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SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF STANISLAUS

CALIFORNIA SPORTFISHING PROTECTION ALLIANCE, a California non-profit public benefit conservation and research organization,

Plaintiff and Petitioner,

vs.

ALL PERSONS INTERESTED IN THE MATTER OF THE VALIDITY OF THE EASTERN SAN JOAQUIN GROUNDWATER SUBBASIN GROUNDWATER SUSTAINABILITY PLAN,

Defendants,

EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY; CENTRAL DELTA WATER AGENCY GROUNDWATER SUSTAINABILITY AGENCY; CENTRAL SAN JOAQUIN WATER CONSERVATION DISTRICT GROUNDWATER SUSTAINABILITY AGENCY; CITY OF LODI GROUNDWATER SUSTAINABILITY AGENCY; CITY OF MANTECA

Case No. CV-20-001720

SECOND AMENDED AND SUPPLEMENTAL COMPLAINT FOR REVERSE VALIDATION AND PETITION FOR WRIT OF MANDATE

[CCP §§ 860, 863, 1085]

Action filed: March 16, 2020

Department 22

GROUNDWATER SUSTAINABILITY AGENCY; CITY OF STOCKTON GROUNDWATER SUSTAINABILITY AGENCY; EASTSIDE SAN JOAQUIN GROUNDWATER SUSTAINABILITY AGENCY; CALAVERAS COUNTY WATER DISTRICT GROUNDWATER SUSTAINABILITY AGENCY; COUNTY OF CALAVERAS GROUNDWATER SUSTAINABILITY AGENCY; COUNTY OF STANISLAUS GROUNDWATER SUSTAINABILITY AGENCY; ROCK CREEK WATER DISTRICT GROUNDWATER SUSTAINABILITY AGENCY; LINDEN COUNTY WATER DISTRICT GROUNDWATER SUSTAINABILITY AGENCY; LOCKEFORD GROUNDWATER SUSTAINABILITY AGENCY; NORTH SAN JOAQUIN WATER CONSERVATION DISTRICT GROUNDWATER SUSTAINABILITY AGENCY; OAKDALE IRRIGATION DISTRICT GROUNDWATER SUSTAINABILITY AGENCY; COUNTY OF SAN JOAQUIN GROUNDWATER SUSTAINABILITY AGENCY; COUNTY OF SAN JOAQUIN GROUNDWATER SUSTAINABILITY AGENCY - EASTERN SAN JOAQUIN 1; COUNTY OF SAN JOAQUIN GROUNDWATER SUSTAINABILITY AGENCY - EASTERN SAN JOAQUIN 2; CALIFORNIA WATER SERVICE COMPANY; SOUTH DELTA WATER AGENCY GROUNDWATER SUSTAINABILITY AGENCY; SOUTH SAN JOAQUIN GROUNDWATER SUSTAINABILITY AGENCY; CITY OF ESCALON ; CITY OF RIPON; SOUTH SAN JOAQUIN IRRIGATION DISTRICT; STOCKTON EAST WATER DISTRICT GROUNDWATER SUSTAINABILITY AGENCY; WOODBRIDGE IRRIGATION DISTRICT GROUNDWATER SUSTAINABILITY AGENCY; CITY OF LODI; CITY OF STOCKTON; COUNTY OF CALAVERAS WATER DISTRICT; COUNTY OF CALAVERAS; COUNTY OF

STANISLAUS; ROCK CREEK WATER DISTRICT; NORTH SAN JOAQUIN WATER CONSERVATION DISTRICT; COUNTY OF SAN JOAQUIN; STOCKTON EAST WATER DISTRICT; and DOES 11 through 500,

Defendants, Respondents, and Real Parties in Interest,

DEPARTMENT OF WATER RESOURCES,

Real Party in Interest and Respondent.

For its Second Amended and Supplemental Complaint for Reverse Validation and Petition for Writ of Mandate, Plaintiff and Petitioner California Sportfishing Protection Alliance (CSPA, Plaintiff, or Petitioner) alleges as follows:

1. Pursuant to the Sustainable Groundwater Management Act (SGMA), codified at Water Code section 10720 et seq., no earlier than January 14, 2020, Defendants and Respondents Central Delta Water Agency Groundwater Sustainability Agency; Central San Joaquin Water Conservation District Groundwater Sustainability Agency; City of Lodi Groundwater Sustainability Agency; City of Manteca Groundwater Sustainability Agency; City of Stockton Groundwater Sustainability Agency; Eastside San Joaquin Groundwater Sustainability Agency; Calaveras County Water District Groundwater Sustainability Agency; County of Calaveras Groundwater Sustainability Agency; County of Stanislaus Groundwater Sustainability Agency; Rock Creek Water District Groundwater Sustainability Agency; Linden County Water District Groundwater Sustainability Agency; Lockeford Groundwater Sustainability Agency; North San Joaquin Water Conservation District Groundwater Sustainability Agency; Oakdale Irrigation District Groundwater Sustainability Agency; County of San Joaquin Groundwater Sustainability Agency; County of San Joaquin Groundwater Sustainability Agency – Eastern San Joaquin 1; County of San Joaquin Groundwater Sustainability Agency – Eastern San Joaquin 2; California Water Service Company; South Delta Water Agency Groundwater Sustainability Agency; South San Joaquin Groundwater Sustainability Agency; City of Escalon; City of Ripon; South San Joaquin Irrigation District; Stockton East Water District Groundwater Sustainability Agency; Woodbridge Irrigation District Groundwater Sustainability Agency; City of Lodi; City of Stockton; County of Calaveras Water District; County of Calaveras; County of Stanislaus; Rock Creek Water District; North San Joaquin Water Conservation District; County of San Joaquin; and Stockton East Water District (collectively GSA Defendants or GSA Respondents) in this case finally adopted the Eastern San Joaquin Groundwater Subbasin Groundwater Sustainability Plan for the San Joaquin Valley Groundwater Basin, Eastern San Joaquin Subbasin, California Department of Water Resources Basin No. 5-22.01 (hereinafter GSP or Plan).

2. On or before July 27, 2022, GSA Defendants revised the GSP after being directed

to do so by Real Party in Interest and Respondent California Department of Water Resources ("DWR"). References to the changes made in 2022 are referred to as the "2022 Revisions."

3. On or about July 6, 2023, DWR issued a writing determining that the GSP was "approved" pursuant to Water Code sections 10733, 10733.4 and California Code of Regulations, title 23, section 355.2.

4. The Mokelumne River, Calaveras River, Stanislaus River, San Joaquin River, Dry Creek, Bear Creek, and other surface waters flow through or along a border of the Eastern San Joaquin Subbasin. These streams are or were home to several runs of Central Valley Chinook salmon and Central Valley steelhead. Today, several of these runs are extirpated from the region and others are greatly diminished. Two of them are listed as "threatened" under the state and federal Endangered Species Acts and another is a species of concern.

5. Part of the problem is groundwater pumping: overpumping lowers the water table, thereby decreasing flows and increasing temperatures.

6. The Legislature passed SGMA in 2014 to address overextraction of groundwater from the state's aquifers. Under SGMA, local Groundwater Sustainability Agencies (GSAs) must adopt GSPs that achieve sustainable groundwater management. Among SGMA's requirements—and of the mandatory regulations adopted by DWR—are that GSAs provide adequate opportunities for public engagement, collect detailed information on the interaction between groundwater and surface waters and their impacts on beneficial uses and users of that surface and groundwater, quantitatively define impermissible "undesirable results," set quantitative and specific measurable objectives to achieve sustainability, and implement projects and management actions that lead towards sustainability.

7. When it comes to evaluating and mitigating the effects of groundwater extraction on the habitat, populations, and continued viability of the Subbasin's ecosystems, particularly salmonids, the GSP utterly fails. It lacks required information on the hydrologic interaction between groundwater and surface water as well as the impacts of that interaction on ecosystems. It excludes actual and potential groundwater dependent ecosystems and interconnected surface waters from its analysis. It fails to set compliant planning goals—the definitions of "undesirable re-

sults," minimum thresholds, and measurable objectives. It fails to include sufficient monitoring. And its projects and management actions fail to protect fish and in some cases may be actively harmful.

8. These failures violate SGMA. And the failure to consider and mitigate the impacts of pumping on interconnected and navigable surface waters also violates the public trust doctrine and the waste and unreasonable use doctrine.

9. CSPA has given GSA Defendants every opportunity to develop a compliant GSP. It submitted comments before plan adoption. It filed this action and then stipulated to stay it pending DWR's required review. When DWR deemed the plan "incomplete" in 2022, CSPA submitted additional comments.

10. But in summer on 2023, DWR shirked its responsibility to implement SGMA and its own regulations, determining the GSP to be "approved" despite finding that the GSP did not satisfy the regulations and characterized the GSP's arguments in favor of its methodology as "not compelling."

11. The ecosystems of the Eastern San Joaquin Subbasin and the people that rely on them deserve and are legally entitled to a fully compliant GSP.

12. CSPA now asks this Court for an order setting aside the GSP and requiring it to comply with SGMA and its regulations.

13. CSPA also asks this Court for an order setting aside DWR's "approval" of the GSP.

JURISDICTION

14. Plaintiff brings this reverse validation action pursuant to Water Code section 10726.6, subdivision (a) and the validation statute at Code of Civil Procedure section 863 and this Petition for Writ of Mandate pursuant to Water Code section 10726.6, subdivision (e) and Code of Civil Procedure section 1085 to challenge the validity of the GSP on grounds that the GSA Defendants violated the procedural requirements of SGMA and the public trust doctrine in adopting the GSP and that the GSP violates the substantive requirements of SGMA, the public trust doctrine and the waste and unreasonable use doctrine.

15. Plaintiff brings its writ of mandate cause of action against DWR under Code of

Civil Procedure section 1085 on the grounds that DWR violated procedural and substantive requirements of SGMA by "approving" the GSP.

PARTIES

16. Plaintiff CALIFORNIA SPORTFISHING PROTECTION ALLIANCE (Plaintiff) is a California non-profit public benefit conservation and research organization established in 1983 for the purpose of conserving, restoring, and enhancing the state's water quality, wildlife and fishery resources and their aquatic ecosystems and associated riparian habitats.

17. Defendants referred to herein as ALL PERSONS INTERESTED IN THE MATTER OF THE VALIDITY OF THE EASTERN SAN JOAQUIN GROUNDWATER SUBBASIN GROUNDWATER SUSTAINABILITY PLAN are all persons interested in the validity of the Eastern San Joaquin Groundwater Subbasin Groundwater Sustainability Plan.

18. Plaintiff alleges the identity of each Defendant named in the following paragraphs based on information and belief and on that basis alleges that each such Defendant, other than DWR, is a Groundwater Sustainability Agency ("GSA") established pursuant to SGMA with jurisdiction over land or water resources in the geographic area subject to the GSP or a member of one of the GSAs identified as a Defendant herein with jurisdiction over land or water resources in the geographic area subject to the GSP, and that each Defendant adopted the GSP.

19. Defendant CENTRAL DELTA WATER AGENCY GROUNDWATER SUSTAINABILITY AGENCY is a GSA formed by the Central Delta Water Agency, which is a water delivery agency formed by the act of the California Legislature (Stats.1973, c. 1133), a local agency as defined in SGMA, and a member of the Eastern San Joaquin Groundwater Authority.

20. Defendant CENTRAL SAN JOAQUIN WATER CONSERVATION DISTRICT GROUNDWATER SUSTAINABILITY AGENCY is a GSA formed by the Central San Joaquin Water Conservation District, which is a California Water Conservation District formed under Division 21 of the California Water Code, a local agency as defined in SGMA, and a member of the Eastern San Joaquin Groundwater Authority.

21. Defendant CITY OF LODI GROUNDWATER SUSTAINABILITY AGENCY is a GSA formed by the City of Lodi, which is a California municipal corporation, a local agency as

defined in SGMA, and a member of the Eastern San Joaquin Groundwater Authority.

22. Defendant CITY OF MANTECA GROUNDWATER SUSTAINABILITY AGENCY is a California municipal corporation, a local agency as defined in SGMA, a member of the Eastern San Joaquin Groundwater Authority, and a GSA.

23. Defendant CITY OF STOCKTON GROUNDWATER SUSTAINABILITY AGENCY is a GSA formed by the City of Stockton, which is a municipal corporation organized under a Charter pursuant to Government Code section 34101, a local agency as defined in SGMA, and a member of the Eastern San Joaquin Groundwater Authority.

24. Defendant EASTSIDE SAN JOAQUIN GROUNDWATER SUSTAINABILITY AGENCY ("Eastside GSA") is a multi-agency GSA comprised of the County of Calaveras, the County of Stanislaus, Calaveras County Water District, and Rock Creek Water District, formed by Memorandum of Understanding pursuant to Water Code section 10723.6(a) and a member of the Eastern San Joaquin Groundwater Authority.

25. Defendant CALAVERAS COUNTY WATER DISTRICT GROUNDWATER SUSTAINABILITY AGENCY is a GSA formed by the Calaveras County Water District, which is a county water district organized under Division 12 of the California Water Code to provide water and sewer service in Calaveras County, a local agency as defined in SGMA, and a member of the Eastside GSA.

26. Defendant COUNTY OF CALAVERAS GROUNDWATER SUSTAINABILITY AGENCY is a GSA formed by the COUNTY OF CALAVERAS, which is a political subdivision of the State of California, a local agency as defined in SGMA, and a member of the Eastside GSA.

27. Defendant COUNTY OF STANISLAUS GROUNDWATER SUSTAINABILITY AGENCY is a GSA formed by the County of Stanislaus, which is a political subdivision of the State of California, a local agency as defined in SGMA, and a member of the Eastside GSA.

28. Defendant ROCK CREEK WATER DISTRICT GROUNDWATER SUSTAINABILITY AGENCY is a GSA formed by the Rock Creek Water District, which is a water district organized under Division 13 of the California Water Code to provide agricultural irrigation water in its service area, a local agency as defined in SGMA, and a member of the Eastside GSA.

29. Defendant LINDEN COUNTY WATER DISTRICT GROUNDWATER SUSTAINABILITY AGENCY is a GSA formed by the Linden County Water District, which is a county water district organized under Division 12 of the California Water Code, a local agency as defined in SGMA, and a member of the Eastern San Joaquin Groundwater Authority.

30. Defendant LOCKEFORD GROUNDWATER SUSTAINABILITY AGENCY is a GSA formed by the Lockeford Community Services District, a California community services district organized under Government Code section 61000 et seq. to supply water in its service area, a local agency as defined in SGMA, and a member of the Eastern San Joaquin Groundwater Authority.

31. Defendant NORTH SAN JOAQUIN WATER CONSERVATION DISTRICT GROUNDWATER SUSTAINABILITY AGENCY is a GSA formed by the North San Joaquin Water Conservation District, a California water conservation district organized under Division 21 of the California Water Code, a local agency as defined in SGMA, and a member of the Eastern San Joaquin Groundwater Authority.

32. Defendant OAKDALE IRRIGATION DISTRICT GROUNDWATER SUSTAINABILITY AGENCY is a GSA formed by the Oakdale Irrigation District, which is an irrigation district organized under Division 11 of the California Water Code, a local agency as defined in SGMA, a member of the Eastern San Joaquin Groundwater Authority, and a GSA; and it adopted the GSP.

33. Defendant COUNTY OF SAN JOAQUIN GROUNDWATER SUSTAINABILITY AGENCY is a GSA formed by the County of San Joaquin, which is a political subdivision of the State of California, a local agency as defined in SGMA, and a member of the Eastern San Joaquin Groundwater Authority.

34. Defendant COUNTY OF SAN JOAQUIN GROUNDWATER SUSTAINABILITY AGENCY - EASTERN SAN JOAQUIN 1, is a GSA formed by the County of San Joaquin and a member of the Eastern San Joaquin Groundwater Authority.

35. Defendant COUNTY OF SAN JOAQUIN GROUNDWATER SUSTAINABILITY AGENCY - EASTERN SAN JOAQUIN 2, is a GSA formed by the County of San Joaquin and is

a member of the Eastern San Joaquin Groundwater Authority.

36. Defendant CALIFORNIA WATER SERVICE COMPANY is an investor owned utility acting in combination with Defendant City of Stockton Groundwater Sustainability Agency and Defendant County of San Joaquin Groundwater Sustainability Agency - San Joaquin County No. 2.

37. Defendant SOUTH DELTA WATER AGENCY GROUNDWATER SUSTAINABILITY AGENCY is a GSA formed by the SOUTH DELTA WATER AGENCY, which is a political division of the State of California created by the California Legislature under the South Delta Water Agency Act, chapter 1089 of the statutes of 1973 (Water Code, Appendix, 116-1.1 et. seq.), a local agency as defined in SGMA, and a member of the Eastern San Joaquin Groundwater Authority.

38. Defendant SOUTH SAN JOAQUIN GROUNDWATER SUSTAINABILITY AGENCY (hereinafter "SSJ GSA") is a multi-agency GSA comprised of the cities of Escalon and Ripon and the South San Joaquin Irrigation District and a member of the Eastern San Joaquin Groundwater Authority.

39. Defendant CITY OF ESCALON is a California municipal corporation, a local agency as defined in SGMA, and has elected to exercise the powers and authorities of a GSA as a member of the SSJ GSA.

40. Defendant CITY OF RIPON is a California municipal corporation, a local agency as defined in SGMA, and has elected to exercise the powers and authorities of a GSA as a member of the SSJ GSA.

41. Defendant SOUTH SAN JOAQUIN IRRIGATION DISTRICT is an irrigation district organized under Division 11 of the California Water Code, a local agency as defined in SGMA, and has elected to exercise the powers and authorities of a GSA as a member of the SSJ GSA.

42. Defendant STOCKTON EAST WATER DISTRICT GROUNDWATER SUSTAINABILITY AGENCY is a water conservation district formed by the California legislature, a local agency as defined in SGMA, a member of the Eastern San Joaquin Groundwater Authority,

and a GSA.

43. Defendant WOODBRIDGE IRRIGATION DISTRICT GROUNDWATER SUSTAINABILITY AGENCY is a GSA formed by the Woodbridge Irrigation District, which is an irrigation district organized under Division 11 of the California Water Code, a local agency as defined in SGMA, and a member of the Eastern San Joaquin Groundwater Authority.

44. Upon the filing of the Complaint for Reverse Validation in this action, Plaintiff, being ignorant of the true name of the Defendant, and having designated the Defendant in the Complaint for Reverse Validation by the fictitious name of DOE 1, and having discovered the true name of the Defendant to be: CITY OF LODI, which is California municipal corporation, a local agency as defined in the Sustainable Groundwater Management Act (SGMA), codified at Water Code section 10720 et. seq., and a member of Defendant Eastside San Joaquin Groundwater Sustainability Agency, and which purported to adopt the Eastern San Joaquin Groundwater Subbasin Groundwater Sustainability Plan, previously amended the Complaint for Reverse Validation by substituting the true name, CITY OF LODI, for the fictitious name, DOE 1, wherever DOE 1 appears in the Complaint for Reverse Validation, and hereby confirms this allegation.

45. Upon the filing of the Complaint for Reverse Validation in this action, Plaintiff, being ignorant of the true name of the Defendant, and having designated the Defendant in the Complaint for Reverse Validation by the fictitious name of DOE 2, and having discovered the true name of the Defendant to be: CITY OF STOCKTON, which is a municipal corporation organized under a Charter pursuant to Government Code section 34101, a local agency as defined in the Sustainable Groundwater Management Act (SGMA), codified at Water Code section 10720 et. seq., and a member of Defendant Eastside San Joaquin Groundwater Sustainability Agency, and which purported to adopt the Eastern San Joaquin Groundwater Subbasin Groundwater Sustainability Plan, previously amended the Complaint for Reverse Validation by substituting the true name, CITY OF STOCKTON, for the fictitious name, DOE 2, wherever DOE 2 appears in the Complaint for Reverse Validation, and hereby confirms this allegation.

46. Upon the filing of the Complaint for Reverse Validation in this action, Plaintiff, being ignorant of the true name of the Defendant, and having designated the Defendant in the Com-

plaint for Reverse Validation by the fictitious name of DOE 3, and having discovered the true name of the Defendant to be: COUNTY OF CALAVERAS WATER DISTRICT, which is a county water district organized under Division 12 of the California Water Code to provide water and sewer service in Calaveras County, a local agency as defined in SGMA, a member of Defendant Eastside San Joaquin Groundwater Sustainability Agency, and which purported to adopt the Eastern San Joaquin Groundwater Subbasin Groundwater Sustainability Plan, previously amended the Complaint for Reverse Validation by substituting the true name, COUNTY OF CALAVERAS WATER DISTRICT, for the fictitious name, DOE 3, wherever DOE 3 appears in the Complaint for Reverse Validation, and hereby confirms this allegation.

47. Upon the filing of the Complaint for Reverse Validation in this action, Plaintiff, being ignorant of the true name of the Defendant, and having designated the Defendant in the Complaint for Reverse Validation by the fictitious name of DOE 4, and having discovered the true name of the Defendant to be: COUNTY OF CALAVERAS, which is a political subdivision of the State of California, a local agency as defined in the Sustainable Groundwater Management Act (SGMA), codified at Water Code section 10720 et. seq., and a member of Defendant Eastside San Joaquin Groundwater Sustainability Agency, and which purported to adopt the Eastern San Joaquin Groundwater Subbasin Groundwater Sustainability Plan, previously amended the Complaint for Reverse Validation by substituting the true name, COUNTY OF CALAVERAS, for the fictitious name, DOE 4, wherever DOE 4 appears in the Complaint for Reverse Validation, and hereby confirms this allegation.

48. Upon the filing of the Complaint for Reverse Validation in this action, Plaintiff, being ignorant of the true name of the Defendant, and having designated the Defendant in the Complaint for Reverse Validation by the fictitious name of DOE 5, and having discovered the true name of the Defendant to be: COUNTY OF STANISLAUS, which is a political subdivision of the State of California, a local agency as defined in the Sustainable Groundwater Management Act (SGMA), codified at Water Code section 10720 et. seq., and a member of Defendant Eastside San Joaquin Groundwater Sustainability Agency, and which purported to adopt the Eastern San Joaquin Groundwater Subbasin Groundwater Sustainability Plan, previously amended the Com-

plaint for Reverse Validation by substituting the true name, COUNTY OF STANISLAUS, for the fictitious name, DOE 5, wherever DOE 5 appears in the Complaint for Reverse Validation, and hereby confirms this allegation.

49. Upon the filing of the Complaint for Reverse Validation in this action, Plaintiff, being ignorant of the true name of the Defendant, and having designated the Defendant in the Complaint for Reverse Validation by the fictitious name of DOE 6, and having discovered the true name of the Defendant to be: ROCK CREEK WATER DISTRICT, which is a water district organized under Division 13 of the California Water Code to provide agricultural irrigation water in its service area, a local agency as defined in the Sustainable Groundwater Management Act (SGMA), codified at Water Code section 10720 et. seq., and a member of Defendant Eastside San Joaquin Groundwater Sustainability Agency, and which purported to adopt the Eastern San Joaquin Groundwater Subbasin Groundwater Sustainability Plan, previously amended the Complaint for Reverse Validation by substituting the true name, ROCK CREEK WATER DISTRICT, for the fictitious name, DOE 6, wherever DOE 6 appears in the Complaint for Reverse Validation, and hereby confirms this allegation.

50. Upon the filing of the Complaint for Reverse Validation in this action, Plaintiff, being ignorant of the true name of the Defendant, and having designated the Defendant in the Complaint for Reverse Validation by the fictitious name of DOE 7, and having discovered the true name of the Defendant to be: NORTH SAN JOAQUIN WATER CONSERVATION DISTRICT, which is a California water conservation district organized under Division 21 of the California Water Code, a local agency as defined in the Sustainable Groundwater Management Act (SGMA), codified at Water Code section 10720 et. seq., and a member of Defendant Eastside San Joaquin Groundwater Sustainability Agency, and which purported to adopt the Eastern San Joaquin Groundwater Subbasin Groundwater Sustainability Plan, previously amended the Complaint for Reverse Validation by substituting the true name, NORTH SAN JOAQUIN WATER CONSERVATION DISTRICT, for the fictitious name, DOE 7, wherever DOE 7 appears in the Complaint for Reverse Validation, and hereby confirms this allegation.

51. Upon the filing of the Complaint for Reverse Validation in this action, Plaintiff, be-

ing ignorant of the true name of the Defendant, and having designated the Defendant in the Complaint for Reverse Validation by the fictitious name of DOE 8, and having discovered the true name of the Defendant to be: COUNTY OF SAN JOAQUIN which is a political subdivision of the State of California, a local agency as defined in the Sustainable Groundwater Management Act (SGMA), codified at Water Code section 10720 et. seq., and a member of Defendant Eastside San Joaquin Groundwater Sustainability Agency, and which purported to adopt the Eastern San Joaquin Groundwater Subbasin Groundwater Sustainability Plan, previously amended the Complaint for Reverse Validation by substituting the true name, COUNTY OF SAN JOAQUIN, for the fictitious name, DOE 8, wherever DOE 8 appears in the Complaint for Reverse Validation and hereby confirms this allegation.

52. Upon the filing of the Complaint for Reverse Validation in this action, Plaintiff, being ignorant of the true name of the Defendant, and having designated the Defendant in the Complaint for Reverse Validation by the fictitious name of DOE 9, and having discovered the true name of the Defendant to be: STOCKTON EAST WATER DISTRICT, which is a water conservation district formed by the California legislature, a local agency as defined in the Sustainable Groundwater Management Act (SGMA), codified at Water Code section 10720 et. seq., and a member of Defendant Eastside San Joaquin Groundwater Sustainability Agency, and which purported to adopt the Eastern San Joaquin Groundwater Subbasin Groundwater Sustainability Plan, hereby amends the Complaint for Reverse Validation by substituting the true name, STOCKTON EAST WATER DISTRICT, for the fictitious name, DOE 9, wherever DOE 9 appears in the Complaint for Reverse Validation.

53. Upon the filing of this action, Plaintiff was ignorant of DWR's July 6, 2023 "approval" of the GSP, DWR's 2022 "incomplete" determination, the nature of DWR's interest in CSPA's Second Cause of Action, and/or any potential need to join DWR to the Second Cause of Action alleged herein. DWR is a state agency created by the California Legislature (Wat. Code § 120), with duties under SGMA to administratively evaluate and assess the GSP submitted by the GSA Defendants upon its adoption and following each revision, in a manner consistent with SGMA, its regulations, and other governing law (Wat. Code § 10733.4; Cal. Code Regs., tit. 23,

§ 355 et seq.). On or about July 6, 2023, DWR issued a writing "approving" the GSP. For purposes of the Second Cause of Action, Plaintiff designated Real Party in Interest DWR by the fictitious name of DOE 10. Having discovered the true name of the of the Real Party in Interest to be: DEPARTMENT OF WATER RESOURCES, and the nature of its interest in the Second Cause of Action, Plaintiff hereby amends the First Amended and Supplemental Complaint for Reverse Validation and Petition for Writ of Mandate by substituting the true name, DEPARTMENT OF WATER RESOURCES, for the fictitious name, DOE 10, wherever DOE 10 appears in the First Amended and Supplemental Complaint for Reverse Validation and Petition for Writ of Mandate. Plaintiff also names DWR as Respondent to its Third Cause of Action alleged in this complaint.

54. Plaintiff does not know the true names and capacities of Defendants fictitiously named herein as DOES 11 through 500, inclusive. Plaintiff is informed and believes, and thereon alleges, that such fictitiously named Defendants are responsible in some manner for the acts or omissions complained of herein. Plaintiff will amend this Petition to allege the fictitiously named Defendants' true names and capacities when ascertained.

VENUE

55. Venue is proper in Stanislaus County pursuant to Code of Civil Procedure sections 392, subdivision (a)(1), 393, subdivision (b), 863, and Water Code section 10726.6, subdivisions (a) and (b).

STANDING

56. Plaintiff and its members are beneficially interested in Defendants' and Respondents' full compliance with SGMA. Plaintiff and its members are and have been directly harmed by Defendants' and Respondents' failures to sustainably manage groundwater in the past and will be harmed by Defendants' and Respondents' unlawful behavior in the future. This harm takes the form of impacts to fisheries, ecosystems, and habitats on which Plaintiff and its members rely for, *inter alia*, research, ecological and scenic value, and recreation. Defendants and Respondents owed a mandatory duty to comply with SGMA, the public trust doctrine, and the waste and unreasonable use doctrine before approving the GSP. Plaintiff has the right to enforce the mandatory duties that the law imposes on Defendants and Respondents.

EXHAUSTION OF ADMINISTRATIVE REMEDIES

57. Plaintiff was not required to exhaust administrative remedies on its First and Second Causes of Action because SGMA does not provide for any administrative remedy that must be exhausted before bringing suit. SGMA does not require a party to file comments or appear at a public hearing before bringing a challenge to a GSP. And GSA Defendants provided no effective administrative remedy that the plaintiff could have exhausted prior to the adoption of the GSP.

58. In the alternative, CSPA exhausted any administrative remedies that may exist on its First and Second Causes of Action by submitting comments on, *inter alia*, August 21, 2019, August 23, 2019 and July 13, 2022. These comments, in concert with comments filed by other NGOs and federal and state agencies, raised all substantive issues required to be raised in order to satisfy any exhaustion requirement that may exist.

59. With respect to the 2022 Revisions, SGMA does not provide for any administrative remedy that must be exhausted before bringing suit and/or supplementing an existing action. And Defendants provided no effective administrative remedy that could have been exhausted prior to the 2022 Revisions.

60. With respect to Plaintiff's Third Cause of Action, CSPA was not required to exhaust administrative remedies because SGMA does not provide for any administrative remedy that must be exhausted before bringing suit challenging DWR's approval of a GSP.

61. In the alternative, CSPA exhausted any administrative remedies that may exist on Plaintiff's Third Cause of Action by submitting comments to DWR on or about, *inter alia,* May 14, 2020 and September 30, 2022. These comments, in concert with comments filed by other NGOs and federal and state agencies, raised all substantive issues required to be raised in order to satisfy any exhaustion requirement that may exist.

TIMELINESS

62. Plaintiff timely filed its reverse validation action by filing within 60 days of the adoption of the GSP, which occurred not before January 14, 2020. (Wat. Code § 10726.6, subd. (a), Code Civ. Proc. §§ 12a, 12b, 860, 863.) CSPA filed this action on March 16, 2020.

63. The reverse validation action is additionally timely because it was filed less than

240 days after the adoption of the GSP. (Wat. Code § 10726.6, subd. (a).)

64. The petition for writ of mandate constituting the Second Cause of Action is timely filed. The Complaint filed on March 2020 was timely filed within three years of the adoption of the GSP and the addition of the cause of action for mandamus relates back to that filing. (Wat. Code § 10726.6, subd. (e), Code Civ. Proc. § 338.)

65. The supplemental complaint and petition comprising the First Amended and Supplemental Complaint for Reverse Validation and Petition for Writ of Mandate was timely filed. The revisions to the GSP were approved no earlier than July 27, 2022. On September 6, 2022, the parties executed a Tolling Agreement tolling the limitations period applicable to amendment or supplementation of the Operative Complaint to obtain judicial review of the approval of the 2022 Revisions as of that date until the date that the Department of Water Resources (DWR) determined that the GSP was approved within the meaning of SGMA and published a writing on its website affirming such approval, or until other events agreed to by the parties occurred. DWR published such a writing determining that the GSP was "approved" on July 6, 2023. This complaint is therefore timely filed after accounting for the period of time when the limitations period was tolled by this agreement. CSPA filed its First Amended and Supplemental Complaint, attached to its Motion for Leave to File First Amended and Supplemental Complaint, on or before July 13, 2023.

66. The amendment naming DWR as a Real Party in Interest to CSPA's Second Cause of Action is timely filed. CSPA designated DWR under the fictitious name Doe 10 in its initial complaint for reverse validation in 2020. The amendment to add the Second Cause of Action relates back to the March 2020 filing of this action. DWR's interest in the Second Cause of Action arose upon its approval of the GSP on July 6, 2023. In addition and in the alternative, CSPA pursued an alternative remedy against DWR in a different forum by filing comment letters with DWR in, *inter alia*, May 2020 and September 2022 with DWR urging it not to "approve" the GSP. These comment letters were submitted within the statutory limitations period and therefore gave DWR timely notice of CSPA's claims. The claims within the comment letters are sufficiently similar to the claims of the Second Cause of Action that DWR will suffer no prejudice from being joined to this action now. CSPA's submission of these letters and its prosecution of this action, including

voluntarily staying this action pending DWR's assessment, were also reasonable and done in good faith. Any statute of limitations as to DWR was therefore equitably tolled during the pursuit of the alternative remedy.

67. The amendment to add Plaintiff's Third Cause of Action against DWR is timely filed. DWR "approved" the GSP on or about July 6, 2023. Plaintiff filed its Second Amended Complaint and Petition for Writ Mandate within three years of this date. (Code Civ. Proc. § 338.)

PRIVATE ATTORNEY GENERAL DOCTRINE

68. Plaintiff brings this action as private attorneys general pursuant to Code of Civil Procedure § 1021.5, and any other applicable legal theory, to enforce important rights affecting the public interest. Issuance of the relief requested in this Complaint will confer a significant benefit on a large class of persons by ensuring that Defendants and Respondents approve a valid GSP that complies with SGMA and other governing laws.

LEGAL FRAMEWORK

69. In 2014, the Legislature adopted SGMA, which authorizes local agencies in California to form GSAs. GSAs must adopt GSPs to achieve SGMA's goal of sustainable groundwater management. (Wat. Code §§ 10720.1(a) ["it is the intent of the Legislature to . . . provide for the sustainable management of groundwater basins"]; 10725(b); 10727(a); 10727.2(b).)

70. SGMA authorizes DWR to adopt, and DWR has adopted, regulations governing the contents of and DWR's review of GSPs. (Wat. Code § 10733.2; Cal. Code Regs., tit. 23, § 350 et seq. (DWR Regs.).)

71. Each GSP must achieve a "sustainability goal," which is "the existence and implementation of one or more groundwater sustainability plans that achieve sustainable groundwater management by identifying and causing the implementation of measures targeted to ensure that the applicable basin is operated within its sustainable yield." (Wat. Code § 10721, def. (u); 10727.)

72. "Sustainable groundwater management" means "the management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results." (Wat. Code § 10721(v).) A basin's "sustainable yield" is "the maximum quantity of water . . . that can be withdrawn annually from a groundwater supply with-

out causing an undesirable result." (Wat. Code § 10721(w).)

73. "Undesirable results" include: (1) Chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply if continued over the planning and implementation horizon. Overdraft during a period of drought is not sufficient to establish a chronic lowering of groundwater levels if extractions and groundwater recharge are managed as necessary to ensure that reductions in groundwater levels or storage during a period of drought are offset by increases in groundwater levels or storage during other periods; (2) Significant and unreasonable reduction of groundwater storage; (3) Significant and unreasonable seawater intrusion; (4) Significant and unreasonable degraded water quality, including the migration of contaminant plumes that impair water supplies; (5) Significant and unreasonable land subsidence that substantially interferes with surface land uses; (6) Depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water. (Wat. Code § 10721(x).)

74. Thus, a GSP must facilitate achieving no depletions of interconnected surface waters or impacts to water quality that have significant and unreasonable adverse impacts on the beneficial uses of the surface water in a basin.

75. GSAs must define undesirable results by including the "criteria used to define when and where the effects of the groundwater conditions cause undesirable results for each applicable sustainability indicator." (DWR Regs. § 354.26(b).) These criteria "shall be based on a quantitative description of the combination of minimum threshold exceedances that cause significant and unreasonable effects in the basin." (*Ibid.*)

76. GSPs must include, inter alia: "(1) Measurable objectives, as well as interim milestones in increments of five years, *to achieve the sustainability goal* in the basin within 20 years of the implementation of the plan. (2) A description of how the plan helps meet each objective and how each objective is intended to achieve the sustainability goal for the basin for long-term beneficial uses of groundwater." (Wat. Code § 10727.2(b).) Measurable objectives are "specific, quantifiable goals for the maintenance or improvement of specified groundwater conditions that have been included in an adopted Plan to achieve the sustainability goal for the basin." (DWR Regs. § 351(s).) Measurable objectives must "be established for each sustainability indicator, based on

quantitative values using the same metrics and monitoring sites as are used to define the minimum thresholds." (DWR Regs. § 354.30(b).) And using that same metric, they must include 5-year increments showing a "reasonable path to achieve the sustainability goal" for the basin. (DWR Regs. § 354.30(e).)

77. GSPs must also identify minimum thresholds for each sustainability indicator, including depletions of interconnected surface water. (DWR Regs. § 354.28(a).) GSAs must quantify minimum thresholds using a "numeric value" that represents a "point in the basin that, if exceeded, may cause undesirable results." (DWR Regs. § 354.28(a).) The description of minimum thresholds must include, inter alia, supporting information and data, an explanation of how the minimum threshold will avoid undesirable results in the basin and in adjacent basins, an explanation of how the minimum thresholds may affect the interests of beneficial uses and users, and an explanation of each minimum threshold will be measured and monitored. (DWR Regs. § 354.28(b).)

78. The GSP must support minimum thresholds for interconnected surface waters by providing "The location, quantity, and timing of depletions of interconnected surface water" and a "description of the groundwater and surface water model used to quantify surface water depletion" or an "equally effective method, tool, or analytical model." (DWR Regs. § 354.28(c)(6)(A)-(B).) Minimum thresholds for interconnected surface waters "shall be defined" as including "the rate or volume of surface water depletions caused by groundwater use that has adverse impacts on beneficial uses of the surface water and may lead to undesirable results." (DWR Regs. § 354.28(c)(6).)

79. Each GSP must include a water budget, which is "an accounting of the total groundwater and surface water entering and leaving a basin including the changes in the amount of water stored." (Wat. Code § 10721(y).)

80. SGMA requires consideration of the interests of all beneficial uses and users of groundwater, which include "surface water users, if there is a hydrologic connection between surface and groundwater bodies." (Wat. Code § 10723.2(f).)

81. GSPs must also identify "groundwater dependent ecosystems" (Wat. Code § 10723.2(g)) which are "ecological communities or species that depend on groundwater emerging

from aquifers or on groundwater occurring near the ground surface" (DWR Regs. § 351(m)).

82. GSPs must also include monitoring, including "Monitoring protocols that are designed to detect . . . flow and quality of surface water that directly affect groundwater levels or quality or are caused by groundwater extraction in the basin." (Wat. Code § 10727.2, subd. (f).) As applicable to each basin, GSPs must include "monitoring and management of groundwater quality, . . . and changes in surface flow and surface water quality that directly affect groundwater levels or quality or are caused by groundwater extraction in the basin." (Wat. Code § 10727.2, subd. (d)(2).) Monitoring must be of "sufficient quality, frequency, and distribution to characterize groundwater and related surface water conditions in the basin and evaluate changing conditions that occur through implementation of the Plan." (DWR Regs. § 354.32.)

83. Thus, both SGMA and the regulations require a GSP to consider the interactivity between groundwater pumping and interconnected surface water, define what the undesirable result caused by any depletions is (including quantification of the timing, location, and quantity of those extractions), and set minimum thresholds that prevent the undesirable result and achieve sustainable groundwater management.

84. When a GSA adopts a GSP, it must submit the GSP to DWR for review and DWR must complete its review within two years. (Wat. Code § 10733.4(a), (d).) DWR's role is to "issue an assessment of the plan" and "the assessment may include recommended corrective actions to address any deficiencies identified by the department." (Wat. Code § 10733.4(d).) DWR must either "approve" a GSP or determine it to be "incomplete" or "inadequate." (Wat. Code § 10733.4(d); DWR Regs. § 355.2(e).) A DWR finding that a plan is "inadequate" provides the State Water Resources Control Board (Board) with authority to place a basin in "probationary" status, which may lead to the Board adopting a GSP for the affected groundwater basin and imposing fees on landowners and groundwater extractors in the basin. (Wat. Code §§ 10735.8; 10736.6.)

85. DWR's review must determine if a GSP "conforms with" SGMA and "is likely to achieve the sustainability goal for the basin." (Wat. Code § 10733(a).) DWR's regulations additionally provide:

> The Department shall evaluate a Plan that satisfies the requirements of Subsection (a) to determine whether the Plan, either individually or in coordina-

> tion with other Plans, complies with the Act and substantially complies with the requirements of this Subchapter. Substantial compliance means that the supporting information is sufficiently detailed and the analyses sufficiently thorough and reasonable, in the judgment of the Department, to evaluate the Plan, and the Department determines that any discrepancy would not materially affect the ability of the Agency to achieve the sustainability goal for the basin, or the ability of the Department to evaluate the likelihood of the Plan to attain that goal. When evaluating whether a Plan is likely to achieve the sustainability goal for the basin, the Department shall consider the following:
>
> (1) Whether the assumptions, criteria, findings, and objectives, including the sustainability goal, undesirable results, minimum thresholds, measurable objectives, and interim milestones are reasonable and supported by the best available information and best available science.
>
> (2) Whether the Plan identifies reasonable measures and schedules to eliminate data gaps.
>
> (3) Whether sustainable management criteria and projects and management actions are commensurate with the level of understanding of the basin setting, based on the level of uncertainty, as reflected in the Plan.
>
> (4) Whether the interests of the beneficial uses and users of groundwater in the basin, and the land uses and property interests potentially affected by the use of groundwater in the basin, have been considered.
>
> (5) Whether the projects and management actions are feasible and likely to prevent undesirable results and ensure that the basin is operated within its sustainable yield.
>
> (6) Whether the Plan includes a reasonable assessment of overdraft conditions and includes reasonable means to mitigate overdraft, if present.
>
> (7) Whether the Plan will adversely affect the ability of an adjacent basin to implement its Plan or impede achievement of its sustainability goal.
>
> (8) Whether coordination agreements, if required, have been adopted by all relevant parties, and satisfy the requirements of the Act and this Subchapter.
>
> (9) Whether the Agency has the legal authority and financial resources necessary to implement the Plan.
>
> (10) Whether the Agency has adequately responded to comments that raise credible technical or policy issues with the Plan.

(DWR Regs. § 355.4(b).)

86. The reasonable and beneficial use doctrine, to which SGMA expressly must comply (Wat. Code § 10720.1(b)), is codified in the California Constitution. It requires that "the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and

that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare." (Cal. Const., art. X, § 2; see also *United States v. State Water Resources Control Bd.* (1986) 182 Cal.App.3d 82, 105 ["[S]uperimposed on those basic principles defining water rights is the overriding constitutional limitation that the water be used as reasonably required for the beneficial use to be served."].)

87. The public trust doctrine applies to the waters of the State, and establishes that "the state, as trustee, has a duty to preserve this trust property from harmful diversions by water rights holders" and that thus "no one has a vested right to use water in a manner harmful to the state's waters." The public trust doctrine applies to groundwater where there is a hydrological connection between the groundwater and a navigable surface water body. (*Environmental Law Foundation v. State Water Resources Control Bd.* (2018) 26 Cal.App.5th 844 (*ELF*); *United States v. State Water Resources Control Bd.*, *supra*,182 Cal.App.3d at 106; see also *National Audubon Society v. Superior Court* (1983) 33 Cal.3d 419, 426 ["[B]efore state courts and agencies approve water diversions they should consider the effect of such diversions upon interests protected by the public trust, and attempt, so far as feasible, to avoid or minimize any harm to those interests."].) In *ELF*, the court held that the public trust doctrine applies to "the extraction of groundwater that adversely impacts a navigable waterway" and that the government has an affirmative duty to take the public trust into account in the planning and allocation of water resources. (*ELF*, *supra*, 26 Cal.App.5th at 856-62.) The court also specifically held that SGMA does not supplant the requirements of the common law public trust doctrine. (*Id.* at 862-70.) The public trust doctrine imposes an "affirmative duty on the state to act on behalf of the people to protect their interest in navigable water." (*Id.* at 857.) The doctrine is expansive and flexible—public trust uses include not only navigation, commerce, and fishing, but also hunting, bathing, and swimming. (*Ibid.)* Further, "an increasingly important public use is the preservation of trust lands 'in their natural state, so that they may serve as ecological units for scientific study, as open space, and as environments which provide food and habitat for birds and marine life, and which favorably affect the scenery and climate of the area.'" (*Ibid.* [quoting *San Francisco Baykeeper, Inc. v. State Lands Com.* (2015) 242 Cal.App.4th 202, 234].)

88. *ELF* held that the State Board's public trust obligation was independent of, and not limited by, its authority to oversee permitting. (*Id.* at 862 [quoting *National Audubon Society*, *supra*, 33 Cal.3d at 446-47].) Relying on *National Audubon Society v. Superior Court*, *ELF* held that state agencies have "an affirmative duty to take the public trust into account in the planning and allocation of water resources and to protect public trust uses whenever feasible." Further, *ELF* held that "SGMA does not . . . replace or fulfill public trust duties, or scuttle decades of decisions upholding, defending, and expanding the public trust doctrine." (*Ibid.*)

89. GSAs must comply with the holding of *Environmental Law Foundation v. State Water Resources Control Board* in deciding to adopt or approve GSPs. Pursuant to *ELF*, GSAs must: (1) identify any public trust resources within each basin; (2) identify any public trust uses within each basin; (3) identify and analyze the potential adverse impact of groundwater extractions on public trust resources and uses; and (4) determine the feasibility of protecting public trust uses and protect such uses "whenever feasible."

90. DWR must comply with the public trust doctrine and the waste and unreasonable use doctrines when evaluating GSPs.

91. In 2019, the California Department of Fish & Wildlife ("CDFW") published "Fish & Wildlife Groundwater Planning Considerations" specifically to provide guidance to GSAs in their efforts to draft GSPs that adequately address both "Groundwater Dependent Ecosystems" ("GDEs") and "Interconnected Surface Waters" ("ISW"). This guidebook provides important criteria for judging whether a groundwater sustainability plan adequately addresses these issues.

92. With respect to Interconnected Surface Waters, CDFW's Groundwater Planning Considerations pose three questions that GSPs should answer:

> 1. How will groundwater plans document the timing, quantity, and location of ISW [Interconnected Surface Waters] depletions attributable to groundwater extraction and determine whether these depletions will impact fish and wildlife?
>
> 2. How will GSAs determine if fish and wildlife are being adversely impacted by groundwater management impacts on ISW?
>
> 3. If adverse impacts to ISW-dependent fish and wildlife are observed, how will GSAs facilitate appropriate and timely monitoring and management response actions?

The GSP answers none of these questions.

93. CDFW's Groundwater Planning Considerations provide a detailed description of the factors that must be included in GSPs to evaluate impacts on fish and wildlife stream flow depletion from groundwater pumping, including factors relating to species life cycle (e.g., temporal water needs ["aquatic and terrestrial species require different quantities and qualities of water at different times and for different durations"]; spatial water needs ["similar to temporal water needs, species are sensitive to the location and coverage of ISW and GDE wetland habitat available to them"]; hydrologic variability ["water availability is naturally variable, and many species rely on a degree of hydrologic variability"]; water availability ["CDFW expects groundwater budget projections to include fish and wildlife water needs"]; water quality ["Groundwater quality and ISW quality play a significant role in habitat adequacy. Groundwater pumping can impact many components of water quality . . ."]) and factors relating to habitat value (e.g., connectivity ["Habitat connectivity is a key ecological attribute of thriving ecosystems"]; heterogeneity ["Habitat heterogeneity, such as vegetation age and diversity, is a key ecological attribute of many functional ecosystems . . ."]; groundwater elevation ["Groundwater-dependent habitats, including ISW, are particularly susceptible to changes in the depth of the groundwater"].)[1]

94. The reasonable and beneficial use doctrine, also known as the waste and unreasonable use doctrine, to which SGMA expressly must comply (Wat. Code § 10720.1(b)), is codified in

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[1] "Lowered water tables that drop beneath root zones can cutoff phreatophyte vegetation from water resources, stressing or ultimately converting vegetated terrestrial habitat. Induced infiltration attributable to groundwater pumping can reverse hydraulic gradients and may cause streams to stop flowing, compromising instream dissolved oxygen and temperature characteristics, and eventually causing streams to go dry. The frequency and duration of exposure to lowered groundwater tables and low-flow or no-flow conditions caused by groundwater pumping, as well as habitat and species resilience, will dictate vulnerability to changes in groundwater elevation. For example, some species rely on perennial instream flow, and any interruption to flow can risk species survival. Impacts caused by changes in groundwater elevation should be considered in the evaluation of groundwater management effects on GDEs and ISW." (CDFW, Fish & Wildlife Groundwater Planning Considerations (2019) at p. 11, available at https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=170185, accessed February 9, 2022.)

the California Constitution. It requires that "the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare." (Cal. Const., art. X, § 2; see also *United States v. State Water Resources Control Bd.* (1986) 182 Cal.App.3d 82, 105 ["[S]uperimposed on those basic principles defining water rights is the overriding constitutional limitation that the water be used as reasonably required for the beneficial use to be served."].) The GSP does not include any analysis of these factors, nor does it propose a plan or protocol to do so in the future.

FACTUAL BACKGROUND

95. Three distinct runs of Chinook salmon as well as Central Valley steelhead spawn in the Sacramento-San Joaquin River system. Chinook salmon runs, each of which is genetically distinct, are named for the season when the majority of the run enters freshwater as adults. Two of these runs, Central Valley spring-run Chinook Salmon and Central Valley steelhead, are listed as "threatened" under the Federal Endangered Species Act ("ESA"). Fall-run and late-fall-run Chinook Salmon are listed as "species of concern" under the ESA.

96. All runs of Chinook as well as steelhead did historically and/or do currently use rivers and other surface waters flowing through or adjacent to the Eastern San Joaquin Subbasin, including the Mokelumne River, the Cosumnes River, the Calaveras River, Dry Creek, the San Joaquin River, and the Stanislaus River, for migration, spawning, incubation, and rearing.

97. Fall-run Chinook Salmon migrate upstream as adults from July through December and spawn as early as October. This timing often varies in each stream. Late-fall run Chinook salmon migrate into the rivers from mid-October through December, starting to spawn as early as January going through mid-April. The majority of these young salmon migrate to the ocean during the first few months following emerging from the rocky riverbed. Some salmon however may remain in the freshwater and migrate as yearlings.

98. Spring-run Chinook Salmon enter freshwater from late March through September. Adults hold in cooler water habitats during the summer, spawning in the fall from mid-August

through early October. These juveniles start migrating soon after emergence or remain in the freshwater, migrating as yearlings.[2]

99. Fall-run Chinook Salmon migrate upstream as adults from July through December and spawn from early October through late December. The timing of runs varies from stream to stream. Late-fall-run Chinook Salmon migrate into the rivers from mid-October through December and spawn from January through mid-April. The majority of young salmon of these runs migrate to the ocean during the first few months following emergence, although some may remain in freshwater and migrate as yearlings.

100. Spring-run Chinook Salmon enter the Sacramento River from late March through September. Adults hold in cool water habitats through the summer, then spawn in the fall from mid-August through early October. Spring run juveniles migrate soon after emergence as young-of-the-year, or remain in freshwater and migrate as yearlings. [3]

101. Fall-run Chinook Salmon are currently the most abundant of the Central Valley races, contributing to large commercial and recreational fisheries in the ocean and popular sport fisheries in the freshwater streams. Five major Central Valley hatcheries release more than 32 million smolts each year. Due to concerns over population size and hatchery influence, Central Valley fall and late-fall-run Chinook Salmon are a Species of Concern under the federal Endangered Species Act.[4]

102. The National Marine Fisheries' Service's ("NMFS") proposed decision to list Central Valley steelhead as "threatened" under the federal ESA states:

> This coastal steelhead ESU occupies the Sacramento and San Joaquin Rivers and their tributaries. In the San Joaquin Basin, however, the best available information suggests that the current range of steelhead has been limited to the Stanislaus, Tuolumne, and Merced Rivers (tributaries), and the main-

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[2] https://wildlife.ca.gov/Conservation/Fishes/Chinook-Salmon

[3] https://wildlife.ca.gov/Conservation/Fishes/Chinook-Salmon

[4] *Ibid.*

> stem San Joaquin River to its confluence with the Merced River by human alteration of formerly available habitat. The Sacramento and San Joaquin Rivers offer the only migration route to the drainages of the Sierra Nevada and southern Cascade mountain ranges for anadromous fish. The distance from the Pacific Ocean to spawning streams can exceed 300 km, providing unique potential for reproductive isolation among steelhead. The Central Valley is much drier than the coastal regions to the west, receiving on average only 10– 50 cm of rainfall annually. The valley is characterized by alluvial soils, and native vegetation was dominated by oak forests and prairie grasses prior to agricultural development. Steelhead within this ESU have the longest freshwater migration of any population of winter steelhead.
>
> [. . .]
>
> In the San Joaquin River Basin, there is little available historic or recent information on steelhead distribution or abundance. According to McEwan and Jackson (1996), there are reports of a small remnant steelhead run in the Stanislaus River. Also, steelhead were observed in the Tuolumne River in 1983, and large rainbow trout (possibly steelhead) have been observed at Merced River Hatchery recently. NMFS concludes that the Central Valley steelhead ESU is presently in danger of extinction. Steelhead have already been extirpated from most of their historical range in this ESU. Habitat concerns in this ESU focus on the widespread degradation, destruction, and blockage of freshwater habitats within the region, and the potential results of continuing habitat destruction and water allocation problems.

(Federal Register, Vol. 61, No. 155, August 9, 1996, p. 41554.)

> Steelhead on the west coast of the United States have experienced declines in abundance in the past several decades as a result of natural and human factors. Forestry, agriculture, mining, and urbanization have degraded, simplified, and fragmented habitat. Water diversions for agriculture, flood control, domestic, and hydropower purposes (especially in the Columbia River and Sacramento-San Joaquin Basins) have greatly reduced or eliminated historically accessible habitat. Studies indicate that in most western states, about 80 to 90 percent of the historic riparian habitat has been eliminated. Further, it has been estimated that during the last 200 years, the lower 48 states have lost approximately 53 percent of all wetlands and the majority of the rest are severely degraded. Washington and Oregon's wetlands are estimated to have diminished by one-third, while California has experienced a 91-percent loss of its wetland habitat. Loss of habitat complexity has also contributed to the decline of steelhead. For example, in national forests in Washington, there has been a 58-percent reduction in large, deep pools due to sedimentation and loss of pool-forming structures such as boulders and large wood. Similarly, in Oregon, the abundance of large, deep pools on private coastal lands has decreased by as much as 80 percent. Sedimentation from land use activities is recognized as a primary cause of habitat degradation in the range of west coast steelhead.

(Federal Register, Vol. 61, No. 155, August 9, 1996, p. 41557.)

103. NMFS' final decision to list Central Valley steelhead as "threatened" under the fed-

eral ESA states:

> Modification of natural flow regimes have resulted in increased water temperatures, changes in fish community structures, depleted flow necessary for migration, spawning, rearing, flushing of sediments from spawning gravels, reduced gravel recruitment and the transport of large woody debris. In addition to these indirect effects from dams and other water control structures, they have also resulted in increased direct mortality of adult and juvenile steelhead.

(Federal Register, Vol. 71, No. 3, p. 856.)

104. NMFS's proposed decision to list Central Valley spring-run Chinook salmon as "threatened" under the federal ESA states:

> Chinook salmon (O. tshawytscha) are easily distinguished from other Oncorhynchus species by their large size. Adults weighing over 120 pounds have been caught in North American waters. . . . Chinook salmon are anadromous and semelparous. This means that as adults, they migrate from a marine environment into the fresh water streams and rivers of their birth (anadromous) where they spawn and die (semelparous). Adult female chinook will prepare a spawning bed, called a redd, in a stream area with suitable gravel composition, water depth and velocity. . . . Stream flow, gravel quality, and silt load all significantly influence the survival of developing chinook salmon eggs.

(Federal Register, Vol. 63, No. 45, p. 11483.)

> Native spring chinook salmon have been extirpated from all tributaries in the San Joaquin River Basin, which represents a large portion of the historic range and abundance of the ESU as a whole. The only streams considered to have wild spring-run chinook salmon are Mill and Deer Creeks, and possibly Butte Creek (tributaries to the Sacramento River), and these are relatively small populations with sharply declining trends. Demographic and genetic risks due to small population sizes are thus considered to be high.
>
> Habitat problems are the most important source of ongoing risk to this ESU. Spring-run fish cannot access most of their historical spawning and rearing habitat in the Sacramento and San Joaquin River Basins (which is now above impassable dams), and current spawning is restricted to the mainstem and a few river tributaries in the Sacramento River. The remaining spawning habitat accessible to fish is severely degraded. Collectively, these habitat problems greatly reduce the resiliency of this ESU to respond to additional stresses in the future. The general degradation of conditions in the Sacramento River Basin (including elevated water temperatures, agricultural and municipal diversions and returns, restricted and regulated flows, entrainment of migrating fish into unscreened or poorly screened diversions, and the poor quality and quantity of remaining habitat) has severely impacted important juvenile rearing habitat and migration corridors.

(Federal Register, Vol. 63, No. 45, p. 11491-92.)

105. NMFS's final decision to designate critical habitat for Central Valley steelhead and

Central Valley spring-run Chinook salmon under the federal ESA states, regarding these species' life cycle and habitat needs:

> Juveniles and subadults typically spend from 1 to 5 years foraging over thousands of miles in the North Pacific Ocean before returning to spawn. Some species, such as coho and Chinook salmon, have precocious life history types (primarily male fish known as "jacks") that mature and spawn after only several months in the ocean. Spawning migrations known as "runs" occur throughout the year, varying by species and location. Most adult fish return or "home" with great fidelity to spawn in their natal stream, although some do stray to non-natal streams. Salmon species die after spawning, except anadromous O. mykiss (steelhead), which may return to the ocean and make one or more repeat spawning migrations. This complex life cycle gives rise to complex habitat needs, particularly during the freshwater phase (see review by Spence et al., 1996). Spawning gravels must be of a certain size and free of sediment to allow successful incubation of the eggs. Eggs also require cool, clean, and well oxygenated waters for proper development. Juveniles need abundant food sources, including insects, crustaceans, and other small fish. They need places to hide from predators (mostly birds and bigger fish), such as under logs, root wads and boulders in the stream, and beneath overhanging vegetation. They also need places to seek refuge from periodic high flows (side channels and off channel areas) and from warm summer water temperatures (cold water springs and deep pools). Returning adults generally do not feed in fresh water but instead rely on limited energy stores to migrate, mature, and spawn. Like juveniles, they also require cool water and places to rest and hide from predators. During all life stages salmon require cool water that is free of contaminants. They also require rearing and migration corridors with adequate passage conditions (water quality and quantity available at specific times) to allow access to the various habitats required to complete their life cycle.

(Federal Register, Vol. 70, No. 170, p. 52519.)

106. NMFS's final decision to designate critical habitat for Central Valley steelhead and Central Valley spring-run Chinook salmon also discusses the required scale for analyzing impacts on these species:

> We are now also able to identify "specific areas" (ESA section 3(5)(a)) and "particular areas" (ESA section 4(b)(2)) at a finer scale than in 2000. As described in the proposed rule, we have used the State of California's CALWATER watershed classification system, which is similar to the USGS watershed classification system that was used for salmonid critical habitat designations in the Northwest. This information is now generally available via the internet, and we have expanded our GIS resources to use these data. We used the CALWATER Hydrologic Subarea (HSA) unit (which is generally similar in size to USGS HUC5s) to organize critical habitat information systematically and at a scale that, while somewhat broad geographically, is applicable to the spatial distribution of salmon. Organizing information at this scale is especially relevant to salmonids, since their innate homing ability allows them to return to the watersheds where they were born. Such site fidelity results in spatial aggregations of salmonid populations that general-

> ly correspond to the area encompassed by HSA watersheds or aggregations of these watersheds.
>
> The CALWATER system maps watershed units as polygons, bounding a drainage area from ridge-top to ridgetop, encompassing streams, riparian areas and uplands. Within the boundaries of any HSA watershed, there are stream reaches not occupied by the species. Land areas within the CALWATER HSA boundaries are also generally not "occupied" by the species (though certain areas such as flood plains or side channels may be occupied at some times of some years). We used the watershed boundaries as a basis for aggregating occupied stream reaches, for purposes of delineating "specific"' areas at a scale that often corresponds well to salmonid population structure and ecological processes. This designation refers to the occupied stream reaches within the watershed boundary as the "habitat area'" to distinguish it from the entire area encompassed by the watershed boundary. Each habitat area was reviewed by the CHARTs to verify occupation, PCEs, and special management considerations (see "Critical Habitat Analytical Review Teams" section below).
>
> The watershed-scale aggregation of stream reaches also allowed us to analyze the impacts of designating a "particular area,"' as required by ESA section 4(b)(2). As a result of watershed processes, many activities occurring in riparian or upland areas and in nonfish-bearing streams may affect the physical or biological features essential to conservation in the occupied stream reaches. The watershed boundary thus describes an area in which Federal activities have the potential to affect critical habitat (Spence et al., 1996). Using watershed boundaries for the economic analysis ensured that all potential economic impacts were considered. Section 3(5) defines critical habitat in terms of "specific areas," and section 4(b)(2) requires the agency to consider certain factors before designating "'particular areas." In the case of Pacific salmonids, the biology of the species, the characteristics of its habitat, the nature of the impacts and the limited information currently available at finer geographic scales made it appropriate to consider "specific areas"' and "particular areas" as the same unit.

(Federal Register, Vol. 70, No. 170, p. 52520.)

107. The Eastern San Joaquin Subbasin contains hydraulically interconnected surface water and groundwater This linkage is critically important in creating and maintaining habitat for Central Valley Steelhead and Chinook Salmon. Groundwater aquifers supplement stream flows, creating an influx of cold, clean water that is important in maintaining the temperature and flow volume.

108. Groundwater pumping affects habitat for listed and vulnerable species by, inter alia, lowering groundwater tables, decreasing surface water flows, increasing water temperatures, and degrading water quality. Adequate and legally compliant GSPs could address all of these impacts and more, but the GSP fails to do so.

SUPPLEMENTAL PROCEDURAL HISTORY

109. Plaintiff filed its action in Stanislaus Superior Court on March 16, 2020.

110. On April 9, 2020, CSPA filed its First Amendment to the Complaint naming additional parties to the action.

111. On or about May 15, 2020, CSPA filed a comment letter with DWR regarding the Eastern San Joaquin Groundwater Subbasin GSP.

112. On or about June 18, 2020, pursuant to stipulation of the Parties, the Court ordered the dismissal of Defendant EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY from the action without prejudice.

113. Also on or about June 18, 2020, pursuant to a stipulation of the Parties, the Court ordered a stay of the case. That order stated that:

> This case, and all further proceedings in this action including, but not limited to, responsive pleadings, discovery proceedings, motion practice, and trial of this action shall be stayed immediately until the earlier of:
>
> A. Fifteen (15) days after the Groundwater Sustainability Plan being challenged in the Action is approved by the California Department of Water Resources (DWR) pursuant to Title 23 CCR Section 355.2(e)(1); or
>
> B. Upon further order of this Court dissolving the stay of proceedings.

114. On January 28, 2022, the Department of Water Resources, pursuant to the Water Code section 10733.4, subdivision (d) and the DWR Regulations section 355.2, determined that the GSP was "incomplete." As a result, DWR directed the Defendants to submit a revised GSP by July 27, 2022.

115. On or about July 27, 2022 the Defendants approved the 2022 Revisions to the GSP and submitted them to DWR.

116. On August 22, 2022, this Court conducted a case management conference and issued a case management order. The Court's case management order stated in part: "The stay is extended to 1/31/2023 with the limited exception for Plaintiff to file a motion for leave to file an amended complaint."

117. On February 6, 2023, the Court conducted a case management conference and issued a minute order stating in part, "The Case remains stayed with its limited exception to allow

DWR to complete its assessment of the revised GSP."

118. After submission of the Revised GSP, DWR opened a 60-day public comment period on the Revised GSP. The comment period closed September 30, 2022. CSPA submitted a comment letter on September 30, 2022 to DWR.

119. On or about July 6, 2023, DWR issued its determination (the "Determination Letter") that the revised GSP was approved pursuant to the conditions outlined in § 355.4(a) of the DWR Regulations. (DWR Regs. § 355.4(a)(2).)

120. The Determination Letter found that the "GSP does not provide a sufficient evaluation of the potential impacts to various beneficial uses and users of groundwater related to the chronic lowering of groundwater level minimum thresholds and criteria used to identify undesirable results." (Determination Letter at p. 50.) It further found that the GSP "does not estimate the quantity, location, or timing of depletions that would result in significant and unreasonable impacts to surface water diverters or environmental users. Additionally, the GSP does not quantify what would be considered an undesirable result in terms of depletion." (Determination Letter at p. 40.) It describes the use of groundwater levels as a proxy for depletions of interconnected surface waters as containing "not many details" and characterizes its argument concluding stream depletions will not cause undesirable results as "not compelling."

121. Nonetheless, DWR approved the GSP. The Determination Letter includes "recommended corrective actions" that appear to be nonmandatory, and in any event unlikely to cure the legal insufficiencies with the GSP.

FIRST CAUSE OF ACTION
(Reverse Validation Action for Violations of SGMA, Public Trust Doctrine, Waste and Unreasonable Use Doctrine: GSA Defendants, All Persons Interested in the Matter of the Validity of the Eastern San Joaquin Groundwater Subbasin Groundwater Sustainability Plan, and Does 11-500)

122. Plaintiff hereby realleges and incorporates the preceding paragraphs of this Complaint as though set forth herein in full.

123. This Cause of Action is asserted against GSA Defendants, All Persons Interested in the Matter of the Validity of the Eastern San Joaquin Groundwater Subbasin Groundwater Sustainability Plan, and Does 11-500.

124. The GSA Defendants did not follow the procedures required by SGMA before adopting the GSP and the GSP violates substantive requirements of SGMA in that:

a. The revised GSP fails to achieve sustainable groundwater management, meaning "the management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results."

b. The GSP is not likely to achieve the sustainability goal established by the GSP within 20 years.

(i) In particular, the identified sustainability goal for the GSP does not comply with SGMA's requirements by failing to require avoidance of undesirable results, including depletion of interconnected surface waters that have undesirable results, meaning significant and unreasonable effects on beneficial uses of surface water. In addition, the definitions of sustainable management criteria, including undesirable results, minimum thresholds, and measurable objectives fail to comply with SGMA and its regulations by failing to consider harm to beneficial uses and users of groundwater and interconnected surface water.

(1) As an example and without limitation, the GSP fails to adequately analyze surface flow data, salmonid lifecycle and habitat needs, and the beneficial uses of the surface waters within the Subbasin.

(2) As an example and without limitation, the GSP improperly uses groundwater elevation as a "proxy" for other sustainability indicators. But it fails to provide adequate evidence that groundwater levels are a "reasonable proxy" for interconnected surface waters. (DWR Regs. § 354.30(d).) The use of groundwater levels as a proxy fails to tell the GSP or the

public anything about the "location, quantity, and timing," of depletions of interconnected surface water, as required by SGMA and the regulations. (DWR Regs. § 354.28(c)(6).) As the GSP chose not to use a "numerical groundwater and surface water model," the GSP was required to demonstrate that using the groundwater level as a proxy is "equally effective," to accomplish the "requirements of SGMA," which the revised GSP fails to do. The GSP contains contradictory information about whether negative effects that occur in dry years are classified as undesirable results.

(3) As a further example and without limitation, the minimum thresholds and measurable objectives are also improperly based on the groundwater level sustainability indicator. Minimum thresholds are set at specified levels—corresponding to levels experienced during the 2012-2016 drought—for each monitoring well, but minimum thresholds are only considered to be violated if at least 25% of wells remain below those thresholds for two consecutive years. But it is likely that significant and unreasonable effects could occur should a quarter of the wells in a given area drop below MT levels—levels that are based upon drought conditions and are thus catastrophically low (and with an additional buffer that actually makes them much lower than drought conditions). This definition improperly ignores the harm to ecosystems that can occur from even short-term dewatering of rivers or significant temperature effects.

(4) As a further example and without limitation, minimum threshold levels are set up to 50 feet below the elevation of

nearby rivers—guaranteeing streamflow depletion. Yet these depletions are inadequately characterized or quantified, where they are mentioned at all.

(5) As a further example and without limitation, in areas where the groundwater table has dropped below the elevation of hydrologic connection to stream channels due to pumping groundwater, the GSP fails to identify or plan to avoid the undesirable result of continuing loss of stream flow to groundwater

c. The assumptions, criteria, findings, and objectives, including the sustainability goal, undesirable results, minimum thresholds, measurable objectives, and interim milestones are not supported by the best available information and best available science.

(i) In particular and without limitation, CSPA, CDFW, NMFS, and others submitted comments demonstrating the existence of undesirable results. Yet the GSP improperly failed to consider or analyze the information in these comments when concluding that undesirable results were not occurring.

(ii) As a further example and without limitation, the GSP improperly excludes managed wetlands from its definition of GDEs, and fails to adequately address species in its treatment of GDEs.

d. The GSP did not adequately consider the interests of the beneficial uses and users of groundwater in the basin and the land uses and property interests potentially affected by the use of groundwater in the basin.

(i) As an example, and without limitation, the GSP fails to describe how it will avoid further harm to listed salmonids and contribute to their recovery from the brink of extinction, which represents a failure to comply with SGMA's requirement to avoid undesirable results

by establishing minimum thresholds, measurable objectives, and interim milestones supported by the best available information and best available science.

(ii) With respect to identifying the undesirable result of stream flow depletion as a result of pumping interconnected groundwater, the GSP treats the topic as an afterthought, when it must be recognized as a critical factor in determining the extinction or recovery of Central Valley steelhead and Central Valley spring-run Chinook salmon, two anadromous salmonid species listed as "threatened" under the federal Endangered Species Act ("ESA").

e. The GSP's "water budget" fails to demonstrate achievement of sustainable groundwater management for the Eastern San Joaquin Groundwater Subbasin

f. The GSP does not identify adequate measures and schedules to eliminate data gaps and fails to identify data gaps and make an adequate plan where it lacks information.

g. The GSP improperly designates required components of the GSP, including but not limited to the interconnected surface water sustainability criteria, as data gaps by failing to acknowledge relevant, available information and failing to provide information and analysis of known, relevant information, including but not limited to methodologies for evaluating and assessing GDEs and groundwater-surface water interactions, population trends, lifecycles, and habitat needs of salmonids and other species, and streamflow gage data.

(i) By way of example and without limitation, the GSP designates some potential GDE areas as "data gaps" despite evidence showing the likelihood of depth to groundwater of less than 30 feet and thus the likely presence of GDEs.

h. The sustainable management criteria and projects and management actions

are not commensurate with the level of understanding of the basin setting, based on the level of uncertainty, as reflected in the Plan.

(i) The interests of the beneficial uses and users of groundwater in the basin, and the land uses and property interests potentially affected by the use of groundwater in the basin, were not adequately considered.

i. The GSP does not substantiate its findings that the projects and management actions identified in the GSP are feasible and likely to prevent undesirable results and ensure that the basin is operated within its sustainable yield.

j. Some projects and management actions identified in the GSP may actively further deplete or otherwise harm interconnected surface waters and the beneficial uses and users that rely on them, including groundwater dependent ecosystems. Such projects and management actions violate SGMA's requirements to achieve sustainable groundwater management and avoid undesirable results.

(i) These include, by way of example and without limitation, the Farmington Dam Repurpose Project, which could reduce surface flows available for ecosystems.

k. The GSP does not adequately support its findings regarding potential overdraft conditions.

l. The GSP fails to adequately consider climate change in violation of SGMA.

m. GSA Defendants have not adequately responded to comments that raise credible technical or policy issues with the Plan.

n. GSA Defendants did not adequately engage the public in planning and adopting the GSP.

(i) These failures extended to the revision process in the summer of 2022 in that the GSPs failed to provide an adequate opportunity or mechanism for public comment, failed to post relevant supporting

documents, and removed important supporting documents before the hearing for approval.

o. The GSP fails to recognize the effects on water quality, including temperature of water, and out of basin effects that come from depleting groundwater. This failure violates, inter alia, SGMA's requirements to set sustainable management criteria for water quality, and its requirements to include "monitoring and management of… changes in surface flow and surface water quality that directly affect groundwater levels or quality or are caused by groundwater extraction in the basin." (Wat. Code § 10727.2, subd. (d)(2).)

(i) As an example and without limitation, the San Joaquin River and Stanislaus Rivers are listed under the Clean Water Act section 303(d) as impaired for temperature.[5] The GSP, however, includes almost no discussion of water temperature or the effects of groundwater management on river temperatures, nor does the GSP include any plan to do so.

p. To the extent the revised GSP purports to map and or characterize the locations and extent of GDEs and ISWs, such attempts are vague, unintelligible, unsupported, and fail to comply with SGMA's requirements.

(i) The GSP fails to use the best available information to identify the geographic locations where, and times of year when, groundwater pumping depletes or is likely to deplete stream flow. This exclusion is arbitrary, unsupported, and also violates SGMA's requirement for

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[5] State Water Resources Control Board, 2020-2022 California Integrated Report (Clean Water Act Section 303(d) List and 305(b) Report), App. H, available at https://www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/2020_2022_integrated_report.html (accessed July 11, 2023).

identifying GDEs.

(ii) To the extent that the revised GSP purports to quantify streamflow depletions, such conclusions are unsupported and fail to quantify the timing of such depletions.

q. The revised GSP's sustainable yield calculation fails to comply with SGMA by allowing levels of pumping that will result in undesirable results. The sustainable yield calculation is also not supported by adequate evidence.

r. The revised GSP fails to include sufficient monitoring and/or sufficient plans to establish sufficient monitoring in the future in violation of SGMA.

125. These violations of SGMA are described in more detail in public and agency comment letters submitted to GSA Defendants on the GSP, including, without limitation:

a. Comment letter dated August 23, 2019, from Kevin Thomas, Regional Manager, North Central Region, Department of Fish and Wildlife. (GSP, Appendix I-I, p. 543.)

b. Comment letter dated August 21, 2019, from Thomas N. Lippe, Law Offices of Thomas N. Lippe. (GSP, Appendix I-I, p. 559.)

c. Comment letter dated August 23, 2019, from Greg Kamman, Kamman Hydrology & Engineering. (GSP, Appendix I-I, p. 563.)

d. Comment letter dated August 25, 2019, from Clean Water Action/Clean Water Fund; American Rivers; Audubon CA; Union of Concerned Scientists; and The Nature Conservancy. (GSP, Appendix I-I, p. 613; 619 ("Summary of Comments").)

e. Comment letter dated July 17, 2019, from League of Women Voters of San Joaquin County; Delta-Sierra Group, Sierra Club; Restore the Delta; Environmental Justice Coalition for Water; P.U.E.N.T.E.S. (GSP, Appendix I-I, p. 659.)

f. Comment letter dated September 4, 2019, from Restore the Delta. (GSP, Appendix I-I, p. 781.)

g. Comment letter dated August 25, 2019, from Delta-Sierra Group, Sierra Club. (GSP, Appendix I-I, p. 789.)

h. Comment letter dated August 24, 2019, from The Nature Conservancy. (GSP, Appendix I-I, p. 851.)

i. Comment letter dated September 30, 2022, from Environmental Law Foundation on behalf of CSPA, attached as Attachment A.

126. In adopting the revised GSP, GSA Defendants violated prohibitions on waste and unreasonable use by authorizing activities including extraction of water constituting waste and unreasonable use of such water in a manner that causes unreasonable impacts to beneficial uses and users of that water and the public at large in conflict with the reasonable and beneficial use doctrine and the California Constitution. Like the original GSP, the Revised GSP provides no additional analysis of the waste and unreasonable use doctrine.

127. In adopting the revised GSP, GSA Defendants failed to consider impacts on public trust resources and failed to attempt to avoid insofar as feasible harm to the public's interest in those resources.

SECOND CAUSE OF ACTION
(Petition for Writ of Mandate for Violations of SGMA, the Public Trust Doctrine, and the Waste and Unreasonable Use Doctrine: GSA Respondents, DWR, and Does 11-500)

128. Petitioner hereby realleges and incorporates the preceding paragraphs of this Complaint and Petition as though set forth herein in full.

129. Each GSA Defendant identified herein is a Respondent (GSA Respondent) to this Petition for Writ of Mandate. Does 11-500 are Respondents and/or Real Parties in Interest to this Cause of Action.

130. DWR is a Real Party in Interest to this Second Cause of Action.

131. Each respondent has a mandatory duty to comply with SGMA, the waste and unreasonable use doctrine, and the public trust doctrine.

132. Every ground for reverse validation against each respondent is likewise grounds for a writ of mandate directing respondents and each of them to comply with SGMA and other gov-

erning law. Each respondent has failed to fulfill this duty for the same reasons that it has violated SGMA and other governing law for the purposes of the First Cause of Action.

133. Petitioner has no speedy or adequate remedy at law for the violations alleged herein.

THIRD CAUSE OF ACTION
(Petition for Writ of Mandate for Violations of SGMA, the Public Trust Doctrine, and the Waste and Unreasonable Use Doctrine: DWR, GSA Respondents, and Does 11-500)

134. Petitioner hereby realleges and incorporates the preceding paragraphs of this Complaint and Petition as though set forth herein in full.

135. This Third Cause of Action is alleged against DWR and Does 11-500 and each of them as respondents (Third Cause of Action Respondents).

136. The GSA Defendants and Does 11-500 are real parties in interest to this Third Cause of Action.

137. Third Cause of Action Respondents have a mandatory duty to comply with the requirements of SGMA in evaluating and issuing an assessment of the GSP. (Wat. Code §§ 10733(a); DWR Regs. § 355.2, 355.10.)

138. Third Cause of Action Respondents have a mandatory duty to comply with the DWR Rules in evaluating and issuing an assessment of the GSP. In particular, without limitation, Third Cause of Action Respondents have a duty pursuant to DWR Regulations section 355.2 to determine the GSP was "inadequate" because it failed, for the reasons stated above, to include required components under Water Code sections 10727.2 and 10727.4, it failed to satisfy the requirements of DWR Regulations section 355.4(a), because it contained significant deficiencies pursuant to DWR Regulations section 355.4(b), and/or because the 2022 Revisions did not correct the deficiencies identified by DWR it its 2022 "incomplete" determination.

139. Third Cause of Action Respondents, in approving the GSP on or about July 6, 2023, failed to comply with this mandatory duty by deeming the GSP "approved."

140. In addition, Third Cause of Action Respondents failed to comply with the procedural and substantive requirements of the public trust doctrine in "approving" the GSP. In particular and without limitation, Third Cause of Action Respondents failed to consider the effects of the

GSP and activities permitted under it on public trust resources, and failed to mitigate those effects to the extent feasible.

141. In addition, Third Cause of Action Respondents violated prohibitions on waste and unreasonable use by "approving" a GSP authorizing activities including extraction of water constituting waste and unreasonable use of such water in a manner that causes unreasonable impacts to beneficial uses and users of that water and the public at large in conflict with the reasonable and beneficial use doctrine and the California Constitution. Like the original GSP, the Revised GSP provides no additional analysis of the waste and unreasonable use doctrine.

142. Petitioner has no speedy or adequate remedy at law for the violations alleged herein.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff prays for the following relief:

1. For an order declaring that GSA Defendants' adoptions of the GSP were and are invalid and that the GSP is and are invalid;

2. For a writ of mandate to issue directing the GSA Respondents to withdraw and/or set aside their adoptions of the GSP and readopt it only in conformance with SGMA, the public trust doctrine, and the waste and unreasonable use doctrine;

3. For a writ of mandate to issue directing DWR to withdraw and/or set aside its approval of the GSP and to conduct any further assessment in accordance with SGMA, the public trust doctrine, and the waste and unreasonable use doctrine.

4. For an order compelling Defendants and Respondents to pay Plaintiff's costs of suit;

5. For an order compelling Defendants and Respondents to pay Plaintiff's reasonable attorneys' fees related to these proceedings pursuant to Code of Civil Procedure § 1021.5; and

6. For such other relief as the Court may deem proper.

Dated: March 4, 2024

ENVIRONMENTAL LAW FOUNDATION

By: Nathaniel Kane

LAW OFFICES OF THOMAS N. LIPPE, APC

By: Thomas N. Lippe

Attorneys for Plaintiff and Petitioner
California Sportfishing Protection Alliance

VERIFICATION

I, Chris Shutes, declare that:

1. I am Chris Shutes, Executive Director of California Sportfishing Protection Alliance, a Petitioner here. I have my professional office in Berkeley, CA.

3. I have read the foregoing Second Amended and Supplemental Complaint and Petition for Writ of Mandate and know the contents thereof. I am informed and believe that the factual allegations therein are true and on that ground allege that the matters stated therein are true.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct.

Executed this 4th day of March, 2024 at Berkeley, California.

Chris Shutes

March 4, 2024

Attachment A

ENVIRONMENTAL LAW FOUNDATION
1222 Preservation Park Way, Suite 200, Oakland, California 94612 · (510) 208-4555 · www.envirolaw.org
Nathaniel Kane, Executive Director · nkane@envirolaw.org

September 30, 2022

Via E-mail

Paul Gosselin
Deputy Director of Sustainable Groundwater Management
Department of Water Resources
715 P Street
Sacramento, CA 95814
paul.gosselin@water.ca.gov

Re: CSPA Comments on Eastern San Joaquin GSP Revisions

Dear Mr. Gosselin:

Thank you for the opportunity to comment on the Revised Groundwater Sustainability Plan for the Eastern San Joaquin Subbasin (Revised ESJ GSP or GSP). These comments are submitted on behalf of California Sportfishing Protection Alliance (CSPA). DWR cannot approve this GSP consistent with SGMA and its regulations.[1]

The Revised GSP fails to comply with the Corrective Actions identified in DWR's January 2022 Determination Letter (Determination Letter) by failing to properly amend its sustainable management criteria (SMC), especially for interconnected surface waters (ISW). These SMCs will allow for significant and ongoing impacts to surface waters and the vulnerable species that rely on them. And its recalculated water budget and sustainable yield calculations reveal the basin will continue to be in overdraft under climate change conditions, with no plan to mitigate such overdraft. It has also failed to resolve numerous other issues identified by CSPA in its previous comment letters.[2] These include failure to analyze and characterize ISWs and groundwater dependent ecosystems (GDEs) using the best available science, exclusion of actual and potential GDEs in violation of SGMA, failure to comply with the public trust and waste and unreasonable use doctrines, and, most critically, its refusal to acknowledge ongoing severe ongoing negative effects on vulnerable species due to groundwater overpumping, contravening the conclusions of DWR itself along with California Department of Fish and Wildlife and National Marine Fisheries Service. All of the above require that DWR find the GSP

[1] This letter attaches as Exhibit A comments on the revised GSP by Greg Kamman, a certified hydrologist.

[2] CSPA's comment letters from 2019 and 2020 are attached as Exhibits B, C, and D.

"inadequate."

Background on DWR's Role

Beginning in January 2020, DWR reviewed the ESJ GSP pursuant to Water Code section 10733.4. On January 28, 2022, DWR issued its Determination Letter finding that the ESJ GSP was "incomplete." It gave the GSAs 180 days, until July 27, 2022, to submit revisions to the coordinated and component GSPs.

DWR found several deficiencies with the GSP in its Determination Letter. It provided Corrective Actions which include but are not limited to: (1) The definition of undesirable results that excluded results during dry years violated SGMA; (2) The GSP failed to include projects and management actions (PMAs) to remedy effects during drought years; (3) The GSP failed to explain how its SMCs for subsidence and depletions of ISWs in light of the exclusion of effects in dry years; and (4) The GSP failed to explain how it considered effects on environmental users in a scenario where conditions exceeded the minimum threshold at up to 25% of monitoring sites for up to two consecutive years before the effects would be considered significant and unreasonable. (Determination Letter, Staff report, at pp. 11-12.) DWR also found significant deficiencies relating to drinking water and subsidence. (*Id.* at 12-16.)

DWR did not address significant deficiencies in the 2020 GSP, including characterization of interconnected surface waters (ISW) and groundwater dependent ecosystems (GDEs) along with failure to comply with the waste and unreasonable use and public trust doctrines. Yet these issues remain in the Revised GSP and as they violate SGMA and the SGMA regulations, DWR must find the Plain inadequate pursuant to California Code of Regulations, title 23, section 355.2(e)(3)(C).[3]

For the areas where the GSAs amended the GSP in response to DWR's determination, the changes failed to fix some deficiencies and have created new deficiencies. In particular, the SMCs have not been changed to comply with SGMA. And by recalculating the water budget and sustainable yield figures, the GSP now reveals serious issues of overdraft and a sustainable yield figure that will lead to undesirable results.

For this final review, the SGMA Regulations require DWR to consider, among other things:

> (1) Whether the assumptions, criteria, findings, and objectives, including the sustainability goal, undesirable results, minimum

[3] Further citations to California Code of Regulations, title 23, section 350 et seq. are to the "SGMA Regulations."

> thresholds, measurable objectives, and interim milestones are reasonable and supported by the best available information and best available science.
>
> (2) Whether the Plan identifies reasonable measures and schedules to eliminate data gaps.
>
> (3) Whether sustainable management criteria and projects and management actions are commensurate with the level of understanding of the basin setting, based on the level of uncertainty, as reflected in the Plan.
>
> (4) Whether the interests of the beneficial uses and users of groundwater in the basin, and the land uses and property interests potentially affected by the use of groundwater in the basin, have been considered.
>
> (5) Whether the projects and management actions are feasible and likely to prevent undesirable results and ensure that the basin is operated within its sustainable yield.
>
> (6) Whether the Plan includes a reasonable assessment of overdraft conditions and includes reasonable means to mitigate overdraft, if present.
>
> (7) Whether the Plan will adversely affect the ability of an adjacent basin to implement its Plan or impede achievement of its sustainability goal.
>
> (8) Whether coordination agreements, if required, have been adopted by all relevant parties, and satisfy the requirements of the Act and this Subchapter.
>
> (9) Whether the Agency has the legal authority and financial resources necessary to implement the Plan.
>
> (10) Whether the Agency has adequately responded to comments that raise credible technical or policy issues with the Plan.

(SGMA Regulations § 355.4(b).)

For the reasons stated below, DWR must find that, based on the factors in section 355.4 and the requirements of the SGMA Regulations, the ESJ GSP is not in compliance

with SGMA and not in compliance with the SGMA Regulations. DWR must therefore find the GSP "inadequate."

The Sustainable Management Criteria Violate SGMA and Are Not Supported by the Best Available Science or by Adequate Evidence

Despite DWR's direction, the Revised GSP make only superficial changes to the definitions of sustainable management criteria, including undesirable results, minimum thresholds, and measurable objectives. These mask the GSAs from recognizing and taking action to remedy the undesirable results are in existence, evidenced by clearly documented harms to listed species and vulnerable ecosystems.

The sustainable management criteria are at the heart of SGMA. They inform the public, GSAs, and state regulators whether the plan is working to achieve sustainability. If a GSP does not define "undesirable results" in compliance with SGMA, then negative effects traceable to unsustainable groundwater use can—and likely will—occur without triggering management actions. (See generally Wat. Code §§ 10721, defs. (u)-(x); 10727.2; SGMA Regulations § 354.26.) And if minimum thresholds and measurable objectives are not defined and not quantitively tied to undesirable result definitions, then they will not prevent the occurrence of undesirable results. (SGMA Regulations §§ 354.28-354.30.) Here, they are set at levels that almost guarantee undesirable results.

Failure to Comply with Corrective Actions

DWR's Corrective Action 1(a) requires the GSP to remove the water-year type requirement from the undesirable result definitions. (Determination Letter, Staff Report, at p. 12.) But with regard to the ISW sustainability indicator, the revisions fail to make this change. Indeed, despite removing the exclusion of dry years from the definition of undesirable results for chronic lowering of groundwater levels, the Minimum Threshold (MT) for ISWs still describes it as "non-dry year pairings where 25 percent or more wells fall below their minimum thresholds." (Revised GSP at 3-27.)[4] As a result, the revisions do not resolve the issues identified by CSPA in earlier correspondence or by DWR.

DWR's Corrective Action 1(d) requires the GSP to "explain how other factors they identified as "potential undesirable results" (e.g., adverse impacts to **environmental uses and users**) factored into selecting minimum thresholds and describe anticipated effects of the thresholds on beneficial uses and users of groundwater." (Determination Letter, Staff Report at p. 12 (emphasis added).) The Revised GSP fails to address corrective action 1(d) by making no changes to the Sustainable Management Criteria for ISW, except as to changes to the proxy groundwater level SMC. (Revised GSP at 3-26 to 3-27.) Indeed, Technical Memo No. 2, which should have addressed impacts to

[4] Page references are to the redlined version of the Revised GSP.

environmental users, including ISW and GDE, is devoid of such discussion. (Revised GSP, App. 3-D (Technical Memo No. 2) at p. 2.) Thus, the GSAs have failed to undertake the analysis DWR required of them in its Determination Letter. As a result, all of CSPA's previous comments related to the failure to establish SMCs, measurable objectives, and minimum thresholds for ISW continue to apply. Further specific defects concerning these elements in the Revised GSP is discussed below.

Undesirable Result Definition

SGMA requires a definition of undesirable results that includes "[t]he criteria used to define when and where the effects of the groundwater conditions cause undesirable results for each applicable sustainability indicator," and this criteria "shall be based on a quantitative description of the combination of minimum threshold exceedances that cause significant and unreasonable effects in the basin." (SGMA Regulations § 354.26(b)(2).)

The GSP defines undesirable results for ISW as "depletions that result in reductions in flow or levels of major rivers and streams that are hydrologically connected to the basin such that the reduced surface water flow or levels have a significant and unreasonable adverse impact on beneficial uses and users of the surface water within the Subbasin . . . ." (Revised GSP at 3-26.) The passage "Identification of Undesirable Results" again states that undesirable results occur where "the reduced surface water flow or levels have a significant and unreasonable adverse impact on beneficial uses." (*Ibid.*) This definition is, on its face, circular and insufficient because it fails to define what these terms mean, especially in in the context of surface water users. Obvious places to start would be to consider the flow and temperature needs of listed species and the flow regimes necessary to support their lifecycles. But the GSP is devoid of any such analysis and contains no concrete plans to perform it in the future.

To the extent that the GSP gestures in the direction of defining the magnitude of impacts it considers significant and unreasonable, that effort fails. In discussing the minimum thresholds, the GSP states that a 1 percent reduction of average flows is not significant or unreasonable. (Revised GSP at 1-27.) For reasons explained in more detail in Mr. Kamman's letter and below, this 1 percent figure is misleading in that it masks significant impacts on the Stanislaus River while containing no information about the timing of depletions. But it also fails to answer the question, required by SGMA, of what percentage of flow reduction *would* be significant or unreasonable.

And setting SMCs for ISWs requires analysis of impacts on surface flows *as well as* impacts on beneficial uses and users of water. (Wat. Code § 10721, def. (x)(6); SGMA Regulations §§ 354.28(c)(6) [MT for ISWs must be the "the rate or volume of surface water depletions caused by groundwater use that has adverse impacts on beneficial uses of the surface water"]; 354.34(c)(6) [monitoring program must characterize "factors that

may be necessary to identify adverse impacts on beneficial uses of the surface water"].) The Revised GSP includes no plan to analyze the effects of any depletions of groundwater on habitat quality and survivability of listed species, despite SGMA's direction to do so.

SGMA requires identification of the effects of undesirable results on surface water beneficial "uses and users." (SGMA Regulations § 354.26.) Reaches of the Mokelumne, Calaveras, and Stanislaus Rivers that flow through the ESJ Subbasin are designated as having some or all of the following beneficial uses: warm- and cold-water freshwater habitat, warm- and cold-water migration, and warm- and cold-water spawning, as well as wildlife habitat.[5]

Effects from overpumping could include not just streamflow reduction, but also temperature and out-of-basin effects. GSAs are required to include "monitoring and management of . . . changes in surface flow and surface water quality that. . . are caused by groundwater extraction in the basin," when such conditions are present in the basin.[6] (Wat. Code § 10727.2, subd. (d)(2).) The San Joaquin River and Stanislaus Rivers are listed under Clean Water Act section 303(d) as impaired for temperature.[7] Yet the GSPs contain almost no discussion of water temperature or the effects of groundwater management on river temperatures, nor do they contain a plan to do so. And flow depletions due to overdraft—whether increased losses in gaining reaches or decreased gains from gaining reaches—can require larger releases from upstream dams to maintain any flow requirements that may exist or be imposed.[8]

As discussed in our previous correspondence, the GSP has improperly closed its eyes to ongoing undesirable results with regard to ISWs. The GSP simply "assumes," based on "discussions" with "ESJGWA Board, Advisory Committee, Workgroup

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[5] Central Valley Regional Water Quality Control Board, Basin Plan for The Sacramento River Basin and the San Joaquin River Basin (2019) at pp. 2-10 to 2-13, available at https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr_201902.pdf (accessed September 18, 2022).

[6] The GSP does not contain a discussion of whether the factors in section 10727.2(d) are applicable to the basin. But as discussed in this letter, high temperatures attributable at least in part to groundwater extraction are potentially lethal to salmon and other species. The failure to discuss 10727.2(d)(2) factors is a further legal defect in the Plan.

[7] State Water Resources Control Board, 2020-2022 California Integrated Report (Clean Water Act Section 303(d) List and 305(b) Report), App. H, available at https://www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/2020_2022_integrated_report.html (accessed September 17, 2022).

[8] This is particularly true in light of the State Board's updates to the Bay-Delta Plan (or voluntary agreements in addition to or instead of requirements under the plan) which may reduce the availability of surface water supplies for irrigation and impose higher environmental flow requirements.

members, and GSA staff" that "that historical conditions are protective of beneficial uses related to interconnected surface water." (Revised GSP at p. 3-27.)

The conclusion that these discussions did not "indicate any current or historical significant and unreasonable depletions" applies the wrong evidentiary standard. (Revised GSP at p. 3-27.) SGMA requires that the GSAs "consider the interests of all beneficial uses and users of groundwater," including "environmental users of groundwater." (Wat. Code § 10723.2, subd. (e).) As discussed below, CSPA, CDFW, and NMFS, among others, submitted comments demonstrating the existence of undesirable results. Thus to the extent that the GSP's conclusions that undesirable results do not exist rely only one the discussions among its own governing bodies, the conclusion unlawfully fails to consider the interests of actual beneficial users of groundwater and ISWs—the people who fish those waters and the agencies in charge of conserving the vulnerable species that inhabit them.[9]

The conclusion that undesirable results are not occurring is also inconsistent with DWR's own determination that the basin is critically overdrafted. It's also inconsistent with the conclusions of CDFW and NMFS, the agencies charged with conserving the species vulnerable to degraded conditions in their habitat in the ESJ subbasin.[10] CDFW filed additional comments on the Revised GSP stating that it:

> believes historical declines in terrestrial and aquatic groundwater dependent ecosystem viability, exacerbated by recent drought years, are evidence of undesirable results and further groundwater decline will undoubtedly lead to significant and unreasonable effects on fish and wildlife beneficial uses and users of

[9] Numerous stakeholders, including Clean Water Action, CSPA and Delta-Sierra Group, Sierra Club, Restore the Delta, and many others, have commented on the difficulties of engaging in meaningful public comment with the ESJ GSAs. (E.g., Letter from Ngodoo Atume et al. to Paul Gosselin, DWR (July 5, 2022), available at https://sgma.water.ca.gov/portal/gsp/comments/47 (accessed September 30, 2022); Letter from Mary Elizabeth, Delta-Sierra Group, Sierra Club and Barbara Barrigan-Parrilla, Restore the Delta, to ESJGA et el. (June 22, 2022), available at https://sgma.water.ca.gov/portal/gsp/comments/47 (accessed September 30, 2022).) DWR should consider this lack of transparency and responsiveness in its review. (SGMA Regulations § 355.4(b)(4), (b)(10).

[10] See Letter from Kevin Thomas, CDFW to Craig Altare, DWR (May 13, 2020) at p. 7, available at https://sgma.water.ca.gov/portal/gsp/comments/47 (CDFW Letter) (accessed September 28, 2022); Letter from Erin Strange, NMFS, to Craig Altare, DWR, March 17, 2020, at pp. 3-4, available at https://sgma.water.ca.gov/portal/gsp/comments/47 (NMFS Letter) (accessed September 28, 2022).

> groundwater and interconnected surface waters under the proposed sustainable management criteria.[11]

Negative effects occurred in the subbasin during the last drought and will become worse before this undesirable result is deemed to occur under the Revised GSP. These effects include reduced flows and elevated temperatures in the San Joaquin River.[12] NMFS described in detail actual and potential undesirable results occurring in the ESJ Subbasin in its comments to DWR.[13] During the 2013-2016 drought, fish populations in the San Joaquin River ecosystem suffered greatly. In its report on impacts of the 2012-2016 drought, CDFW determined that the San Joaquin basin rivers suffered from higher temperatures and lower flows.[14] Temperatures in the Stanislaus and Tuolumne Rivers peaked above "lethal" levels in 2014-2015 and remained high into 2016.[15]

Use of Chronic Lowering of Groundwater Levels as Proxy

The Revised GSP still uses chronic lowering of groundwater levels as a proxy for the ISW SMC. One of the few substantive changes to the SMCs for the GSP as a whole is the removal of water year type qualifier from the definition of undesirable results for chronic lowering of groundwater levels. (E.g., Revised GSP at 3-4.) But the remaining definition (leaving aside the fact that the ISW discussion still appears to contain the water-year type requirement) is still faulty. It reads:

> **Two consecutive years of minimum threshold exceedances are used to determine if an undesirable result has occurred and to establish a pattern rather than indicate an isolated event**. The lowering of groundwater levels during dry or critically-dry years is not considered to be unreasonable unless the levels do not rebound to above the thresholds following wet conditions or are otherwise

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[11] Letter from Kevin Thomas, CDFW to Monica Reis, DWR, September 29, 2022, at Att. A, p. 6, available at https://sgma.water.ca.gov/portal/gsp/comments/47 (accessed September 30, 2022).

[12] CDFW Letter at p. 7.

[13] NMFS Letter at pp. 3-4.

[14] See Statewide Drought Response: Stressor Monitoring Summary Report • 2014-2017, at pp. 91-100, available at https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=168170&inline (accessed September 17, 2022).

[15] *Id.* at 95 (temperatures on the lower San Joaquin and Stanislaus peaked well above 25°C during drought years). See Myrick, C. A., & Cech, J. J., Temperature Effects on Chinook Salmon and Steelhead: A Review Focusing on California's Central Valley Populations. Bay-Delta Modeling Forum (2001) at p. iii, available at http://www.cwemf.org/Pubs/TempReview.pdf (accessed September 19, 2022) (lethal limit for salmonids is 25°C).

> mitigated through adaptive management or implementation of projects and management actions. While statistically, three data points are required to establish a trend, three years of exceedances was felt to be too extreme, whereas a single exceedance was not sufficient to establish a trend. Therefore, the two consecutive years was selected as part of this definition.
>
> **At least 25 percent of representative monitoring wells used to monitor groundwater levels falling below their minimum thresholds for two consecutive years** was presented to the Eastern San Joaquin Technical Advisory Committee (ESJ TAC) during the April 10, 2019 meeting and was approved by the Eastern San Joaquin Groundwater Authority (ESJGWA) Board during the May 8, 2019 meeting. The Eastern San Joaquin Water Resources Model (ESJWRM) results under the projected conditions baseline scenario were used to evaluate minimum threshold exceedances, and the model results considered in **determining that a 25 percent exceedance threshold was sufficient to determine that undesirable results would occur subbasin-wide (e.g., were not a localized event).**

(Revised GSP at 3-4, emphasis added.) It is conceivable, in fact likely, that significant and unreasonable effects, under any definition, could occur should a quarter of the wells in a given area drop below MT levels—levels that are based upon drought conditions and are thus catastrophically low (and with an additional buffer that actually makes them much *lower* than drought conditions). By choosing a 25% figure, and by tying it to a two-year consecutive period, the Revised GSP in fact guarantees that the basin will experience effects more severe than in the last drought because it permits up to 25% of wells to drop below that level, into uncharted and potentially disastrous territory.

The Revised GSP uses as a premise the idea that undesirable results must be a "pattern" rather than an "isolated event." (Revised GSP at p. 3-4.)[16] The GSP further states that

> The lowering of groundwater levels during dry or critically-dry years is not considered to be unreasonable unless the levels do not rebound to above the thresholds following wet conditions or are otherwise mitigated through adaptive management or implementation of projects and management actions. While statistically, three data points are required to establish a trend, three

[16] This quoted passage discusses the SMC for chronic lowering of groundwater levels, which is used as a proxy, unmodified, for the ISW SMC.

> years of exceedances was felt to be too extreme, whereas a single exceedance was not sufficient to establish a trend.

(*Ibid.*) This conclusion is divorced from the text of SGMA and is not based on evidence or analysis. This logic seems to rely on—without citing—Water Code section 10721, definition (x)(1) for the proposition that undesirable results for chronic lowering of groundwater levels does not occur if it is temporary during a drought. But SGMA's carve-out for short-term lowering of groundwater levels applies *only* to the groundwater level sustainability indicator and not any other, including depletions of ISW. (Wat. Code § 10721, def. (x)(2)-(6).) Importantly, no other sustainability indicator includes this language. Thus no other sustainability indicator permits short-term exceedances so long as impacts are offset later. (*Id.* § 10721, defs. (x)(2)-(5).) And this is consistent with the impacts from the other undesirable results: for instance, subsidence is often irreversible and cannot be remedied by increased groundwater levels or storage later. (*Id.* § 10721, def (x)(5).) Depletions of interconnected surface waters likewise do not contain this exception and for good reason: beneficial uses of surface waters, including listed species, can be irreparably harmed by a single year where conditions are incompatible with species survival. (See, e.g., *National Wildlife Federation v. National Marine Fisheries Service* (9th Cir. 2018) 886 F.3d 803, 818 [harm to a member of a listed species is "irreparable because '[o]nce a member of an endangered species has been injured, the task of preserving that species becomes all the more difficult,' " brackets in original].)

It is therefore inappropriate for the GSP to rely on the chronic lowering of groundwater levels sustainability indicator as a proxy for ISW or any other SMC. Even if water levels recover after a drought, harm to species could be lasting. The GSP must, but does not, analyze short term impacts to ISWs and their beneficial users. Dewatering of a GDE or a surface water or allowing lethally high temperatures for a whole year could constitute an extinction- or extirpation-level event for species reliant on groundwater.[17]

The GSP also fails to include analysis of the effects of its two-year period—or any other effects of the undesirable results definition—on beneficial users of ISWs. (See SGMA Regulations § 354.26(b)(3).) As the GSP itself states, the selection of two years was based on a feeling, not analysis, of what effects would occur under this definition (or, for that matter, a 1- or 3-year definition). (Revised GSP at 3-4.) And while the new appendices to the GSP include a discussion of the removal of the water type qualifier, they contain no analysis of the effects of the revised SMCs on actual instream conditions. (See Revised GSP App. 2-B at p. 19.) Rather, the Appendix continues to state that no undesirable results are anticipated in the basin. (*Ibid.*)

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[17] Mr. Kamman's comments and CSPA's earlier correspondence also point out that a groundwater-level proxy—especially when measured by infrequent semi-yearly monitoring—cannot account for timing of depletions as required by SGMA Regulations section 354.28(c)(6)(A).

The Revised GSP also is under the mistaken impression that an undesirable result must be occurring "subbasin wide" and cannot be a "localized event." (Revised GSP at 3-4.) The GSP does not cite any authority for this position, nor do the statute or regulations support it. Impacts to ISWs, by their nature, are localized to the streams and other waters where they occur. And because of the lack of sufficient monitoring wells in shallow groundwater near streams, as discussed in CSPA's and others' previous letters, it is entirely possible for undesirable results to occur in surface waters without reaching the minimum threshold level.

For all of these reasons, the use of a groundwater level proxy for ISWs is inappropriate and violates SGMA.

Minimum Threshold

The minimum threshold ("MT") must be "supported" by:

> (A) The location, quantity, and timing of depletions of interconnected surface water.
>
> (B) A description of the groundwater and surface water model used to quantify surface water depletion. If a numerical groundwater and surface water model is not used to quantify surface water depletion, the Plan shall identify and describe an equally effective method, tool, or analytical model to accomplish the requirements of this Paragraph.

(SGMA Regulations § 354.28(c)(6).) The use of groundwater levels as a proxy does not tell the GSAs or the public anything about the "location, quantity, and timing" of depletions of interconnected surface water. And as the GSP has chosen not to use a "numerical groundwater and surface water model," to set ISW SMCs, it has not demonstrated that the use of the groundwater level proxy is "equally effective" to accomplish the "requirements" of SGMA.

As discussed further in Mr. Kamman's letter, the MT levels are also not protective of ISWs. They set the MT levels not *at* historic drought levels, but 20-50 feet below those levels. This permits potential degradation of surface water conditions far beyond the already serious effects already documented. And as these MT levels are set in some cases below the elevations of the relevant streambeds, they could lead to completely disconnected rivers. Further, the GSP's conclusion that They will permit serious depletions leading to undesirable results, including depletion of almost half the flow of the Stanislaus River.

It is also unclear why the GSAs did not use the ESJ Water Resources Model (ESJWRM) to develop SMCs for ISW. The ESJWRM is, "in its current state, . . . a robust, comprehensive, defensible and well-established model for assessing the water resources in the ESJ Subbasin under historical and projected conditions." (Revised GSP at App. 2-A, ES-9.) The model uses more than 1600 stream nodes to assess groundwater-surface water interaction. (Revised GSP at App. 2-A, p. 2-6.) And while the model is certainly not perfect, and additional wells and stream gages are needed to better assess ISW depletions, the GSP provides no justification for why a proxy approach is superior to a modeled approach for ISWs.

This is especially true as SGMA Regulations section 354.28(c)(6)(B) requires either a description of the model used or "an equally effective method, tool, or analytical model to" set the MT. As discussed above, the proxy method fails to comply with SGMA or the regulations. The GSP fails to show that the proxy method is "equally effective" to using the ESJWRM.

Measurable Objective

A measurable objective (MO) must contain "specific, quantifiable goals for the maintenance or improvement of specified groundwater conditions that have been included in an adopted Plan to achieve the sustainability goal for the basin." (SGMA Regulations § 351, def. (s).) A GSP may only use groundwater elevation as a "proxy" for other sustainability indicators when the Agency can "demonstrate" that such value is a "reasonable proxy" as "supported by adequate evidence." (*Id.* § 354.30(d).) For the same reasons that the undesirable result definitions and MTs cannot be supported by the groundwater level proxy, the GSP does not supply such evidence for the MOs.

They also are set at levels that fail to protect against undesirable results. The MOs are set at historic drought levels. As demonstrated above, undesirable results were occurring during the 2012-2016 drought and therefore the MOs cannot be designed to achieve the basin's sustainability goal as that goal by definition must avoid undesirable results. (Wat. Code §§ 10721 defs. (u), (w); 10727.2, subd. (b)(1).)

Setting the MO at historic drought levels is also inconsistent with DWR's finding that the basin is in critical overdraft and that environmental effects are already occurring.[18] This finding implies that an MO must be set a level that shows improvement from current conditions, not stasis at the worst conditions in recorded history.

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[18] DWR, Sustainable Groundwater Management Act 2019 Basin Prioritization (2020), at pp. 29-31 available at https://water.ca.gov/programs/groundwater-management/basin-prioritization (accessed September 16, 2022); priority points assigned to Delta-Mendota Subbasin available using the map tool at https://gis.water.ca.gov/app/bp-dashboard/final/ (accessed September 16, 2022).

And as discussed further in the attached comments by Greg Kamman and below, the measurable objectives and minimum thresholds fail to appropriately consider climate change.

The Revised GSP Recognizes a Condition of Overdraft But Fails to Provide for Its Mitigation

A GSP is required to identify and mitigate overdraft in the basin. (Wat. Code § 10727.2, subd. (d)(3); SGMA Regulations § 354.18(b)(5).). If Bulletin 118 identifies overdraft conditions—as has occurred in the ESJ Subbasin—then the GSP must "include a quantification of overdraft over a period of years during which water year and water supply conditions approximate average conditions." (SGMA Regulations § 354.18(b)(5).) And the GSP must "describe projects or management actions, including a quantification of demand reduction or other methods, for the mitigation of overdraft." (*Id.* § 354.44(b)(2).)

DWR is required to evaluate whether the "Plan includes a reasonable assessment of overdraft conditions and includes reasonable means to mitigate overdraft, if present." (SGMA Regulations § 355.4(b)(6).)

The implications of this regulatory scheme are clear: if a GSP does not identify overdraft, then it will fail to specify projects and management actions to address any such overdraft, including a quantification of demand reduction. (See SGMA Regulations § 354.44(b)(2).)

Fortunately, the GSP admits that the subbasin is in overdraft. (Revised GSP at ES-7.) But the GSP does not include projects and management actions that address the overdraft. As discussed further in Mr. Kamman's attached comments, further PMAs will be necessary to achieve sustainability. And because the SMC are insufficient and fail to comply with SGMA, the situation is likely to be even worse than the GSP contemplates.

The Revised GSP Fails to Consider Climate Change

In its May 2020 comments, CSPA previously provided authority that California agencies are generally required to plan for climate change. (See e.g., Health and Safety Code §§ 38550, 38566; Executive Order S-3-05; *Cleveland National Forest Foundation v. San Diego Assn. of Governments* (2017) 3 Cal.5th 497, 504 ["targets were based on a scientific consensus that climate change was largely caused by human activity resulting in elevated levels of carbon dioxide and other heat-trapping gases in the atmosphere and that drastic reductions in greenhouse gas emissions were required to stabilize the climate"]; *Center for Biological Diversity v. California Dept. of Fish and Wildlife* (2015) 62 Cal.4th 204, 219 (*Newhall Ranch I*); *Center for Biological Diversity v. Department of Fish and Wildlife* (2016) 1 Cal.App.5th 452, 469 (*Newhall Ranch II*); *Spring Valley Lake*

Association v. City of Victorville (2016) 248 Cal.App.4th 91, 101; *Sierra Club v. County of San Diego* (2014) 231 Cal.App.4th 1152, 1168; *Friends of Oroville v. City of Oroville* (2013) 219 Cal.App.4th 832, 841; *Citizens for Responsible Equitable Environmental Development v. City of Chula Vista* (2011) 197 Cal.App.4th 327, 335-36.) In particular, SGMA Regulations sections 354.18(b)(3) and (d)(3) require use of best available information and science and/or DWR data to provide a quantified understanding the water budget in light of climate change.

As developed in more detail in Mr. Kamman's letter, the water budget and sustainable yield calculation in the Revised GSP fails to include climate change estimates. This leads to an underestimate of the necessary reduction in groundwater pumping or offsetting recharge. Thus to the extent that SMCs are based on the sustainable yield figure, they will fail to prevent undesirable results.

The Revised GSP Fails to Include Sufficient Monitoring

SGMA requires sufficient monitoring. (Wat. Code § 10727.4 subds. (d)(2), (e), (f); SGMA Regulations §§ 354.32-352.40.) For reasons detailed in Mr. Kamman's letter, the monitoring network for ISWs in the ESJ subbasin is insufficient. It lacks sufficient wells near streams as well as plans for new wells. It also lacks adequate streamflow gages to associate with the monitoring wells that do exist. Monitoring frequency is also insufficient to assess timing of streamflow depletions. The GSP contains no plans to correct these issues.

The Identification and Characterization of ISWs and GDEs Continues to Be Insufficient

Northing in the revisions changes CSPA's previous conclusions that the GSP unlawfully excludes potential GDEs and ISWs from consideration without any sufficient plan to gather more data to improve the situation. Nor does the GSP rely on the best available information in violation of SGMA Regulations section 354.18(e). These provisions in the GSP violated SGMA in 2020 and violate SGMA today.

The Revised GSP Does Not Alter CSPA's Previous Assessment That It Violates SGMA, the Public Trust Doctrine, and the Waste and Unreasonable Use Doctrine.

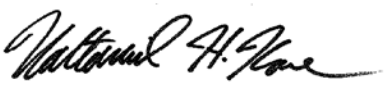
In previous comments and filings, CSPA presented legal authority that the ESJ GSP failed to consider and comply with the waste and unreasonable use doctrine and the public trust doctrine. (Cal Const., art. X, § 2; *National Audubon Society v. Superior Court* (1983) 33 Cal.3d 419, 426; *Environmental Law Foundation v. State Water Resources Control Bd.* (2018) 26 Cal.App.5th 844; see also *United States v. State Water Resources Control Bd.* (1986) 182 Cal.App.3d 82, 105.) The Revised GSP provides no additional

analysis under these doctrines, nor does it demonstrate any compliance with the requirements imposed by them.

DWR Must Find the ESJ GSP "Inadequate"

In light of the foregoing deficiencies, DWR must find that the GSP is inadequate. The failures to comply with SGMA are many and—especially with regard to the failures to address climate change, address overdraft, and to adopt adequate SMCs that will protect vulnerable species—go to the heart of the GSPs' approach to groundwater management. It is highly unlikely that minor revisions in a 2025 update will address these issues. DWR should find the Plan inadequate.

Sincerely,



Nathaniel Kane
Executive Director
Environmental Law Foundation

Attorneys for California Sportfishing
Protection Alliance

EXHIBIT A

September 30, 2022

Mr. Nathaniel Kane, Executive Director
Environmental Law Foundation
1222 Preservation Park Way, Suite 200
Oakland, CA 94612

Subject: Review of Revised Groundwater Sustainability Plans
Eastern San Joaquin Groundwater Subbasin

Dear Mr. Kane:

I have been retained by your Foundation to review the Revised Groundwater Sustainability Plans (GSP) for the Eastern San Joaquin (ESJ) Groundwater Subbasin. As you are aware, I have previously reviewed and reported on the adequacy of the Draft and Final ESJ subbasin GSPs per my comment letters dated August 23, 2019, and May 14, 2020, and May 15, 2020. Based on the findings, it is my opinion that the Revised GSP remains deficient in several areas. The rationale for this opinion is based on the findings presented below.

1. Section 2.2.6 (Interconnected Surface Waters, pgs. 2-104 to 2-105): Figure 2-72 of the GSP shows gaining streams in blue where groundwater discharges to rivers, losing streams in red where streams lose water to the groundwater system, and mixed streams (gaining or losing less than 75 percent of the time) in yellow. This analysis was based on modeling results from the historical calibration of the East San Joaquin Water Resources Model (ESJWRM) for approximately 900 stream nodes in the Eastern San Joaquin Subbasin. The historical model calibration period covers the water years 1996-2015. This section of the GSP only presents a description of historical (and dry) interconnected surface water conditions. Section 354.16 of the California Code of Regulations (SGMA Regulations) stipulates that each Plan shall provide a description of current and historical groundwater conditions in the basin. California Water Code Section 10727.2(a) and (a)(2) require a GSP to describe the physical setting and characteristics of basin groundwater-surface water

interaction. The GSP fails to describe the current conditions of the interconnected surface water system in the basin.

2. Section 2.2.7 (Groundwater Dependent Ecosystems, pg. 2-108 to 2-114): Figure 2-74 of the GSP has identified NCCAG areas (starting point for delineation of GDEs) where water depths are greater than 30 feet. The GSP considers these as data gap areas. However, it is my opinion that when adhering to the Nature Conservancy (TNC) GDE identification guidelines (2019)[1] for developing depth-to-groundwater contours, it will be found that many of these data gap areas have groundwater depths much less than 30 feet. This conclusion is based on the depth-to-water mapping along the Stanislaus River completed by WRIME in 2007[2], which indicates depth to water values much less than 30-feet in contrast to the greater than 30 feet designation assigned to Figure 2-74 in the GSP (see Figures 1a and 1b in my May 14, 2020 letter). Thus, using the best available science would indicate that GDEs considered as data gaps are valid GDEs.

3. Section 2.3.6 (Sustainable Yield Estimate, pgs. 2-148 to 2-149): The last paragraph on page 2-148 states that the sustainable yield (SY) estimate for the ESJ Subbasin was calculated through development of an ESJWRM sustainable conditions scenario (model run) where the long-term (50-yr) change in groundwater storage is zero as a change in storage of greater than zero could cause undesirable results. The first paragraph on page 2-149 states that the sustainable conditions scenario does not include climate change. The third paragraph on page 2-149 states that the sustainable yield for the Subbasin is 715,000 AF/yr. +/- 10 percent. This section of the GSP leaves me with several questions and comments, including the following.

    a. The Projected Water Budget with projects and management actions (PCBL-PMA) is presented in Section 2.3.7.6 of the GSP, with groundwater budget results presented in Table 2-27 and Figure 2-111 (page 2-177). This scenario does not include climate change (CC). As indicated in Table 2-27 (pg. 2-177), average annual total groundwater pumping under the PCBL-PMA is 712,900 AF/yr. I assume this is the value that informs the sustainable yield estimate for the Subbasin of 715,000 AF/yr. Figure 2-111 indicates an annual storage increase of 5,300 AF/yr., and slight increase in long-term cumulative storage over the PCGL-PMA simulation period (i.e., Subbasin managed sustainably). Throughout the GSP, only a single average annual water budget variable value is presented except for a few tables that present water year-type averages. This makes it impossible to evaluate the annual variability and trends in water budget variables within the period analyzed. SGMA Regulation Section 354.18(a) states that water budgets should provide an accounting for total annual input, output and storage variables, not just the average for the water budget period. The GSP does not provide the total annual data in tabular or graphic formats as required.

[1] https://groundwaterresourcehub.org/public/uploads/pdfs/TNC_NCdataset_BestPracticesGuide_2019.pdf
[2] Water Resources & Information Management Engineering, Inc. (WRIME), 2007, Recharge characterization for Stanislaus and Tuolumne Rivers. Prepared for: Stanislaus and Tuolumne Rivers Groundwater Basin Association, May 2, 31p.

b. The results of the projected water budget with climate change and PMAs (PCBL-CC-PMA) is presented in Table 2-29 (pg. 2-181) and Figure 2-114 (pg. 2-182). Under this scenario, average annual groundwater pumping increases to 794,100 AF/yr. (Table 2-19) leading to an annual decline in aquifer storage (overdraft) of 15,700 AF/yr. and over 750,000 AF decline in storage over the entire projected water budget period (Figure 2-114). This raises the question, why the GSP stipulates a sustainable yield, and in turn, SMC values, without factoring in the realities of climate change? Section 354.18(e) of the SGMA Regulations states, "*Each Plan shall rely on the best available information and best available science to quantify the water budget for the basin in order to provide an understanding of historical and projected hydrology, water demand, water supply, land use, population, climate change, sea level rise, groundwater and surface water interaction, and subsurface groundwater flow*." Including climate change in the projected water budget is the best available science when quantifying sustainable yield. In fact, DWR specifically requires and makes available this best available science to GSAs per Sections 354.18(d) through (f) of the SGMA Regulations. However, the ESJGWA Board decided not to use DWR's climate projections in determining sustainable yield for the subbasin, nor did they describe or integrate an equally effective method at addressing climate change. Thus, the sustainable yield estimate presented in the GSP is not based on the best available science. Furthermore, the sustainable yield value will be less protective of undesirable results because of not using the best available science.

c. Page 27 of DWR's 2017 SMC BMP guidance document[3] provides the following guidance regarding establishment of Measurable Objectives.

> *Measurable objectives are quantitative goals that reflect the basin's desired groundwater conditions and allow the GSA to achieve the sustainability goal within 20 years. Measurable objectives are set for each sustainability indicator at the same representative monitoring sites and using the same metrics as minimum thresholds. Measurable objectives should be set such that there is a reasonable margin of operational flexibility between the minimum threshold* [MT] *and measurable objective* [MO] *that will accommodate droughts, climate change, conjunctive use operations, or other groundwater management activities.*

Basing SMC on predicted sustainable conditions that don't include the effects of climate change does not demonstrate that there is the operational flexibility between MT and MO protective of undesirable results. Thus, it is my opinion that the GSP should

[3] California Department of Water Resources (DWR), 2017, Draft Best Management Practices for the Sustainable Management of Groundwater: Sustainable Management Criteria BMP. Accessed 9/26/22 at: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Sustainable-Groundwater-Management/Best-Management-Practices-and-Guidance-Documents/Files/BMP-6-Sustainable-Management-Criteria-DRAFT_ay_19.pdf

incorporate the effects of climate change into the sustainable yield and SMC values for the Subbasin.

d. The projected conditions scenario water budget estimates an annual overdraft of 34,000 AF/year in the Eastern San Joaquin groundwater subbasin. The GSP states (page 2-149), "*In order to achieve a net-zero change in groundwater storage over a 50-year planning period, approximately 78,000 AF/year of direct or in lieu groundwater recharge and/or reduction in agricultural and urban groundwater pumping would need to be implemented in the Eastern San Joaquin Subbasin to reduce the projected groundwater pumping to the sustainable yield. This number (78,000 AF/year) is larger than the estimated annual overdraft of the projected conditions scenario (34,000 AF/year) due to the integrated nature of a groundwater subbasin. As efforts are made to reach sustainability in a subbasin, flows to and from neighboring basins and flows to and from streams may vary due to proposed management actions resulting in increased groundwater levels, creating the need for additional recharge or pumping reduction greater than the overdrafted amount.*" Pages 2-164 through 2-182 of the Final GSP present the Climate Change Analysis required under Section 354.18 (c)(3)(A), "to evaluate future scenarios of hydrologic uncertainty associated with projections of climate change and sea level rise." The results of this water budget that includes climate change are described as follows (page 2-164). "*With a similar surface water supply and increased water demands under the climate change scenario, private groundwater production is simulated to increase approximately 11 percent, from 801,000 AF/year to 887,000 AF/year. Under climate change conditions, the depletion in aquifer storage is expected to increase by about 68 percent to an average annual storage change of 57,000 AF/year, from 34,000 AF/year in the projected conditions scenario*." As indicated above, the ESJGWA Board chose not to use the climate change figures in final calculation of the sustainable yield estimate. However, when applying the same escalation factor[4] used to derive the 78,000 AF/yr. overdraft estimate, the depletion in aquifer storage under the climate change scenario could translate to 130,800 AF/yr. (57,000 AF/yr. x 229%) of direct or in lieu groundwater recharge and/or reduction in groundwater pumping a value well in excess of the 36,300 to 96,700 AF/yr. of in-lieu or direct recharge attributed to the Category A projects (PMA) (see page 3 of GSP Appendix 2-B).

4. Section 3.3.1 (SMC – Chronic Lower of Groundwater Levels, pg. 3-3 to 3-12): SGMA states that undesireable results occur when significant and unreasonable effects for any of the sustainability indicators are caused by groundwater conditions occuring throughout the basin. The top of page ES-7 of the GSP states that the ESJ Subasin has been in an overdraft condition for many years. Overdraft occurs when the amount of groundwater extracted exceeds the long-term average

[4] The 78,000 AF/yr. value is 229% higher than the estimated annual overdraft value of 34,000 AF/yr. from the projected conditions scenario. The only stated rationale attributed to applying this 229% escalation factor is that it is "due to the integrated nature of a groundwater subbasin". This is arbitrary rationale without any further explanation or justification.

groundwater recharge. Figure 49a of the 2018 ESJWRM Report (GSP Appendix 3-A) illustrates this overdraft condition by plotting the long-term (1996-2015 Historical Period) decline in cumulative ESJ Subbasin storage. Similarly, the groundwater level hydrographs for representative SMC monitoring wells in GSP Appendix 3-B indicate concomitant declines (lowering) in groundwater levels.

The "*Description of Undesirable Results" in Section 3.3.2 (SMC – Reduction of Groundwater Storage) of the GSP states, "The ESJGWA has determined that an undesirable result for the reduction of groundwater storage is experienced if sustained groundwater storage volumes are insufficient to satisfy beneficial uses within the Subbasin over the planning and implementation horizon of this GSP (see Section 1.3.1 for a discussion of beneficial uses and users). Undesirable results related to groundwater storage in the Subbasin have not occurred historically, are not currently occurring, and are not likely to occur in the future".* In their comment letters on the Final GSP, both the National Marine Fisheries Service (NMFS, 2020[5]) and the California Department of Fish and Wildlife (CDFW, 2020[6]) refute the GSP conclusion that no historic unreasonable results have occurred. Thus, groundwater conditions, including water levels, over the Historical Period reflect periods of undesirable conditions and basing SMC water level MT on these undesirable levels seems irresponsible, allowing the basin to be managed in a state of overdraft.

GSP Appendix 3-B contains plots comparing groundwater level SMC (MT and MO) to historic measured groundwater levels at 20 representative monitoring wells. In all cases, the historic minimum (1992 and 2015-2016) well water levels are equal to the MO value, while the MT is typically 20- to 50-feet deeper than the MO elevation. This deeper MT results from applying, 1) a buffer of 100-percent of historical range or 2) the 10th percentile well total depth of wells within a 3-mile radius of the monitoring well (see GSP Section 3.3.1.2 [Minimum Thresholds], pg. 3-5). Based on my experience in reviewing numerous San Joaquin Valley GSPs, I routinely see the MT set no deeper than the historic minimum water level at representative monitoring wells. The ESJGWA's justification for adding such a generous "buffer" to the MT comes back to the assumption that no unmitigated undesirable results occurred during historic groundwater level minimums. In essence, the Groundwater Level MTs proposed in the ESJ Subbasin GSP would allow for increased storage depletion and overdraft well beyond what has already occurred and would perpetuate unreasonable results. This seems contrary to the purpose of SGMA and the GSP and the groundwater level SMCs should be considered in adequate in managing the subbasin in a sustainable fashion. In addition, the MT levels for wells near streams are significantly lower than the stream bed elevations. Groundwater levels that fall to the MT

[5] Strange, E., 2020, NOAA's National Marin Fisheries Service comments on the final Groundwater Sustainability Plan for the Eastern San Joaquin Sub-basin. Letter to California Department of Water Resources, NMFS, West Coast Region, March 17, 7p.

[6] Vance, J., 2020, Comments on the San Joaquin River Exchange Contractors GSP Group Final Groundwater Sustainability Plan. Letter to California Department of Water Resources and San Joaquin River Exchange Contractors Water Authority, California Department of Fish and Wildlife, Central Region, April 15, 18p.

elevation in these wells would likely result in a disconnected groundwater-surface water conditions, potentially adversely impacting stream flow and beneficial uses of surface water.

5. Section 3.2.6 (SMC – Depletions of Interconnected Surface Water, pg. 3-25 to 3-26): Based on my review of this section of the GSP, I have the following comments.

    a. The use of groundwater levels alone is not a meaningful or reliable indicator for quantifying and/or monitoring depletions of interconnected surface water (ISW). Apart from identifying where streams are in hydraulic connection to the underlying aquifer and where streams are gaining or losing, the GSP provides no quantification on how groundwater levels interact with stream flows. The GSP (pg. 3-25) states that there are no current or historic significant or unreasonable depletions in surface water flow. However, there is no analysis or justification for this statement apart from the opinions of ESJGWA Board, Advisory Committee Workgroup members, and GSA staff. As required under SGMA {Section 354.28(c)(6)}, the GSP must identify a way to quantify how historic, current, and future changes in groundwater levels have/will affect the timing and rate of surface water depletions and impacts on stream flow levels/rates, water quality and the associated aquatic habitats sustained by stream hydrology. This requires understanding the interrelated set of hydrologic and ecological processes that occur on spatial and temporal scales much finer than the coarse scales represented by the proposed monitoring network and typical of groundwater basin model grids. In order to quantify just the hydrologic processes at a single point, one would ideally need to: construct, screen and continuously monitor a well within suitable distance and depths of the stream channel; measure and record well pumping rates and/or water levels; measure water levels and flow rates in the stream channel adjacent to well; characterize the hydraulic properties of the intervening aquifer sediments and stream bed material; and analyze the data over a suitable period that captures seasonal (or shorter) changes in groundwater and surface water levels and flow rates. Through analytical or modeling methods, the concomitant changes in stream flow depletions, stream water levels, pumping rates and stream flow rates could be correlated and quantified. These empirically based correlations could then be incorporated into an integrated surface water-groundwater model for areas displaying similar geologic and hydrologic conditions. The monitoring data would also be used to calibrate the surface water-groundwater interaction solutions performed by a numerical model. However, this only covers the physical processes. Additional monitoring and analyses of the benefits and impacts of varying stream flow and water levels on ecological conditions would need to be developed to determine how changes in stream flow depletions impact aquatic habitat beneficial uses, including salmonids. This analysis would need to consider all life stages of target species, which means understanding seasonal habitat requirements. Bridging the cause-and-effect relationships between physical and biological processes in an ISW system can't be done by monitoring water levels alone, nor monitoring only water levels and stream levels – the full spectrum of interrelated physical and biological processes needs to be correlated.

    b. A good example of the failure of using groundwater level minimum thresholds as a proxy for the depletions of ISW sustainability indicator can be found in the GSP. Section 3.3.6.2 (ISW Minimum Thresholds) of the GSP states that historical conditions are protective of beneficial uses related to ISW. This claim is not substantiated in the GSP in any manner. The last paragraph in Section 3.3.6.2 (pg. 3-26) of the GSP makes the following statements about stream flow depletions in the subbasin.

> *The ESJWRM was used to estimate the volume of additional depletions associated with groundwater levels that would be classified as undesirable results (non-dry year pairings where 25 percent or more wells fall below their minimum thresholds). The sustainable conditions scenario (see Section 2.3.6) does not result in groundwater level undesirable results, but the projected conditions scenario (see Section 2.3.4.3) does result in groundwater level undesirable results. The additional stream losses that occurred in the projected conditions scenario compared to the historical calibration are estimates of additional depletions as they can be linked directly to simulated increases in groundwater pumping. The additional depletions in the projected conditions scenario are 50,000 acre-feet per year (AF/year), which is approximately 1 percent of total stream outflows from the Eastern San Joaquin Subbasin. As the reduction in total stream flows is small, no impact is expected to the beneficial users of interconnected surface water in the Subbasin. Depletions greater than an increase of 50,000 AF/year would not occur because at this point the sustainability indicators for groundwater levels would be triggered and would be protective of any further depletions. Therefore, groundwater level thresholds are protective of the depletions of interconnected surface water.*

For clarification, the 50,000 AF/yr. of depletions cited above represent the net total added depletions from the major drainage attributable to increased groundwater pumping under the projected conditions scenario (as compared to historical conditions) within the East San Joaquin subbasin, including depletions from: Dry Creek; Mokelumne River; Calaveras River; Stanislaus River; San Joaquin River; and "local tributaries." The ESJWRM model used to quantify the stream flow depletions incorporates portions of other groundwater subbasins boarding the Eastern San Joaquin subbasin and the GSP presents total added depletions from rivers due to combined pumping from adjoining subbasins, including stream flow depletions from: Dry Creek, Mokelumne River; Stanislaus River; and San Joaquin River.

The GSP concludes that the 50,000 AF/yr. in total depletions (equal to 1 percent of outflow from the subbasin) won't lead to unreasonable effects. However, the GSP does not look at the potential impacts on flow in each individual stream system, therefore potential impacts to an individual stream are masked by only presenting the totalized depletions for all rivers (50,000 AF/yr.) in the Subbasin. For example, comparison of the Historic and Projected Stanislaus River water budget with climate change results in Table 2-16 illustrate how Stanislaus River flow is reduced under Projected Conditions (incremental changes presented in the following bullets).

- Under Projected Conditions, the average annual supply of water to the Stanislaus River from the ESJ Subbasin via stream gains from groundwater decreases by 21,000 AF/yr. (stream gains from groundwater dropping from 43,000 AF/yr. under Historic Conditions to 22,000 AF/yr. under Projected Conditions).
- There are additional 19,000 AF/yr. reduction in Stanislaus River flow due to reduced stream gains from groundwater in the adjacent Modesto Basin (stream gains dropping from 42,000 AF/yr. under Historic Conditions to 23,000 AF/yr. under Projected Conditions).

- Table 2-16 also indicates that Stanislaus River flow in the Eastern San Joaquin Subbasin decreases by another 29,000 AF/yr. of outflows due to increased stream seepage (increased river seepage outflow from 31,000 AF/yr. under Historic Conditions to 60,000 AF/yr. under Projected Conditions).
- There is another 24,000 AF/yr. loss of Stanislaus River flow to the Modesto Subbasin as seepage rates to "Other Subbasins" increases from 29,000 AF/yr. under Historic Conditions to 53,000 AF/yr. under Projected Conditions.

Based on these reductions in river gains and increases in river losses due to increased seepage, there will be a total 93,000 AF/yr. reduction of water in the Stanislaus River under Projected Conditions. This equates to a reduction of 255 AF/day and reduction in mean daily flow rate by 128.5 cfs. When compared to the average monthly late dry-season base flow rates for the USGS gauge on the Stanislaus River below Goodwin Dam near Knights Ferry in September (274 cfs)[7], the stream flow depletions from both subbasins would lead to a 47% reduction in flow with half of that reduction attributable to groundwater pumping from the Eastern San Joaquin subbasin.

It is my opinion that a 47% reduction of flow in the Stanislaus River would constitute an undesirable impact on beneficial uses of the river, especially since this would occur during the fall-run and late-fall run chinook migration and spawning periods. However, pursuant to the GSP, sustainability indicators for groundwater level would not be triggered and no undesirable effects assumed based on this SMC. However, impacts to the Stanislaus River are likely, thus the use of groundwater levels as sustainability indicators for undesirable stream flow depletions have failed. The GSP must evaluate potential impacts on each individual stream in the subbasin, not just a summation of total project supply for all streams.

c. Given the deficiencies in using groundwater level monitoring to characterize ISW conditions and identify undesirable results, it is my opinion that the ISW SMC based on routine (i.e., semi-annual) ESJWRM modeling of current conditions through the 2010-2040 GSP implementation period would be a better interim approach until ISW data gaps, and a more robust monitoring program (see comment below) can be established to provide the necessary information needed to accomplish this task. Although the existing model will only provide monthly average changes in river flows, this coarser information is better suited to establish and evaluate more meaningful ISW SMC than groundwater levels.

6. Section 4.5 (Monitoring Network for Depletions of Interconnected Surface Water, pg. 4-14 to 4-17): The core of the monitoring network proposed for ISW is the same as the Representative Monitoring Network (20 wells) and Broad Monitoring Network (107 wells) proposed to monitor for chronic lowering of groundwater levels throughout the subbasin (Chapter 4.1). Although the number of wells appears impressive, there are a limited number and low density near streams or screened within the shallow alluvium of stream corridors. Water levels in wells are proposed to be monitored semi-annually in March and October (GSP pg. 4-7). Stream flow information is similarly sparse and includes existing gauges at notable distances from wells that will severely limit the correlation between groundwater

[7] https://waterdata.usgs.gov/ca/nwis/monthly/?referred_module=sw&site_no=11302000&por_11302000_213275=2208955,00060,213275,1957-02,2021-09&format=html_table&date_format=YYYY-MM-DD&rdb_compression=file&submitted_form=parameter_selection_list

levels and surface water levels and flow rates. The spatial distribution of monitoring locations and low frequency of proposed monitoring events from these wells will be of little use to assessing stream depletions by wells (i.e., the coarse spacing and lack of paired stream and groundwater monitoring sites limit), if not preclude the collection of data necessary to identify undesirable effects).

Section 4.7.5 of the GSP indicates that up to 10 new wells will be in GDE areas and near streams to further understanding of groundwater-surface water connectivity and to refine GDE data gaps. However, there is no discussion or recommendation of the other necessary components for identifying and quantifying undesirable impacts to ISW as described above. For example, there is no recommendation for: pairing the ISW monitoring wells with surface water monitoring gauges (flow and water level); the frequency of field measurements; measuring groundwater pumping rates; or assessing how ecological conditions are affected by variable stream flow rates and water levels.

Please feel free to contact me with any questions regarding the material and conclusions contained in this letter.

Sincerely,

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Senior Ecohydrologist