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GAVIN NEWSOM, Governor
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May 17, 2024

JoAnna Lessard
Watershed Manager
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Subject: Extension of the Yuba Accord Long-Term Water Transfer Program
DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT (DSEIR)
SCH No. 2005062111

Dear JoAnna Lessard:

The California Department of Fish and Wildlife (CDFW) received and reviewed the Notice of Availability of a DSEIR from Yuba Water Agency (YWA) for the proposed Extension of the Yuba Accord Long-Term Water Transfer Program (Project) pursuant the California Environmental Quality Act (CEQA) statute and guidelines[1].

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish, wildlife, native plants, and their habitat. Likewise, CDFW appreciates the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may need to exercise its own regulatory authority under the Fish and Game Code.

CDFW ROLE

CDFW is California's Trustee Agency for fish and wildlife resources and holds those resources in trust by statute for all the people of the State (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (Fish & G. Code, § 1802). Similarly for purposes of CEQA, CDFW provides, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

[1] CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

CDFW may also act as a Responsible Agency under CEQA (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. To the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), the project proponent may seek related take authorization as provided by the Fish and Game Code.

PROJECT DESCRIPTION SUMMARY

YWA proposes to extend the Yuba Accord Long-Term Water Transfer Program for an additional 25 years past its current expiration date of December 31, 2025 through 2050. The existing Water Transfer Program consists of (1) storage water transfers of up to 200,000 acre-feet per year; (2) groundwater substitution water transfers of up to 90,000 acre-feet per year and up to 180,000 acre-feet in a three-year period; (3) rediversion of transfer water at authorized points of rediversion; (4) use of transfer water within the State Water Project and Central Valley Water Project service areas; and (5) use of transfer water for authorized purposes of use, including irrigation and municipal uses.

YWA proposes that the extension Project contain comparable terms as the existing agreements, which include: (1) the Water Purchase Agreement; (2) the YWA/Contra Costa Water District/East Bay Municipal Utilities District Water Transfer Option Agreement; (3) the Conjunctive Use agreements; and (4) the terms and conditions imposed in State Water Resources Control Board (SWRCB) Corrected Order WR 2008-0014 and subsequent Yuba Accord water transfer change petitions approved by the SWRCB.

COMMENTS AND RECOMMENDATIONS

CDFW offers the comments and recommendations below to assist YWA in adequately identifying and, where appropriate, mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources.

COMMENT 1: Impacts of Transfer Timing and Flow Fluctuations

Section 3.4.2 Fisheries and Aquatic Resources

Issue: The DSEIR does not adequately consider the potential impacts of water transfer timing, resulting instream flows, and flow fluctuations on aquatic species, including Central Valley spring-run Chinook salmon (*Oncorhyncus tshawytscha;* SRCS*),* a threatened species under the California Endangered Species Act (CESA). Neither the DSEIR nor the 2007 Yuba Accord EIR includes sufficient analysis of Project flow patterns and their potential impact on SRCS, particularly during the spawning and incubation life stages. Further, since the 2007 EIR was finalized, water transfer conditions have changed, as the water transfer window for the State Water Project was

extended from September 30 to November 30 in the Incidental Take Permit issued by CDFW to the Department of Water Resources in March 2020.

SRCS occur in the Project area and typically spawn in September and October, and egg incubation may last through January. Should water transfers for the Project take place during September through November, it is possible that spawning SRCS will construct redds within transfer-water inundated areas that are then exposed and desiccated when transfer releases end and the river stage decreases. Conversely, should SRCS spawn prior to a water transfer, the pulse of released water may scour existing redds. Substantial or rapid flow fluctuations may also lead to stranding of emerging SRCS fry and rearing SRCS yearlings in shallow areas that may become disconnected from the active river channel. The DSEIR does not contain sufficient discussion, nor does it demonstrate through modeling of Project operations and instream flows, that the ramp-up and ramp-down periods of the water transfers would avoid impacts to salmonid redds under the existing regulatory flow regime.

Recommendation: CDFW recommends that the SEIR include additional, focused discussion of the potential impacts to salmonids, including SRCS, and other aquatic species that may result from flow fluctuations caused by the proposed Project. The SEIR should clearly identify the likely timing of transfer releases in relation to aquatic species' life stages, and as needed, refer to specific operational model runs to illustrate the range of potential flow fluctuations and associated impacts.

If transfers are likely to occur during September through November, the SEIR should identify specific actions that will be taken to avoid redd dewatering or scouring below Englebright Dam, including early notification of planned transfer operations, pre-transfer monitoring, post-transfer monitoring, and protective ramping rates.

COMMENT 2: Impacts to Groundwater Dependent Ecosystems
Section 3.3.2 Groundwater Resources, page 3.3-15

Issue: The DSEIR does not adequately consider impacts to groundwater dependent ecosystems (GDEs). The DSEIR discussion of GDEs (page 3.3-15) states that the Yuba Groundwater Sustainability Plan (GSP) concluded that groundwater pumping would be unlikely to affect GDEs. However, CDFW review and comment of the Yuba GSP, as submitted to the GSA and DWR in 2020 (Attachment A), found contradictory evidence as to the impact of pumping on shallow groundwater, as indicated by the following statement:

> "[T]he GSP: 1) identifies shallow groundwater elevations in the principal aquifer (pages 2-94, 2-95); 2) shows shallow groundwater elevation trends that, although muted, parallel seasonal pumping trends of groundwater elevations in deeper wells, particularly along the Feather River (page 2-104); and 3) acknowledges that shallow groundwater monitoring data is limited (page 4-8). The GSP limits oversight over shallow subsurface water by distinguishing it from the 'principal

> aquifer' (page 2-70) but develops SMC [sustainable management criteria] for depletions of interconnected surface water by way of groundwater elevation proxy (see Comment #4). Absent a better understanding of shallow groundwater systems and their relationship to deeper, 'principal' groundwater reservoirs, it is contradictory to abdicate oversight of shallow groundwater as a non-principal aquifer while identifying shallow groundwater as the primary subsurface influence on surface water interconnectivity, for which the GSP proposes SMC by way of groundwater elevation proxy."

Additionally, comment was provided as to the methods used to identify GDEs:

> "Methods applied to the Natural Communities Commonly Associated with Groundwater (NCCAG) dataset to eliminate potential GDEs may exclude ecosystems that rely on groundwater during specific seasons, water years, or life stages. The litmus test question proffered by the GSP to determine the validity of a potential GDE in the NCCAG – 'would the ecosystem not exist if groundwater levels were deeper?' (page 2-140) – assumes a false dichotomy between both ecosystem existence and non-existence, as well surface water-dependence and groundwater dependence. Groundwater dependent vegetation or interconnected surface waters may be able to sustain existence/flow during temporary, or even extended, groundwater elevation reductions (Naumburg et al., 2005), and these GDEs may oscillate between surface water reliance and groundwater reliance. In short, GDEs may be opportunistic, and the GSP assessment of GDEs is based on overly simplistic determination criteria that do not account for GDE adaptability."

As a result of the potential connectivity of pumped groundwater and shallow aquifer conditions, groundwater pumping could potentially result in lowering of shallow groundwater levels and the capillary fringe to deeper than groundwater dependent vegetation rooting depths. As of the date of the GSP comment letter, assessment of GDEs is incomplete and ongoing.

Recommendation: CDFW recommends that the SEIR incorporate information from the most recent survey(s) of GDEs in the groundwater extraction area to determine the locations of concern and their species assemblages. If additional surveys have not yet occurred following submittal of the Yuba GSP, the SEIR should include any available supplemental information that identifies other known or suspected GDE in the project area. The requirements of these species with respect to groundwater levels, such as rooting zones or seasonal pooling, should be described in the SEIR. Additionally, the SEIR should characterize groundwater monitoring, either by YWA or a subbasin Groundwater Sustainability Agency, that will actively monitor groundwater depths in the areas of concern and adapt groundwater pumping to avoid negatively impacting these ecosystems during groundwater transfer periods. Monitoring results should inform the Project's operations to avoid both chronic long-term lowering and acute seasonal

impacts resulting from the lowering of groundwater levels to below key ecological thresholds.

COMMENT 3: Analysis of Streamflow Depletion Effects
Appendix B: Streamflow Depletion Effects on Downstream Water Supplies

Issue 3.1: The DSEIR does not adequately consider the seasonal variation of streamflow depletion impacts. A given amount of depletion may have a greater impact on the function of stream ecosystems at different times of year. For example, a fixed volume or rate of depletion in early spring, when flows are comparatively high and temperatures are relatively cold, may be a small percentage of flow with less significant impacts on aquatic habitat and water quality. That same volume/rate of depletion in late summer could be a significant percentage of the streamflow, reducing the stream's ability to oxygenate, buffer against temperature fluctuations and dilute contaminants, and reduce physical aquatic habitat availability; or, the depletion could dewater the stream completely. With the exception of stream segment Yuba River 2 (YR2), the Project does not appear to have the ability to mitigate for depleted streamflow in tributary stream reaches in the Project area.

Recommendation 3.1: CDFW recommends monitoring of instream habitat conditions, with increased frequency during identified periods of ecosystem vulnerability. Ecologically relevant streamflow thresholds should be identified, and pumping operations of near-stream wells should undergo adaptive management before flows approach these thresholds. The SEIR should further evaluate the relationship between groundwater levels and tributary streamflow. Depending on hydrogeological characteristics, key relationship(s) for maintaining adequate summer streamflow may include the groundwater levels of upgradient monitoring wells in preceding months. Well operations should adapt to maintain these key seasonal groundwater levels that support critical instream flows.

Issue 3.2: While the inclusion of the Wheatland Water District In-Lieu Recharge Project (WWD Project) is helpful contextually, the analysis of stream depletion reduction resulting from the WWD Project is confusing, the quantifiable benefits to flow overall are not clear, and the differential offsetting of stream depletion in individual tributaries are not addressed.

Recommendation 3.2: No reduction in the streamflow depletion factor (SDF) should occur as a result of WWD Project operations unless a more robust analysis of the spatial and temporal benefits of recharge is conducted. The analysis should include an evaluation of projected recharge operations under a range of future climate change conditions influencing recharge water availability, and an evaluation of the zone of beneficial influence of recharge relative to the depletion of groundwater levels and streamflow in the greater zone of pumping. The analysis should also consider whether it is necessary for recharge to occur in close temporal proximity to the groundwater substitution pumping in order to mitigate the acute streamflow depletion. It is possible

that this analysis is present in the grant proposal, but it is not available as part of the DSEIR.

Issue 3.3: The Department of Water Resource (DWR) has convened multi-stakeholder advisory groups to develop a framework for developing SDF for groundwater substitution water transfers. It is unknown whether the suggested approach in the SEIR will be consistent with this upcoming guidance.

Recommendation 3.3: While it is appreciated that the permittee is pro-active in considering a possible SDF approach, any SDF adopted for this project should be subject to change given the evolving standards. Regardless of the eventual guidance of the multi-stakeholder advisory groups, due to the long-term nature of the proposed Project and uncertainty surrounding future climatic and hydrologic conditions, it is recommended that the SDF be subject to review and revision at regular intervals.

COMMENT 4: Cumulative Impacts Analysis
Section 4.3 Analysis of Cumulative Impacts, page 4-18

Issue: The cumulative effects analysis in the DSEIR does not provide sufficient information for meaningful review of potential significant cumulative effects of the proposed Project and other reasonably foreseeable probable projects. While the DSEIR is thorough in its identification of other reasonably foreseeable projects, the subsequent discussion of cumulative impacts and the Project's incremental contribution lacks specificity and metrics to support its conclusions.

In its evaluation of cumulative impacts to both surface waters and fisheries and aquatic resources, the DSEIR does not adequately discuss and incorporate changes to environmental baseline conditions that occurred during previous implementation of the Water Transfer Program, including population trends for salmonids and other fisheries that occur in the Project area and Bay-Delta.

Recommendation: CDFW recommends the SEIR incorporate an evaluation of cumulative impacts to address the changed environmental baseline conditions related to trends in fisheries populations, instream flows, and Delta outflows and water quality. Inclusion of specific metrics, and modeling to the extent available, will support a more nuanced evaluation of how surface waters or aquatic resources may have been impacted by the previous Water Transfer Program in combination with other related projects, and it will better contextualize a consideration of how conditions may continue to evolve with the proposed Project and other reasonably foreseeable probable projects.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations (Pub. Resources Code, §

21003, subd. (e)). Accordingly, please report any special-status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDB). The CNNDB field survey form can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Submitting-Data. The completed form can be submitted online or mailed electronically to CNDDB at the following email address: CNDDB@wildlife.ca.gov.

FILING FEES

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required in order for the underlying project approval to be operative, vested, and final (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089.)

CONCLUSION

Pursuant to Public Resources Code § 21092 and § 21092.2, CDFW requests written notification of proposed actions and pending decisions regarding the proposed project. Written notifications shall be directed to: California Department of Fish and Wildlife North Central Region, 1701 Nimbus Road, Rancho Cordova, CA 95670 or emailed to R2CEQA@wildlife.ca.gov.

CDFW appreciates the opportunity to comment on the DSEIR for the Extension of the Yuba Accord Long-Term Water Transfer Program to assist Yuba Water Agency in identifying and mitigating Project impacts on biological resources. CDFW personnel are available for consultation regarding biological resources and strategies to minimize and/or mitigate impacts. Questions regarding this letter or further coordination should be directed to Bridget Gibbons, Environmental Scientist, at bridget.gibbons@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Morgan Kilgour
C3A86764C0AD4F6...

Morgan Kilgour
Regional Manager

Attachment A: CDFW Yuba Subbasins Final GSP Comment Letter to DWR

ec: Jennifer Garcia, Environmental Program Manager
Colin Purdy, Environmental Program Manager
Bridget Gibbons, Senior Environmental Scientist (Supervisory)
Beth Lawson, Senior Hydraulic Engineer
Anna Allison, Senior Environmental Scientist (Supervisory)
Tracy McReynolds, Senior Environmental Scientist (Specialist)
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Department of Fish and Wildlife

Office of Planning and Research, State Clearinghouse, Sacramento

Attachment A

Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
North Central Region
1701 Nimbus Road,
Rancho Cordova, CA 95670
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

June 1, 2020

Via Electronic Mail and Online Submission

Craig Altare
Supervising Engineering Geologist
California Department of Water Resources
901 P Street, Room 213
Sacramento, CA 94236

Email: Craig.Altare@water.ca.gov
Portal Submission: https://sgma.water.ca.gov/portal/#gsp

Dear Mr. Altare:

Subject: COMMENTS ON THE FINAL YUBA SUBBASINS GROUNDWATER SUSTAINABILITY PLAN

The California Department of Fish and Wildlife (Department) North Central Region is providing comments on the Final Yuba Subbasins Groundwater Sustainability Plan (GSP) prepared by Yuba Water Agency, City of Marysville, and Cordua Irrigation District Groundwater Sustainability Agencies (GSAs) pursuant to the Sustainable Groundwater Management Act (SGMA). As trustee agency for the State's fish and wildlife resources, the Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of such species (Fish & Game Code §§ 711.7 and 1802).

Development and implementation of GSPs under SGMA represents a new era of California groundwater management. The Department has an interest in the sustainable management of groundwater, as many sensitive ecosystems and species depend on groundwater and interconnected surface waters, including ecosystems on Department-owned and -managed lands within SGMA-regulated basins. SGMA and its implementing regulations afford ecosystems and species specific statutory and regulatory consideration, including the following as pertinent to Groundwater Sustainability Plans:

- Groundwater Sustainability Plans must **identify and consider impacts to groundwater dependent ecosystems (GDEs)** [23 CCR § 354.16(g) and Water Code § 10727.4(l)];
- Groundwater Sustainability Agencies must **consider all beneficial uses and users of groundwater**, including environmental users of groundwater [Water Code §10723.2 (e)]; and Groundwater Sustainability Plans must **identify and**

consider potential effects on all beneficial uses and users of groundwater [23 CCR §§ 354.10(a), 354.26(b)(3), 354.28(b)(4), 354.34(b)(2), and 354.34(f)(3)];

- Groundwater Sustainability Plans must **establish sustainable management criteria that avoid undesirable results** within 20 years of the applicable statutory deadline, including **depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water** [23 CCR § 354.22 *et seq*. and Water Code §§ 10721(x)(6) and 10727.2(b)] and **describe monitoring networks** that can identify adverse impacts to beneficial uses of interconnected surface waters [23 CCR § 354.34(c)(6)(D)]; and
- Groundwater Sustainability Plans must **account for groundwater extraction for all water use sectors** including managed wetlands, managed recharge, and native vegetation [23 CCR §§ 351(al) and 354.18(b)(3)].

Furthermore, the Public Trust Doctrine imposes a related but distinct obligation to consider how groundwater management affects public trust resources, including navigable surface waters and fisheries. Groundwater hydrologically connected to navigable surface waters or surface waters supporting fisheries, and surface waters tributary to navigable surface waters or surface waters supporting fisheries, are also subject to the Public Trust Doctrine to the extent that groundwater extractions or diversions affect or may affect public trust uses (*Environmental Law Foundation v. State Water Resources Control Board* (2018), 26 Cal. App. 5th 844; *National Audubon Society v. Superior Court* (1983), 33 Cal. 3d 419). Accordingly, groundwater plans should consider potential impacts to and appropriate protections for interconnected surface waters and their tributaries, and interconnected surface waters that support fisheries, including the level of groundwater contribution to those waters.

In the context of SGMA statutes and regulations, and Public Trust Doctrine considerations, the Department values groundwater planning that carefully considers and protects environmental beneficial uses and users of groundwater including fish and wildlife and their habitats: groundwater dependent ecosystems and interconnected surface waters.

COMMENT OVERVIEW

The Department supports ecosystem preservation and enhancement in compliance with SGMA and its implementing regulations based on Department expertise and best available information and science. Consistent with comments previously submitted to the GSA on December 9, 2019, the Department recommends the GSP provide additional information and analysis that considers all environmental beneficial uses and users of groundwater and that better characterizes surface water-groundwater connectivity. The Department appreciates The GSAs' consideration and integration of many of the Department's original comments. Where the Department's initial comments have not been addressed, they are restated in this letter with updated page citations.

Where the GSAs have since responded to the Department's comments, the Department has updated the comments and provided additional context in *italicized text*.

COMMENTS AND RECOMMENDATIONS

The Department comments are as follows:

1. **Comment #1 Interconnected Surface Waters** (Basin Setting, 2.2.2.6 Interconnected Surface Water Systems, starting page 2-136): The GSP identifies a high degree of interconnectivity between shallow groundwater and surface water in the basin but limits management oversight of shallow groundwater – and therefore over interconnected surface waters – on account of limited hydraulic connectivity between the shallow groundwater and the 'principal aquifer.'
    a. *Issue*: The GSP notes in several places that there are significant clays and restrictive units in the shallow subsurface that support shallow groundwater contributions to interconnected surface waters and that limit hydraulic connectivity between shallow groundwater and the 'principal aquifer' (Section 2.2.2.1.3, Section 2.2.2.6). In its analysis of pumping-induced groundwater level impacts, the GSP suggests that groundwater within the upper 20 to 30 feet of the subsurface would show heavily muted responses to groundwater pumping in deeper strata (page 2-143). Simultaneously, the GSP: 1) identifies shallow groundwater elevations in the principal aquifer (pages 2-94, 2-95); 2) shows shallow groundwater elevation trends that, although muted, parallel seasonal pumping trends of groundwater elevations in deeper wells, particularly along the Feather River (page 2-104); and 3) acknowledges that shallow groundwater monitoring data is limited (page 4-8). The GSP limits oversight over shallow subsurface water by distinguishing it from the 'principal aquifer' (page 2-70) but develops SMC for depletions of interconnected surface water by way of groundwater elevation proxy (see Comment #4). Absent a better understanding of shallow groundwater systems and their relationship to deeper, 'principal' groundwater reservoirs, it is contradictory to abdicate oversight of shallow groundwater as a non-principal aquifer while identifying shallow groundwater as the primary subsurface influence on surface water interconnectivity, for which the GSP proposes SMC by way of groundwater elevation proxy.
    b. *Recommendation*: The Department supports the proposed expansion of shallow groundwater monitoring in the Yuba Subbasins to better understand the hydraulic relationship between shallow groundwater, interconnected surface waters, and pumping within the 'principal aquifer'

(Section 5). The Department also recommends the GSAs consider treating the shallow groundwater system as a 'principal aquifer' to ensure shallow groundwater levels and depletions of interconnected surface water will be managed to the extent possible with accountability to relevant SMC (e.g., near-stream hydraulic gradients). There is no specific reason why a shallow aquifer cannot comprise a 'principal aquifer,' particularly where shallow aquifers are overlain by GDEs or support interconnected surface waters with special status species. Where a shallow groundwater system stores and yields quantities of water that are 'significant' to surface water beneficial users, including environmental beneficial users and GDE beneficial users, this shallow aquifer may be considered a 'principal aquifer' [23 CCR § 351(aa)]. Shallow groundwater systems are arguably the *most* significant aquifers for environmental beneficial uses and users of groundwater, because they are the aquifers directly accessible to and supportive of the terrestrial and aquatic habitat. Therefore, the Department recommends identifying the shallow groundwater network in the Yuba Subbasins as a 'principal aquifer.'

GSA Response to Comments: *Comment noted. The shallow groundwater system was not identified a principal aquifer as defined under SGMA. Quoted directly, 23 CCR § 351(aa) reads "'Principal aquifers' refer to aquifers or aquifer systems that store, transmit, and yield significant or economic quantities of groundwater to wells, springs, or surface water systems." Based on the analysis performed in the GSP, the shallow groundwater system was not considered to meet the definition of a principal aquifer: "that store, transmit, and yield significant or economic quantities of groundwater to wells, springs, or surface water systems." This discussion is included in Section 2.2.1.9.*

Section 2.2.2.1.3 provides a description of groundwater conditions in the shallow aquifer and in the principal aquifer. The presence of clays in the subsurface is the driver for the use of land for rice cultivation and also limits the percolation of water into the deeper subsurface. These clays allow some level of percolation, as shown through groundwater modeling and the water budget analysis. However, the recharge from applied water and natural sources occur in volumes that result in stable groundwater levels or muted summer declines in groundwater levels in shallower monitoring wells.

The management presented does not "de facto dismiss "oversight of shallow groundwater. The shallow groundwater is not used for water supply purposes. Management of the shallow groundwater system is best performed through improved understanding of the shallow system (included in the GSP as additional monitoring) and monitoring and management of what can be

managed under SGMA - the deeper aquifer (Appendix D: Responses to Public Comments, PDF page 396)

Department Response: *The above comment remains relevant for several reasons: 1) shallow groundwater supply may be developed for consumptive use in the future; 2) shallow groundwater elevations demonstrate trends that correlate with deeper groundwater pumping patterns and accordingly may be hydrologically connected; 3) shallow groundwater may store, transmit, or yield volumes of water significant to surface water systems critical to environmental beneficial users of groundwater, and therefore may be considered a principal aquifer; and 4) interconnected surface waters and other GDEs rely on shallow groundwater. The Department supports expanded monitoring of shallow groundwater to understand how pumping in the principal aquifer impacts shallow groundwater and interconnected surface water.*

2. **Comment #2 Groundwater Dependent Ecosystems** (Basin Setting, 2.2.2.7 Groundwater Dependent Ecosystems, starting page 2-140): GDE identification, required by 23 CCR § 354.16(g), is based on methods that risk exclusion of ecosystems that may depend on groundwater.
    a. *Issue*: Methods applied to the Natural Communities Commonly Associated with Groundwater (NCCAG) dataset to eliminate potential GDEs may exclude ecosystems that rely on groundwater during specific seasons, water years, or life stages. The litmus test question proffered by the GSP to determine the validity of a potential GDE in the NCCAG – 'would the ecosystem not exist if groundwater levels were deeper?' (page 2-140) – assumes a false dichotomy between both ecosystem existence and non-existence, as well surface water-dependence and groundwater dependence. Groundwater dependent vegetation or interconnected surface waters may be able to sustain existence/flow during temporary, or even extended, groundwater elevation reductions (Naumburg et al., 2005), and these GDEs may oscillate between surface water reliance and groundwater reliance. In short, GDEs may be opportunistic, and the GSP assessment of GDEs is based on overly simplistic determination criteria that do not account for GDE adaptability.
    b. *Recommendations*: The Department recommends the GSP include potential GDEs until there is evidence that the overlying ecosystem has no significant dependence on groundwater across seasons and water year types. The Department advises that riparian GDE beneficial users of groundwater and surface water are also carefully considered in the analysis of undesirable results and minimum thresholds for depletions of interconnected surface waters (see Comment #4).

GSA Response to Comments: *Added text noting that the depth to water values that were compared to the 30' criteria were based on the minimum depth to water (shallowest conditions) over the August 2014 - September 2018 time period: "The comparison with the 30-foot criterion was made using the minimum depth to water measurement (shallowest measured conditions) over the period August 2014 to September 2018 for wells with a total depth of than 100 feet."*

This is considered to be a representative period, as it includes the very wet winter of 2016-2017. By including wet conditions, the shallowest-measured conditions criteria will be able to address the adaptability of GDEs mentioned in the comment.

Comment noted. Flows are maintained in the Yuba River year-round, in part to meet flow requirements at the Marysville gage. Additionally, irrigation occurs throughout the growing season as a necessity of farming. These sources provide water for nearby ecosystems. Further, no potential GDEs were removed during the analysis. DWR provides guidance on use of the NCCAG dataset in GSP development, stating that "[t]he Natural Communities dataset is provided by DWR as a reference dataset and potential starting point for the identification of GDEs in groundwater basins. The Natural Communities dataset and its source data can be reviewed by GSAs, stakeholders, and their consultants using local information and experience related to the validity of mapped features and understanding of local surface water hydrology, groundwater conditions, and geology..."

This DWR guidance resulted in the methodology used for this GSP which was to identify likely GDEs in the subbasin by combining the NCCAG database with additional local data and knowledge. The database was a starting point to identify areas dependent on groundwater. Areas identified in the NCCAG dataset were further analyzed to assess the features as discussed in the GSP. Continued work to refine this process is discussed in the projects and management actions section (Appendix D: Responses to Public Comments, PDF page 397-398).

Department Response: *The Department revised the above comment and supports on-going GDE evaluation efforts (pages 5-7, 5-8).*

3. **Comment #3 Monitoring Networks** (Monitoring Networks, 3.2 Monitoring Networks, starting page 3-1): Number and distribution of shallow groundwater monitoring wells are insufficient for analysis of impacts to interconnected surface water and GDEs.
    a. *Issue*: Existing shallow groundwater monitoring wells may not be sufficient to characterize surface water-groundwater interactions along the course of

the main waterways in the Yuba Subbasins or to monitor impacts to environmental beneficial uses and users of groundwater and interconnected surface waters [23 CCR § 354.34(2)]. Few shallow monitoring wells are located along interconnected surface waters or concentrations of potential GDEs; and therefore, there are few data points on shallow groundwater level trends as they related to environmental users of groundwater. These data are critical to understanding groundwater management impacts on fish and wildlife beneficial uses and users of groundwater, including GDEs and interconnected surface water habitats, which are impacted disproportionately by shallow groundwater trends.

b. *Recommendation*: Consistent with the GSPs acknowledgement of the need for additional shallow groundwater monitoring (page 4-8), the Department supports installing additional shallow groundwater monitoring wells near streamflow gages along interconnected surface waters and GDEs, potentially pairing multiple-completion wells with streamflow gauges for improved understanding of surface water-groundwater interconnectivity.

GSA Response to Comments: *Comment noted. CDFW is encouraged to continue to participate in implementation if there are priority areas for well installation activities described in Section 5 of the GSP, or if the GSP can benefit from monitoring activities that CDFW may perform on their lands (Appendix D: Responses to Public Comments, PDF page 398).*

Department Response: *The above comment remains relevant, and the Department appreciates the invitation to participate in GSP/monitoring implementation.*

4. **Comment #4 Sustainable Management Criteria** (Sustainable Management Criteria; 4.3.1, 4.4.1 Groundwater Levels and 4.3.6, 4.4.6 Depletions of Interconnected Surface Water; starting page 4-4): Groundwater level and interconnected surface water SMC may not protect against undesirable results for fish and wildlife beneficial uses and users of groundwater and interconnected surface waters.
    a. *Issues*:
        i. Proxy Metric: The GSP does not provide evidence that a "significant correlation exists between groundwater elevations" and Depletions of Interconnected Surface Water [23 CCR § 354.36(b)(1)]. Conversely, the GSP identifies shallow groundwater as a primary influence on interconnected surface waters and

suggests there is limited hydraulic connectivity between the shallow groundwater and the deeper 'principal aquifer' (page 4-8), but then uses deep groundwater elevations from the 'principal aquifer' as a proxy metric for surface water depletions (page 4-8). The GSP justifies the proxy metric by modeling minimum threshold pumping impacts on the Yuba, Feather, and Bear Rivers and concluding that simulated depletions associated with the increased pumping would not be significant and unreasonable (page 4-10). These modeling efforts are presumably not based on robust shallow groundwater data (see Comment #3), therefore the estimated surface water depletion results are subject to uncertainty. If shallow groundwater monitoring data is limited and a significant correlation is lacking between principal groundwater elevations and depletions of interconnected surface water, then groundwater elevations used as a proxy for surface water depletions may misinform groundwater management activities and poorly predict instream habitat conditions for fish and wildlife species. Accordingly, the application of groundwater level sustainable management criteria to depletions of interconnected surface water is inappropriate, as it is not grounded in a quantifiable and site-specific understanding of surface water-groundwater connectivity as required by 23 CCR § 354.28 (c)(6)(A).

ii. Undesirable Results**:** Besides mentioning potential adverse impacts on GDEs under 'potential effects of undesirable results' (page 4-7), groundwater level minimum thresholds, exceedances of which indicate undesirable results, are applied to the identification of undesirable results for the depletions of interconnected surface water without a reasonable justification (see 'Proxy Metric' comment above). Specifically, for the Yuba, Feather and Bear Rivers, undesirable results are defined by modeling analysis outputs that "indicated that the groundwater level sustainability indicator would prevent additional depletions" (page 4-10). The modeled additional depletions are then compared to total annual flow in these river systems. This coarse annual evaluation does not consider how groundwater contributions may benefit river base flows and groundwater-dependent riparian communities during dry years, or during seasonal summer low-flow months. Furthermore, given that "minimum thresholds for chronic declines of groundwater levels are considered sufficiently protective" (page 4-10) for the

larger rivers in the GSP, it is not an appropriate assumption that the smaller streams in the subbasins would "experience similar responses to hypothetically lower groundwater conditions" (page 4-9). These smaller streams generally have no upstream reservoir that stores seasonal water, and therefore no Federal Energy Regulatory Commission-required instream base flows. In these streams, depleted shallow groundwater conditions could reduce base flows or extend the duration of dry periods, causing an undesirable result for fish and wildlife beneficial users.

iii. Minimum Thresholds: Minimum thresholds for groundwater levels, and by proxy, for depletions of interconnected surface water, are not likely to prevent undesirable results for environmental beneficial uses and users of groundwater and interconnected surface water. For representative monitoring sites, minimum thresholds allow for a decrease of groundwater elevation from historic lows to groundwater elevations of 75 feet below-ground-surface, or deeper (page 4-21). According to Table 4-1, representative monitoring sites that have historically demonstrated shallow groundwater accessible to GDEs and interconnected surface waters, could demonstrate a 70+ foot drop in groundwater elevations before undesirable results are experienced (page 4-21). Under these minimum thresholds, the Department expects that fish and wildlife beneficial uses and users of groundwater and interconnected surface water that rely on shallow groundwater could lose access to shallow water supplies and experience significant and unreasonable impacts far before the proposed minimum thresholds are reached.

b. *Recommendation*:

i. Proxy Metrics: To justify use of groundwater elevations as a proxy metric for depletions of interconnected surface water, the GSP should specify how groundwater elevations from the 'principal aquifer' are significantly correlated to surface water depletions. If there is no significant correlation, the GSP recommends that the GSA determine an expeditious path to gathering additional shallow groundwater data and establishing SMC for interconnected surface waters based on the rate or volume of surface water depletions caused by groundwater use, per 23 CCR § 354.28(c)(6).

ii. Undesirable Results**:** The Department recommends the GSP specify groundwater level 'undesirable results' and 'effects of undesirable results' for environmental beneficial users of

groundwater and interconnected surface water identified in Appendix C. The Department also recommends analyzing interconnected surface water 'undesirable results' by either looking at seasonal accretion/depletions along the full stream courses or using comparisons of near-surface groundwater gradients throughout the length of the river. A more robust shallow groundwater monitoring well network (See Comment #3) will help the GSAs determine more clearly how changes in shallow groundwater may affect interconnected surface waters. Additionally, the seasonal and interannual impacts of surface water depletions should be separately analyzed for small, unmanaged streams.

iii. Minimum Thresholds: The Department recommends the GSP reconsider minimum thresholds at representative monitoring sites with historically shallow groundwater, accounting for the effects of undesirable results on fish and wildlife beneficial uses and users of groundwater and interconnected surface water.

GSA Response to Comments: *Modified text in Section 4.3.6.4 to further explain the correlation between depletions of interconnected surface water and groundwater levels in the principal aquifer.*

Comment noted. The analysis of undesirable results for depletions of interconnected surface water was performed using the best available science. Data are not available for the requested analyses, which would require comprehensive data on every stream in the Yuba Subbasins and is not practical. Data of this nature is not available for the vast majority of rivers and streams in the state. Additional shallow groundwater monitoring facilities are a noted data gap and practical additions are included in the projects and management actions section of the GSP.

Section 2.2.2.1.3 provides a description of groundwater conditions in the shallow aquifer and in the principal aquifer. The presence of clays in the subsurface is the driver for the use of land for rice cultivation and also limits the percolation of water into the deeper subsurface. These clays allow some level of percolation, as shown through groundwater modeling and the water budget analysis. However, the recharge from applied water and natural sources occurs in volumes that result in stable groundwater levels or muted summer declines in groundwater levels in shallower monitoring wells.

Groundwater levels associated with minimum thresholds are based on the best available science and are considered protective of fish and wildlife beneficial users and users of groundwater and interconnected surface water

based on the analysis contained in the GSP. Specifically, this is based on the presence of abundant natural and applied surface water recharge combined with the presence of shallow clays that limit deep percolation of groundwater.

It is noted that the Yuba Basins have not operated at these levels historically and the functioning of the basin cannot be fully understood at this time. The adaptive management strategy and the plan for annual reporting and 5-year evaluations allow for further refinement of the GSP to incorporate new knowledge and understanding of the Yuba Subbasins. Additional monitoring wells are proposed under Section 5 to improve the understanding of shallow groundwater (Appendix D: Responses to Public Comments, PDF page 399-401).

Department Response: *The above comment remains relevant.*

CONCLUSION

In conclusion, the Department appreciates that the Final Yuba Subbasins GSP addressed many of the Department's original comments, but the Department remains concerned for the GSP's consideration of environmental beneficial uses and users of groundwater, including fish and wildlife and their habitats: GDEs and ISW.

The Department appreciates the opportunity to provide comments on the Final Yuba Subbasins GSP. If you have any further questions, please contact Briana Seapy, Senior Environmental Scientist, Supervisor, by email at Briana.Seapy@wildlife.ca.gov or at (916) 508-3345.

Sincerely,

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Literature Cited

Naumburg E, Mata-Gonzalez R, Hunter R.G., McLendon T, Martin D.W. 2005. "*Phreatophytic vegetation and groundwater fluctuations: a review of current research and application of ecosystem response modeling with an emphasis on great basin vegetation".* Environmental Management. 35(6):726-40.