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March 6, 2025

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Subject: Cache Slough Mitigation Bank Project (U-23-03), Initial Study/Mitigated Negative Declaration, SCH No. 2025010929, Solano County

Dear Mathew Walsh:

The California Department of Fish and Wildlife (CDFW) received a Notice of Intent to Adopt an Initial Study/Mitigated Negative Declaration (IS/MND) from Solano County for the Cache Slough Mitigation Bank Project (Project) pursuant the California Environmental Quality Act (CEQA) and CEQA Guidelines.¹

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of 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. (*Id.*, § 1802.) Similarly, for purposes of CEQA, CDFW is charged by law to provide, 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.

CDFW is also submitting comments 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. As proposed, for example, the Project may be subject to CDFW's Lake and Streambed

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.

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Alteration (LSA) regulatory authority. (Fish & G. Code, § 1600 et seq.) Likewise, 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 AND LOCATION SUMMARY

Proponent: Solano County

Objective: The Project will develop the Cache Slough Mitigation Bank (Bank), a private commercial mitigation bank, at the southernmost reach of the Yolo Bypass. The Project would include a low water crossing under State Route (SR)-84 and restore over 300 acres of tidal freshwater wetland and floodplain-associated vegetation communities within the interior of the Project site that will expand available juvenile rearing habitat and increase food web support for at-risk Delta fish species. Project activities include: site preparation, water management, mobilization of equipment, establishment of staging areas, erosion controls, exclusion areas, and installation of water control systems, clearing and grubbing; salvaging and stockpiling vegetation for reuse, construction of a new bridge under SR-84 including in-water work, excavation, installation of foundation pilings, sheet piles, bridge footings, and rock slope protection, grading/dredging of marsh plain and excavation of channels; sediment removal and reuse on site, construction of a new perimeter and habitat berm, berm removal, reintroduction of full tidal hydrology, planting, seeding, or transplanting of wetland and riparian vegetation.

Location: Rio Vista, Solano County, SR-84/Airport Road

Timeframe: Construction targeted for Spring 2026

The CEQA Guidelines (§§15124 & 15378) require that the MND incorporate a full project description, including reasonably foreseeable future phases of the Project, and that contains sufficient information to evaluate and review the Project’s environmental impact.

COMMENTS AND RECOMMENDATIONS

CDFW offers the comments and recommendations below to assist Solano County in adequately identifying and/or mitigating the Project’s significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources. Editorial comments or other suggestions may also be included to improve the document. Based on the Project’s avoidance of significant impacts on biological resources with implementation of mitigation measures, including those CDFW recommends in the comments below CDFW concludes that a MND is appropriate for

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the Project.

I. Project Description and Related Impact Shortcoming

Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS?

COMMENT 1: Riparian Conversion/Setbacks

Biological Resources Assessment Section 1.2, Page 1

Issue: The Project has the potential to encroach into riparian vegetation (i.e., “riparian zone”), temporarily impact, and/or convert existing riparian habitat into another habitat type from development of the Project. Riparian conversion/encroachment into the riparian zone can adversely impact sensitive riparian and aquatic species through reduction of habitat and decreased water quality. Specifically, there are a number of riparian dependent avian species [e.g. Swainson’s hawk (*Buteo swainsoni*), western yellow-billed cuckoo (*Coccyzus americanus*), Yellow warbler (*Denroica petechia*), and Song sparrow (*Melospiza melodia*)] and a variety of listed fish species [e.g., Delta smelt (*Hypomesus transpacificus*), Longfin smelt (*Spirinchus thaleichthys*), Central Valley steelhead (*Oncorhynchus mykiss irideus*)] that may rely on the ecosystem services of the existing riparian area when the area is flooded under current conditions.

Evidence impact would be significant: Riparian vegetation, and associated floodplains, provide many essential benefits to stream and aquatic species habitat, including thermal protection, cover, and large woody debris (Moyle 2002, CDFW 2007). Development adjacent to, or conversion of, the riparian zone can result in fragmentation of riparian habitat and decreases in native species abundance and biodiversity (Davies et al. 2001, Hansen et al. 2005, CDFW 2007). Riparian buffers help keep pollutants from entering adjacent waters through a combination of processes including dilution, sequestration by plants and microbes, biodegradation, chemical degradation, volatilization, and entrapment within soil particles. Narrow riparian buffers are considerably less effective in minimizing the effects of adjacent development than wider buffers (Castelle et al. 1992, Brosofske et al. 1997, Dong et al. 1998, Kiffney et al. 2003, Moore et al. 2005).

Recommended Potentially Feasible Mitigation Measure(s) (Regarding Project Description and Related Impact Shortcoming)

Recommendation 1: CDFW recommends the Project establish riparian buffer zones to limit development and vegetation clearing to outside of and away from riparian areas. CDFW also recommends limiting any proposed riparian conversion to

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the minimum necessary and identifying opportunities for riparian enhancement. CDFW staff are available to consult with Solano County to determine appropriate site-specific riparian buffers, and/or opportunities for riparian enhancement to reduce impacts to sensitive species and riparian habitat to less-than-significant. We also recommend that the Project find higher elevation areas within the Project footprint that can support riparian enhancements to minimize the need for offsite riparian mitigation to compensate for riparian habitat conversions or evaluate a Project design alternative that avoids impacts to riparian forest. Additionally, the Project should notify CDFW pursuant to Fish and Game Code section 1600 et seq. for Project activities affecting lakes or streams and associated riparian habitat, and comply with the LSA Agreement, if issued. Temporarily impacted areas within the riparian zone or other sensitive natural communities should be restored and planted with native trees, shrubs and grasses. CDFW recommends that permanent impacts to riparian habitat or other sensitive natural communities be replaced in-kind when possible, and be assessed on a per-species basis, and mitigation follow species-specific needs.

Would the Project interfere substantially with movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede use of native wildlife nursery sites?

COMMENT 2: Aquatic Organism Connectivity/Fish Passage

IS/MND Section 2.1.3 General Site Conditions, Page 2-1

Issue: The IS/MND states that a primary Project objective is to improve volitional fish passage onto and off of the Project area. It is later described in the IS/MND that water and connectivity between habitat features will be maintained through open culverts. Without careful implementation of the Long-Term Management Plan, these water control features could represent a barrier to fish or other aquatic organism passage. Ponding or retaining water through the use of new and enhanced berms in addition to water control structures can reduce aquatic connectivity and disconnect fish within unfavorable habitat within the Project area and from the Sacramento River.

Evidence impact would be significant: Habitat fragmentation of watercourses as a result of impoundment and water control purposes is considered one of the major threats to worldwide aquatic biodiversity, including freshwater fishes (Liermann et al., 2012, Nicola et al., 1996, Poulet, 2007). The Delta serves as a migration corridor for all anadromous fish species in the Central Valley. Anadromous and resident native fish species require volitional access to all Delta habitats available to them to meet their basic life history requirements (e.g., spawning, rearing, migration). Instream barriers to fish passage and unscreened water diversions impede

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migratory and rearing movements and adversely affect overall species survival.

Recommended Potentially Feasible Mitigation Measure(s) (Regarding Environmental Setting and Related Impact Shortcoming)

Mitigation Measure RS.P-5: Protect and enhance wildlife movement corridors to ensure the health and long-term survival of local animal and plant populations. Preserve contiguous habitat areas to increase habitat value and to lower land management costs.

Recommendation 2: The IS/MND should provide information on how and when fish will be able to access the site and how volitional passage will be maintained (fish passage structure design, scientific references, modeling, etc.) without the risk for stranding. CDFW recommends the Project proponent includes a water management plan that can ensure that disconnected, ponded water is minimized or eliminated to prevent stranding juvenile fish within the Project area. In addition, the IS/MND should require that all inlet pumps on water control structures be fitted with fish screens that adhere to CDFW's fish screening criteria to reduce entrainment or impingement of fish. CDFW's fish screening criteria can be found in the California Salmonid Stream Restoration Manual's Appendix S available at: <https://wildlife.ca.gov/Grants/FRGP/Guidance>. CDFW also recommends only using open bottomed culverts in areas where fish passage is required.

Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or U.S. Fish and Wildlife Service (USFWS)?

COMMENT 3: Compatibility of Land Uses

IS/MND Environmental Setting, Page 3-103

Issue: The Project description states that there is a history of agricultural land uses at the site that likely includes the use of herbicides/insecticides. Additionally, the IS/MND states that there is an abandoned natural gas well and associated infrastructure in the northwest corner of the bank property, that recreational access including hunting will increase, and ongoing grazing is planned for the upland areas.

Evidence impact would be significant: Recent work in the Delta (Anzalone et al., 2022, Fuller et al., 2022) suggests that the agricultural land use history of a site can impact juvenile rearing of Delta native fishes. Anzalone et al., (2022) found significantly higher concentrations of organochlorines recorded in floodplain rearing fish and bioavailable organochlorine in floodplain sediment compared to the Sacramento River. These findings suggest that within these habitats, juvenile

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Chinook salmon (*Oncorhynchus tshawytscha*) feeding primarily on zooplankton within the water column may be exposed to a greater range of pesticides than those feeding on benthic macroinvertebrates, and that the benefits of floodplain rearing may come at a cost of increased organochlorine exposure. Other studies have documented higher growth rates associated with floodplain rearing of hatchery origin juvenile salmonids but with variable survival rates (Katz and et al., 2017, Jeffres et al., 2020). Public access and hunting can sometime conflict with conservation objectives, particularly in ecologically sensitive areas. Increased human activity, recreation, and infrastructure development may impact habitat integrity, disrupt wildlife corridors, and introduce degradation risks such as erosion, pollution, and vegetation loss. Expanded recreational facilities may further increase pressures on natural resources, particularly if not carefully sited and managed. Light pollution, increased human-wildlife interactions, noise disturbances, and wastewater management are additional concerns that could degrade habitat quality and ecosystem function. Without careful planning and mitigation, these impacts could undermine the long-term ecological value of the site.

The Project should seek to minimize any impacts from future oil or gas exploration and extraction in or around the property. The site is located above the Rio Vista Gas field and the subsurface mineral rights have been severed and are owned by various mineral rights holders who could choose to explore for or extract additional petroleum or natural gas in the future. Section 15.2 Mineral Ownership from the Cache Slough Mitigation Bank Prospectus states that a minimum two-acre mineral site and access will be maintained outside of the Conservation Easement. We support this design feature as a way to limit impacts to this area.

Recommended Potentially Feasible Mitigation Measure(s) (Regarding Environmental Setting and Related Impact Shortcoming)

Recommendation 3: CDFW recommends careful early planning to ensure that long-term operations and management of the site is supported by all stakeholders representing the different land uses. Specifically, we recommend developing an adaptive management plan that details the management practices associated with public, recreational, and gas/oil utility access and agricultural operations (e.g., limit or eliminate pesticide use, water management schedule relative to fish needs, etc.). Additionally, CDFW recommends expanding the size of the 2-acre mineral site as the GEOCON report cited in section 15.2 of the Biological Resource Report concluded “that future oil or gas exploration and/or extraction could be accommodated on the property by establishing a single drilling “island” of approximately 2 to 5 acres.” Two acres may not be sufficient to accommodate future mineral developments. The IS/MND should also disclose any ongoing monitoring or management that will be carried out as part of an adaptive management plan or hypothesis testing.

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II. Mitigation Measure or Alternative and Related Impact Shortcoming

Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS?

COMMENT 4: Beaver Abatement

Issue: The IS/MND does not directly address animal abatement, including beaver dam abatement. In 2023, CDFW established a Beaver Restoration Program and adopted a beaver depredation policy that promotes human-beaver coexistence. It is unclear if the Project will implement or adhere to this program.

Evidence impact would be significant: Beaver colonization and behavior is valuable to the ecosystems they maintain (e.g., felling trees, damming waterways), however, this behavior may lead to direct contact and potential conflict with project infrastructure. Abatement of beavers within the Project area may result in significant impacts to environmental systems within the Project area.

Recommendation 4: CDFW recommends the IS/MND include an evaluation of potential beaver colonization within the Project area and potential beaver damage to existing or future Project infrastructure. The IS/MND should identify effective and feasible non-lethal deterrent strategies and options that could be implemented in lieu of lethal beaver management. Installation of these devices and equipment may be done proactively to prevent beaver damage or may be pursued to abate damage as an alternative to pursuing depredation. CDFW also recommends as an alternative that the Project be designed to be inclusive of beaver establishment and resilient to beaver activities.

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 (CNDDDB). The CNDDDB field survey form can be filled out and submitted online at the following link: <https://wildlife.ca.gov/Data/CNDDDB/Submitting-Data>. The types of information reported to CNDDDB can be found at the following link: <https://www.wildlife.ca.gov/Data/CNDDDB/Plants-and-Animals>.

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ENVIRONMENTAL DOCUMENT FILING FEES


The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of environmental document 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 environmental document filing 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

CDFW appreciates the opportunity to comment on the IS/MND in order to assist Solano County in identifying and mitigating Project impacts on biological resources.

Questions regarding this letter or further coordination should be directed to Elijah Portugal, Senior Environmental Scientist, at (707) 428-2088 or Elijah.Portugal@wildlife.ca.gov; or Sara Kern, Senior Environmental Scientist, (Supervisory) at (916) 531-4465 or Sara.Kern@wildlife.ca.gov.

Sincerely,

DocuSigned by:

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Erin Chappell
Regional Manager
Bay Delta Region

REFERENCES

Brosofske, K.D., J. Chen, R.J. Naiman, and J.F. Franklin. 1997. Harvesting effects on microclimatic gradients from small streams to uplands in western Washington. *Ecological Applications* 7:1188-1200.

California Department of Fish and Wildlife [CDFW]. 2007. California wildlife: conservation challenges. California Department of Fish and Game, Sacramento, CA.

Castelle, A.J., C. Conolly, M. Emers, E.D. Metz, S. Meyer, M. Witter, S. Mauermann, T. Erickson, and S.S. Cooke. 1992. Wetlands buffers use and effectiveness. Adolfson Associates, Inc., Shorelands and Coastal Zone Management Program, Washington Department of Ecology, Olympia, WA. Pub. No. 92-10.

Davies, K.F., C. Gascon, and C.R. Margules. 2001. Habitat fragmentation:

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consequences, management, and future research priorities. Pages 81-97 in: M.E. Soule and G. H. Orians, (eds.) Conservation Biology: Research Priorities for the Next Decade. Island Press, Washington, DC.

Hansen, A. J., R. L. Knight, J. M. Marzluff, S. Powell, K. Brown, P. A. Gude, and K. Jones. 2005. Effects of exurban development on biodiversity patterns, mechanisms, and research needs. *Ecological Applications* 15:1893-1905.

Liermann, C. R., Nilsson, C., Robertson, J., & Ng, R. Y. (2012). Implications of dam obstruction for global freshwater fish diversity. *BioScience*, 62, 539–548.
<https://doi.org/10.1525/bio.2012.62.6.5>

Moore, R. D., D. L. Spittlehouse, and A. Story. 2005. Riparian microclimate and stream temperature response to forest harvesting: a review. *Journal of the American Water Resources Association* 41:813-834.

Moyle P.B. 2002. *Inland fishes of California*. University of California Press. Berkeley, CA.

Nicola, G. G., Elvira, B., & Almodovar, A. (1996). Dams and fish passage facilities in the large rivers of Spain: Effects on migratory species. *Archives of Hydrobiology*, 10, 375–379. <https://doi.org/10.1127/lr/10/1996/375>

Poulet, N. (2007). Impact of weirs on fish communities in a piedmont stream. *River Research and Applications*, 23, 1038–1047. [https://doi.org/10.1002/\(ISSN\)1535-1467](https://doi.org/10.1002/(ISSN)1535-1467)