



November 13, 2024

Tyson Zimmerane, Assistant General Manager

Ironhouse Sanitary District

450 Walnut Meadows Drive

Oakley, CA 94561

Zimmerman@isd.us.com

Subject: Giant Garter Snake Mitigation Bank, Initial Study/Mitigated Negative Declaration, SCH No. 2024100624, City of Jersey Island, Contra Costa County

Dear Tyson Zimmerman:

The California Department of Fish and Wildlife (CDFW) has reviewed the Ironhouse Sanitary District's (ISD) Initial Study/Mitigated Negative Declaration (IS/MND) for the Giant Garter Snake 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 fish and wildlife resources of the State. Please be advised, by law, CDFW 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.) 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 over the Project pursuant to the Fish and Game Code. 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.

Tyson Zimmerman
Ironhouse Sanitary District
November 13, 2024
Page 2

Alteration (LSA) regulatory authority, if the Project impacts the bed, channel or bank of any river, stream or lake within the State (Fish & G. Code, § 1600 et seq.). Likewise, to the extent the Project 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.

REGULATORY REQUIREMENTS

California Endangered Species Act

A CESA Incidental Take Permit (ITP) must be obtained from CDFW if the Project has the potential to result in “take” of plants or animals listed under CESA, either during construction or over the life of the Project. Under CESA, “take” means “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” (Fish & G. Code, § 86.) CDFW’s issuance of an ITP is subject to CEQA and to facilitate permit issuance, any project modifications and mitigation measures must be incorporated into the CEQA document analysis, discussion, and mitigation monitoring and reporting program. If the Project will impact CESA listed species, early consultation is encouraged, as significant modification to the Project and mitigation measures may be required in order to obtain a CESA permit.

CEQA requires a mandatory finding of significance if a project is likely to substantially impact threatened or endangered species. Pub. Resources Code, §§ 21001, subd. (c) & 21083; CEQA Guidelines, §§ 15380, 15064 & 15065.) In addition, pursuant to CEQA, the lead agency cannot approve a project unless all impacts to the environment are avoided or mitigated to less-than-significant levels, or the lead agency makes and supports Findings of Overriding Consideration (FOC) for impacts that remain significant despite the implementation of all feasible mitigation. FOC under CEQA, however, do not eliminate the Project proponent’s obligation to comply with the Fish and Game Code.

Lake and Streambed Alteration

CDFW requires an LSA Notification, pursuant to Fish and Game Code section 1600 et seq., for Project activities affecting river, lakes or streams and associated riparian habitat. Notification is required for any activity that may substantially divert or obstruct the natural flow; change or use material from the bed, channel, or bank (including associated riparian or wetland resources); or deposit or dispose of material where it may pass into a river, lake, or stream. Work within ephemeral streams, drainage ditches, washes, watercourses with a subsurface flow, and floodplains is generally subject to notification requirements. In addition, infrastructure installed beneath such aquatic features, such as through horizontal directional drilling, is also generally subject to notification requirements. Therefore, any impact to the mainstems, tributaries, or

Tyson Zimmerman
Ironhouse Sanitary District
November 13, 2024
Page 3

floodplains or associated riparian habitat caused by the proposed Project will likely require an LSA Notification. CDFW may not execute a final LSA Agreement until it has considered the IS/MND and complied with its responsibilities as a responsible agency under CEQA.

Migratory Birds and Raptors

CDFW has authority over actions that may result in the disturbance or destruction of active bird nest sites or the unauthorized take of birds. Fish and Game Code sections protecting birds, their eggs, and nests include section 3503 (regarding unlawful take, possession, or needless destruction of the nests or eggs of any bird), section 3503.5 (regarding the take, possession, or destruction of any birds-of-prey or their nests or eggs), and section 3513 (regarding unlawful take of any migratory nongame bird). Migratory birds are also protected under the federal Migratory Bird Treaty Act.

PROJECT DESCRIPTION AND LOCATION SUMMARY

Proponent: Ironhouse Sanitary District

Objective: The applicant seeks to establish an approximately 206-acre mitigation bank primarily to provide foraging, basking, and sheltering habitat for giant garter snake (*Thamnophis gigas*, GGS). Because GGS require a mosaic of upland and wetland habitat, and to better service the mitigation market, another goal would be to receive perennial emergent marsh credits for re-established wetland habitats, and riparian credits for riparian scrub habitats established as part of the habitat enhancement for GGS. The Project footprint is 206-acres and 189-acres will function as the bank. Approximately 17-acres will be temporarily impacted for staging during construction. The current land use on the site is cattle grazing on four irrigated pastures with irrigation infrastructure. The proposed method of creating GGS habitat is to construct a habitat matrix consisting of approximately 200-acres of open water, perennial or semi-permanent marsh, edge habitat, constructed upland berms, and restored riparian scrub by integrating into the existing ditches in several locations in order to provide water and subsequent drainage for the restored habitats. The Biological Resources report identified four special-status plant species, and 18 special-status wildlife species composed of 15 birds, 1 mammal, and 2 reptiles. The existing resources within the proposed mitigation bank area include open water for GGS foraging, marsh for GGS foraging and basking, and berm areas for GGS basking and sheltering. GGS have been observed within the Project site along the northwest and southeast corners of the proposed mitigation bank.

Location: Contra Costa County, Jersey Island Road, Latitude/Longitude: 38.052223° , -121.666924°

Timeframe: Implementation targeted for third quarter 2027

Tyson Zimmerman
Ironhouse Sanitary District
November 13, 2024
Page 4

The CEQA Guidelines (§§15124 and 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. Please include a complete description of the following Project components in the Project description including but not limited to the below information.

- Land use changes or incompatible land uses (e.g., presence of oil/gas wells, managed wetland water management for waterfowl vs water management that favors salmonids) resulting from Project implementation.
- Footprints of permanent Project features and temporarily impacted areas, such as staging areas and access routes.
- Area and plans for any proposed buildings/structures, ground disturbing activities, fencing, paving, stationary machinery, landscaping, and stormwater systems.
- Operational features of the Project, during and after implementation including level of anticipated human presence (describe seasonal or daily peaks in activity, if relevant), artificial lighting/light reflection, noise, traffic generation, ongoing management of water control structures, and other features.
- Construction schedule, activities, equipment, and crew sizes.

ENVIRONMENTAL SETTING

Sufficient information regarding the environmental setting is necessary to understand any potentially significant impacts on the environment of the proposed Project and any alternatives identified in the IS/MND (CEQA Guidelines, §§15125 & 15360). CDFW recommends the IS/MND provide baseline habitat assessments for special-status plant, fish and wildlife species located and potentially located within the Project area and surrounding lands, including all rare, threatened, and endangered species (CEQA Guidelines, §15380). The IS/MND should describe aquatic habitats, such as wetlands or waters of the U.S. or State, and any sensitive natural communities or riparian habitat occurring on or adjacent to the Project site (for sensitive natural communities see: <https://wildlife.ca.gov/Data/VegCAMP/NaturalCommunities#sensitive%20natural%20communities>), and any stream or wetland set back distances the City or County may require. Fully protected (FP), threatened, or endangered, candidate, and other special-status species or sensitive natural communities that are known to occur, or have the potential to occur in or near the Project site, include, but are not limited to:

Tyson Zimmerman
Ironhouse Sanitary District
November 13, 2024
Page 5

Plants

- Parry's rough tarplant (*Centromadia parryi* ssp. *parryi*), California Native Plant Society (CNPS) Rank 4.2
- Woolly rose-mallow (*Hibiscus lasiocarpus*), CNPS Rank 1B.2
- Mason's lilaeopsis (*Lilaeopsis masonii*), State-listed as Rare
- Suisun Marsh aster (*Symphotrichum lentum*), CNPS Rank 1B.2
- Delta tule pea (*Lathyrus jepsonii* var *jepsonii*), CNPS 1B.2
- Delta mudwort (*Limosella australis*), CNPS 2.B1

Fishes

- Green Sturgeon (*Acipenser medirostris*), Federally-listed as Threatened (FT)
- White Sturgeon (*Acipenser transmontanus*), State candidate for listing as Threatened
- Central Valley Steelhead (*Oncorhynchus mykiss irideus*), FT
- Central Valley fall-run Chinook Salmon (*Oncorhynchus tshawytscha*), State Species of Special Concern (SSC)
- Central Valley spring-run Chinook Salmon (*Oncorhynchus tshawytscha*), State-listed as Threatened (ST), FT
- Sacramento River winter-run Chinook Salmon (*Oncorhynchus tshawytscha*), State-listed as Endangered (SE), Federally-listed as Endangered (FE)
- Delta Smelt (*Hypomesus transpacificus*), SE, FT
- Longfin Smelt (*Spirinchus thaleichthys*), ST
- Sacramento Splittail (*Pogonichthys macrolepidotus*), SSC

Reptiles/Amphibians

- Western pond turtle (*Emys marmorata*), SSC, Federal Proposed Threatened
- Giant garter snake (*Thamnophis gigas*), ST, FT

Tyson Zimmerman
Ironhouse Sanitary District
November 13, 2024
Page 6

- Northern California legless lizard (*Anniella pulchra*), SSC
- California tiger salamander (*Ambystoma californiense*), FT, ST

Birds

- Golden eagle (*Aquila chrysaetos*), FP, CDFW Watch List (WL)
- Bald eagle (*Haliaeetus leucocephalus*), SE, FP
- Swainson's hawk (*Buteo swainsoni*), ST
- Northern harrier (*Circus hudsonius*), SSC, U.S. Fish and Wildlife Services (USFWS) Bird of Conservation Concern
- White-tailed kite (*Elanus leucurus*), FP
- Mountain plover (*Charadrius montanus*), SSC, USFWS Bird of Conservation Concern
- Lesser sandhill crane (*Grus canadensis canadensis*), SSC
- Greater sandhill crane (*Grus canadensis tabita*), ST, FP]
- Western burrowing owl (*Athene cunicularia hypugaea*), SSC, candidate for listing under CESA, USFWS Bird of Conservation Concern
- Western yellow billed cuckoo (*Coccyzus americanus*), FT
- Double-crested cormorant (*Nannopterum auritum*), CDFW WL
- Bank swallow (*Riparia riparia*), ST
- California black rail (*Laterallus jamaicensis coturniculus*), ST
- California ridgeway's rail (*Rallus obsoletus obsoletus*), FE, SE, FP
- Loggerhead shrike (*Lanius ludovicianus*), SSC
- Yellow warbler (*Denroica petechia*), SSC
- Song sparrow (*Melospiza melodia*), SSC
- Tricolored blackbird (*Agelaius tricolor*), ST

Tyson Zimmerman
Ironhouse Sanitary District
November 13, 2024
Page 7

- Other nesting and migratory birds

Mammals

- Western red bat (*Lasiurus blossevillii*), SSC
- Salt-marsh harvest mouse (*Reithrodontomys raviventris*), FP Species

Habitat descriptions and species profiles included in the IS/MND should include robust information from multiple sources: aerial imagery; historical and recent survey data; field reconnaissance; scientific literature and reports; USFWS's Information, Planning, and Consultation System; California Aquatic Resources Inventory; and findings from "positive occurrence" databases such as California Natural Diversity Database (CNDDDB), or any geographically relevant Habitat Conservation Plans (HCP), Natural Community Conservation Planning (NCCP) or other conservation planning documents. Only with sufficient data and information can the Ironhouse Sanitary District adequately assess which special-status species are likely to occur in the Project vicinity.

CDFW recommends surveys be conducted for special-status species with potential to occur, following recommended survey protocols if available. Survey and monitoring protocols and guidelines are available at:

<https://www.wildlife.ca.gov/Conservation/Survey-Protocol>.

Botanical surveys for special-status plant species, including those listed by the California Native Plant Society (<http://www.cnps.org/cnps/rareplants/inventory/>), should also be conducted during the blooming period for all sensitive plant species potentially occurring within the Project area and include the identification of reference populations. Please refer to CDFW botanical field surveyor qualifications and protocols for surveying and evaluating impacts to rare plants and required elements to include in a Botanical Survey Report that should be incorporated into the IS/MND available at:

<https://www.wildlife.ca.gov/Conservation/Plants>.

IMPACT ANALYSIS AND MITIGATION MEASURES

The CEQA Guidelines (§15126.2) necessitate the IS/MND discuss all direct and indirect impacts (temporary and permanent) that may occur with implementation of the Project. This includes evaluating and describing impacts such as:

- Land use changes that would cause a reduction/conversion of riparian or other sensitive habitat, reduce open space, or impact managed wetlands or agricultural land uses;
- Changes in hydrological/hydraulic conditions through levee breaches and changes to flow routing that could negatively impact neighboring properties

Tyson Zimmerman
Ironhouse Sanitary District
November 13, 2024
Page 8

and/or cause unintended impacts to water quality or cause an increase in non-native species both during construction and ongoing operation of the Project;

- Potential for impacts to special-status species (e.g., riparian obligates);
- Loss or modification of breeding, nesting, dispersal and foraging habitat, including riparian vegetation removal, alteration of soils and hydrology, and removal of habitat structural features (e.g., snags, roosts, overhanging banks);
- Permanent and temporary habitat disturbances associated with ground disturbance, noise, lighting, reflection, air pollution, traffic, or human presence;
- Obstruction of movement corridors, fish passage, or access to water sources and other core habitat features;
- Impacts, including those to water quality, both from construction and operation of the Project and;
- Impacts to rivers and streams including beds, channels, banks, and associated riparian habitats, and the direct and indirect effects to fish, wildlife, and their habitat.

The CEQA document also should identify existing and reasonably foreseeable future projects in the Project vicinity, disclose any cumulative impacts associated with these projects, determine the significance of each cumulative impact, and assess the significance of the Project's contribution to each impact (CEQA Guidelines, §15355). Although a project's impacts may be insignificant individually, its contributions to a cumulative impact may be considerable; a contribution to a significant cumulative impact (e.g., reduction of available habitat for a listed species) should be considered cumulatively considerable without mitigation to minimize or avoid the impact.

The CEQA Guidelines direct the Ironhouse Sanitary District, as the Lead Agency, to consider and describe in the IS/MND all feasible mitigation measures to avoid and/or mitigate potentially significant impacts of the Project on the environment based on comprehensive analysis of the potential direct, indirect, and cumulative impacts of the Project. (CEQA Guidelines, §§ 15021, 15063, 15071, 15126.2, 15126.4 & 15370.) This should include a discussion of take avoidance and minimization measures for special-status species, which are recommended to be developed in early consultation with the U.S. Fish and Wildlife Service, the National Marine Fisheries Service and CDFW. These measures can then be incorporated as enforceable Project conditions to reduce potential impacts to biological resources to less-than-significant levels.

Tyson Zimmerman
Ironhouse Sanitary District
November 13, 2024
Page 9

Fully protected species such as salt marsh harvest mouse (*Reithrodontomys raviventris*) may not be taken or possessed at any time except in limited circumstances (Fish & G. Code, §§ 3511, 4700, 5050, & 5515). Therefore, the IS/MND should include measures to completely avoid take of fully protected species.

COMMENTS AND RECOMMENDATIONS

Based on the information provided in the IS/MND and received during early coordination CDFW offers the comments and recommendations below to assist the Ironhouse Sanitary District in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and/or indirect impacts on fish and wildlife (biological) resources. **These comments and recommendations are not an exhaustive list and CDFW may provide additional recommendations as more Project specific information is disclosed. The MND must include a full Project Description, Environmental Setting, and Impact Analysis and Mitigation Measures as outlined above.** Editorial comments or other suggestions may also be included to improve the document.

COMMENT 1: Riparian Conversion/Setbacks

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 (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 that rely on the ecosystem services of the few remaining patches of mature riparian forest in the Project area.

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).

Tyson Zimmerman
Ironhouse Sanitary District
November 13, 2024
Page 10

Recommendation 1: CDFW recommends the Project establish, and the IS/MND incorporate, 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 the minimum necessary and to identify opportunities for riparian enhancement. CDFW staff are available to consult with the Ironhouse Sanitary District 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 either the Project find higher elevation areas within the Project footprint that can support riparian enhancements to minimize the need for off-site riparian mitigation to compensate for riparian habitat conversions or evaluate a Project design alternative that avoids impacts to riparian forest in the IS/MND.

COMMENT 2: Aquatic Organism Connectivity/Fish Passage

Issue: Page 7 of the IS/MND states: "Within various sections of the proposed habitat matrix, soils will be excavated to create deep (>36 inches) open-water habitat. These areas will provide primary foraging habitat for GGS, and habitat for their primary prey (amphibians and fishes)." The conceptual design does not indicate direct fish passage will be created with the False River. If native fishes are introduced into the Project area with the goal of successful establishment, then habitat conditions (i.e., water quality, temperature, substrate, and connectivity) must be sufficient to support them within the Project area. It is later described in the IS/MND that water and connectivity between habitat features will be actively managed on the site with flash boards. 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 False 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 migratory and rearing movements and adversely affect overall species survival.

Recommendation 2: The IS/MND should provide information on how fish will be introduced into the site and how volitional passage is provided (fish passage structure design, scientific references, modeling, etc). CDFW recommends project proponents develop a management plan that can ensure that disconnected, ponded water is

Tyson Zimmerman
Ironhouse Sanitary District
November 13, 2024
Page 11

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>.

COMMENT 3: 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 new 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 3: 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.

COMMENT 4: Biosolids

Issue/Evidence impact would be significant: Biosolids, when introduced into the aquatic environment through inundation, are known to pose a toxicological threat to fish and wildlife as well acting as a direct source of trash or plastic pollution into our waterways. The IS/MND states that the Project site was used for both agricultural production and spreading of biosolids, however it does not present how the Project will clean up this waste and ensure that water quality in and around the Project site will not be affected by pharmaceutical byproducts, nor does the IS/MND assess the level of potential environmental toxicants in the soils of the Project site or assess the impacts associated with flooding of the Project site. Therefore, the Project may result in a significant impact by way of creating a point source of pollution for both toxicological/hormone mimicking compounds and plastics trash found in biosolids and the resulting effects on fish and wildlife.

Tyson Zimmerman
Ironhouse Sanitary District
November 13, 2024
Page 12

Recommendation 4: CDFW recommends the Project conduct on-site testing of soils for chemicals, including whether the site has become contaminated with Per- and Polyfluoroalkyl Substances, also known as PFAS or “forever chemicals” (<https://www.epa.gov/biosolids/and-polyfluoroalkyl-substances-pfas-biosolids>), endocrine disrupting compounds, and plastics pollution. The results of the testing efforts should then be disclosed in a revised and recirculated IS/MND and an analysis of potential impacts from the Project should these compounds be found at detectable levels. If pollution impacts are anticipated from inundation of on-site soils, then the revised and recirculated IS/MND should identify mitigation measures to clean up and remove sources of on-site pollution prior to constructing the Project.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to prepare subsequent CEQA documents or to make supplemental environmental determinations. (Pub. Resources Code, § 21003, subd. (d) & (e).) Accordingly, please report any special-status species and natural communities detected during Project surveys to the CNDDDB. The CNDDDB field survey form can be filled out and submitted online here: <https://wildlife.ca.gov/Data/CNDDDB/Submitting-Data>. The types of information reported to CNDDDB can be found here: <https://www.wildlife.ca.gov/Data/CNDDDB/Plants-and-Animals>.

CONCLUSION

CDFW finds that further analysis of impacts associated with the inundation of soils where landspreading of biosolids has occurred should be conducted and disclosed in a revised IS/MND. CDFW appreciates the opportunity to comment on the IS/MND in order to assist the ISD 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 Melissa Farinha, Environmental Program Manager, at (530) 351-4801 or Melissa.Farinha@wildlife.ca.gov.

Sincerely,

DocuSigned by:

Erin Chappell

Erin Chappell

Regional Manager
Bay Delta Region

ec: Office of Planning and Research, State Clearinghouse, Sacramento

Tyson Zimmerman
Ironhouse Sanitary District
November 13, 2024
Page 13

REFERENCES

- Brososke, 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: 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).