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Common Response 11: Terrestrial Biological Resources and Compensatory Mitigation Plan

Overview

This Common Response addresses the common themes and topics raised in public comments on Chapter 13, *Terrestrial Biological Resources*, and Appendix 3F, *Compensatory Mitigation Plan for Special-Status Species and Aquatic Resources*, of the Environmental Impact Report (EIR). These themes include the information used to describe the environmental setting, the approach to the impact analysis, the proposed mitigation measures in Chapter 13, and the contents of Appendix 3F.

Chapter 13 identifies avoidance and minimization mitigation measures to reduce potentially significant impacts on special-status species. The Compensatory Mitigation Plan (CMP), which is described in Appendix 3F and Attachment 3F.1, *Compensatory Mitigation Design Parameters*, identifies compensatory mitigation options to address potentially significant impacts on habitat for special-status plant and wildlife species (including fish) and natural communities (including wetlands and other waters or “aquatic resources”) that may result from the construction and operation of the Delta Conveyance Project (project).

Common topics raised in comments include the following.

- Natural communities, terrestrial species, and wetland resources in general: Comments raised concerns regarding impacts on vegetation, wetlands, and wildlife species.
- Baseline conditions, special-status species surveys, and habitat modeling: Comments questioned the adequacy of the description of baseline conditions for vegetation, wetlands, and wildlife; supporting survey data; and species habitat modeling.
- Wildlife corridor analysis: Comments raised concerns about the adequacy of the habitat connectivity analysis and the best management practices (BMPs), environmental commitments, and mitigation measures to reduce habitat connectivity impacts to a less-than-significant level.
- Adequacy of mitigation: Comments raised concerns about the California Environmental Quality Act (CEQA) mitigation requirements and the adequacy and suitability of the avoidance and minimization mitigation measures.
- Adequacy of the CMP: Comments questioned the efficacy of measures, timing of implementation, performance standards and monitoring, long-term assurances, calculation of mitigation needs, mitigation ratios, and level of detail required for CEQA.

Given the themes identified above, this Common Response discusses the comments on natural communities, terrestrial species, and wetland resources in general; explains the methods and approach for evaluation of impacts, including the adequacy of baseline conditions, use of habitat models and habitat acres, and species occurrence data; and discusses the adequacy of analysis and avoidance and minimization measures, including deferred mitigation, wildlife and habitat connectivity analysis and mitigation, and environmental commitments and mitigation measures. This Common Response also addresses the CMP, including its level of specificity, mitigation ratios, mitigation efficacy and adaptive management, potential land encumbrances at mitigation sites, efficacy of compensatory mitigation actions, accessibility for the giant garter snake to colonize

mitigation sites, performance standards and monitoring, long-term assurances, the timeline for implementation, and revisions to the CMP.

Please see Common Response 1, *CEQA Process, General Approach to Analysis, and Other Environmental Review Issues*, for a general discussion of the adequacy of impact analysis, mitigation measures, and cumulative analysis for the purposes of CEQA.

None of the revisions made to Chapter 13 and the CMP for the Final EIR resulted in a new significant environmental impact, resulted in a substantial increase in the severity of an environmental impact, or required additional mitigation measures to which the California Department of Water Resources (DWR) was unwilling to commit. Rather, these revisions either add specificity to or clarify components of an existing mitigation measure, provide additional mitigation for a species beyond what is required to reach a determination of a less-than-significant impact, or are located within areas that have already been identified as compensatory mitigation locations.

General Comments on Natural Communities, Terrestrial Species, and Wetland Resources

This section addresses common comments that raised general concerns, without providing evidence to support their assertions, regarding impacts on terrestrial biological resources, including natural communities, terrestrial species, and wetlands. The methods and results for the detailed analysis of potential effects on natural communities, species habitat, and wetlands are presented in Chapter 13. The tables in Appendix 13C, *Impact Tables*, present the acreages of anticipated permanent, long-term temporary, and temporary impacts on special-status plant and wildlife habitats, sensitive natural communities (including riparian habitat), and wetland and other water types. Impacts on riparian habitat are discussed in detail in Impact BIO-3: *Impacts of the Project on Valley/Foothill Riparian Habitat*, and the following mitigation measures would reduce the impact to a less-than-significant level: Mitigation Measure BIO-2a: *Avoid or Minimize Impacts on Special-Status Natural Communities and Special-Status Plants*; Mitigation Measure BIO-2b: *Avoid and Minimize Impacts on Terrestrial Biological Resources from Maintenance Activities*; and Mitigation Measure BIO-2c: *Electrical Power Line Support Placement*. Impacts on jurisdictional wetlands and other waters are described in Impact BIO-51: *Substantial Adverse Effect on State- or Federally Protected Wetlands and Other Waters through Direct Removal, Filling, Hydrological Interruption, or Other Means*, and Mitigation Measure BIO-2b would reduce the impact to a less-than-significant level. Some comments suggested, without providing supporting evidence, that the analysis did not fully address potential impacts on special-status plants. Impacts on special-status plants are discussed in Impact BIO-9: *Impacts of the Project on Special-Status Vernal Pool Plants*; Impact BIO-10: *Impacts of the Project on Special-Status Alkaline Seasonal Wetland Complex Plants*; Impact BIO-11: *Impacts of the Project on Special-Status Grassland Plants*; Impact BIO-12: *Impacts of the Project on Tidal Freshwater Emergent Wetland Plants*; and Impact BIO-13: *Impacts of the Project on Special-Status Nontidal Perennial Aquatic Plants*. Mitigation Measure BIO-2a and Mitigation Measure BIO-2b would reduce the impact to a less-than-significant level.

Some comments made general claims that the project alternatives would have impacts on natural communities, terrestrial species habitat, and biodiversity in the region but did not specify perceived deficiencies in the analysis. Terrestrial wildlife resources addressed in Chapter 13 are defined as special-status wildlife species (excluding fish, which are analyzed in Chapter 12, *Fish and Aquatic Resources*) and the habitats on which they depend, nesting migratory birds, colonies of non-special-

status roosting bats, and wildlife corridors. Some comments ask why specific species were or were not analyzed. The section titled *Methods Used to Assess Impacts on Special-Status Species* in Chapter 13 describes how potential terrestrial biological resources in the study area were evaluated. The table titled Special-Status Plant Species Considered for Analysis (in the Study Area) and the table titled Special-Status Wildlife Species Considered for Analysis (in the Study Area) in Appendix 13A, *Special-Status Species with Potential to Occur in the Study Area*, and the species accounts in Appendix 13B, *Species Accounts*, include the status, description of habitat requirements, and likelihood of occurrence for the special-status species identified as potentially present.

The CMP (Appendix 3F) would compensate for the loss of natural communities, habitats for species, and aquatic resources determined to be potentially significant.

All impacts on terrestrial biological resources would be reduced to a less-than-significant level with the CMP together with the project's environmental commitments, BMPs, and mitigation measures.

Methods and Approach for Evaluation of Impacts

This section responds to comments regarding the overall analytical approach to the evaluation of impacts on terrestrial biological resources. It discusses the baseline conditions, the use of existing information to describe baseline conditions and inform impact analyses, and the use of habitat models to evaluate impacts on special-status plant and wildlife species.

Baseline Conditions

Several comments argued that Chapter 13 failed to adequately assess, disclose, and describe baseline environmental conditions for terrestrial biological resources. These assertions are incorrect: Qualified biologists conducted extensive literature and data reviews to determine the characterization of the environmental baseline using the best available scientific data and resources (e.g., agency databases, scientific literature, land cover mapping, aerial imagery, existing reports), as described in Chapter 13, Appendix 13A, and Appendix 13B. Information regarding baseline environmental conditions for terrestrial biological resources¹ is provided in the following sections and appendices.

- Chapter 13:
 - *Land Cover Types* section
 - *Special-Status Species* section
 - *Wetlands and Other Waters of the United States* section
 - *Wildlife and Habitat Connectivity* section
 - *Methods Used to Assess Impacts on Sensitive Natural Communities* section
 - *Methods Used to Assess Impacts on Special-Status Species* section
- Appendix 13A, *Special-Status Species with Potential to Occur in the Study Area*
- Appendix 13B, *Species Accounts*

¹ Responses to comments regarding the adequacy of baseline conditions specific to the wildlife corridor analysis are provided later in this Common Response in the *Wildlife and Habitat Connectivity* section.

The baseline conditions accurately define the study area because they calculate existing land cover acreages, provide a conservative impact analysis using anticipated disturbance footprints and timing, and provide decision makers with an understanding of the types and magnitudes of direct and indirect impacts on terrestrial biological resources. The baseline conditions were also considered when developing the mitigation measures to reduce the potential significant impacts identified in Chapter 13 and when developing the BMPs for resource avoidance, as described in Appendix 3B, *Environmental Commitments and Best Management Practices*.

Chapter 13 describes the methods used for mapping the land cover types identified in the study area and provides the estimated acreage of each land cover type in the study area. The methods used to determine the land cover types provide the most accurate baseline conditions because the land cover mapping was based on recent data from databases and aerial photography; therefore, the habitat models have a high likelihood of accurately depicting current conditions and identifying the locations of sensitive natural communities. The *Environmental Setting* section in Chapter 13 describes the environmental conditions of the study area by including descriptions, locations, and extent of land cover types, sensitive natural communities, and wetland and other waters in the study area.

The *Environmental Setting* section of Chapter 13 also presents baseline environmental conditions for terrestrial biological resources. This section describes the method used to determine which special-status plant and wildlife species occur in the study area and the common wildlife species that are associated with the land cover types in the study area. Appendix 13B provides additional baseline information describing the status and distribution, habitat requirements, blooming periods, the occurrence of special-status plant species in the study area, and special-status plant species model descriptions.

Use of Habitat Models and Habitat Acres

Some comments suggested that the habitat models were not sufficient and that the impact analysis should be based on on-the-ground surveys. Because access to much of the study area is limited, comprehensive survey data could not be gathered that would sufficiently inform project impacts. In addition, the scale, long-term nature, and level of design of the project also preclude on-the-ground surveys. The development and application of habitat models is an appropriate approach for ascertaining the scope of potential terrestrial biological impacts and has been used on other large-scale infrastructure projects, such as the California High-Speed Rail Program, when survey data were also limited or lacking. The habitat models reflect the best available science and were based on known species habitat associations and habitat requirements, which were developed and used to determine where the project may result in impacts on special-status species.

Furthermore, habitat modeling used in the preparation of the EIR is considered an appropriate approach for assessing the extent of impacts in the EIR because it is based on scientific literature and supported by resource agencies. (DWR's coordination with the wildlife agencies is described in more detail later in this section). Qualified biologists worked with a geographic information system (GIS) specialist to develop the habitat models; this work included conducting extensive reviews of scientific literature to support the preparation of the model descriptions, which were used as the basis for the habitat models. (See Appendix 13B for further details on habitat model development.) For example, the habitat model for tricolored blackbird (*Agelaius tricolor*) was based on the following credible scientific literature and agency reports: Beedy et al. 2020; California Department

of Fish and Wildlife 2018; DeHaven et al. 1975; Hamilton et al. 1995; Hamilton 2004; Meese pers. comm.; Meese 2017; Neff 1937; Orians 1961; and U.S. Fish and Wildlife Service 2019.

DWR coordinated the development of the habitat models with agency input from both the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS). DWR met with CDFW staff to discuss the models for state-listed species in detail and incorporated CDFW staff input. Additionally, DWR provided model parameters and details for federally listed species to USFWS; feedback from USFWS was also incorporated into the habitat models.

Some comments claimed that the Draft EIR's habitat models made unsubstantiated assumptions or underestimate habitat. Appendix 13B clearly substantiates the accuracy of the habitat models by describing the model assumptions and the scientific literature used in their development. Identification of potential habitat for special-status species in the models was based on scientific literature review, land cover mapping data, and aerial imagery interpretation. In most cases, the modeling approach assumed that potential habitat is suitable and occupied by special-status species. By its nature, this type of model tends to overestimate suitable habitat by being as inclusive as possible in the absence of site-specific data on vegetation structure, species composition, hydrology, occurrence of or proximity to other habitat elements, and other variables that would provide more certainty with respect to habitat quality and the potential for occurrence. This comprehensive conceptual habitat modeling approach overestimates the amount of occupied habitat for species within the study area because not all potentially suitable habitat is occupied. Consequently, the modeling approach provides a conservative assessment of impacts on special-status species.

Appendix 13B acknowledges the few instances where suitable habitat for a particular species could be underestimated. The potential underestimates of habitat are generally due to not being able to map all the individual trees that could provide nesting habitat for some bird and bat species. As part of pre-construction activities, DWR will conduct habitat assessments to determine all suitable habitat that would be affected by the project and will conduct site-specific surveys to determine presence or absence of special-status species. In the unlikely event that the modeling constitutes an underestimation of potential impacts, DWR will consider whether this new information warrants additional review under CEQA.

Although Chapter 13 describes the reasons field-verification is beneficial, some comments suggested that the habitat models are not reliable because they require field surveys to field-verify their accuracy. In Chapter 13, the *Special-Status Wildlife Species* section and the figure titled Modeled Habitat in Relation to Suitable and Occupied Habitat describe the process by which, once access to properties is available, all work areas would be evaluated for the presence of suitable habitat for special-status species and occupied habitat for special-status species through habitat assessments or species surveys. The EIR includes numerous mitigation measures that require DWR to conduct species-specific, protocol-level, and focused surveys prior to construction, which will be used to verify species habitat modeling results. This is standard practice for evaluation of potential project effects in CEQA documents because protocol-level and focused surveys can take multiple seasons to complete. Furthermore, the results of surveys may only be valid for a limited time, per agency requirements (e.g., plant surveys), and thus it is appropriate to conduct the field surveys closer to construction start dates because if they are conducted too early, they may no longer be valid by the time construction begins.

Species Occurrence Data

Species occurrence data are used to enhance the suitable habitat models, but some comments claimed that the habitat models should be based on occurrence data from all available databases and that because they are not, they do not identify all potential habitat for special-status species. As described in Appendix 13B, in the section titled *Species Habitat Suitability Model*, the habitat suitability models are GIS-based models developed primarily using land cover data, species range, and suitable habitat definition. Because occurrence data are incomplete for most species in the study area, occurrence data are used to bolster the validity of the habitat models and, if necessary, revise the vegetation input data. The impact analysis in Chapter 13 includes the proximity of known special-status species occurrences in relation to the construction footprints. Occurrence data cited in Chapter 13 are typically sourced from the CDFW California Natural Diversity Database because the occurrences are verified by CDFW. However, additional datasets (e.g., Tricolored Blackbird Data Portal, iNaturalist, eBird, Western Monarch Milkweed Mapper) are used where the California Natural Diversity Database data are lacking and/or as appropriate. As described in the previous section of this Common Response, the EIR's habitat models tend to overestimate suitable habitat by including all potential land cover types that species could use based on the species' habitat requirements, which are described in Appendix 13B. However, areas that are not identified as habitat do not indicate with certainty that a species would not occur; rather, they indicate that there is a much lower probability of occurrence compared with areas identified as suitable habitat.

As described above, prior to project construction, on-the-ground habitat assessments or species surveys would be conducted in all work areas to evaluate the presence of suitable habitat and occupied habitat for special-status species, whether or not suitable habitat is identified in the habitat models. (See also the methods described in Chapter 13 under *Special-Status Species*.)

Adequacy of Analysis and Avoidance and Minimization Mitigation Measures

This section responds to statements in comments regarding the adequacy of the impact analysis and mitigation measures for terrestrial biological resources. It also responds to statements in comments regarding deferred mitigation specific to terrestrial biological resources and addresses comments on the adequacy and robustness of the wildlife and habitat connectivity analysis and mitigation.

Adequacy of Analysis and Mitigation Measures

Some comments question the adequacy and feasibility of the mitigation measures identified in Chapter 13 and Appendix 3F for impacts on terrestrial biological resources resulting from the project alternatives, including the level of detail in the mitigation measures and whether the mitigation approach satisfies legal requirements. Because the impact analysis was based on the best available science, the mitigation requirements are based on facts and data from multiple sources, including previous surveys, database searches, land cover mapping, and aerial imagery interpretation, as detailed in the preceding sections of this Common Response.

DWR, as the lead agency, must certify the Final EIR pursuant to CEQA and approve the mitigation measures described therein. Under CEQA, DWR must identify significant and unavoidable impacts, if it is infeasible to reduce impacts to less-than-significant levels through mitigation. DWR is required to prepare a mitigation monitoring and reporting program identifying the mitigation measures that

will be implemented. The timing of the mitigation measures will be identified in the mitigation monitoring and reporting program.

CEQA requires that agencies adopt feasible mitigation measures to substantially lessen or avoid otherwise significant adverse environmental impacts. CEQA Guidelines Section 15364 defines the term *feasible* to mean “capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.” Mitigation measures are not required for impacts that are found to be less than significant (Pub. Resources Code § 21081; CEQA Guidelines §§ 15002(a)(3), 15021(a)(2), 15091(a)(1)). Prior to the initiation of project construction activities, DWR will acquire permits and approvals from CDFW, which, for incidental take authorization under Section 2081 of the California Fish and Game Code, would specify the mechanisms for financial assurances to cover all mitigation costs, including land acquisition, mitigation construction, monitoring and maintenance, adaptive management, and contingency and administrative fees.

CEQA Guidelines Section 15370 states that *mitigation* includes the following: (1) “Avoiding the impact altogether by not taking a certain action or parts of an action”; (2) “Minimizing impacts by limiting the degree or magnitude of the action and its implementation”; (3) “Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment”; (4) “Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action”; or (5) “Compensating for the impact by replacing or providing substitute resources or environments, including through permanent protection of such resources in the form of conservation easements.” Where feasible, DWR would avoid implementing an action in locations where a special-status species or habitat is most likely to occur or when a special-status species is most active.

The EIR employs all five of the CEQA Guidelines mitigation approaches to reduce potentially significant impacts from the project on terrestrial biological resources. The general approach to mitigation for the project is that the EIR first identifies whether the potential environmental effects—both permanent and temporary—of each project alternative are significant and adverse. For significant adverse impacts, the EIR then considers whether mitigation measures would lessen the effects and, if so, analyzes whether the mitigation measures would reduce the impact to less-than-significant levels.

In Chapter 3, *Description of the Proposed Project and Alternatives*, Appendix 3F, Attachment 3F.1, and Chapter 13, mitigation measures are articulated, where feasible, for each significant impact on terrestrial biological resources. These mitigation measures would reduce impacts to a level of less than significant with mitigation under CEQA.

For example, Mitigation Measure BIO-2a requires surveys to document special-status plant locations in all work areas and avoidance and minimization measures in or near temporary work areas. The CMP requires both compensation for any impacts that cannot be avoided through Mitigation Measure BIO-2a and development of a restoration and monitoring plan that will include performance standards for monitoring and management of any non-mitigation-bank compensatory special-status plant habitat. For another example, Mitigation Measure BIO-30: *Avoid and Minimize Impacts on Giant Garter Snake* includes actions to avoid and minimize impacts through timing of work, excluding work within habitat, limiting work areas, and conducting preconstruction surveys. Impacts on giant garter snake (*Thamnophis gigas*) are rectified and compensated for through the restoration and protection of habitat, as described in the CMP (Appendix 3F and Attachment 3F.1). The CMP requires compensation for impacts on giant garter snake habitat and describes the general

performance standards for management of non-mitigation-bank giant garter snake habitat. The mitigation proposed in the EIR is therefore adequate and meets the requirements of CEQA.

Deferred Mitigation

Please see Common Response 1 for a discussion of why the Delta Conveyance Project does not inappropriately defer mitigation. CEQA Guidelines Section 15126.4(a)(1)(B) allows the preparation of plans, studies, or surveys as mitigation measures, as long as these measures include performance standards committed to by the lead agency that describe what the lead agency will do to minimize the effects of the project as the specifics of the mitigation measure are further developed. Specific to terrestrial biological resources, some of the comments expressed the opinion that certain mitigation measures constitute deferred mitigation because they require biological surveys to be conducted prior to the start of construction. Biological surveys for special-status species are necessary to inform mitigation based on the length of time between project approval and construction. Furthermore, as described above, surveys for some special-status species may require multiple years of surveys. The mitigation measures, which require the surveys, will be committed to if the proposed project is approved, after certification of the Final EIR and prior to an activity's impact on the environment. These surveys will confirm the scope of the impacts, which will be used to calculate the amount of required mitigation using the established ratios and performance standards in the CMP. The requirement of a preconstruction survey as part of determining the specific mitigation does not constitute deferred mitigation because the mitigation specifies the actions taken and specific amount of mitigation based on the findings of the survey (*Ocean St. Extension Neighborhood Assn. v. City of Santa Cruz* (2021) 73 Cal.App.5th 985, 1010; *Defend the Bay v. City of Irvine* (2004) 119 Cal.App.4th 1261, 1277).

For example, Mitigation Measure BIO-2a states that DWR will conduct surveys in accordance with applicable CDFW protocols or the most current protocols with respect to the number and timing of surveys. DWR will implement this measure to conduct preconstruction botanical surveys that will confirm the extent of the project's impacts on vegetation communities and special-status plants and will confirm the quantity of compensatory mitigation using the performance standards ratios described in the CMP. DWR understands that surveys over multiple growing seasons could be necessary before confirming survey results for annual special-status plant species.

Similarly, Chapter 13 includes mitigation measures that require protocol or focused surveys for special-status wildlife species, including vernal pool branchiopods (*Branchinecta lynchi* and *Branchinecta conservatio*), California red-legged frog (*Rana draytonii*), burrowing owl (*Athene cunicularia*), golden eagle (*Aquila chrysaetos*), and Swainson's hawk (*Buteo swainsoni*), once property access is granted and prior to the start of construction. Some of these surveys must be conducted a minimum of 1 year in advance of construction because of the timing of surveys or the number of surveys recommended by a protocol (e.g., vernal pool branchiopods, California red-legged frog, burrowing owl). Surveys for some species would likely begin as soon as property access is obtained to provide information for permitting and mitigation planning, which does not constitute deferred mitigation.

Wildlife and Habitat Connectivity

This section addresses concerns raised about the adequacy of the habitat connectivity analysis and the BMPs, environmental commitments, and mitigation measures that would reduce impacts to a less-than-significant level.

As described in Chapter 13 and Appendix 13E, *Terrestrial Wildlife Connectivity*, the EIR discussion of wildlife and habitat connectivity includes the following.

- A description of baseline conditions based on scientifically accepted methods.
- An analysis of impacts on existing wildlife and habitat connectivity conditions and resources sufficient for the purposes of CEQA.
- Project elements that do not have impacts on connectivity.
- Environmental commitments and mitigation measures to avoid, minimize, and compensate for project-related impacts on wildlife and habitat connectivity.

Impact Analysis and Baseline Conditions

Impact analyses on terrestrial connectivity resources are detailed in Chapter 13, under Impact BIO-53: *Interfere Substantially with the Movement of Any Native Resident or Migratory Fish or Wildlife Species or with Established Native Resident or Migratory Wildlife Corridors, or Impede the Use of Native Wildlife Nursery Sites*, and include an objective and detailed inventory of baseline conditions for existing wildlife and habitat connectivity. This baseline is described using existing terrestrial wildlife connectivity resources, documented wildlife-vehicle collision data, and a regional and local review of connectivity resources (see the Chapter 13 sections titled *Wildlife and Habitat Connectivity* and *Methods for Analysis*, and Appendix 13E). The Wildlife Crossing Guilds (WCG) approach was used to evaluate impacts (table titled Summary of Terrestrial Wildlife Crossing Guilds and Example Species Used in the Analysis). The WCG approach aims to ensure the inclusive consideration of movement needs for a wide variety of wildlife species with varying ecological needs and behaviors. This WCG approach facilitates project impacts analyses and development of environmental commitments and mitigation measures that maximize connectivity structure and function for a wide variety of species. The WCG approach also facilitates identification of minimum design standards to maintain and achieve connectivity structure and function for each WCG. This approach uses best available science, addresses the needs of various species, and has been developed by experts in the field of habitat connectivity.

Project Elements Not Affecting Connectivity

Although the project overlaps with existing terrestrial wildlife connectivity resources (as detailed in the *Wildlife and Habitat Connectivity* section of Chapter 13 and in Appendix 13E), these resources would remain connected, in large part, because many project features are below-ground or overhead. Please see Chapter 3 and the figure titled Power Lines for a description of project components that would be located below-ground or overhead. Therefore, landscape connectivity of existing terrestrial wildlife connectivity resources would be maintained within and in the region surrounding the study area.

Environmental Commitments and Mitigation Measures

A variety of environmental commitments and mitigation measures have been developed to avoid, minimize, and compensate for project-related impacts on wildlife connectivity and habitats. These environmental commitments and mitigation measures include targeting connectivity for a wide variety of species and resources, compensatory mitigation, multiple dedicated wildlife crossing structures, and other design elements and actions that would maintain and enhance wildlife connectivity and conservation.

Mitigation Measure BIO-24b: *Compensate for Impacts on California Red-Legged Frog Habitat Connectivity* and Mitigation Measure BIO-53: *Avoid and Minimize Impacts on Terrestrial Wildlife Connectivity and Movement* include proposed dedicated wildlife crossing structures that will be developed with a qualified wildlife connectivity biologist and will be located at State Route 12 (this location will remediate a CDFW wildlife connectivity barrier) and at riparian crossings, including Brushy Creek. Dedicated wildlife crossing structures will support a wide variety of species including giant garter snake, western pond turtle (*Emys marmorata*), mink (*Mustela vison*), river otter (*Lontra canadensis*), American beaver (*Castor canadensis*), California red-legged frog, and other aquatic, semi-aquatic, and terrestrial wildlife species inhabiting the area. Wildlife crossing structures will completely span suitable aquatic and riparian habitat. Wildlife crossing structures and other project-related infrastructure located near riverine habitat and riparian corridors will include the preservation and minimization of impacts on riparian vegetation and the design and installation of wildlife fencing to maximize functionality of wildlife crossings and connectivity to support wildlife movement prevent wildlife-roadway other wildlife conflicts.

Some of the other environmental commitments and mitigation measures addressing wildlife and habitat connectivity are listed here.

The following environmental commitments would address connectivity issues: EC-1: *Conduct Environmental Resources Worker Awareness Training*; EC-2: *Develop and Implement Hazardous Materials Management Plans*; EC-3: *Develop and Implement Spill Prevention, Containment, and Countermeasure Plans*; EC-4a: *Develop and Implement Erosion and Sediment Control Plans*; EC-4b: *Develop and Implement Stormwater Pollution Prevention Plans*; EC-11: *Fugitive Dust Control*; EC-12: *On-Site Concrete Batching Plants*; and EC-14: *Construction Best Management Practices for Biological Resources*. Environmental commitments can be found in Appendix 3B and in the terrestrial biological resource analyses and mitigation measures in Chapter 13.

In addition to the CMP, the following mitigation measures would address connectivity issues: AES-4b: *Minimize Fugitive Light from Portable Sources Used for Construction*; AES-4c: *Install Visual Barriers along Access Routes, Where Necessary, to Prevent Light Spill from Truck Headlights toward Residences*; BIO-2b: *Avoid and Minimize Impacts on Terrestrial Biological Resources from Maintenance Activities*; BIO-22b: *Avoid and Minimize Operational Traffic Impacts on Wildlife*; BIO-24a: *Avoid and Minimize Impacts on California Red-Legged Frog and Critical Habitat*; BIO-24b: *Compensate for Impacts on California Red-Legged Frog Habitat Connectivity*; and BIO-53: *Avoid and Minimize Impacts on Terrestrial Wildlife Connectivity and Movement*.

Additionally, edits have been made to Mitigation Measure BIO-53 that further clarify the wildlife crossing and connectivity specialist credentials and how the specialist will contribute to the project design phase to ensure adequate wildlife crossing and connectivity element design and outcomes. In addition, the mitigation measure has been revised to include more detailed wildlife connectivity enhancement measures to reduce impacts on listed amphibians (e.g., California tiger salamander [*Ambystoma californiense*]) such as amphibian-friendly roads and curbs.

Also, please see Mitigation Measure BIO-53 for added language incorporating operational monitoring and adaptive management for connectivity and crossings. These modifications provide additional detail to Mitigation Measure BIO-53 but, as described in the *Overview* section of this Common Response, they do not result in a change to an impact determination.

Accessibility for Species to Colonize Compensatory Mitigation Sites

For information on species' ability to colonize mitigation sites, please see the discussion on mitigation efficacy and adaptive management in the *Compensatory Mitigation Plan* section of this Common Response.

Compensatory Mitigation Plan

The purpose of the CMP (Appendix 3F) is to identify compensatory mitigation options that would address impacts on habitat for special-status plant, wildlife species (including fish), and natural communities (including wetlands and other waters or "aquatic resources") that may result from the construction and operation of the project. This section addresses concerns raised in comments about the CMP, such as its level of specificity, the need for mitigation ratios, and efficacy of mitigation measures and adaptive management.

This section also describes revisions that were made to the CMP. The revisions described here were made in coordination with CDFW and USFWS through other regulatory processes. The revisions made add specificity to the CMP, making it more robust, but they do not result in a change to impact determinations throughout the EIR or require additional mitigation measures that DWR is unwilling to commit to. The revisions and explanations of why they do not change impact determinations are described in this Common Response in the section titled *Revisions to the Compensatory Mitigation Plan*.

Level of Specificity

Some comments conveyed concern that the CMP does not provide the necessary level of specificity in regard to the level of analysis, location, and design of tidal habitat and channel margin mitigation sites. In regard to the level of analysis, please see the discussion in Common Response 1 about project-level versus program-level analysis. The mitigation approaches are described in sufficient detail to meet the requirements of CEQA, the National Environmental Policy Act, and other laws, and these actions would reduce significant impacts to a less-than-significant level. However, because specific data, such as location or design, are not yet available for tidal habitat and channel margin habitat mitigation measures, the degree of specificity of the analysis for those CMP measures necessarily reflects the available information. Prior to mitigation measure implementation, DWR, as the CEQA lead agency, would assess whether there is additional information on the record at that later time to warrant additional CEQA compliance for implementing the specific CMP mitigation actions. This could include, for example, impact analysis for plant species included in the EIR that potentially overlap with tidal habitat or channel margin habitat but not with the project footprint and hence were not analyzed because there would be no impacts from project construction.

Regarding the locations of tidal mitigation sites, DWR acknowledges the exact location for tidal habitat restoration mitigation has not been determined at this time but generally is planned to occur in the North Delta Arc, a recognized priority area for tidal habitat restoration to benefit native fishes. This area is also within the elevation bands suitable for restoration areas, as recommended by the *Delta Plan* ER P2: Restore Habitats at Appropriate Elevations (23 Cal. Code Regs. § 5006). Because the specific locations of channel margin habitat that could be adversely affected remain to be determined, the CMP (Appendix 3F) figure titled Bouldin Island Conceptual Design has been revised, and areas that had been previously identified as potential sites for channel margin habitat along Bouldin Island have been removed from the figure.

Regarding the level of design detail, please see the Appendix 3F sections titled *Bouldin Island Mitigation Sites* and *DWR I-5 Ponds* for information about the designs, including performance standards, for the initial mitigation sites; also see Attachment 3F.1 for additional habitat design guidelines. It is anticipated that additional design and management planning, including site-specific technical studies, monitoring methods, and adaptive management actions, may be needed prior to mitigation measure implementation. However, the level of design and estimated habitat compensation is adequate to reduce the identified impacts in Chapter 13 to a less-than-significant level.

Mitigation Ratios

Some comments expressed concern that the CMP did not provide mitigation ratios or did not make clear the amount of mitigation for certain species and their habitat types. Since the publication of the Draft EIR, mitigation ratios have been developed to compensate for impacts on aquatic resources and habitat for species listed under the Endangered Species Act or the California Endangered Species Act through further consultation with CDFW and USFWS. The Appendix 3F table titled Compensatory Mitigation Approaches has been revised to show mitigation ratios for permanent loss of aquatic resources and certain species habitats. The final compensatory habitat mitigation needs for the project will be determined once all regulatory permits and approvals are secured.

A concern that the amount of mitigation was not sufficient was articulated in other comments. For example, some comments recommended that ratios of 3:1 or 5:1 should be used. However, the applied mitigation ratios, which range from 1:1 to 3:1 depending on species and aquatic resources, have been developed in coordination with CDFW, USFWS, and other agencies through other regulatory processes. The CMP has been updated to include a commitment to design, manage, and maintain mitigation sites to provide habitat requirements for a variety of wildlife species. The mitigation ratios proposed are typical of those used to compensate for impacts on the terrestrial biological resources analyzed and are sufficient to meet the needs of CEQA.

Mitigation Efficacy and Adaptive Management

Some comments voiced various concerns about the feasibility and efficacy of the proposed mitigation actions, as described in the following sections.

Potential Land Encumbrances at Mitigation Sites

The suitability and feasibility of potential mitigation actions at the initial mitigation sites (Bouldin Island and the I-5 ponds) due to other commitments and encumbrances were questioned in other comments. DWR considered existing land uses and protections, queried databases for existing easements to determine that the Bouldin Island and the I-5 pond sites are in alignment with CDFW's mitigation policy (California Department of Fish and Game 2012), and confirmed that information on the record indicates there are no future uses, including recorded easements, that pose an encumbrance for use as mitigation.

Regarding the I-5 ponds, portions of the parcels are designated as the White Slough Wildlife Area, a State Conservation Area. DWR and CDFW have an interagency agreement for CDFW to manage the I-5 ponds while DWR retains ownership. This agreement states that DWR can use the management area for the purposes of mitigation required for future projects, including the recordation of associated conservation easements.

Regarding Bouldin Island, which is owned by the Metropolitan Water District of Southern California, concerns were raised about potential conflicts with other land use concepts considered through the Delta Island Adaptations Program. While the scenarios from the Delta Island Adaptations planning do not address the proposed mitigation sites, the scenario findings are compatible with the compensatory mitigation proposed at specific sites on Bouldin Island, and they do not result in a commitment of funding for the acquisition, encumbrance, or management of the property. DWR will continue to coordinate with the Metropolitan Water District of Southern California to ensure that planning activities are actively coordinated.

Efficacy of Compensatory Mitigation Actions

Some comments raised concerns regarding the efficacy and uncertainties of compensatory mitigation actions, which include habitat creation at specific sites, mitigation bank credits, and site protection instruments. The CMP was developed based on substantial evidence, including species recovery plans and aquatic resources mitigation guidelines, as well as on the professional expertise of restoration practitioners and biologists and input from the wildlife resource agencies. As described in Appendix 3F in the section titled *Site Selection Criteria and Baseline Conditions*, the initial mitigation sites at Bouldin Island and the I-5 ponds were selected because their conditions are suitable for successful establishment of aquatic resources and species habitat. The design guidelines for developing mitigation for special-status species, which are described in Appendix 3F in the section titled *Approach to Special-Status Species Mitigation* and in Attachment 3F.1, were based on habitat requirements for special-status plants and wildlife as described in Chapter 13 and on species accounts in Appendix 13B.

Regarding uncertainties in performance and outcomes, all mitigation measures will be implemented according to a mitigation monitoring and reporting program to reduce significant impacts on terrestrial resources to less-than-significant levels, as described in the EIR. Please refer to the Appendix 3F section titled *Adaptive Management* regarding development of a site-specific monitoring and adaptive management plan for each compensatory mitigation site to track progress toward performance standards and to trigger remedial actions if needed to achieve mitigation goals. Please also refer Common Response 1 regarding the level of detail of the CMP and future development and implementation of portions of this plan.

Regarding concerns about the availability of conservation credits, please refer to Appendix 3F for a discussion of mitigation credits and site protection instruments and the feasibility of mitigation bank credits. DWR evaluated credit needs for targeted species and determined that those needs could be met through the mitigation banking market.

Accessibility for Giant Garter Snake to Colonize Initial Mitigation Sites

Concerns regarding accessibility to allow colonization of the I-5 ponds by giant garter snakes were mentioned in some comments. As described in Appendix 3F in the subsection *Site Selection Criteria* found in the section titled *DWR I-5 Ponds*, the I-5 ponds were selected because of their location within the White Slough Management Unit of the Delta Basin Recovery Unit. The EIR was updated with information about hydrologic connectivity and observations of giant garter snakes in the White Slough region (Caldoni Marsh, Shin Kee Tract Wetlands) near the I-5 ponds. The following characteristics of the I-5 ponds lead to the conclusion that recolonization of the ponds could occur without intervention: the presence of known populations just south of the sites; the proximity to Woodbridge Ecological Reserve, which is less than 2 miles to the north; and the direct hydrologic

connection each pond has to these areas (Pond 6 via White Slough and Ponds 7 and 8 via Hog Slough and an agricultural ditch).

In addition, as described in the *Wildlife and Habitat Connectivity* section of this Common Response, compensatory mitigation at Ponds 7 and 8 will also include Mitigation Measure BIO-53: *Avoid and Minimize Impacts on Terrestrial Wildlife Connectivity and Movement*, which supports hydrologic connectivity for giant garter snake by upgrading the existing culvert on State Route 12 to a dedicated crossing structure to facilitate giant garter snake movement.

Performance Standards and Monitoring

Several comments raised concerns about performance standards and the specificity of effectiveness monitoring. Monitoring and evaluation are described in Appendix 3F in the section titled *Performance Standards and Monitoring*, and the level of detail needed to meet the requirements of CEQA is described in the *Introduction* section of Appendix 3F and in Common Response 1. Species-specific design commitments and guidelines are described in the table titled Design Commitments and Guidelines for Compensatory Mitigation to Compensate for Loss of Special-Status Species Habitat in Attachment 3F.1. The species habitat design criteria and metrics are consistent with the guidance and discussions with CDFW and USFWS through other regulatory processes. The monitoring indicators are consistent with guidance from U.S. Army Corps of Engineers for compensatory mitigation of aquatic resources.

Some comments recommended species occupancy as a performance standard. Please refer to the Appendix 3F section titled *Performance Standards* regarding the consideration of occupancy as a monitoring metric. The objective of the mitigation sites is to establish suitable habitat within a reasonable dispersal or movement distance for targeted species to access the mitigation site once constructed. The selection and design of sites considers criteria and habitat requirements, as provided in Attachment 3F.1.

Site-specific maintenance, monitoring, and adaptive management plans would be developed and submitted to the relevant wildlife agency for review and approval after acquisition of compensatory lands but before creation, enhancement, or management activities are begun. Once the plans have been accepted and the site has been constructed, monitoring would take place and annual results would be compared against the performance standards. As described in the Appendix 3F section titled *Monitoring*, protected and created compensatory mitigation sites would be monitored every year for 5 years after initial acquisition/creation and thereafter, for most species, every 5 years. Where monitoring results do not meet the performance standards, the adaptive management plan would be implemented.

Long-Term Assurances

Some comments expressed concern about financial commitments to long-term monitoring, management, and protection of compensatory mitigation sites. DWR's commitment to provide funding for construction, monitoring, and management of compensatory mitigation sites is described in Appendix 3F in the section titled *Assurances*. As described in the section titled *Adequacy of Analysis and Mitigation Measures* of this Common Response, prior to the initiation of project construction activities, DWR will acquire permits and approvals from CDFW, which would specify the mechanisms for financial assurances specific to incidental take authorization under Section 2081 of the California Fish and Game Code. DWR's commitment includes the initial 5-year

establishment period and all activities associated with ongoing maintenance and long-term management, as described in Appendix 3F in the section titled *Monitoring*. All lands restored for compensation will be protected in perpetuity and with appropriate conservation easements.

Timeline for Implementation

Some comments requested more information about the timing and sequence of compensatory mitigation. The detailed restoration design work and management planning, which will include detailed performance standards, monitoring methods, and adaptive management actions, will occur between the project permitting phase and project completion. Other mitigation actions, including bank credit purchases and habitat protection, will also occur between the permitting phase and project completion. To inform the mitigation planning process between permit issuance and mitigation land construction or preservation, DWR will prepare Draft and Final Habitat Mitigation Plans for affected species and wetlands. The CMP has been revised to clarify that compensatory mitigation would be secured in phases in accordance with the progress of construction. Compensatory mitigation (i.e., protection, creation, enhancement) will stay ahead of the cumulative, permanent suitable habitat loss by 10%. If the 10% stay-ahead requirement cannot be met and habitat is protected or restored after the impact occurs, the mitigation amount will be increased by 5% for every year protection is delayed in order to offset the temporal loss of habitat.

Revisions to the Compensatory Mitigation Plan

This section describes the revisions that have been made to the CMP and associated resource-related modifications. As discussed previously, these revisions do not result in a change to any impact conclusions or require additional mitigation measures that DWR is unwilling to commit to. For terrestrial biological resources, no changes to an CEQA impact determination or mitigation measure are necessary because the CMP revisions either add specificity to an existing measure, provide additional mitigation for a species beyond what is required to reach a determination of a less-than-significant impact, or are located within areas that have already been identified as compensatory mitigation locations, as described in the *Biological Resources* section of this Common Response. DWR has committed to implementing all measures within the revised CMP if the proposed project is approved. For other resources, CMP revisions cause minimal change to a resource, do not affect a resource, or lessen the impact on a resource, as described in the *Other Resources* section of this Common Response.

Biological Resources

To ensure there would be no net loss in habitat value for special-status species, Measure CMP-0: *General Design Guidelines* in Attachment 3F.1 has been updated to provide more detail about DWR's commitment to compensate for habitat impacts that could occur as a result of the CMP.

Compensation design guidelines specific to a new species, Crotch bumble bee (*Bombus crotchii*), has been added to the CMP through consultation with CDFW during project permitting discussions because the species is now a candidate species for listing under the California Endangered Species Act (but was not as of the publication of the Draft EIR). This detail was included as CMP-29: *Crotch Bumble Bee Habitat*, which was added to Attachment 3F.1. The revision to the CMP does not result in a change to the impact determination of less than significant with mitigation for Crotch bumble bee in Chapter 13; rather, the revision further clarifies how grassland mitigation would support Crotch bumble bee to compensate for potential impacts on the species and its habitat.

Revisions were made to the CMP (Appendix 3F) and to the design commitments and guidelines (Attachment 3F.1) for California tiger salamander, tricolored blackbird, and Swainson's hawk. For California tiger salamander, CMP-13: *California Tiger Salamander Habitat* was modified to require that this mitigation habitat be located adjacent or connected to occupied upland or aquatic habitat. For tricolored blackbird, compensation for impacts on breeding season foraging habitat was added at a ratio of 1:1. Compensation for breeding season foraging habitat would consist of the creation or enhancement of grassland, vernal pool complex, alkaline seasonal wetland, or suitable cultivated lands or the implementation of a site protection instrument. CMP-22a: *Tricolored Blackbird Nesting Habitat* has been revised to define high and very high-quality breeding season foraging habitat. For Swainson's hawk, CMP-19: *Swainson's Hawk Nesting and Foraging Habitat* has been modified to revise the land cover and crop types included in the very high, high, and moderate categories of foraging habitat value types. These revisions to the CMP were made in consultation with CDFW through other regulatory processes and do not result in a change to the impact determination of less than significant with mitigation for California tiger salamander, tricolored blackbird, or Swainson's hawk.

As described above, the CMP has also been updated (in the Appendix 3F table titled Compensatory Mitigation Approaches) to include the applied mitigation ratios that have been developed in consultation with CDFW and USFWS through the project permitting process. Additional language has also been added to the CMP to describe in more detail the sequence and timing of mitigation implementation. Language has also been added to the CMP to describe the commitment by DWR to ensure that compensation lands are managed to provide habitat for multiple species (e.g., grassland would be managed for species that require varying vegetation heights).

In addition, in the Appendix 3F section titled *Initial Mitigation Sites*, the tables comparing existing land cover with created or enhanced habitat have been revised to provide more detail, clarifying the conversions of existing land cover to created, enhanced, or unchanged habitat. Provision of these details in the CMP does not change the conclusion of the impact analysis, which already accounted for these conversions.

Other Resources

The Final EIR resource chapters have been updated to reflect the revisions to the CMP described in previous sections of this Common Response. Revisions have been made to resource chapters where appropriate under the subheading *Compensatory Mitigation* in the section titled *Mitigation Impacts*. The CMP revisions in the Final EIR that could affect other nonbiological resources are related to the removal of channel margin habitat restoration and associated construction activities at Bouldin Island, including no construction of a setback levee, and minor changes in restoration acreages. Impacts on environmental resources such as agricultural resources, air quality and greenhouse gases, and land use, as well as effects on socioeconomics, which are based on an analysis of acreage changes or a disturbance of acres, are not affected by the minor acreage changes in the CMP. This is because in many cases the acreages are reduced or the activities previously proposed as part of the CMP are reduced (e.g., eliminating construction of the setback levee). Impacts related to flood protection would also be unaffected because flood protection would be the same, either with or without the setback levee. As a result of eliminating some of the proposed construction activities (e.g., channel margin habitat restoration and constructing a setback levee), impacts on resources such as water quality, soils, geology, minerals, cultural resources, public services and utilities, hazards and hazardous materials, and paleontological resources, which are primarily related to ground disturbance during construction, would generally be lessened compared to what was

described in the Draft EIR. Impacts on many resources, including flood protection, groundwater, recreation, aesthetics, fish and aquatic resources, public health, noise, energy, and transportation, are unaffected by the CMP revisions because the acreage changes are too minor to affect the analyses provided in the Draft EIR, the changes in ground disturbance do not affect the resource, or similar types of construction activities would still be required compared to what was evaluated in the Draft EIR. Any mitigation measure included in the Draft EIR related to the CMP would remain applicable with the revisions to the CMP (e.g., Impact WQ-6: Effects on Mercury Resulting from Facility Operations and Maintenance, Mitigation Measure WQ-6: *Develop and Implement a Mercury Management and Monitoring Plan*). Therefore, the CMP revisions made throughout the EIR do not result in a change to CEQA impact determinations or result in an increase in severity of CEQA impact determinations.

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1 **Personal Communications**

- 2 Meese, Robert. Biologist, PhD. Tricolored Blackbird Portal, U.C. Davis, Davis, CA. August 19, 2020—
3 Email providing tricolored blackbird colony data from the Tricolored Blackbird Portal for the
4 counties that overlap with the DCP study area in response to Rachel Gardiner’s data request.