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Submitted electronically to: PachecoExpansion@valleywater.org; TSexauer@valleywater.org

Re: Comments on Pacheco Reservoir Expansion Project Draft Environmental Impact Report (SCH # 2017082020)

Dear Mr. Sexauer:

Thank you for the opportunity to comment on the Draft Environmental Impact Report (“DEIR”) for the Pacheco Reservoir Expansion Project (“Project” or “PREP”). The following comments are submitted on behalf of the California Native Plant Society (“CNPS”), the California Oaks Program of the California Wildlife Foundation, California Sportfishing Protection Alliance, CalWild, Center for Biological Diversity (the “Center”), Friends of the River (“FOR”), Save California Salmon, Sierra Club California, South Yuba River Citizens League, and Water Climate Trust. After reviewing the DEIR, these organizations are concerned that the DEIR fails to provide for a range of feasible alternatives and adequately analyze and mitigate impacts related to wildlife connectivity, plant and animal species, oaks and oak woodlands, vegetation communities, greenhouse gas emissions, and wildfire. The organizations’ concerns are detailed below.

I. The Alternatives Analysis in the DEIR is Inadequate and Fails to Comply with CEQA.

CEQA mandates that significant environmental damage be avoided or substantially lessened where feasible. (Pub. Res. Code § 21002; Guidelines §§ 15002(a)(3), 15021(a)(2), 15126(d).) Moreover, although “an EIR need not consider every conceivable alternative to a project ... it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation.” (Guidelines § 15126.6(a).) The “key to the selection of the range of alternatives is to identify alternatives that meet most of the project’s objectives but have a reduced level of environmental impacts.” (*Watsonville Pilots Assn. v. City of Watsonville* (2010) 183 Cal. App. 4th 1059, 1089.) Furthermore, under CEQA,

“the public agency bears the burden of affirmatively demonstrating that, notwithstanding a project's impact on the environment, the agency's approval of the proposed project followed meaningful consideration of alternatives and mitigation measures.” (*Mountain Lion Foundation v. Fish & Game Com.* (1997), 16 Cal. 4th 105, 134.) Accordingly, a rigorous analysis of reasonable alternatives to the Project must be provided to comply with this strict mandate. Unfortunately, the DEIR fails to meet this requirement by putting forth alternatives that are infeasible, either technically or legally. Therefore, the DEIR fails to include a reasonable range of alternatives, in violation of CEQA.

A. The Proposed Project and Alternative C Are Technologically Infeasible.

The DEIR's alternatives analysis is inadequate and misleading because both the Proposed Project and Alternative C call for the construction of a hardfill dam, which is technologically infeasible. CEQA requires the examination of alternatives that are “potentially feasible.” (14 Cal. Code Regs. [“CEQA Guidelines”] § 15126.6(a).) An alternative is feasible when it is “capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and *technological factors*.” (CEQA Guidelines § 15364; Pub. Res. Code § 21061.1 [emphasis added].) The Department of Water Resources Division of Safety of Dams (“DSOD”) reviewed the Project's design concepts for a hardfill dam, what would be the largest hardfill dam in the United States, and declined to approve the Valley Water's concept. (See November 1, 2021 DSOD letter to Valley Water [Exhibit 1].) In rejecting the hardfill concept, DSOD noted the most critical problem as “the potential degradation of hardfill over time in the presence of water.” (Exhibit 1 at 1.) DSOD additionally found the concept flawed because of “the lack of well-documented case histories, cohesive design standards, and independent research regarding hardfill dams and their long-term performance poses unacceptable risks for public safety.” (*Id.*) There is no indication in DSOD's findings that a hardfill dam of the sizes considered by the DEIR could gain DSOD's approval. Therefore, the Proposed Project and Alternative C are technologically infeasible, and their inclusion in the DEIR is improper.

Valley Water was made aware of the infeasibility of the hardfill dam proposal before the DEIR was released for public review on November 17, 2021. (See Exhibit 1 [DSOD staff expressed their concerns with Valley Water during an October 27, 2021, meeting].) However, Valley water did not change the DEIR, or make note of the infeasibility of the hardfill dam design, claiming that the DEIR “was already completed and in the approval process[.]” (See November 19, 2021, Valley Water response to DSOD [Exhibit 2].) However immense the logistical efforts involved in producing a document as voluminous as this DEIR may be, a lead agency's arbitrary timeline does not override CEQA's requirement that an EIR disclose project impacts and clearly present alternatives that might lessen those impacts. This serves as the central goal of public disclosure. The DEIR should be recirculated with an accurate presentation of technologically feasible alternatives, in compliance with CEQA.

B. The Proposed Project and Project Alternative A Are Legally Infeasible Because They Conflict with Henry Coe State Park.

The Project has changed in at least one significant way since Valley Water sought and received a maximum conditional eligibility determination from the California Water Commission's Water Supply Investment Program in 2017/2018. As described in the DEIR, the proposed reservoir and Alternative A would occupy nearly a mile of the North Fork of Pacheco Creek Canyon within Henry Coe State Park.¹ Such occupation is illegal, and permits cannot be lawfully obtained. This renders both the proposed project and Alternative A infeasible under the California Environmental Quality Act (CEQA).²

It is the understanding of the NGO Coalition that the dam site for the proposed project and Alternatives A and B was selected to avoid more difficult and expensive-to-mitigate foundation conditions found at the downstream 2017 Initial Study dam site³ while, for the proposed and Alternative A reservoirs, maintaining the same impoundment volume as was stored behind the 2017/18 dam sites now embodied in Alternatives C and D. Alternative B avoids putting the reservoir in Henry Coe State Park, but at the cost of a 31 percent reduction in reservoir volume from the other alternatives.

Sections 5001–5873 of California Public Resources Code (“PRC”) address the California State Park System. The PRC describes the nature of Park units in the State Park System:

PRC §5019.53. State parks consist of relatively spacious areas of outstanding scenic or natural character, oftentimes also containing significant historical, archaeological, ecological, geological, or other similar values. The purpose of state parks shall be to preserve outstanding natural, scenic, and cultural values, indigenous aquatic and terrestrial fauna and flora, and the most significant examples of ecological regions of California, such as the Sierra Nevada, northeast volcanic, great valley, coastal strip, Klamath-Siskiyou Mountains, southwest mountains and valleys, redwoods, foothills and low coastal mountains, and desert and desert mountains.⁴

Henry Coe State Park is located in California's foothills and low coastal mountains and is a significant example of the Coast Range, listed by the California Geologic Survey as one of California's eleven Geomorphic provinces. At 87,000 acres, this Park is a significant part of the southern Coast Range, where large expanses of public lands are comparatively rare. The northeastern portion of Henry Coe State Park, consistent with PRC section 5019.68, includes California's second largest state wilderness area. The Park describes itself as “an area that protects and preserves 87,000 acres of scenic hills and mountain ridges in the Diablo Mountain

¹ DEIR, p. 3.13-13. An estimate of 0.9 miles of incursion up the North Fork of Pacheco Creek was derived using Google Earth Pro.

² The California Environmental Quality Act (“CEQA”) requires that a DEIR consider a reasonable range of alternatives. Cal. Pub. Res. Code §§ 21002, 21061, 21100; tit. 14, Cal. Code Regs. (“CEQA Guidelines”) § 15126.6.

³ Valley Water's reasons for moving the reservoir location upstream are reported in more detail in The Mercury News Article, “Price tag nearly doubles to \$2.5 billion for huge new dam project in Santa Clara County,” by Paul Rogers, 6 January 2021. Available online: <https://www.friendsoftheriver.org/wp-content/uploads/2022/02/2020-1-6-Price-tag-nearly-doubles-for-Pacheco-Dam-Merc-News.pdf>.

⁴ See Cal. Pub. Res. Code §§ 5019.50–5019.80.

Range. This largely undeveloped park welcomes backpackers, equestrians, mountain bikers, day-hikers, and anyone seeking solitude in a nearly untouched setting.”⁵

The PRC also provides some statutory management direction for State Parks, noting that “[...]each state park shall be managed as a composite whole in order to restore, protect, and maintain its *native environmental complexes* to the extent compatible with the primary purpose for which the park was established.”⁶

The proposed new Pacheco Reservoir is not consistent with the plain text reading of the PRC management direction for State Parks. The proposed reservoir level would fluctuate according to seasonal and inter-annual demand, operations, and availability of water. It is not proposed to mimic a natural lake with a stable and full-pool water elevation. In these circumstances, the upper ends and sides of reservoirs experience “bathtub rings” barren of permanent vegetation. When exposed, the barren areas may be bare or may be ephemerally colonized by ruderal (weedy) and predominately non-native vegetation much in conflict with the “native environmental complexes” that the Department of Parks and Recreation is to “restore, protect, and maintain.”

For instance, this drone view of San Luis Reservoir and Romero Overlook Visitors Center shows an example of barren “bathtub rings” that form at man-made reservoirs:



*Figure 1: San Luis Reservoir from Romero Overlook Visitors Center.
Credit to the California Department of Water Resources, 2021.*

Additionally, the proposed project and Alternative A do not meet the threshold for allowed modifications to State Parks. Any developments (“improvements”) proposed to be made in State Park units must fit through a narrow lens, a lens too narrow for a new reservoir to fit through.

⁵ See Henry Coe State Park website, last accessed 8 February 2022, https://www.parks.ca.gov/?page_id=561.

⁶ PRC § 5019.53 (emphasis added).

Improvements undertaken within state parks shall be for the purpose of making the areas available for public enjoyment and education in a manner *consistent* with the preservation of natural, scenic, cultural, and ecological values for present and future generations. Improvements may be undertaken to provide for recreational activities including, but not limited to, camping, picnicking, sightseeing, nature study, hiking, and horseback riding, *so long as those improvements involve no major modification of lands, forests, or waters.* Improvements that do not directly enhance the public’s enjoyment of the natural, scenic, cultural, or ecological values of the resource, which are attractions in themselves, or which are otherwise available to the public within a reasonable distance outside the park, *shall not be undertaken within state parks.*⁷

Nothing in the DEIR Primary Objectives (water supply and altering downstream Pacheco Creek steelhead conditions) or the Secondary Objectives (improving water quality for water users, increasing operational flexibility for San Luis Reservoir contractors, developing refuge water supplies, and supporting habitat in the Delta watershed) meet the purposes for “improvements” as specified in the PRC. Instead, the “improvements” involve a “major modification of lands, forests, or waters” of approximately 4,750 feet of the North Fork Pacheco Creek Canyon within Henry Coe State Park for the benefit of the project proponents as described in the Objectives for the PREP.⁸ Therefore, the proposed project and Alternative A do not meet the objectives prescribed by the legislature for state parks, and PRC section 5019.53 expressly forbids park “improvements” contemplated in the proposed project and Alternative A.

“Facilities” such as the proposed reservoir within Henry Coe State Park are also in conflict with another section of the PRC, stating that “[n]o new facility may be developed in any unit of the state park system unless it is compatible with the classification of the unit.”⁹

Henry Coe State Park is classified as a state park. As noted above, “... The purpose of state parks shall be to preserve outstanding natural, scenic, and cultural values, indigenous aquatic and terrestrial fauna and flora, and the most significant examples of ecological regions of California ...”¹⁰ The purpose of state parks is *not* to warehouse lands to be made available in the future for reservoirs to be built by and for the benefit of a nearby water district. Such facilities are in conflict with the actual purposes of state parks, and are thus prohibited.

The DEIR discusses its obligations to highlight “Areas of Known Controversy.” The DEIR combines a discussion of its general disclosure obligations and the results of its investigations for the PREP “Areas of Known Controversy,” stating the following:

CEQA Guidelines Section 15123 states that an EIR must identify areas of known controversy that might have been raised by other agencies, the public, and/or other stakeholders. Areas of communicated controversy related to the EIR identified in the EIR scoping process include, but are not limited to, the following:

⁷ PRC § 5019.53(emphasis added).

⁸ PREP DEIR, p. 3.13-13.

⁹ PRC § 5001.9(b).

¹⁰ PRC § 5019.53.

- Impacts to sensitive natural communities, special status plants and wildlife and their habitats, and appropriate mitigation measures
- Consistency of the Project with the Santa Clara Valley Habitat Plan
- Contribution of the Project to growth inducement
- Types and requirements of permits and approvals required for Project implementation
- Range of alternatives to be evaluated in the Draft EIR, including the No Project Alternative.¹¹

The proposed unlawful occupation of Henry Coe State Park is not clearly included in this list of “Areas of Known Controversy.”

Additionally, the DEIR does not clearly address the illegal status of constructing a reservoir facility included in the list of “Issues to be Resolved.” Instead, the DEIR states the following:

CEQA Guidelines Section 15123 calls for the lead agency to disclose issues to be resolved—including the choice among alternatives and whether or how to mitigate significant effects. Issues to be resolved related to the Proposed Project or Draft EIR include, but are not limited to, the following:

- Securing access to private lands to enable completion of biological and cultural resource field investigations for portions of the Project Area
- Level of participation in the Proposed Project by San Benito County Water District
- Identification of the electrical power provider and operator of power facilities
- Selection of lands and activities for compensatory mitigation related to botanical/natural community and terrestrial resource mitigation measures.¹²

The Land Use section of the PREP DEIR is more candid concerning the state park implications for the proposed project and Alternative A, stating “[t]his impact to Henry W. Coe State Park is inconsistent with the purpose of state park lands as identified in Section 5001.9(b) of the PRC — ‘no new facilities unless compatible,’ and the Henry W. Coe General Plan — ‘in an essentially natural condition.’”¹³ The DEIR even admits the impact to the Park would be significant.¹⁴

In its consolidated tabular display of project impacts on Land Use, the DEIR concludes that all of the action alternatives have significant and unmitigable effects on Land Use for a number of reasons summarized in the Table ES-6 excerpt below:

¹¹ PREP DEIR p. ES-41.

¹² PREP DEIR p. ES-41.

¹³ PREP DEIR p. 3.13-13.

¹⁴ PREP DEIR p. 3.13-13.

“Impact LU-2: Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.”¹⁵

Furthermore, Table ES-6 states that no mitigation measures have been identified for any of the action alternatives.¹⁶

In its Land Use conflict discussion, the DEIR presumably lumps the “inconsisten[cy]” of the proposed project and Alternative A with the PRC and the Henry Coe State Park General Plan with the conflicts that all of the action alternatives have with land use plans:

There is no feasible mitigation available that would reduce conflicts with land use plans or zoning caused by inundation or other Project-related permanent support facilities. This impact would be significant and unavoidable. Implementation of compensatory wildlife habitat mitigation (e.g., BI-1d, BI-3c), as described in Section 3.5.3 is intended to protect and restore lands, including those that may be zoned as ranchlands but would not off-set the conflicts with land use plans or zoning caused by inundation or other Project-related permanent support facilities.¹⁷

This preceding DEIR discussion also concludes that there is no feasible mitigation for these Land Use conflicts identified in Table ES-6. The DEIR states that the Santa Clara Valley Water District intends to adopt a statement of overriding considerations to allow it to proceed in conflict with adopted land use plans.¹⁸ It may or may not have this power with some plans, but it is subject, at minimum, to the PRC, which the DEIR appears to conclude is in conflict with the PREP. Project proponents cannot meaningfully override their obligations under the PRC and the consequences of the state’s ownership and management of state parks and lands.¹⁹

Project Alternatives B, C, and D avoid and thus mitigate the reservoir-inundation conflict of the proposed project and Alternative A with the PRC and Henry Coe State Park General Plan. However, the DEIR is not clear why alternatives B, C, and D remain in “conflict” with “land use plans or zoning.”²⁰ The DEIR is also not clear whether the Santa Clara Valley Water District regards Alternatives B, C, and D to be feasible in spite of their Land Use conflicts. These alternatives embody the land-use-plan mitigation that should have altered the state-park-inundation alternatives, yet the DEIR says that there is “no feasible mitigation available” for Alternatives B, C, or D — or any of the alternatives.

¹⁵ PREP DEIR, Table ES-6, p. ES-58. The table shows that all the action alternatives have varying degrees of unmitigable significant impacts.

¹⁶ PREP DEIR, Column 3, Mitigation Measures, Table ES-6, p. ES-58.

¹⁷ PREP DEIR pp 3.13-14 & 1.13-15.

¹⁸ PREP DEIR pp. 1-3 and 4-3.

¹⁹ A portion of some or all of the PREP reservoirs occupy the state Cottonwood Creek Wildlife Area. It is unclear if the DEIR includes this ownership as being in Land Use conflict with the project. The DEIR Land Use conflict discussion does not discuss whether or how the wildlife area is in conflict with the PREP — neither does it discuss whether this state-owned land is subject to condemnation by the Santa Clara Valley Water District, a political subdivision of the state of California.

²⁰ PREP DEIR pp 3.13-14 & 1.13-15.

If the proposed project and Alternative A are in conflict with the PRC and the park General Plan, and the other action alternatives are infeasible because of unmitigable conflicts with other land use plans, some or all of which that may be impossible for the project to overcome, it would appear that there may be no demonstrated feasible alternatives included in the DEIR—a rather dramatic departure from the duty under CEQA to provide a reasonable range of alternatives.²¹

With no feasible or legal alternatives apparently identified²², the PREP DEIR is fatally flawed and the NGO Coalition believes it should be withdrawn from circulation.²³

C. The DEIR Fails to Provide a Reasonable Range of Alternatives Because the Proposed Project, Alternative A, and Alternative C Are Legally and/or Technologically Infeasible.

As discussed above, the inundation of land within Henry Coe State Park by the Project is prohibited as a matter of law, rendering both the Proposed Project and Alternative A legally infeasible. Legal feasibility must be considered in deciding which alternatives to include in an EIR. (CEQA Guidelines § 15364.) An alternative can be found legally infeasible, among other scenarios, when its adoption would exceed the legal authority committed to an agency. (*See Habitat & Watershed Caretakers v. City of Santa Cruz* (2013) 213 Cal.App.4th 1277, 1304.) This is the case here, where Valley Water does not possess the legal authority to execute either the Proposed Project or Alternative A. It is misleading to present a proposed project, and an alternative, that are not legally capable of being implemented. This skews the public’s understanding of what Valley Water actually intends to do. The DEIR must be recirculated with a proposed project and alternatives that are legally feasible.

Of the six different forms of the Project assessed in the DEIR (Proposed Project, four alternatives and the No Project Alternative), only Alternative B, Alternative D, and the No Project Alternative are both technologically and legally feasible.²⁴ This is not a reasonable range of alternatives as envisioned under CEQA. The alternatives analysis must be revised, and the DEIR must be recirculated once an adequate alternatives analysis has been prepared.

II. The DEIR Fails to Adequately Assess Impacts to Wildlife and Wildlife Connectivity.

The Project would inundate and destroy terrestrial and aquatic habitat covering

²¹ See *Citizens of Goleta Valley v. Board of Supervisors*, 52 Cal.3d 553, 566 (1990) (An EIR must consider a reasonable range of alternatives that offer substantial environmental benefits and may feasibly be accomplished).

²² It is also important to note that the proposed project may not be permissible because of the Division of Safety of Dams’ (DSOD) concerns. See letter of determination November 1, 2022, available online: <https://www.friendsoftheriver.org/wp-content/uploads/2022/02/21.11.1-DSOD-Hardfill-Concept-Denial-Ltr.docx.pdf>

²³ See, e.g., *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova*, 40 Cal.4th 412, 447-449 (2007). It should also be noted that there may be other “feasibility” issues that affect feasibility other than conflict with land use plans and areas owned by the state incompatible with the PREP.

²⁴ “Technological and legal feasibility” here is used in the sense that Alternatives B and D do not encroach on Henry Coe State Park and use a proposed earthfill design rather than the DSOD-disfavored hardfill design.

approximately 1,500 acres within the undeveloped Diablo Range, devastating the habitat of numerous special-status species and overall biodiversity. In addition to the habitat lost to inundation, the construction of roads and new infrastructure will sever ecosystems and inhibit species movement and proliferation. Despite the immense magnitude of the Project's impacts on biological resources, the DEIR fails to conform to legal standards for environmental review. The DEIR's treatment of biological resources like wildlife and wildlife connectivity is legally inadequate for two overarching reasons. First, the DEIR fails to accurately describe the baseline condition of the project site and the presence of special status species and wildlife connectivity areas, undermining the accuracy of the impact analyses. Second, the DEIR does not adequately mitigate the Project's significant impacts, either by impermissibly deferring the formulation of specific mitigation measures, or by relying on insufficient and/or ineffective mitigation. For the reasons laid out below, the DEIR's analysis of impacts to biological resources like wildlife and wildlife connectivity is inadequate, and Valley Water must remedy the failures before moving forward in the environmental review process.

A. The DEIR Fails to Adequately Assess and Mitigate Impacts to Wildlife Connectivity in the Project Area.

As the Center's 2021 report highlights, the ability of wildlife to move between distinct habitat areas is critical to both individual and population survival (Yap, Rose, Anderson, et al., 2021). As landscapes become more fragmented by development, it is critical that proposed Projects are designed to minimize impacts on habitat connectivity. This is especially vital as climate change alters the range and amount of habitat available to different species. The DEIR erroneously concludes that Project impacts to wildlife movement would be less than significant, relying solely on PAMM BI-10, a vague measure that is insufficient to reduce the significant impacts the Project will have on wildlife connectivity (and therefore special-status species and overall biodiversity and ecosystem health).

Furthermore, the DEIR's discussion of so-called "project-specific avoidance and minimization measures" is misleading and violates CEQA. These measures, such as PAMM BI-10, are mitigation measures that are designed to minimize or avoid the Project's impacts, in the case of PAMM BI-10 the impacts to wildlife movement. By including these measures as part of the Project description, as "Design and Implementation Features" (See DEIR at 3.5-49), the DEIR is "compressing the analysis of impacts and mitigation measures into a single issue," thereby ignoring the requirements of CEQA. (*Lotus v. Department of Transportation* (2014) 223 Cal.App.4th 645, 655.) The DEIR therefore fails to properly disclose and analyze the extent of the impacts, and it does not do nearly enough to mitigate the significant impacts.

It is widely recognized that the continuing fragmentation of habitat by humans threatens biodiversity and diminishes our (humans, plants, and animals) ability to adapt to climate change. In a report for the International Union for Conservation of Nature (IUCN), world-renowned scientists from around the world stated that "[s]cience overwhelmingly shows that interconnected protected areas and other areas for biological diversity conservation are much more effective than disconnected areas in human-dominated systems, especially in the face of climate change" and "[i]t is imperative that the world moves toward a coherent global approach for ecological connectivity conservation, and begins to measure and monitor the effectiveness of

efforts to protect connectivity and thereby achieve functional ecological networks” (J. Hilty et al., 2020). The DEIR fails to adequately assess and mitigate impacts to wildlife connectivity.

i. The DEIR’s Assessment and Disclosure of Wildlife Connectivity in the Project Area Is Inadequate.

There is insufficient discussion of the baseline conditions of wildlife connectivity in the Project area. The DEIR fails to adequately disclose the importance of the Project area to local, regional, and continental wildlife connectivity for numerous special-status species and overall biodiversity, including mountain lions and American badgers, CRLF and CTS, coast horned lizard and WESP, native bats and migratory birds, and many other species. The DEIR erroneously omits that CDFW has identified the Project area as having high connectivity value and high biodiversity ranking, with the entire area marked as “irreplaceable and essential corridors” or “conservation planning linkages” in their Areas of Conservation Emphasis (ACE) program.²⁵ The DEIR also omits that the Project area is identified as a critical linkage by the Conservation Lands Network,²⁶ and a Bay Area critical linkage design by SC Wildlands (Penrod et al., 2013). In addition, the Project area’s proximity to protected lands and easements (which the Project infringes on) further highlights its importance for wildlife movement and habitat connectivity. Yet no movement data or maps are provided to visualize where important connectivity areas are in the Project area. The DEIR fails to adequately assess and describe the wildlife connectivity baseline conditions in the Project area, making it impossible for the public to determine whether the DEIR adequately assesses and mitigates impacts due to the proposed Project.

The Project would result in the destruction and removal of about 1,500 acres of contiguous, diverse habitats surrounded by mostly protected open space and eliminate local and regional connectivity for small, less mobile species. The Project also includes the construction of facility structures, powerlines, and 45 miles of roads, of which 37.6 miles would be permanent. Yet the DEIR fails to adequately provide any analysis of the impacts of the structures or roads on wildlife connectivity, or any biological resources generally. The Biological Resources Appendix has no assessment or evaluation of the Project area’s baseline conditions or its impacts to wildlife connectivity. In addition, the area assessed only encompasses the inundation area and downstream aquatic resources while completely neglecting areas where the Project’s roads and structures would be constructed. The DEIR states, “impacts may not differ significantly from the existing condition given that existing roads (e.g., SR 152, Kaiser-Aetna Road), Pacheco Reservoir and North Fork Dam all currently preclude some degree of wildlife movement both spatially and temporally” (DEIR at 3.5-113). This is pure conjecture and not based on any substantiated science. No movement studies were conducted in the study area, and as mentioned previously, portions of the Project area were completely omitted from analysis. Adding multiple roads and structures, building a new dam upstream, and expanding the existing reservoir from 5,500 acre-ft to 140,000 acre-ft and inundating approximately 1,500 acres of contiguous habitat will have significant impacts on existing wildlife connectivity throughout the area. The DEIR fails to adequately assess baseline conditions of and the Project’s potential impacts to the Project

²⁵ CDFW Areas of Conservation Emphasis website: <https://wildlife.ca.gov/Data/Analysis/Ace> (Accessed Feb. 4, 2022).

²⁶ Conservation Lands Network website: <https://www.bayarealands.org/> (Accessed Feb 4, 2022)

area's wildlife connectivity, and they improperly conclude that the Project would have less than a significant impact on wildlife connectivity. The DEIR is insufficient and incomplete and fails to comply with CEQA.

Roads and development create barriers that lead to habitat loss and fragmentation, which harm native wildlife, plants, and people. As barriers to wildlife movement, poorly planned development and roads can affect an animal's behavior, movement patterns, reproductive success, and physiological state, which can lead to significant impacts on individual wildlife, populations, communities, landscapes, and ecosystem function (Ceia-Hasse et al., 2018; Haddad et al., 2015; Marsh & Jaeger, 2015; Mitsch & Wilson, 1996; Trombulak & Frissell, 2000; van der Ree et al., 2011). For example, habitat fragmentation from roads and development has been shown to cause mortalities and harmful genetic isolation in Central Coast and Southern California mountain lions (Benson et al., 2019; Gustafson et al., 2021), increase local extinction risk in amphibians and reptiles (Brehme et al., 2018; Cushman, 2006), cause high levels of avoidance behavior and mortality in birds and insects (Benítez-López et al., 2010; Kantola et al., 2019; Loss et al., 2014), and alter pollinator behavior and degrade habitats (Aguilar et al., 2008; Goverde et al., 2002; Trombulak & Frissell, 2000). Habitat fragmentation also severely impacts plant communities. An 18-year study found that reconnected landscapes had nearly 14% more plant species compared to fragmented habitats, and that number is likely to continue to rise as time passes (Damschen et al., 2019). The authors conclude that efforts to preserve and enhance connectivity will pay off over the long-term (Damschen et al., 2019). In addition, connectivity between high quality habitat areas in heterogeneous landscapes is important to allow for range shifts and species migrations as climate changes (Cushman et al., 2013; Heller & Zavaleta, 2009; Krosby et al., 2018). Loss of wildlife connectivity has negative impacts on special-status species, decreases biodiversity, and degrades ecosystems. Such impacts of the proposed Project must be assessed and adequately mitigated to comply with CEQA.

Connectivity is critical for resilience to climate change. Climate change is increasing stress on species and ecosystems, causing changes in distribution, phenology, physiology, vital rates, genetics, ecosystem structure and processes, and increasing species extinction risk (Warren et al., 2011). A 2016 analysis found that climate-related local extinctions are already widespread and have occurred in hundreds of species, including almost half of the 976 species surveyed (Wiens, 2016). A separate study estimated that nearly half of terrestrial non-flying threatened mammals and nearly one-quarter of threatened birds may have already been negatively impacted by climate change in at least part of their distribution (Pacifci et al., 2017). A 2016 meta-analysis reported that climate change is already impacting 82 percent of key ecological processes that form the foundation of healthy ecosystems and on which humans depend for basic needs (Scheffers et al., 2016). Genes are changing, species' physiology and physical features such as body size are changing, species are moving to try to keep pace with suitable climate space, species are shifting their timing of breeding and migration, and entire ecosystems are under stress (Cahill et al., 2012; Chen et al., 2011; Maclean & Wilson, 2011; Parmesan, 2006; Parmesan & Yohe, 2003; Root et al., 2003; Warren et al., 2011). Thus, the DEIR must use the best available science and adequately assess the baseline conditions of the Project area so impacts can be adequately assessed and mitigated. The DEIR fails to comply with CEQA.

ii. The DEIR's Mitigation of Wildlife Connectivity Impacts Is Grossly Inadequate.

No mitigation measures are provided to mitigate the Project's significant impacts to wildlife connectivity. Instead, the DEIR incorrectly claims that the implementation of PAMM BI-10 "would minimize the potential for direct and indirect impacts" and therefore "impacts on wildlife dispersal and migration corridors would be less than significant" (DEIR at 3.5-114). As a threshold matter, the packaging of mitigation measures as design features of a project violates CEQA. (*See Lotus v. Department of Transportation* (2014) 223 Cal.App.4th 645, 655–56.) Additionally, such a proclamation is not substantiated, and even if there were adequate information regarding baseline conditions and the movement or potential movement patterns of special-status species and other wildlife throughout the Project area, PAMM BI-10 is vague and lacks sufficient details for the public to ascertain whether or not the measure would actually minimize impacts to wildlife connectivity.

For example, PAMM BI-10 states that "[d]uring construction, all known wildlife crossing structures ... will be kept unobstructed" (DEIR at 2-45), but the DEIR does not provide the number or location of the crossings, nor does it provide how use or potential use of existing crossings by wildlife would be determined. Nor do they provide information regarding whom would determine whether the crossings are being used or have the potential to be used by wildlife. There is no mention of what kinds of data will be collected and/or analyzed, and there is no mention of consulting with CDFW, native Tribes, or other agencies and stakeholders who may have on-the-ground knowledge of wildlife movement patterns in the area, like Pathways for Wildlife, an organization that has published multiple reports regarding wildlife movement and connectivity in the area (e.g., *Pathways for Wildlife*, 2020a, 2020b). The information provided in the DEIR is insufficient to determine if impacts from the Project will actually be minimized.

The DEIR also states that Valley Water will "minimize placing fencing ... within known movement routes along Pacheco Creek and the existing reservoir" and "minimize conducting ground-disturbing activities within known wildlife movement routes and crossing structures during nighttime hours" (DEIR at 2-45), but again, the "known wildlife movement routes and crossing structures" are not identified and the public cannot determine whether or not such areas are appropriate or if such action will actually be taken. Although some species often use specific migratory routes, many species roam through open space without having a predetermined pathway; therefore, the entire Project area serves as important wildlife connectivity at a local and regional scale. The DEIR must provide more information regarding where and how minimization measures will be implemented.

PAMM BI-10 also states that "[b]ridges and culverts along the permanent access routes will be designed to the extent practicable to allow for wildlife to cross under/through the structures unimpeded" (DEIR at 2-45) without providing the number, location, or target species/guild for which such crossings would be constructed. In addition, there is no indication that such crossings would actually be constructed, as the PAMM only states that such crossings would be "designed" with no mention of if, how, when, or where any designed crossings would be implemented. In-depth analyses that include on-the-ground movement studies of which species are moving in the area and their home range area, habitat use, and patterns of movement, as well as roadkill data from sources like the UC Davis Road Ecology Center and potentially

elsewhere, are needed to determine how to best implement such crossings. Any crossings should be designed and implemented in coordination and collaboration with CDFW, native Tribes, and other local stakeholders that are knowledgeable about the area.

Despite the DEIR's inadequate assessment of the Project's impacts to wildlife connectivity and contrary to its incorrect conclusion that impacts would be less than significant, a more reasonable conclusion would be that the Project would have significant impacts to wildlife movement and habitat connectivity. Given the Project area's proximity to protected open space, the documented and/or potential occurrence of numerous special-status species in and near the Project area, and CDFW's identification of the Project area as having high levels of biodiversity and "irreplaceable and essential corridors" and "conservation planning linkages," the DEIR needs to provide adequate mitigation of the Project's impacts to wildlife connectivity. CEQA requires a lead agency to adopt feasible mitigation measures that would reduce a project's significant environmental impacts. (Pub. Res. Code § 21002, 21002.1(b); see also CEQA Guidelines §§ 15021, 15091.) The DEIR must do more to mitigate the significant impacts to wildlife connectivity.

Design that avoids important connectivity areas and incorporates wildlife connectivity specific to the target species or guilds (i.e., groups of species) that are most vulnerable and in need of wildlife connectivity should be implemented as early as possible for it to be most effective in terms of both cost and function for the target species or guild; therefore, experts should be involved in the design process from the very beginning. Different species have different behaviors and movement abilities that need to be incorporated for wildlife crossings to be effective. For example, smaller, less mobile species like CRLF and CTS, often need more frequent crossing structures compared to larger, more mobile species like mountain lions and coyotes. Gunson et al. (2016) recommend that crossing structures generally be spaced about 300m (~1000 feet) apart for small animals when transportation infrastructure bisects large expanses of continuous habitat, though they recognize that some amphibians may need more frequent crossings no more than 50m (~160 feet) apart. Resources and guidelines, including but not limited to Kintsch et al. (2015a), "The Wildlife Crossing Guilds Decision Framework: A Behavior-based Approach to Designing Effective Wildlife Crossing Structures" and Langton & Clevenger (2021), "Measures to Reduce Road Impacts on Amphibians and Reptiles in California" should be reviewed and consulted.

A wildlife connectivity assessment should be completed and approved by CDFW prior to the start of roadway design so that the assessment can inform the design from the beginning. In addition, long-term monitoring to determine the effectiveness of the crossings (e.g., collect and analyze wildlife camera data, roadkill data), maintenance, and adaptive management that maximizes the functionality of the existing and constructed crossings should be included in the Project's mitigation measures. Also, studies have shown that wildlife crossing infrastructure with suitable, protected habitat on both sides of the crossings gradually increase the level of wildlife permeability (Dodd et al., 2012; Kintsch et al., 2018; Sawyer et al., 2012); therefore the preservation and adaptive management of suitable habitat on both sides of the wildlife crossings should be included as a requirement of mitigation measures meant to reduce the Project's impacts to wildlife connectivity.

Given the severity of the Project's impacts to the region's wildlife connectivity, such measures to design and implement wildlife crossings for various target species should extend to nearby roads that present existing barriers to wildlife movement, like SR 152. Valley Water should work with CDFW, Caltrans, and other local and regional stakeholders to determine areas along SR 152 to identify appropriate locations and designs for wildlife crossings and implement them. Pathways for Wildlife has conducted multiple studies and prepared reports for the Santa Clara Valley Habitat Agency regarding wildlife movement and connectivity along SR 152 (e.g., Pathways for Wildlife, 2020a, 2020b), and they should be consulted and coordinated with to identify movement barriers and implement crossing features.

B. The DEIR Fails to Adequately Assess Impacts of the Proposed Project on Special-Status Wildlife.

The Project area is located in a mostly undeveloped open space area surrounded by protected open space where CDFW has identified as having high levels of biodiversity.²⁷ Although there is some existing infrastructure, including 5,500 acre-ft of water at the existing reservoir and SR 152, the expansion of the reservoir to 140,000 acre-ft and the construction of more structures and roads will have significant impacts on the special-status wildlife currently and/or potentially occupying the Project area. Yet the DEIR is deficient in assessing and mitigating the Project's impacts to numerous special-status species. In fact, portions of the Project area, including portions of Henry W. Coe State Park and areas where new roads and facilities are being proposed, are completely omitted from the analyses. Therefore, the estimates of habitat for various species subject to direct and/or indirect impacts of the Project are likely severely underestimated. This is a failure of the DEIR to fully assess and mitigate impacts of the Project. Some species-specific details are provided below. Note that this is not a comprehensive list of inadequacies that need to be addressed for the DEIR to comply with CEQA.

i. Mountain Lions and Other Wide-Ranging Mammals

The DEIR erroneously concludes that, with the implementation of Project-specific Avoidance and Minimization Measures (PAMMs) BI-2-5, 8, 11, and 12, construction and operation of the proposed Project would have less than significant impacts and no impacts on mountain lions, respectively. As a threshold matter, the packaging of mitigation measures as design features of a project violates CEQA. (*See Lotus v. Department of Transportation* (2014) 223 Cal.App.4th 645, 655-56.) Beyond the legal shortcoming, such a conclusion is unsubstantiated and not founded in the best available science. The PAMMs are vague and insufficient and are not specific to mitigating impacts to mountain lions; these minimal measures do little to address the high levels of habitat loss and fragmentation that the Project will result in. The Biological Resources Appendix states that "potential signs of mountain lion predation and tracks have been observed within the study area" (DEIR Biological Resources Appendix Exhibit E at 3-16), though no details regarding where, when, and by whom these observations were made. Such information should be provided in the DEIR.

²⁷ CDFW Areas of Conservation Emphasis website: <https://wildlife.ca.gov/Data/Analysis/Ace> (Accessed Feb. 4, 2022).

Connectivity is the primary driver of the plight of local mountain lions that are included in the proposed Central Coast and Southern California evolutionarily significant unit (ESU) of mountain lions that are a candidate species under the California Endangered Species Act (CESA) (Yap et al., 2019). Yet the DEIR dismisses and downplays the Project's impacts to wildlife connectivity (see **Section I-A The DEIR fails to adequately assess and mitigate impacts to wildlife connectivity in the Project area** for more discussion). By not adequately assessing and mitigating the Project's impacts to wildlife connectivity, the DEIR fails to adequately assess and mitigate impacts to mountain lions and other wide-ranging mammals, including badgers and San Joaquin kit fox.

Recent studies indicate that local mountain lions are in a trajectory similar to that of mountain lions in Southern California, where scientists have documented physical and reproductive signs of inbreeding depression (Huffmeyer et al., 2021) and predicted that if inbreeding depression occurs, pumas in the Santa Monica and Santa Ana mountains have a 99% chance of becoming locally extinct within 50 years (Benson et al., 2019). Gustafson et al. (2021a) found that mountain lions in the Central Coast North (CC-N) population, which includes mountain lions in the Project area, genetic diversity estimates as low as the CC-S and SA populations. This suggests that, despite the CC-N having a higher effective population size compared to the Santa Monica and Santa Ana lions, they are experiencing genetic drift due to dispersal barriers to the north and limited gene flow to the south. The authors state, "if dispersal is limited by continued development southeast of the Central Coast North population, rapid genetic drift and inbreeding may ensue (Mills & Allendorf, 1996; Wang, 2004) and local extinctions may occur as predicted in the Central Coast South and Santa Ana populations (Benson et al., 2016; 2019)" (Gustafson et al., 2021). The Project area is located in the southeastern portion of the CC-N population area, which makes it an exceptionally important area for puma connectivity. Any development involving further habitat loss and fragmentation and the fortification of existing barriers to movement, as is the case for the proposed Project, will have significant impacts to mountain lions. The DEIR fails to adequately assess and mitigate impacts to mountain lions and other wide-ranging wildlife.

ii. Herpetofauna

The DEIR fails to adequately assess and mitigate impacts to special status amphibians and reptiles. The analyses provided lack adequate detail to determine whether or not the Project impacts are adequately assessed and mitigated, and areas of the Project footprint that include the construction of roads and infrastructure are omitted from the analyses. Habitat loss and lack of connectivity threatens these vulnerable, less mobile species. For example, state roads threaten all native turtle and tortoise species, 72% of snake species, 50% of frog and toad species, 18% of lizard species, and 17% of salamander species (Brehme et al., 2018). Therefore, impacts to these species must be adequately assessed and mitigated; the DEIR fails to do so.

The DEIR fails to adequately disclose, assess, and mitigate impacts to special-status amphibians and reptiles in the Project area. The DEIR lacks transparency and clarity, making it difficult to determine the baseline conditions of the Project area for specific special-status species and determine whether Project impacts were adequately assessed or mitigated. For example, although the DEIR provides habitat surveys for California red-legged frog (CRLF) and

California tiger salamander (CTS), surveys were conducted in March/April of 2020, during extended drought when many vernal pools likely did not fill up or dried up early, and the chances of encountering individuals were low. In addition, identified aquatic features may have been underestimated given extended drought conditions and the DEIR's failure to include portions of the Project area that include new roads and infrastructure.

The DEIR is inconsistent and provides confusing information regarding the amount of impacted critical habitat for CRLF and CTS; this information needs to be better explained and clarified to appropriately and adequately disclose information to the public and assess the Project's impacts. The Biological Resources Appendix states approximately 5,609 acres and 28,078 acres of CRLF critical habitat are within the Project study area and the assessment area (within one mile of the Project study area), respectively (DEIR Biological Resources Appendix Exhibit C at 4-1). Further in the Appendix it states that 6,573 summer and upland/dispersal habitat is within the Project study area, and it is unclear if this includes designated critical habitat (DEIR Biological Resources Appendix at 4-6). The acreage provided in the main text of the DEIR also differs; it states that 8,047 acres of CRLF critical habitat is in the Project study area (DEIR at 3.5-146). In addition, compiled CRLF occurrence data only included documented occurrences within the assessment area (within 1 mile of the Project study area), while industry standard generally includes occurrence data within a 5-mile radius.

The DEIR is similarly inconsistent and confusing for CTS. The main text of the DEIR states that there are approximately 6,082 acres of suitable CTS habitat and 570 acres of designated critical habitat in the Project study area (DEIR at 3.5-33). However, the Biological Resources Appendix differs from this, stating there are 6,835 acres of CTS habitat within the Project study area, and an additional 48,500 acres of suitable CTS habitat within the assessment area (within 1.24 miles of the Project study area) (DEIR Biological Resources Appendix Exhibit D at 4-1). The Appendix also states that there are approximately 5,890 acres of designated critical habitat within the Project study area and assessment area, but it is unclear how much designated critical habitat is within each area. In addition, occurrence data only include those within 3.1 miles of the Project study area, and, as mentioned previously, industry standard generally includes occurrence data within a 5-mile radius. Also, observation locations from the referenced Smith 2019 document are not provided in Figure 4-1 (DEIR Biological Resources Appendix Exhibit D at 4-3). The DEIR lacks clarity and transparency regarding the baseline conditions of the Project area, making it difficult for the public to understand the existing conditions of the area and assess whether or not the DEIR adequately assesses and mitigates impacts due to the Project.

In addition to these discrepancies in their descriptions of existing conditions, the DEIR does not provide any explanation or transparency regarding how they arrived at their conclusion that the Project would result in permanent impacts to 1 and 1.5 acres of aquatic habitat for CTS and CRLF, respectively, and 1,526 acres of upland/dispersal habitat for both species (DEIR at 3.5-87), and short-term and temporary impacts to 0.5 and 0.7 acres of aquatic habitat for CTS and CRLF, respectively, and 207 acres of upland/dispersal habitat for both species (DEIR at 3.5-87). No calculations or assumptions are provided, rendering the analysis a mystery to the public. It is unclear which areas are impacted or how many breeding pools are impacted if edge effects were taken into consideration, or if connectivity and metapopulation dynamics were

considered. The DEIR simply states, “Long-term impacts include loss of potential habitat and/or critical habitat within the construction footprints of permanent facilities and associated infrastructure such as the new dam and associated facilities, new access roads, expanded reservoir, transmission line, interchange area, and other areas that would be permanently affected by the Proposed Project and would result in the direct long-term loss of potential aquatic and upland/dispersal habitat for California red-legged frog and California tiger salamander” (DEIR at 3.5-86). This statement is oversimplified and misleading. The Project study area does not include the new roads, transmission line, or new structures or other associated infrastructure of the Project. Therefore, the acreage provided does not include portions of the Project footprint that are outside of the Project study area and the DEIR is falsely representing the analyses that were conducted in their assessment. The DEIR lacks transparency and fails to adequately disclose and assess the Project area’s existing conditions, and that precludes an adequate assessment of the Project’s impacts to CTS and CRLF, their designated critical habitat, and other special-status species and suitable habitat present or potentially present in the Project area.

The DEIR also misrepresents the importance of western pond turtles (WPTs) and fails to provide adequate details of their assessment. Although they are not federally listed, they are a candidate species for listing under the Federal Endangered Species Act (ESA). And there are inconsistencies within the DEIR. According to the main text of the DEIR, approximately 5,009 acres of suitable WPT habitat occurs within the Project area, which is “[b]ased on the results from the reconnaissance-level habitat assessment surveys along with terrestrial vegetation mapping and the aquatic resources delineation” (DEIR at 3.5-35) while the Biological Resources Appendix states that there is 3,090 acres of WPT habitat within the Project study area (DEIR Biological Resources Appendix Exhibit E at 3-7). Furthermore, the main text of the DEIR states that 2,088 acres of potential WPT habitat would be impacted by the Project without providing any details, explanation, or demonstration of how these impacts were calculated (DEIR at 3.5-152). As with the CTS and CRLF analysis, it is unclear which areas are impacted, how many breeding pools are impacted, if edge effects were taken into consideration, or if connectivity and metapopulation dynamics were considered. In addition, the DEIR states that “[a]quatic and semi-aquatic species such as western pond turtle may utilize the expanded reservoir to their advantage for dispersal (e.g., swimming to unoccupied areas within the Project study area)” (DEIR at 3.5-167) without providing substantial evidence that such an assumption is true. The DEIR lacks transparency and fails to adequately disclose and assess the Project area’s existing conditions, and that precludes an adequate assessment of the Project’s impacts to WPT.

Another example of inadequate assessments is the DEIR’s conclusion that western spadefoot toads (WESPs) are absent from the Project area because, even though its range includes southern portions of the study area, no CNDDDB occurrences are within 5 miles of the study area (DEIR Biological Resources Appendix Attachment A in Table 2-3 at 2-25). Therefore, the DEIR does not analyze existing conditions or potential impacts of the Project to WESP. However, lack of presence data does not mean that the species is absent; sampling biases can influence survey effort and where species may or may not be detected (Rose et al., 2020) and it is possible that the area has not been surveyed, the species was missed during surveys, or detections may have not been documented in the area. Given that the study area falls within a portion of the species’ range, such strong assumptions are inappropriate. In addition, portions of the Project’s new roads and infrastructure (and their associated edged effects) fall within Merced

and Stanislaus counties and may be within WESP habitat and range. Further analyses are required if potential habitat is present. The DEIR fails to adequately assess and mitigate impacts to WESP.

Another example of misleading and inadequate information in the DEIR includes their assessment of coast range newts. The DEIR states that coast range newts are absent from the Project area because their range is outside the study area, and therefore they are not analyzed in the DEIR (DEIR Biological Resources Appendix Attachment A in Table 2-3 at 2-26). However, the species has been documented in and near the Project area on iNaturalist and GBIF,²⁸ and while only portions of the species range is considered a species of special concern (SSC), stating that the species does not occur in the area is inaccurate and misleading. Newts are exceptionally vulnerable to impacts of fragmentation, particularly by roads. This is exemplified by the newts at Lexington Reservoir in Santa Clara County. Community scientists have documented over 20,000 dead newts on a 4-mile stretch of road next to a reservoir in the last four breeding seasons²⁹ (newts are more active on the surface when the rains trigger breeding season, generally November to May). According to UC Davis road ecology expert Dr. Fraser Shilling, this is “one of the largest rates of roadkill reported for any wildlife species anywhere in the world” (Shilling et al., 2021), and one report conservatively estimates that about 40% of the population is killed on that stretch of road every year, and if nothing is done, the population could become locally extinct within 60 years (H.T. Harvey and Associates, 2021). Population viability will likely diminish much sooner than 60 years if connectivity is not improved. In addition, climate change further threatens the species (Bucciarelli et al., 2020), and occupied or potentially occupied habitat that also serves as important connectivity areas will be critical for the species both within the specified SSC range and beyond. The DEIR fails to adequately disclose and assess such impacts of the Project.

Amphibians are the most threatened vertebrate group with more than 40% of species threatened (IUCN 2016) and approximately 200 species collapsing to or near extinction since the 1970s (Alroy, 2015; Stuart et al., 2004). According to researchers at the U.S. Geological Survey (USGS), amphibian populations in the U.S. are declining at an alarming rate of almost 4% per year (Grant et al., 2016), and roads increase local extinction risk in amphibians (Brehme et al., 2018; Cushman, 2006). Amphibians are important in many terrestrial and aquatic ecosystems because they play key roles in the food chain and carbon cycle (Arribas et al., 2015; Best & Welsh, 2014; Rowland et al., 2016; R. D. Semlitsch et al., 2014). They face numerous threats, including habitat loss and degradation, invasive species, chemical contaminants, disease, roads, and climate change (*e.g.*, Riley et al. 2005; Hayes et al. 2006; Yap et al. 2015; Brehme et al. 2018; Bucciarelli et al. 2020). The DEIR fails to adequately assess impacts to the numerous amphibians that occur or have the potential to occur in or near the Project area.

iii. Other Special-Status Species

The DEIR fails to adequately assess impacts to other special status species, including birds, insects, bats, and fish. As mentioned previously, portions of the Project area, including

²⁸ <https://www.gbif.org/occurrence/543595146>.

²⁹ See community scientist project, Pacific Newt Roadkill – Lexington Reservoir Project, on iNaturalist: <https://www.inaturalist.org/projects/pacific-newt-roadkill-lexington-reservoir>.

portions of Henry W. Coe State Park and areas where new roads and facilities are being proposed, are completely omitted from the analyses. Therefore, the analysis of species occurrence or potential occurrence within the Project area are incomplete and estimates of habitat for various species subject to direct and/or indirect impacts of the Project are likely severely underestimated. Such analyses need to be provided in the EIR so that accurate baseline conditions can be reviewed by the public and the public can ascertain whether impacts to such resources are adequately mitigated.

In addition, the DEIR neglects to include contextual information with publicly available data to describe existing conditions in the Project area. For example, the DEIR states that the potential for occurrence of California condors is low because of limited cliff habitat and no CNDDDB occurrences within 5 miles of the Project study area (DEIR Biological Resources Appendix Attachment A at 2-29). However, released condors at Pinnacles National Park are part of the California Condor Recovery Program, and their range is slowly expanding northward, with a sighting on iNaturalist about 7 miles south of the Project area in November 2021.³⁰ Given their ability to travel 150 miles per day and their growing recovery, condors may be more likely to use the Project area than is represented in the DEIR.

The DEIR also makes unsubstantiated assumptions about how the Project may benefit wildlife. For example, the DEIR claims that the Project would have no impacts on least Bell's vireo because of limited to low-quality foraging habitat and that the Project would actually benefit the species by improving the downstream riparian habitat (DEIR at 3.5-97). Such claims are conjecture and not substantiated by science. Similarly, the DEIR claims that the Project's pulse flows would benefit Southern-Central California Coast (SCCC) steelhead and other anadromous fish, such as Pacific lamprey, without providing substantial evidence to support this claim (DEIR at 3.6-34) and contrary to CDFW's assessment that any potential benefits to SCCC steelhead due to the Project are uncertain (CDFW, 2018). With Coho salmon returning to several Marin streams for the first time after 16 to 18 years and biologists attributing their return, in part, to an upstream dam removal (Bartlett, 2022), such claims of dams benefiting anadromous fish require substantial evidence to support such claims. The DEIR fails to use the best available science to adequately assess existing conditions and potential impacts of the proposed Project on special-status species and sensitive habitats.

C. The DEIR Fails to Adequately Mitigate Impacts of the Proposed Project on Special-Status Wildlife to Less Than Significant.

The DEIR fails to meet CEQA's cornerstone requirement to include feasible mitigation measures that reduce potentially significant environmental impacts to a less than significant level. (Cal. Pub. Res. Code § 21002; § 21081.6(b); CEQA Guidelines § 15126.4(a); *see also* *Sierra Club v. Gilroy City Council* (1990) 222 Cal.App.3d 30, 41.) Mitigation must be effective, and the effectiveness of a proposed measure must be demonstrated by substantial evidence. (*Sierra Club v. County of San Diego* (2014) 231 Cal.App.4th 1152; *POET, LLC v. State Air Resources Bd.* (2013) 218 Cal.App.4th 681.) For the reasons described below, the DEIR fails to meet these requirements.

³⁰ <https://www.inaturalist.org/observations/101515482>.

As a threshold matter, the failure to accurately present the baseline environmental conditions and to quantify the scope of species-specific impacts precludes the formulation of CEQA-compliant mitigation. (*See City of Long Beach v. City of Los Angeles* (2018) 19 Cal.App.5th 465, 487 [the court found the EIR’s failure to accurately quantify the impact (frequency and duration of particulate matter pollution) precluded the public and decision makers from fairly considering alternatives or mitigation measures].) It’s hard to fix a problem when the extent of it is unknown. Furthermore, the proposed mitigation suffers from multiple defects, namely by deferring the formulation of the actual steps to mitigate the acknowledged significant impacts, and for those measures that are appropriately described, a lack of evidence that proposed mitigation will effectively reduce impacts.

i. Mitigation Is Improperly Deferred.

The goal of informed decision-making necessitates that the public be provided information about the extent of a project’s impacts, and how those impacts will be mitigated, before a project is approved. To that end, it is generally impermissible to defer the formulation of a mitigation measure to some point after a project is approved. (CEQA Guidelines § 15126.4(a)(1)(B).) Deferring the selection of mitigation measures is allowed in cases where specific performance standards are identified, and the agency commits to achieving those standards in an enforceable manner. (*See POET, LLC v. California Air Res. Bd.* (2013) 217 Cal.App.4th 1214, 737-38.) Many of the mitigation measures require site surveys for species and habitats found to be significantly impacted by the Project, with several alluding to the potential inability to access portions of the Project area in 2022 (e.g., mitigation measures BI-1b, 2a, 4a, 5a, 7, 8a, 14a). Such surveys should be conducted prior to drafting the EIR. The inability to conduct site-level surveys because site access was limited and instead require such surveys as a mitigation measure after EIR approval is an absurd attempt to circumvent CEQA’s disclosure and analysis requirements. In addition, mitigation measure BI-14b states that Valley Water will provide compensatory mitigation for inadvertent take of a bald eagle or golden eagle during project activities through the Bald Eagle and Golden Eagle Electrocution Prevention In-lieu Fee Program, but the DEIR does not provide a mitigation ratio, simply stating that it would be “at a ratio agreed upon by the USFWS” (DEIR at 3.5-323). This is also improperly deferred mitigation. Also, it is unclear if project activities include construction and operation of the Project. Beyond the problem of trying to meet both CEQA’s analytical and mitigation requirements at the same time, the mitigation measures noted above, among others, are vague and do not adequately specify the actions Valley Water will take.

Mitigation measure BI-4a points to additional mitigation measures that state sensitive resources would be avoided, and if unavoidable, would provide compensatory mitigation; however, these measures are also vague and insufficient. Mitigation measure BI-4a would require Valley Water to delineate aquatic resources prior to construction “once legal access necessary to perform surveys is obtained” in areas of the Project that are not accessible in 2022 (DEIR at 3.5-315), and then it states that “[b]ased on the findings of the surveys, Mitigation Measure BI-4b and BI-4c will be implemented to avoid aquatic resources and provide compensatory mitigation for unavoidable impacts, mitigation measures BI-4b and 4c” (DEIR at 3.5-316). Mitigation measure BI-4b states that aquatic resources will be avoided, but if avoidance is not feasible, then avoidance buffers or other design modifications may occur (DEIR

at 3.5-315). Presumably the buffer would be 25 feet, based on PAMM BI-9a, but such information is not provided within the mitigation measure, nor are there other measures to prevent erosion or spills, contamination, or other pollution from entering the waters. A 25-foot buffer is insufficient to mitigate impacts to the aquatic resource or the species that rely on the resource.

For example, a literature review found that recommended buffers around aquatic resources for wildlife often far exceeded 100 meters (~325 feet), well beyond the largest buffers implemented in practice (Robins, 2002). For example, Kilgo et al. (1998) recommend more than 1,600 feet of riparian buffer to sustain bird diversity. In addition, amphibians, which are considered environmental health indicators, have been found to migrate over 1,000 feet between aquatic and terrestrial habitats through multiple life stages (Cushman, 2006; G. M. Fellers & Kleeman, 2007; Raymond D. Semlitsch & Bodie, 2003; Trenham & Shaffer, 2005). For example, CRLF have been found to migrate about 600 feet between breeding ponds and non-breeding upland habitat and streams, with some individuals roaming over 4,500 feet from the water (G. M. and Fellers & Kleeman, 2007). Newts have been documented traveling up to a mile from breeding ponds (Trenham, 1998). WPT nests have been found up to 1,919 feet from aquatic habitats, and individuals have been documented to move regularly between aquatic habitats with long-distance movements of up to 2018 feet (615 m) (Sloan, 2012). Accommodating the more long-range dispersers is vital for continued survival of species populations and/or recolonization following a local extinction (Cushman, 2006; Raymond D. Semlitsch & Bodie, 2003). Many other species, including mountain lions and bobcats, often use riparian areas and natural ridgelines as migration corridors or foraging habitat (Dickson et al, 2005; Hilty & Merenlender, 2004; Jennings & Lewison, 2013; Jennings & Zeller, 2017). Additionally, fish rely on healthy upland areas to influence suitable spawning habitat (Lohse et al., 2008), and development on these habitats and over-aggressive removal of riparian areas have been identified as a major driver of declines in freshwater and anadromous fish (e.g., Stillwater Sciences 2002; Lohse et al. 2008; Moyle et al. 2011). Therefore, large buffers that allow for connectivity between the aquatic resource and upland habitat is vital for many species to persist. In addition, more extensive buffers provide resiliency in the face of climate change-driven alterations to these habitats, which will cause shifts in species ranges and distributions (Cushman et al., 2013; Heller & Zavaleta, 2009; Warren et al., 2011). This emphasizes the need for sizeable upland buffers around streams and other aquatic resources, as well as connectivity corridors between heterogeneous habitats. The DEIR fails to adequately assess and mitigate impacts to special-status species that rely on aquatic resources in the Project area.

ii. Mitigation ratios are unacceptably low and identified potential compensatory lands are insufficient.

The DEIR estimates the Project will impact thousands of acres of habitat for numerous special-status species, and these estimates do not even include impacts of the entire Project area. Mitigation ratios are grossly insufficient and are not based on the best available science. CEQA requires that feasible mitigation measures be adopted (CEQA Guidelines § 15126.4(a)), and that the effectiveness of those measures is supported by substantial evidence. (*See Gray v. County of Madera* (2008) 167 Cal.App.4th 1099, 1116–17 [An agency’s finding that a mitigation measure

will be effective will not be granted deference if the finding is not supported by substantial evidence].)

The DEIR proposes an insufficient minimum mitigation ratio of 2:1 for the preservation, restoration, enhancement, or creation of sensitive natural communities and riparian habitats (mitigation measure BI-1d), sycamore alluvial woodlands (direct impacts only, 1:1 for indirect impacts, mitigation measure BI-2c), aquatic resources (mitigation measure BI-4c), special-status plants and monarch butterfly host plants (mitigation ratio BI-5c), CTS, CRLF, FYLF, and WPT upland/dispersal habitat (including designated critical habitat for CRLF; mitigation measure BI-8b), and Romero Ranch Conservation Easement (mitigation measure BI-20), several of which are to be implemented by “purchasing mitigation credits at an agency-approved mitigation bank or by creating, enhancing, or restoring aquatic resources at agency-approved mitigation properties” (e.g., DEIR at 3.5-316).

Avoidance of impacts to sensitive habitats should be prioritized, after which in-kind mitigation should be a minimum of 3:1 (5:1 for designated critical habitat) given that these habitats support numerous special-status species and high levels of biodiversity, can be important for wildlife connectivity, and so much of these habitats have already been lost, and 5:1 (8:1 for designated critical habitat) for habitat restoration or creation with continued monitoring, adaptive management strategies, and well-defined success criteria, to be funded in perpetuity. Restored, enhanced, and/or created habitat mitigation ratios should be higher than preservation mitigation ratios. The DEIR needs to consider that, due to their project, habitat loss and species displacement are immediate, while any gains from their mitigation are uncertain. Therefore, higher mitigation ratios coupled with extended years of effective monitoring and adaptive management strategies are needed to improve chances of successfully mitigating impacts (Ambrose et al., 2006; Moilanen et al., 2009; Sudol & Ambrose, 2002). Scientists recommend 15–20 years or more of monitoring to determine the success, or lack thereof, of enhanced, restored, or created habitat (Mitsch & Wilson, 1996; Zedler & Callaway, 1999). If higher mitigation ratios are not feasible, the DEIR must provide evidence and analysis supporting that conclusion.

Sufficient potential conservation/mitigation banks are not provided, which makes it impossible for the public to ascertain whether such mitigation can feasibly minimize the Project’s impacts. For example, the DEIR states that potential mitigation sites for aquatic resources and upland habitat for CTS/CRLF/FYLF/WPT may include areas within the 200-foot buffer around the expanded reservoir “proposed for watershed management/shoreline buffer and access” (DEIR at 3.5-316 and DEIR at 3.5-320). But that area is part of the proposed Project and subject to other uses that diminish its habitat functionality, and therefore should not be eligible for mitigation credits. Other potential mitigation sites provided are nonspecific, referencing areas either within or outside of the SCVHP Santa Clara County boundaries. This is insufficient information for the public to determine if the Project’s impacts are adequately mitigated.

These are just a few examples of the inadequate mitigation ratios provided in the DEIR; this is not a comprehensive list of the issues. With one third of America’s plant and animal species vulnerable to impacts from human activity and one fifth at risk of extinction (Stein et al., 2018), it is crucial that strategies to prevent further degradation and loss of biodiversity are

explicit and scientifically sound. The Project would result in thousands of acres of impacts to habitats and sensitive natural communities that support numerous special-status species and much of California's biodiversity. Mitigation measures must be considered in the DEIR so that the proper environmental analysis can take place. (See *Sundstrom v. Co. of Mendocino* (1988) 202 Cal.App.3d 296.) More discrete mitigation measures that incorporate the best available science need to be included in the DEIR to enable the public and decision-makers to evaluate their effectiveness in avoiding, minimizing, and mitigating the Project's impacts to sensitive habitats and natural communities.

iii. Inadequate mitigation of wildlife connectivity results in inadequate mitigation of impacts to special-status species and sensitive plant communities.

Both wide-ranging and less mobile species require connectivity between heterogeneous habitats. Yet the DEIR dismisses and downplays the Project's impacts to wildlife connectivity (see **Section I-A The DEIR fails to adequately assess and mitigate impacts to wildlife connectivity in the Project area** for more discussion). By not adequately assessing and mitigating the Project's impacts to wildlife connectivity, the DEIR fails to adequately assess and mitigate impacts to special-status species that occur or have the potential to occur in the Project area.

III. The DEIR's Analysis and Mitigation Measures for Impacts to Oaks and Oak Woodlands Is Inadequate.

The DEIR's analysis of oak woodland impacts is deficient because it does not incorporate all woodlands that have oak canopy of 10 percent or greater. The DEIR does not analyze nor does it include a mitigation plan for impacts of all oak tree removals. Further, it has no discussion of, and appears to be in violation of the oak analysis and mitigation provisions of Public Resources Code § 21083.4. The DEIR does not analyze greenhouse gas impacts associated with oak and other tree removals nor does it include mitigation for this impact. The DEIR also lacks review of oak protections articulated in Santa Clara County's and Stanislaus County's general plans and does not review Santa Clara County's guidelines for evaluating oak impacts. Lastly, improvements are needed in mitigating for project impacts on oaks, including adherence to mitigation standards articulated in Santa Clara County Planning Office Guide to Evaluating Oak Woodlands Impacts.

A. The DEIR Needs to Assess Impacts to All Oak Woodlands with Canopy Cover Greater Than 10 Percent.

The environmental documentation for the proposed project needs to analyze all impacts on oak woodlands. Public Resources Code § 21083.4 specifies that oak conversions are subject to CEQA. The Board of Forestry (BOF) communicated to counties and cities that 10 percent canopy cover is the appropriate measure to define significant oak woodlands for CEQA reviews and that Registered Professional Foresters and arborists must conform to the BOF canopy cover standard in conducting environmental analysis.³¹ Santa Clara County's Planning Office Guide to

³¹ July 2006 correspondence from Erik K. Huff, Executive Officer, Foresters Licensing, Board of Forestry and Fire Protection regarding the application of the Professional Foresters Law to oak woodlands.

Evaluating Oak Woodlands Impacts utilizes the metric of 10 percent or greater to define an oak woodland: *Oak woodlands include a woodland (grouping of trees) on a unit of land or project site where Oak trees encompass 10 percent or greater of the canopy cover. The 10 percent canopy cover applies to the individual woodland and not the entire project site (which may contain one or more woodlands).* Further, there are many definitions in California law that define oaks woodlands as those with a cover of 10 percent or greater:

- Public Resources Code § 4793(e) “Forest land” means land at least 10 percent occupied by trees of any size that are native to California, including native oaks, or formerly having had that tree cover and not currently zoned for uses incompatible with forest resource management.
- Fish and Game Code § 1361(h) “Oak woodlands” means an oak stand with a greater than 10 percent canopy cover or that may have historically supported greater than 10 percent canopy cover.
- Health and Safety Code § 42801.1(g) “Forest” means lands that support, or can support, at least 10 percent tree canopy cover and that allow for management of one or more forest resources including timber, fish and wildlife, biodiversity, water quality, recreation, aesthetics, and other public benefits.

California Wildlife Foundation/California Oaks met with California Native Plant Society and California Department of Fish and Wildlife in July 2021 to explore how the *Manual of California Vegetation* (MCV) could convey the greater than 10 percent canopy cover definition for oak woodlands since MCV is consulted for environmental analysis. In response, the online MCV has been updated to reflect that specificity. Additionally, for a number of alliances, such as Blue Oak (*Quercus douglasii*) and Coast Live Oak (*Quercus agrifolia*) woodland and forest alliances, the MCV includes this information in the vegetation layers for defining canopy when there is not a sizeable amount of relative cover of conifer species. Additionally, a less than 10 percent threshold is used on occasion, such as when there has been a recent impact (such as drought, fire, or disease) in a region that would support at least 10 percent cover once it recovers.

The aerial photographs that are presented in **Exhibit A** Vegetation Communities and Other Habitat Types Map Figures, which begin on page 338 of Biological Resources–Botanical/Wildlife Appendix, are of a resolution that is not sufficiently fine scale to review for oak cover. Nonetheless, it appears that many oak woodlands are not all identified. For example, some of the areas coded 102 (chamise chaparral), 138 (California sagebrush–black sage scrub), 151 (coyote brush scrub), and 525 (holly leaf cherry–toyon–greenbark ceanothus chaparral) may have oak woodland cover of greater than 10 percent.

B. The DEIR Does Not Analyze Greenhouse Gas Impacts Associated with Tree Removals and Does Not Include Mitigation Measures for this Impact.

Page 3.10-8 of the DEIR fails to discuss the greenhouse gas (GHG) impacts of tree removal, a violation of California law. CEQA’s sole GHG focus is “the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions.” Net present value of GHG emissions forms the foundation of the state’s greenhouse reduction objectives, as well as the California

Forest Protocol preservation standards. Every ton of carbon dioxide (CO₂) released into the atmosphere by oak woodland or forest conversion represents a measurable potential adverse environmental effect, which is covered by CEQA.

The DEIR's discussion instead focuses on the loss of carbon sequestration associated with plant removals, making an inaccurate statement about the plants subject to removal being shrubs and a confounding statement about associated soil:

Removal of vegetation from the Project study area may result in a long-term net increase in atmospheric GHGs relative to existing conditions due to a decrease in carbon sequestration.... In addition, although vegetation would be cleared during project construction, the type of vegetation that would be removed (e.g., shrubs), generally does not sequester as much carbon compared to the soil beneath it; this condition would not be altered by the Project. Thus, considering that the Project may result in some level of sequestration loss, but potentially simultaneously result in an increase in carbon sequestration capacity due to reservoir carbon burial, the net change in GHG emission associated with these processes is uncertain.

C. The DEIR Lacks a Review of County Oak Protections.

Oak protections articulated in Santa Clara County's General Plan, Stanislaus County's General Plan's Conservation/Open Space Element's Implementation 1 language about oaks) are not included in the DEIR. The Chapter 3.13 of DEIR and the summary information in Chapter 3.5 (pages 45-46) do not include the following provisions of *Santa Clara General Plan, Book B Resource Conservation Chapter*:

R-RC 43 on page O-28:

Large scale grading and clearing of land should not be allowed if it will significantly degrade valuable habitat or impair surface water quality.

R-RC 47 on page O-29:

Impacts from new development on woodland habitats should be minimized by encouraging:

- clustering of development to avoid critical habitat areas, where clustering is permitted;
- inclusion of important habitat within open space areas for project requiring open space dedication;
- siting and design of roads, utility corridors and other infrastructure to avoid fragmentation of habitat; and
- acquisition or avoidance of critical habitat areas.

R-RC 51 on page O-30:

Preservation of habitat linkages and migration corridors should be encouraged where needed to allow for species migration, prevent species isolation, and otherwise compensate for the effects of habitat fragmentation.

R-RC 52 on page O-30:

For rural area development proposals subject to open space dedication requirements and adjacent to other open space lands, the County shall encourage project design which maximizes the contiguity of undeveloped, open space areas, reducing fragmentation of habitat.

R-RC(i) 17 on page O-30:

Utilize updated mapping and information on natural areas and habitats to identify and assess the potential need for maintaining migration corridors and habitat linkages.

Oak protection is required by Stanislaus County's General Plan yet not discussed in the DEIR. Policy Four of the Conservation/Open Space Element is to *Protect and enhance oak woodlands and other native hardwood habitat*.

Implementation Measure 1 states: "Require all discretionary projects that will potentially impact oak woodlands and other native hardwood habitat, including but not limited to hardwood rangelands... to include a management plan for the protection and enhancement of oak woodlands and other native hardwood habitat."

The project will violate the conditions of the Romero Ranch Conservation Easement, held by The Nature Conservancy, including the easement's oak protections. The DEIR states: "The Romero Ranch Conservation Easement was established in 1999 to 'preserve, protect, enhance and restore in perpetuity the conservation values of property including significant habitat of fish, wildlife and plants' as well as to continue the agricultural uses of the property, including ranching and grazing (Santa Clara County 1999)." (3.5-46) No subsequent discussion addresses how the violation of the *in perpetuity* requirement will be addressed. Instead, the DEIR provides a broad definition of how easements are recorded and how conflicts with the conditions of the easement need to be administered and approved. Thus, the DEIR lacks specificity to satisfy the need to demonstrate that impacts are being fully-mitigated.

D. Oak Mitigation Measures Are Inadequate.

Mitigation needs to be linked to assessment of full impact. As stated above, the DEIR needs to assess impacts to all oak woodlands where the canopy is greater than 10 percent. The mitigation program needs to address all oak impacts.

Mitigation in Santa Clara County must adhere to the county's requirements. Santa Clara County's guide for evaluating oak woodland impacts, prepared in compliance with California Public Resources Code § 21083.4, specifies that any oak tree (native tree species in the genus *Quercus*) that is 5 inches or more in diameter at 4 feet above final grade is subject to the county's

regulations for land development projects that will result in 1/2 acre or more decrease in native oak canopy within an oak woodland on the project site—the county’s definition of significance. Santa Clara County’s mitigation requirements are:

(A) Planting Replacement Oak Trees Pursuant to PRC Section 21083.4 the planting of oaks shall not fulfill more than 50 percent of the mitigation requirement for the project.

Tree replacement can be dependent upon the amount of canopy of the removed trees, the number and size of trees to be removed, steepness of the slope on which trees will be removed, or the amount of room on a parcel in which trees can be planted. The objective of tree planting shall be to restore former oak woodland at a ratio of **2:1 or 3:1 based on the condition of the oak woodland habitat**. 2:1 restoration is recommended for medium quality oak woodland habitat, and 3:1 restoration is recommended for high quality oak woodland habitat.

(B) Conservation Easement Protect existing native oak trees on or off the project site from future development through a conservation easement or fee title dedication to the County or a land conservation group approved by the County. Oak woodland offered as mitigation must be configured in such a manner as to best preserve the integrity of the oak ecosystem and minimize the ratio of edge to area. Priority should be given to conserving oak habitat adjacent to existing woodlands under conservation easements, public lands or open space lands. As a general guide, the protection of existing oak woodlands through conservation easements should mitigate for the loss of oaks at a ratio equal to **2:1 or 3:1 based on the condition of the oak woodland habitat**. 2:1 conservation is recommended for medium quality oak woodland habitat, and 3:1 conservation is recommended for high quality oak woodland habitat. Land proposed as mitigation, when viewed with adjacent conservation land, should not result in conserved parcels of less than **1 acre**.

(C) Other options If the onsite preservation of oak woodlands and/or tree planting is not feasible, oak woodland mitigation may occur in the form of in lieu fees paid to an agency, acceptable to the Planning Office, which shall use the fees for the preservation, restoration, or creation of oak woodland habitat. There must be a direct nexus between the amount of fees paid and mitigation required in terms of oak tree replacement and oak woodland preservation.

In-lieu fees shall be paid to a natural resource agency or nonprofit organization (i.e. Open Space, Parks) for planting of oak trees to create oak woodland habitat located in Santa Clara County. The owner must obtain documentation from the local agency or organization confirming receipt of the payment, and that the funds will be used for planting of oak trees for preservation, restoration, or creation of oak woodland habitat at the required ratio.

Language in the DEIR is vague and insufficient to substantiate claims about mitigation of impacts to oak habitat. Mitigation is a vital part of CEQA and measures to address environmental harm must be clearly articulated in the DEIR. The DEIR speaks about some oak alliances that are designated by CDFW as sensitive, and provides limited and insufficient detail on the mitigation plan. For example, page 3.5-312 of the DEIR states:

For all impacts determined to be unavoidable following pre-construction surveys on riparian habitats and sensitive natural communities (e.g., valley oak woodlands), excluding sycamore alluvial woodlands, Valley Water will prepare a compensatory mitigation plan for review and approval by CDFW to acquire mitigation lands to offset direct upstream and indirect downstream impacts on riparian habitats and sensitive natural communities a minimum preservation ratio of 2:1, or at ratios established in coordination with CDFW that will achieve equivalent or greater mitigation.

The DEIR is more grossly deficient in discussing mitigation for other oak communities. The DEIR's reliance on mitigation habitat for California red-legged frog (*Rana draytonii*) and California tiger salamander (*Ambystoma californiense*) (Mitigation Measure BI-8b) as mitigation for blue oak woodland and coast live oak woodland alliances omits many impacted oak woodlands. Further, the DEIR lacks any discussion of mitigation measure for foothill pine/oak woodlands.

Oak woodlands provide food and vital habitat for California's native species, including 2,000 plants, 5,000 insects and arachnids, 80 amphibians and reptiles, 160 birds, and 80 mammals.³² Davis et al. describe oaks as a "foundation species," using Ellison et al.'s definition of such a species as "... one that 'controls population and community dynamics and modulates ecosystem processes,' whose loss 'acutely and chronically impacts fluxes of energy and nutrients, hydrology, food webs, and biodiversity.'"³³

Many of the endangered, threatened, and species of concern analyzed in the DEIR depend on oak woodland habitat. The disruptions in habitat integrity and connectivity brought about by removal of oak trees will diminish survival of these and other oak-dependent species. While significant environmental impacts are inevitable if the proposed construction and operation advance, a more thorough analysis of impacts and a greater emphasis on oak protections are needed.

IV. The DEIR Fails to Adequately Assess and Mitigate Impacts to Botanical Resources.

A. The DEIR Fails to Adequately Analyze Impacts to Botanical Resources Because Due to Flaws in Survey Methodology.

As discussed in the wildlife sections above, CEQA requires that the DEIR disclose the baseline environmental conditions of the proposed project site. This is necessary to adequately analyze, disclose, and mitigate the Project's environmental impacts. Performing protocol-level surveys within the study area is an essential step in describing the environmental baseline. The DEIR has failed in this regard because it is unclear how much of the Project site has been

³² Meadows, R. 2007. Oaks: Research and outreach to prevent oak woodland loss. *California Agriculture* 61(1): 7-10.

³³ Davis, F.W., D.D. Baldocchi, and C.M. Taylor. 2016. "Oak Woodlands," chap. 25 in *Ecosystems of California*. Editors: H. Mooney and E. Zavaleta. University of California Press.

surveyed. The DEIR states that special-status plant field surveys were conducted on March 16 to April 6, 2020, May 4 to May 22, 2020, and July 20 to August 14, 2020. A portion of the study area within Henry W. Coe State Park totaling approximately 105 acres was inaccessible and was not included in the 2020 survey efforts. However, this portion of the study area within Henry Coe was surveyed in 2021. (DEIR 3.5-24; Bio Appendix, 2-3). These statements imply that the entirety of the study area was surveyed as of the 2021 surveys, but several of the proposed mitigation measures indicate that preconstruction surveys or surveys that will be conducted in 2022 will be relied on to fully assess and mitigate impacts to botanical resources, particularly for access and utility areas. For instance, the following mitigation measures that are proposed to address botanical resource impacts all contain language indicating that future surveys will be required due to land access issues:

Mitigation Measure BI-1b: Access and Utility Area Vegetation Mapping (Proposed Project, Alternatives A through D): If field surveys to verify the desktop mapping of the vegetation communities within the access and utility area portions of the Project study area are not able to be conducted due to landowner access constraints in 2022, Valley Water will perform field surveys prior to construction once the areas are legally accessible to perform surveys.

Mitigation Measure BI-2a: Access and Utility Area Mapping of Sycamore Alluvial Woodlands (Proposed Project, Alternatives A through D): If field surveys to verify the desktop mapping of the vegetation communities within the access and utility area portions of the Project study area are not able to be conducted due to landowner access constraints in 2022, Valley Water will perform field surveys prior to construction once legal access necessary to perform surveys is obtained.

Mitigation Measure BI-2c: Provide Compensatory Mitigation for Impacts on Sycamore Alluvial Woodlands (Proposed Project, Alternatives A through D): Valley Water will avoid sycamore alluvial woodlands under CDFW jurisdiction when feasible following the results of the surveys conducted prior to construction activities as described in Mitigation Measure B1-2b.

Mitigation Measure BI-5a: Access and Utility Area Botanical Surveys (Proposed Project, Alternatives A through D): If field surveys to identify special-status plant species within the access and utility area portions of the Project study area are not able to be conducted due to landowner access constraints in 2022, Valley Water will perform surveys prior to construction once legal access to perform the surveys has been obtained.

Because these mitigation measures contemplate the need for additional future surveys due to ongoing access restrictions, it seems that there may be portions of the Project area where protocol-level surveys have not yet been conducted. As such, the DEIR does not make clear precisely how much of the Project site has been surveyed. If portions of the Project site have in fact not yet been surveyed, then the DEIR has failed to describe the environmental baseline, and by extension has failed to adequately disclose and analyze impacts to botanical resources. *See Communities for a Better Environment v. City of Richmond*, 184 Cal.App.4th 70, 89 (Cal. Ct. App. 2010) (“When an EIR omits relevant baseline environmental information, the agency cannot make an informed assessment of the project's impacts.”) Any conclusions about impacts to special-status plants, vegetation communities, or other resources that are based on desktop mapping alone without field surveys are inappropriate and not based on substantial evidence.

The fact that Valley Water did not have access to the entire Project area due to landowner access constraints is not an excuse to circumvent the requirements of CEQA to disclose and analyze impacts in the DEIR.

B. Impacts to Special-Status Plants.

In Impact Bio-5, the DEIR acknowledges a significant impact to special-status plants, specifically to eight rare plant species in 34 populations, containing approximately 33,000 individuals. (DEIR 3.5-79). This impact would result under all project alternatives (apart from the No Project alternative). The DEIR also claims that these significant impacts to rare plants that would occur through construction and inundation would be reduced to less than significant through the implementation of Mitigation Measures BI-1a, BI-5a, BI-5b, and BI-5c. The inadequacies of MM BI-5a have been described in the previous section.

The proposed mitigation measures Mitigation Measure BI-5b and Mitigation Measure BI-5c, which are the two measures identified to substantially address these impacts, are vague, deferred, and not likely to reduce impacts to a less than significant level.

Mitigation Measure BI-5b proposes avoidance of special-status plant species by implementing follow-up botanical surveys, followed by establishment of avoidance buffers, control of herbicides, and construction monitoring. The DEIR does not estimate what percentage of the rare plant populations impacted by the project could be avoided by this measure. Since a large area of the project would be entirely cleared of vegetation and eventually inundated, avoidance of a significant percentage of the impacted rare plant populations through marginal avoidance measures seems unlikely. In addition, as mentioned previously, substantial areas of the project access and utility areas have not yet been botanically surveyed at all, or were surveyed inadequately. This measure by itself would not reduce impacts to special-status plants to less than significant, but rather would only produce a marginal reduction in harm to sensitive species.

Mitigation Measure BI-5C is the primary mitigation measure proposed in the DEIR to reduce impacts to special-status plants to less than significant by planting new populations or protecting existing populations elsewhere. This measure proposes:

- Planting at a 2:1 ratio to supplement the impacted population or establish new populations in suitable habitat, within the same watershed; or
- Preserving existing populations at “agency-approved mitigation properties” if reestablishing populations is not feasible.

The measure goes on to suggest potential compensatory mitigation sites, starting with the 200-foot buffer around the expanded reservoir, and expanding to other locations nearby if the buffer zone is not adequate. The infeasibility of using the 200-foot buffer for wildlife mitigation has been described in previous sections (i.e., the area is part of the proposed project and subject to other uses that diminish its habitat functionality). Our concerns regarding the use of this area for special-status species out planting are similar: This area is being considered for multiple conflicting purposes, including reservoir access and maintenance and mitigation for other

species, and likely will be affected by invasive species spread in addition to reservoir construction.

Relying on offsite mitigation also seems infeasible, and the existence of sufficient and suitable compensatory habitat seems unlikely. If the soil and habitat conditions in offsite locations were suitable for any of the eight rare plant species identified in the DEIR, it is likely that those species would already be present. Special-status plant species are typically limited in their range because of their specific habitat requirements, so locating ideal potential restoration sites that are not yet occupied by the target species (or other rare plant species) is unlikely to be successful. For example, three of the affected species are currently growing in proximity on rock outcrops, which is a habitat type not commonly found in the area and which would present challenges to typical restoration and out planting efforts.

It should also be noted that for each of the significantly impacted special-status plant species, Valley Water proposes to:

- Collect adequate seeds from existing populations (without affecting their viability);
- Plant seeds/or grow out plants in nursery conditions;
- Plant in suitable habitats (in currently unspecified locations);
- Water and maintain plantings; and
- Monitor the restoration sites.

If this restoration plan is eventually implemented, the DEIR does not describe how restoration sites in the buffer zone would be protected in perpetuity from maintenance activities at the reservoir.

This mitigation is proposed for the loss of tens of thousands of rare plants, so would require at least twice as many for restoration. It should be noted that all but two species of the rare plants affected by the project are annual plants, which are known to have greatly variable populations depending on rainfall, and which can bloom at different times from year to year, evading detection by one-time surveys in limited areas. Without question, surveys done over multiple years (particularly in higher rain years) would reveal larger populations and likely additional species of rare plants. Therefore, since there is so much uncertainty regarding the viability of this effort, a ratio of 2:1 for replanting of special-status plant species is likely inadequate and should be increased. As the DEIR is currently drafted, there is insufficient evidence supporting the conclusion that a 2:1 mitigation ratio for each special-status plant is appropriate.

Other potential mitigation sites provided are nonspecific, referencing areas either within or outside of Santa Clara Valley Habitat Plan and Santa Clara County boundaries. This mitigation is also infeasible, for all the reasons described above. Valley Water provides no indications that they have identified suitable compensatory mitigation sites (of up to thousands of acres) that would:

- Contain existing populations of the impacted plant species in sufficient numbers to compensate for their loss at a ratio least 2:1 (or reasonably much higher);
- Contain the specific habitat conditions required for the impacted species;
- Be available for purchase and/or protection in perpetuity; and
- Be located on properties not already protected or identified as mitigation for impacts elsewhere.

The DEIR also provides no clarity on how these off-site mitigation areas would be managed, restored, and monitored to ensure that the overall population of these species will not further decline.

In short, the DEIR fails to describe adequate mitigation measures to reduce impact to special-status plants to a less than significant level. The mitigation measures proposed are vague, speculative, and ignore numerous technical challenges that would likely result in the failure of the restoration. All of these concerns are deferred to the future, and in reality, will result in the permanent loss of dozens of populations of special-status plants.

C. Impacts to Sycamore Alluvial Woodlands.

Sycamore alluvial woodland is an extremely rare and threatened habitat type that supports numerous special-status species. Seventy-one acres of this habitat type will be impacted by the project. Even with protection measures in place, these 71 acres are expected to shift to other riparian vegetation community types at a faster rate and to a greater degree than baseline conditions or the No Project Alternative. (DEIR 3.5-70 (Proposed Project); 3.5-136 (Alternative A), etc.).

The proposed mitigation measures to address these impacts are vague, deferred, and not likely to reduce impacts to a less than significant level. First, the DEIR states that impacts to sycamore alluvial woodlands will be reduced by implementation of Mitigation Measure BI-2a, because that measure will determine the locations and extent of sycamore alluvial woodlands within the access and utility areas, specifically for the purpose of quantifying any additional impacts on these resources and ensuring adequate compensatory mitigation is implemented to mitigate for impacts. As discussed above, deferring surveys in this way is improper and violates CEQA's mandate of disclosure and analysis prior to project approval.

Second, it is unclear whether the Project will actually be able to achieve Mitigation Measure BI-2c, which proposes to compensate for loss of sycamore alluvial woodland. Mitigation Measure BI-2c would compensate for indirect adverse impacts on the 71 acres of sycamore alluvial woodlands that occur from creek mile 0 to creek mile 7 from Proposed Project operations through preservation, enhancement, and/or restoration at new mitigation sites or other already protected lands at a minimum 1:1 ratio or as agreed to by CDFW. (DEIR 3.5-71 (Proposed Project); 3.5-136 (Alternative A), etc.). As an initial matter, the mitigation ratio for sycamore alluvial woodland is lower than the recommended 3:1 ratio, and the DEIR provides no evidence or support explaining how it concluded that a 1:1 ratio is appropriate for this rare and sensitive habitat. Further, the DEIR fails to disclose whether sufficient offsite mitigation sites exist. In noting the Project's potential conflict with the SCVHP, the DEIR states that "California

sycamore alluvial woodland is a rare natural community type within the SCVHP boundaries and consequently, opportunities to preserve and restore or enhance California sycamore alluvial woodland may be limited within the SCVHP boundaries.” (DEIR, 3.5-115). This potentially conflicts with the SCVHP’s Action Land-R3, which requires acquisition of 40 acres of sycamore alluvial woodland and acquired lands to be at least 10 acres in size. (DEIR, 3.5-114). As such, the project is proposing to look for offsite mitigation locations outside of the SCVHP boundary (Mitigation Measures BI-1d, BI-2a, and BI-2c). However, the DEIR has not disclosed whether sufficient acres offsite mitigation areas are available, or whether existing offsite options will be a suitable replacement for the habitat that will be lost given the rarity of sycamore alluvial woodlands. The DEIR’s failure to disclose and explain these aspects of the proposed mitigation is not permissible under CEQA.

V. The DEIR Fails to Adequately Assess Fire History and Impacts to Wildfire Risk

Wildfires due to lightning strikes and Indigenous cultural burning have occurred on California’s landscapes for millennia. They’re a natural and necessary process for many of California’s ecosystems. But some of the recent fires have been exceptionally harmful to communities. In the past 200 years since European colonization, forced relocation and cultural genocide of Native Tribes, fire suppression and poor land management, and poor land-use planning has shifted historical fire regimes throughout the heterogeneous ecosystems of the state. In addition, hotter, drier and more extreme weather conditions due to climate change make the landscape more conducive to wildfire ignitions and spread. Almost all (95-97%) contemporary wildfires have been caused by humans and/or human infrastructure (Balch et al., 2017); therefore, the placement of new roads and facilities in high and very high fire hazard severity zones requires careful and comprehensive analyses of the area’s fire history, the various ecosystems’ fire ecology, and potential mitigation measures to reduce risk of ignition and fire within the Project area and spreading to nearby communities Yet the DEIR fails to adequately assess the Project area’s fire history and mitigate the Project’s impacts to wildfire risk.

A. Valley Water Needs to Make a Concerted Effort to Incorporate Traditional Ecological Knowledge and Indigenous Science into Their Analyses

The DEIR fails to adequately assess the Project area’s fire history, the Project’s impacts to wildfire risk, and potential mitigation strategies to reduce impacts. Ramos (2022) states, “Indigenous communities have often been marginalized in the sciences through research approaches that are not inclusive of their cultures and histories.” Traditional ecological knowledge (TEK) is often excluded from analyses or distilled to conform to Western science (Ramos, 2022). Here, the DEIR fails to acknowledge that Indigenous communities and cultural burning played a role in California’s historical fire activity, only mentioning previous wildfires in the area in CalFire records (DEIR at 3.21-3). This perpetuates the exclusion and marginalization of Indigenous communities and TEK. Consultation with local Native Tribes, including the Amah Mutsun Tribal Band, and incorporation of Indigenous science, including but not limited to oral histories, ethnographies (that may include burn scars and charcoal records), and archeological data should be incorporated in fire history analysis. As a society, we need to work towards integrative research that “transcends disciplinary boundaries” and employs a range of methodological options to get a deeper understanding of the relationship between people and

ecosystems (Ramos, 2022). Doing so will help inform fire management strategies and mitigation measures that work towards reducing harms of wildfire to people while facilitating beneficial fire for the appropriate ecosystems.

Indigenous communities should be more included in climate change and wildfire discourse. They are disproportionately impacted by wildfire. Native Americans were found to be six times more likely than other groups to live in high fire-prone areas, and high vulnerability due to socioeconomic barriers makes it more difficult for these communities to recover after a large wildfire (Davies et al., 2018). In addition, farmworkers, who are majority people of color and often include migrant workers that come from Indigenous communities, often have less access to healthcare due to immigration or economic status. They are more vulnerable to the health impacts of poor air quality due to increased exposure to air pollution as they work. Yet farmworkers often have to continue working while fires burn, and smoke fills the air, or risk not getting paid (Herrera, 2018; Kardas-Nelson et al., 2020; Parshley, 2018) (Herrera 2018; Parshley 2018; Kardas-Nelson et al. 2020).

B. The DEIR fails to adequately assess and mitigate impacts to wildfire risk.

The DEIR fails to acknowledge and discuss that development and human infrastructure in high fire-prone areas increases the risk of igniting wildfires. As detailed in a 2021 Center Report (Yap, Rose, Broderick, et al., 2021), development in highly fire-prone areas increases unintentional ignitions, places more people at risk (within and downwind of the Project area), and destroys native shrubland habitats that support high levels of biodiversity. Almost all contemporary wildfires in California (95-97%) are caused by humans in the wildland urban interface (Balch et al., 2017; Radeloff et al., 2018; Syphard et al., 2007; Syphard & Keeley, 2020). For example, the 2019 Kincadee Fire, 2018 Camp and Woolsey fires, and 2017 Tubbs and Thomas fires were sparked by powerlines or electrical equipment. And although many of the 2020 fires were sparked by a lightning storm, the Apple Fire was caused by sparks from a vehicle, the El Dorado Fire was caused by pyrotechnics at a gender-reveal celebration, the Blue Ridge Fire was likely caused by a house fire, and electrical equipment is suspected to have ignited the Silverado and Zogg fires. Roads and energy infrastructure are sources of wildfire ignitions, and the Project will be placing both of these things in high and very high fire hazard severity zones. The DEIR fails to consider these issues and adequately assess the Project's impacts to wildfire risk.

Recent wildfires have been exceptionally harmful to people. Between 2015 and 2020 almost 200 people in the state were killed in wildfires, more than 50,000 structures burned, hundreds of thousands of people had to evacuate their homes and endure power outages, and millions were exposed to unhealthy levels of smoke and air pollution. Human-caused wildfires at the urban wildland interface that burn through developments are becoming more common with housing and human infrastructure extending into fire-prone habitats, and homes and structures can add fuel to fires and increase spread (Knapp et al., 2021). This is increasing the frequency and toxicity of emissions near communities in and downwind of the fires. Buildings and structures often contain plastic materials, metals, and various stored chemicals that release toxic chemicals when burned, such as pesticides, solvents, paints, and cleaning solutions (Weinhold, 2011). This has been shown with the 2018 Camp Fire that burned 19,000 structures; the smoke

caused dangerously high levels of air pollution in the Sacramento Valley and Bay Area and CARB found that high levels of heavy metals like lead and zinc traveled more than 150 miles (CARB, 2021).

In addition, there are significant economic impacts of wildfires on residents throughout the state. One study estimated that wildfire damages from California wildfires in 2018 cost \$148.5 billion in capital losses, health costs related to air pollution exposure, and indirect losses due to broader economic disruption cascading along with regional and national supply chains (Wang et al., 2021). Meanwhile the cost of fire suppression and damages in areas managed by the California Department of Forestry and Fire (Cal Fire) has skyrocketed to more than \$23 billion during the 2015-2018 fire seasons.

The DEIR fails to adequately mitigate the Project's impacts to wildfire ignition risk. The single wildfire mitigation measure is an improperly deferred Watershed Wildfire Protection Plan to be developed "after project approval and plan implementation will begin concurrent with construction and would continue to varying degrees during operations" (DEIR at 3.21-34). It is generally impermissible to defer the formulation of a mitigation measure to some point after a project is approved. (CEQA Guidelines § 15126.4(a)(1)(B).) Deferring the selection of mitigation measures is allowed in cases where specific performance standards are identified, and the agency commits to achieving those standards in an enforceable manner. (*See POET, LLC v. California Air Res. Bd.* (2013) 217 Cal.App.4th 1214, 737–38.) These specific performance standards have not been identified here. CEQA requires that feasible mitigation measures be adopted (CEQA Guidelines § 15126.4(a)), and that the effectiveness of those measures is supported by substantial evidence. (*See Gray v. County of Madera* (2008) 167 Cal.App.4th 1099, 1116–17 [An agency's finding that a mitigation measure will be effective will not be granted deference if the finding is not supported by substantial evidence].)

In addition, this mitigation measure is vague and unclear, focusing on fuel reduction, fire breaks, and improving access roads, which can do further harm to sensitive habitats and species. The measure omits the consideration of other potential measures, like cultural burning or controlled/prescribed fire, that may be appropriate to reduce destructive wildfires while benefiting native ecosystems. The measure states that "Valley Water working cooperatively with CAL FIRE, California State Parks, and other landowners will prepare a comprehensive Watershed Wildfire Protection Plan for the North Fork Pacheco Creek watershed area upstream of the expanded reservoir" (DEIR at 3.21-34). The measure omits consultation with local Tribes like the Amah Mutsun Tribal Band that, even if they are not landowners, may be stakeholders of their ancestral lands where numerous cultural sites have been identified. Tribes should be included in the development of the wildfire protection plan.

New infrastructure in high fire-prone areas should be avoided. If unavoidable, mitigation measures should require structures to have ember-resistant vents, fire-resistant roofs, and irrigated defensible space immediately adjacent to structures. External sprinklers with an independent water source could reduce structures' flammability. Rooftop solar and clean energy microgrids could reduce fire risk from utilities' infrastructure during extreme weather. Transmission lines could be placed underground. In addition, education awareness for construction workers and operations/management employees should be provided and include

how to reduce ignition risk. For example, smoking should be prohibited in the Project area, vehicles and electrical equipment that could create sparks need to be properly maintained, defensible space immediately adjacent to structures need to be maintained, etc.

VI. The DEIR Fails to Adequately Analyze the Impacts of Greenhouse Gas Emissions from the Proposed Project

As required by Section 15064.4 of the CEQA guidelines³⁴, the lead agency of any proposed project "... shall make a good-faith effort, *based on the extent possible on scientific and factual data*, to describe, to calculate, or estimate the amount of greenhouse gas emissions resulting from a project." Given this requirement, the EIR fails to adequately analyze the Greenhouse Gas Emissions (GHGs) using the latest science and fails to adequately provide a calculation or estimate of GHGs resulting from the project.

A recent 2021³⁵ study by Harrison et al. suggest that storage reservoirs significantly contribute to GHG emissions. Results from this study suggest that more methane (CH₄) bubbles come from storage reservoirs than was previously known through the processes of degassing and ebullition. This includes bubbling directly out of the reservoir and bubbling that is emitted downstream of a reservoir. This is further supported by a 2017 study conducted by Beaulieu et al. That poses "... water-level drawdowns [of reservoirs] can stimulate ebullitive CH₄ flux in reservoirs ..., thereby establishing a connection between water-level management and CH₄ emissions."³⁶ Additional studies or text that also support the connection between CH₄ emissions and changes in reservoir water levels include Deemer et al. 2016,³⁷ Beaulieu et al. 2016,³⁸ Harrison et al. 2017,³⁹ and the 2017 technical report from the World Bank,⁴⁰ Aside from the bubbling of CH₄ that contributes this GHG, the scientific literature also suggests that sediment trapping and composition can lead to eventual hot and low spots in a reservoir.⁴¹

³⁴ California Natural Resources Agency, "Guidelines for the Implementation of the California Environmental Quality Act," n.d., <https://files.resources.ca.gov/ceqa/>.

³⁵ John A. Harrison et al., "Year-2020 Global Distribution and Pathways of Reservoir Methane and Carbon Dioxide Emissions According to the Greenhouse Gas from Reservoirs (G-Res) Model," *Global Biogeochemical Cycles* no. 6, no. e2020GB006888 (2021).

³⁶ Jake J Beaulieu et al., "Effects of an Experimental Water-Level Drawdown on Methane Emissions from a Eutrophic Reservoir," *Ecosystems (New York, N.Y.)* 21, no. 4 (2018): 657–74, <https://doi.org/10.1007/s10021-017-0176-2>.

³⁷ Bridget R. Deemer et al., "Greenhouse Gas Emissions from Reservoir Water Surfaces: A New Global Synthesis," *BioScience* 66, no. 11 (November 1, 2016): 949–64, <https://doi.org/10.1093/biosci/biw117>.

³⁸ Jake J. Beaulieu, Michael G. McManus, and Christopher T. Nietch, "Estimates of Reservoir Methane Emissions Based on a Spatially Balanced Probabilistic-Survey," *Limnology and Oceanography* 61, no. S1 (2018): S27–40, <https://doi.org/10.1002/lno.10284>.

³⁹ John A. Harrison et al., "Reservoir Water-Level Drawdowns Accelerate and Amplify Methane Emission," *Environmental Science & Technology* 51, no. 3 (February 7, 2017): 1267–77, <https://doi.org/10.1021/acs.est.6b03185>.

⁴⁰ World Bank, "Greenhouse Gases from Reservoirs Caused by Biogeochemical Processes" (December 2017), <https://doi.org/10.1596/29151>.

⁴¹ Stephan Hilgert, Cristovão Vicente Scapulatempo Fernandes, and Stephan Fuchs, "Redistribution of Methane Emission Hot Spots under Drawdown Conditions | Elsevier Enhanced Reader," 2019, <https://doi.org/10.1016/j.scitotenv.2018.07.338>.

Beyond that, within section 3.10.3.1 of the DEIR, it is acknowledged and stated that “Removal of vegetation from the Project study area may result in a long-term net increase in atmospheric GHGs relative to existing conditions due to a decrease in carbon sequestration.” The acceptance of such action does not support several current and previous state initiatives including Executive Order N-19-19⁴² which states:

“...California has ambitious and essential climate goals to transition to a healthier, more sustainable and more inclusive economy, including: reducing greenhouse gas emissions 40 percent below 1990 levels by 2030”

Similarly, Executive Order N-82-20⁴³ directs state agencies to “... accelerate natural removal of carbon and build climate resilience” Additionally, acceptance of any action that increases GHGs runs counter to the State’s Climate Adaption Strategy⁴⁴ which outlines that carbon sequestration is a key pillar in California’s climate action.

As a final point of discussion, the DEIR fails to adequately provide an estimated calculation or estimate of GHGs and instead simply opts to state “... quantification of such outcomes, given the state-of-the-science, data, and models available, is not possible as data are not available at the local, project-level scale necessary to perform such quantification and any results would be considered speculative.” While there may be some level of speculation involved in providing any GHGs estimate, this highlights the lack of effort that the project proponents are willing to put forth in their planning and baseline research. A well-informed conservative estimate or calculation would at least provide some level information for review and help determine what the potential impacts from this project would be.

These impacts should not be taken lightly in the face of the current global climatic disaster we are facing and the current list of project activities do not appropriately account for the associated GHG emissions that will come from disturbed natural areas impacted by the reservoir’s existence, GHG emissions from changes in the water-level within the reservoir, and other sources of GHGs that relate to the proposed project.

VII. Conclusion

Given the possibility that the undersigned organizations will be required to pursue legal remedies in order to ensure that Valley Water complies with its legal obligations including those

⁴² State of California, “Executive Order N-19-19,” California Governor, September 20, 2019, <https://www.gov.ca.gov/2019/09/20/ahead-of-climate-week-governor-newsom-announces-executive-action-to-leverage-states-700-billion-pension-investments-transportation-systems-and-purchasing-power-to-strengthen-climate-resili/>.

⁴³ State of California, “Executive Ordeer N-82-20,” October 2020, <https://resources.ca.gov/Newsroom/Page-Content/News-List/Governor-Newsom-Directs-State-Agencies-to-Enlist-Nature-to-Store-Carbon>.

⁴⁴ “State Releases Draft California Climate Adaptation Strategy,” accessed February 11, 2022, <https://resources.ca.gov/Newsroom/Page-Content/News-List/Adapting-to-a-Changing-Climate-State-Asks-for-Public-Comment>.

arising under CEQA, we would like to remind Valley Water of its statutory duty to maintain and preserve all documents and communications that may constitute part of the “administrative record” of this proceeding. (§ 21167.6(e); *Golden Door Properties, LLC v. Superior Court* (2020) 53 Cal.App.5th 733.) The administrative record encompasses any and all documents and communications that relate to any and all actions taken by Valley Water with respect to the Project, and includes “pretty much everything that ever came near a proposed [project] or [] the agency’s compliance with CEQA” (*County of Orange v. Superior Court* (2003) 113 Cal.App.4th 1, 8.) The administrative record further includes all correspondence, emails, and text messages sent to or received by Valley Water’s representatives or employees, that relate to the Project. Maintenance and preservation of the administrative record requires that, *inter alia*, Valley Water (1) suspend all data destruction policies; and (2) preserve all relevant hardware unless an exact replica of each file is made.

Thank you for the opportunity to comment on the DEIR for the proposed Pacheco Reservoir Expansion Project. If you have any questions, please feel free to contact the undersigned organizations at the emails listed below.

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Exhibit 1

DEPARTMENT OF WATER RESOURCES

P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791



November 1, 2021

Mr. Christopher Hakes, Deputy Operating Officer
Dam Safety and Capital Delivery
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, California 95118

Pacheco Dam, Proposed
Santa Clara County

Dear Mr. Hakes:

This is the Division of Safety of Dams' (DSOD) response to the Santa Clara Valley Water District's (Valley Water) design concept submittals for the proposed Pacheco Dam. Valley Water's submittals, dated March 1, 2021, March 16, 2021, and August 25, 2021, sought DSOD's review and approval of the feasibility of constructing a "hardfill" dam at the preferred upper dam site. For the reasons set forth below, DSOD is unable to approve Valley Water's concept.

DSOD has completed its review of the submitted documents (list enclosed). These submittals define a hardfill dam as a symmetrical gravity dam constructed of cemented materials utilizing construction methods similar to Roller Compacted Concrete (RCC). Hardfill materials generally do not meet industry requirements for RCC mixtures, such as using lower quality aggregates with greater fines content (0.075 mm and smaller particles). According to the submittals, Pacheco Dam would be of similar design.

As proposed, Pacheco Dam would be the largest hardfill dam in the United States, standing at a height of 326-feet with 140,000 acre-feet of storage. A key aspect of DSOD's review has been the design, construction, and performance history of hardfill dams in the United States and elsewhere. However, given the short history (less than 20 years) and limited documentation for this type and size of dam, sufficient information is not readily available. With this limitation, DSOD cannot agree with Valley Water and its consultants that hardfill dams have proven adequate performance based on the lack of documented negative performance.

As discussed in a meeting with you and your staff on October 27, 2021, DSOD has identified major issues that lead us to reject the hardfill dam concept. A complete list of major comments is enclosed. The most critical issue, which was identified during your consultant's (AECOM) Probable Failure Mode (PFM) workshop, is the potential degradation of hardfill over time in the presence of water. This negative factor is identified numerous times in the screening of PFMs, but it was considered remote. However, a lack of research and limited performance history leave large uncertainties as to whether this factor is remote. This compounds the risk since the potential for water to interface with the hardfill cannot be fully mitigated, especially at the interface between the dam and foundation.

Mr. Hakes
November 1, 2021
Page 2

Although risk reduction measures could be incorporated into the design, the adequacy and longevity of any risk reduction measure would be unknown. The ability to monitor the dam's performance would be limited in areas such as at the contact between the dam and its foundation. As such, if deficiencies do manifest after significant progression, intervening actions may not be adequate to prevent a catastrophic failure of the dam.

Additionally, the lack of well-documented case histories, cohesive design standards, and independent research regarding hardfill dams and their long-term performance poses unacceptable risks for public safety. Finally, the suitability of the hardfill as a robust dam design cannot be accepted by DSOD based on these factors and assumptions that may prove incorrect in time as the performance of this dam type is better understood.

The upper dam site preferred by Valley Water remains a feasible site to construct a dam, such as an earthfill dam, but this site does have noted geologic issues that will need to be addressed for any dam type. The concern of site-specific fault rupture and the associated unknowns will remain until the foundation is excavated or fully explored via a trench. Additionally, the adverse bedding in the right abutment and potential for differential settlement between the adjacent geologic units will need to be further evaluated. Any dam constructed at this site will need to be designed to accommodate all uncertainties reliably to mitigate the risks associated with the extremely high downstream consequence associated with a dam of the proposed size.

If you have any further questions or comments, please contact Design Engineer Ashley Moran at (916) 565-7850 or Project Engineer Christopher Dorsey at (916) 565-7846.

Sincerely,



Sharon K. Tapia, P.E.
Division Manager
Division of Safety of Dams

Enclosures

California Natural Resources Agency
DEPARTMENT OF WATER RESOURCES
DIVISION OF SAFETY OF DAMS
November 1, 2021

Enclosure 1

The list of documents submitted by Valley Water that DSOD reviewed for determining the acceptability of a hardfill dam at the proposed Pacheco Dam site follows:

1. Hardfill Dam Workplan Pacheco Reservoir Expansion Project, by AECOM, Inc., Stantec, and GEI Consultants, dated March 11, 2021.
2. Evaluation of Hardfill Dam Technical Memorandum Pacheco Reservoir Expansion Project, by AECOM, Inc., Stantec, and GEI Consultants, dated March 15, 2021.
3. Project Alternatives Assessment Technical Memorandum Pacheco Reservoir Expansion, by AECOM, Inc., Stantec, and GEI Consultants, dated March 2021.
4. DRAFT Assessment of Regional and Local Faulting, Pacheco Reservoir Expansion Project, Santa Clara County, California, by Lettis Consultants International, Inc., dated September 10, 2020.
5. Assessment of Local and Site-Specific Faulting, Pacheco Reservoir Expansion Project, Santa Clara County, California, by Lettis Consultants International, Inc. dated February 12, 2021.
6. Reservoir Rim Landslide Inventory Mapping near the Proposed Pacheco Reservoir Expansion Project, Santa Clara County, California, by Lettis Consultants International, Inc. dated March 2, 2021.
7. Pacheco Reservoir Expansion Project (PREP): Workshop materials from PFM workshop, by AECOM, Inc., Stantec, and GEI Consultants, dated August 25, 2021.

California Natural Resources Agency
DEPARTMENT OF WATER RESOURCES
DIVISION OF SAFETY OF DAMS
November 1, 2021

Enclosure 2

The following is DSOD's list of major comments with respect to the proposed hardfill dam at the Pacheco Dam site (upper or lower):

1. Long-term performance data for hardfill dams of the proposed size are not available to adequately support the proposition of a hardfill dam of such extreme consequence. The dynamic properties of hardfill are not well studied or known, and there are no records showing that the select hardfill dams of a similar or larger size have been subjected to dynamic loading close to their design loads. The documentation by AECOM regarding seismic history are based on estimates rather than direct measurements. The conclusion that hardfill dams have adequate performance because there has been no documentation of negative performance is potentially unconservative given the limited history (less than 20 years) for dams of this type and size under extreme loads.
2. In AECOM's review of potential failure modes (PFMs), a negative factor for many of the PFMs is the possibility that hardfill can degrade over time in the presence of water. We find this to be the most critical issue because water may be able to access the hardfill in multiple locations, and some locations may not be detectable. To date, thorough and complete research on this issue has not been performed, and it would take significant time to completely understand. However, this issue cannot be disregarded and is the crux of further issues below.
3. A grout curtain will not fully prevent seepage below or around the dam, and seepage is likely to permeate the dam at the foundation contacts and potentially cause hardfill degradation. The degradation of hardfill in existing dams is currently unknown and the appropriate research would need to be conducted to mitigate any potential risks.
4. The aggregates will be variable on site, which would increase the potential for hardfill to degrade over time if areas of concentrated seepage occur. While multiple mix designs will be developed, not every property of the hardfill will be understood, and the global variability may cause internal flaws or fractures that cannot be predicted or analyzed before construction. Additionally, adequate mixing will be a challenge with many aggregates exceeding 10-percent fines content. While a liner as proposed would protect the dam, we note that liners do degrade with time and environmental conditions (reservoir cycling, weather, etc.).

Enclosure 2

5. The potential for larger units of shales to abut sandstone units creates a potential for differential settlement below the dam. While structurally, the dam may be able to adequately bridge this condition, water would be more likely to access the interface reducing friction resistance, increasing uplift on the dam, and providing a pathway for seepage into and possible degradation of the hardfill or erosion of the foundation that may be undetectable.
6. Considering the adverse bedding and zones of open fractures in the proposed right abutment and the relatively narrow footprint of the hardfill dam, there is a risk of instability and seepage that could result in failure at that abutment. A dam with a larger footprint, like an earthfill dam, would better mitigate the risk of abutment failure by increasing seepage path lengths and improving the ability to capture and monitor for seepage.
7. The site-specific fault rupture evaluation does not adequately demonstrate absence of active faults in the dam foundation. Any planar, laterally continuous bedrock faults or shear zones exposed in the foundation during construction will be considered conditionally active and a possible rupture hazard if their attributes are reasonably consistent with the current tectonic regime. If a shear is encountered, conclusive proof of inactivity will be difficult to achieve given the apparent absence of Quaternary deposits greater than 35,000 years old.

Exhibit 2



November 19, 2021

Sharon K. Tapia, P.E.
Division Manager
Division of Safety of Dams
P.O. Box 942836
Sacramento, CA 94236-0001

Subject: Pacheco Dam Expansion Project. Letter regarding hardfill dam concept dated November 1, 2021

Dear Ms. Tapia:

Thank you for your letter dated November 1, 2021, regarding the proposed Pacheco Dam. We appreciate your review of the documents provided to demonstrate the feasibility of a hardfill dam at the upstream dam site. We were disappointed to learn that DSOD has concluded that you are unable to approve the hardfill dam for a variety of reasons.

Valley Water selected a hardfill dam at this site as our preferred alternative for several reasons including lower construction cost, smaller dam footprint, lower maintenance costs and our belief that a safe hardfill structure could be constructed at this site. As we demonstrated in our basis of design technical memoranda, we still believe that the hardfill dam is a technically feasible and viable alternative. We realize that there is not a long history for hardfill dams, Pacheco Dam would be the largest hardfill dam in the United States, it would be the first hardfill dam in California, and hardfill dams have not been subjected to large earthquake motions to demonstrate their seismic resistance. Given this lack of historical precedence we understand your reluctance to approve the hardfill concept at this time with the information provided. Given the strong support from the Technical Review Board and potentially significant savings, our consultant team will be evaluating whether DSOD concerns can be adequately addressed. Concurrently Valley Water will be asking the consultant team to advance work plans for an alternative dam type design in parallel which might be more acceptable to DSOD.

Because the letter from DSOD came after the Draft Environmental Impact Report (EIR) was already completed and in the approval process, it has been released to the public with the hardfill dam at the upstream site as the preferred alternative. Please note that



Ms. Sharon K. Tapia, P.E.

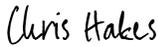
Page 2

November 19, 2021

the Draft EIR includes several other alternatives, including earthfill dams, evaluated to the same level of detail as the preferred alternative. With the information provided in the Draft EIR, concurrent alternative dam type design advancement and our desire to work closely with DSOD to achieve the coequal goals, we believe we can still keep the project moving with minor schedule impacts.

Valley Water shares the same goal as DSOD in that safety of our dams are a top priority. We will continue to work closely with DSOD as we advance the Pacheco Reservoir Expansion Project design. We will keep you informed of our future direction and schedule to allow you to allocate appropriate review resources as deliverables are provided. Please let us know if you or your staff would like to discuss this response or any other aspects of the project.

Sincerely,

DocuSigned by:

EBED997C7E74466...

Christopher Hakes.
Deputy Operating Officer
Dam Safety & Capital Delivery Division

cc: Ashley Moran, Design Engineer
Christopher Dorsey, Project Engineer