



March 23, 2026

Sent via email

City of Roseville Development Services – Planning
Derek Ogden, Senior Planner
311 Vernon Street, Roseville, CA 95678

Re: Comments on the Draft EIR for Phillip Road Project (State Clearinghouse No. 2025060240)

Dear City of Roseville Planning Commission:

This letter is submitted on behalf of the Center for Biological Diversity (“Center”) regarding the Draft Environmental Impact Report (“DEIR”) for the Phillip Road Project (“Project”), State Clearinghouse No. 2025060240.

The Center is a non-profit, public interest environmental organization dedicated to the protection of native species and their habitats through science, policy, and environmental law. The Center has over 1.7 million members and online activists throughout California and the United States. The Center has worked for many years to protect imperiled plants and wildlife, open space, air and water quality, and overall quality of life for people throughout Placer County. The Center frequently participates in environmental review for industrial development projects in Placer County and frequently reviews and submits comment letters on environmental impact reports prepared pursuant to CEQA for projects throughout the state.

COMMENTS

I. The DEIR Fails to Adequately Analyze, Disclose, and Mitigate the Project’s Significant Adverse Air Quality Impacts.

The DEIR fails to adequately disclose, analyze, and mitigate the full suite of the Project’s air quality impacts and public health concerns, in particular nitrogen oxides and particulate matter from the Project’s data centers. (See DEIR at 2-21.) The Project would affect an area already in violation of the Clean Air Act’s National Ambient Air Quality Standards, as the Sacramento Valley Air Basin is in extreme nonattainment for federal ozone standards and nonattainment for the PM 10 standard. (DEIR at 3.4-15.) State and local air agencies have determined that attainment will require massive emission reductions from all pollution sources. However, the DEIR here fails to adequately address the Project’s increase in emissions, analyze

to what extent the Project will hinder ambitious reductions required under the State Implementation Plans, and provide adequate mitigation measures.

First, the DEIR fails to fully disclose and assess the impacts of the Project's diesel backup generators on air quality in surrounding communities. (Olague, 2016.) Diesel generators for data centers emit 200-600 times more NO_x than new or controlled existing natural gas-fired power plants for each unit of electricity produced, as well as particulate matter. (SCAQMD.) Placer County already ranks sixteenth among the nation's worst in ozone pollution (ALA 2026), and experts have linked Ozone to increased risk of cancer, birth defects, low birth weights, and premature death, in addition to a variety of cardiac and lung diseases such as asthma, COPD, stroke, and heart attack. (Laurent 2016; ALA 2025.)

Additionally, Particulate Matter, another pollutant that will be emitted by the data center's diesel generators, can easily escape the body's natural defenses and enter the blood stream, impacting human health. (Harvard, 2025.) Air pollutants like PM 2.5 are considered "non-threshold," meaning there is no safe level and any increase in exposure poses a significant health risk. (*Id.*) Even short-term exposure, lasting from just 30 minutes to 24 hours, can trigger breathing problems, especially for vulnerable individuals with preexisting lung conditions, requiring further assessment. (WA, Dept. of Ecology.)

Second, relatedly, the DEIR fails to adequately disclose and assess the impacts of diesel generator emissions on the nearest sensitive receptors. These sensitive receptors are located in residences approximately 50 feet east of the Project site in the Creekview Specific Plan area and 600 feet south of the Project site in the West Roseville Specific Plan area, as well as eight schools located within two miles of the Project site. (DEIR at 3.4-16.) The CEC has found that the diesel generators, operating for only 20 hours a year for maintenance and testing, still emit as much pollution as 428 gas-powered cars driven for a year. (Capital & Main, 2025.) As a result, researchers at UC Riverside and Caltech found that an increase in permits for diesel generators at data centers in Virginia since 2023 may have resulted in 14,000 asthma symptom cases and caused as much as \$300 million in health care costs. (Capital & Main, 2025.) Accounting for impacts from fossil fuel-generated electricity and domestic chip manufacturing, researchers found the health burdens of data centers could amount to \$20 billion by 2030. (Capital & Main, 2025.) The adverse environmental effects, particularly in terms of air quality degradation associated with data center operations, pose significant risks to nearby communities, especially here with sensitive receptors located so close to the Project site.

And finally, the DEIR failed to adequately disclose and assess the Project's contribution to significant cumulative air quality impacts from data centers. Since 2017, more than one gigawatt of diesel-based energy—enough to power at least 161,969 households for a year—has been approved as emergency power for California data centers alone. (Capital & Main, 2025.)

Nitrogen oxides and particulate matter from these approved diesel generators can travel hundreds of miles with the wind, raising cumulative air pollutant concentrations in communities nearby (EPA, 2026), especially considering that Placer County already has several data centers near the city of Roseville. (Data Center Map, 2026.) Despite this impact, the DEIR fails to assess cumulative impacts of all the Project's data centers' diesel generators running at once during a power outage, alongside other existing diesel backup generators in data centers nearby.

To mitigate these significant impacts, the City should consider several additional mitigation measures for construction and operation, including the following:

- Extending the construction period as feasible in order to ensure air quality daily thresholds are not exceeded.
- The use of zero-emission or electric construction fleets to reduce emissions from NOX, PM2.5 exhaust, and PM10 exhaust.
- Grading activity limitations to reduce fugitive dust or use of construction equipment.
- Construction traffic control plans to reduce sensitive receptor exposure to emissions from NOX, PM2.5 exhaust, and PM10 exhaust.
- Prohibiting off-road diesel-powered equipment from being in the "on" position for more than 10 hours per day.
- Providing electrical hook ups to the power grid, rather than use of diesel-fueled generators, for electric construction tools, such as saws, drills, and compressors, and using electric tools whenever feasible.
- Limiting the amount of daily grading disturbance area.
- Prohibiting grading on days with an Air Quality Index forecast of greater than one hundred for particulates or ozone for the project area.
- Installing and maintaining, at the manufacturer's recommended maintenance intervals, an air monitoring station proximate to sensitive receptors and the facility for the life of the project and making the resulting data publicly available in real time. While air monitoring does not mitigate the air quality or greenhouse gas impacts of a facility, it nonetheless benefits the affected community by providing information that can be used to improve air quality or avoid exposure to unhealthy air.

The FEIR should be revised to include these and other measures to reduce, avoid, or minimize the Project's admittedly significant and unavoidable impacts to air quality and recirculated for public review and comment. As a reminder, should the City decide that one of the suggested mitigation measures is not feasible, it must explain in the record why it concluded that specific mitigation measure was not feasible, supported by substantial evidence. (*Los Angeles Unified Sch. Dist. v. City of Los Angeles* (1997) 58 Cal.App.4th 1019, 1029.)

B. The DEIR Fails to Adequately Analyze, Disclose, and Mitigate the Project's Significant Energy Demand.

The DEIR also fails to adequately assess the Project's massive energy demand. Data centers represent one of the most energy- and water-intensive sectors in the United States. As of March 2025, the United States housed 5,426 recorded data centers (Taylor, 2025), and in 2023, these facilities consumed 176 terawatt-hours (TWh) of electricity, or 4.4 percent of the country's total electricity use—more than the total energy consumption of Ohio in 2022. (Shehabi, 2024.) Data centers' round-the-clock operation requires substantial electricity for both computational processes and cooling systems, often drawing from regional power supplies already operating near capacity. The energy demands of artificial intelligence applications exacerbate this impact: while a conventional data center rack uses an average of 7 kilowatts (kW), AI data center racks can require up to 50 kW. (Loten, 2023.) In 2023, AI workloads represented about 20 percent of total data center capacity, and projections indicate a tenfold increase in AI-related electricity consumption by 2026. (Ramachandran, 2024.)

Specifically, the energy footprint of data centers, such as this Project, is expected to grow significantly in California, posing reasonably foreseeable risks to the stability of the electric grid and undermining national efforts to reduce greenhouse gas emissions. From 2019 to 2023, the electricity consumption in California data centers increased from 5.54 TWh to 10.82 TWh, almost a 95% increase. (Liu, 2025.) Current projections indicate that electricity consumption by data centers in California will grow to between 16.16 and 25.28 TWh by 2028—which corresponds to an increase of 49.2% to 133.6% compared to 2023. (Liu, 2025.) This amount, 25.28 TWh, is equivalent to the annual electricity consumption of approximately 2.4 million average U.S. households. (Liu, 2025.) The DEIR's failure to adequately assess this Project's energy demand in light of numerous other data centers nearby, others currently seeking approval, and these projections, renders the DEIR inadequate as an informational document.

C. The DEIR Fails to Adequately Analyze, Disclose, and Mitigate the Project's Significant Water Demand.

The DEIR also fails to adequately evaluate the reasonably foreseeable increase in long-term water demand associated with the Project. In total, the DEIR states that the Project will require approximately 894,529 gallons per day, and about 1,002 acre feet per year ("AFY") (DEIR at 3.11-19), which amounts to a net annual increase in water demand of 441 AFY of water over the previously proposed project, about 393,699 gallons a day. (DEIR at 3.11-19.) For the data centers specifically, the DEIR estimates an annual water usage of 538 AFY (about 175,308,068 gallons), which is much higher than other data centers in California. (DEIR at 3.11-13.) For example, Bowers Data Center uses 2 AFY, Martin Data Center uses 2 AFY, CA3

(Vantage) Data Center uses 2 AFY, and Great Oaks South Data Center uses 4 AFY. (Bowers FEIR; Martin FEIR; CA3 FEIR; Great Oaks South FEIR.)

Substantial evidence indicates that the Project’s massive water demand will significantly impact water supplies. Data centers generally rank among the top 10 water-consuming commercial industries in the United States (Siddik; Berkeley, 2026), and California is number two on the list of states with the most data centers in highly water-stressed areas. (Campbell, 2025.) AI researchers at UC Riverside recently determined that between 2019 and 2023 on-site water consumption in California data centers slightly more than doubled. (Lazo, 2025.) And with the advent of artificial intelligence, each year data centers will require more: Google’s data centers used 20 percent more water in 2022 than in 2021, while Microsoft’s water use rose by 34 percent. (Berreby.) These are reasonably foreseeable impacts of the Project, when the DEIR failed to fully disclose and assess, indicating significant impacts on water supplies.

Furthermore, climate change and population growth pose unprecedented challenges to California’s efforts to allocate and conserve limited water resources. New studies predict that in the next 35 to 60 years, if GHG emissions continue unchecked, the American West’s snowpack will continuously shrink, disappearing for a decade or more at a time. (Siirila-Woodburn 2021.) In 2022, the IPCC specifically identified the American West as vulnerable, warning that with projected warming in the western mountains, accumulated snowpack is “virtually certain to decline.” (IPCC 2022.) This warning informed an Executive Order from Governor Newsom, declaring that California must “redouble near-, medium-, and long-term efforts to adapt its water management to a changing climate, shifting precipitation patterns, and water scarcity.” (Executive Order N-7-22 (2022).) Climate change has caused increased water extremes—a boom and bust cycle between flooding and drought—that scientists predict will only get worse, especially considering the high water demands of the data center industry. (Polade et al. 2017; Swain et al. 2018.)

The DEIR claims that the Project will not significantly impact water supplies because it will rely solely on recycled water. (DEIR at 3.11-15.) However, CEQA requires that mitigation be “fully enforceable through permit conditions, agreements, or other measures.” (See Pub. Res. Code § 21081.6(b); CEQA Guidelines § 15126.4(a)(2).) Nowhere does the DEIR *require* that the Project use recycled water as mandatory, enforceable mitigation measure; rather it only assumes recycled water will be used. Instead, to mitigate impacts on water supplies, the FEIR should mandate that the Project’s data centers use recycled water as a mitigation measure and employ Zero Water Evaporation Systems, which recycle water in a closed loop, eliminating the need to add fresh water to the cooling system. Microsoft has pledged to employ this type of cooling system at several data centers beginning in 2026 and estimates it will save 1.25 million gallons of water annually per data center. (Darley, 2024.) Alternatively, closed-loop chilled water

systems that use energy-efficient chillers, as well as immersion cooling, would provide efficient options to mitigate the Project's water demand in its data centers. (Jain, 2024.)

D. The DEIR Fails to Adequately Analyze, Disclose, and Mitigate the Project's Significant Noise Impacts.

The DEIR admits that data centers' HVAC systems and diesel backup generators will result in significant noise impacts for the local community and sensitive receptors just feet from the Project site. Specifically, the DEIR admits that construction-generated noise during daytime could be as high as 76.1 dBA Leq and 80.1 dBA L max at the nearest sensitive receptor (DEIR at 3.6-15), and that noise from HVAC units would be 38.5 dBA Leq and 41.5 dBA L max at sensitive receptors 200 feet east (DEIR at 3.6-20) and 70 dBA Leq and 70 dBA L max from diesel generators. (DEIR at 3.6-21.) However, the DEIR overlooks impacts from data centers' tonality, frequency content, impulsiveness, and amplitude modulation, which can also impact surrounding communities. (Ledger, 2024.)

Additionally, the DEIR fails to disclose and assess health impacts on residents, especially nearby sensitive receptors, from these sound levels. Noise is the second largest environmental cause of health problems, just after the impact of air pollution. (Angelo 2023; Harvard 2022.) Large-scale studies show that, over time, noise exposure increases the risk of high blood pressure, type 2 diabetes, coronary heart disease, and heart attacks, as well as strokes, diabetes, dementia, sleep disturbances, memory impairment, and depression. (Bosker, 2019; Vermeer 2000; Minho 2012; Park 2018; Harvard 2022.) Chronic noise exposure contributes to about 48,000 new cases of heart disease in Europe each year and disrupts the sleep of 6.5 million people. (Harvard 2022.) For children, noise pollution interferes with behavioral and cognitive development and speech and language development, and it decreases concentration, impairs memory retention, and increases blood pressure. (Angelo, 2023; Ferguson, 2013; Raess, 2022.) For adolescents, it can interfere with mental health. (Lim, 2018.)

The sound levels disclosed in the DEIR, in particular, will impact residents' health, as sound levels of 55+ dBA are linked to health impacts, such as hypertension, heart disease, and stroke. (Munzel, 2014.) A UK study concluded that daytime noise levels of 55 dBA and above could account for an additional 542 cases of hypertension-related heart attacks, 788 instances of stroke (see below), and 1,169 cases of dementia in the United Kingdom. (Harding, 2013; Olivo, 2023; Bosker, 2019; Cary, 2023.)

Noise from data centers does not only impact communities, but it also impacts wildlife, which the DEIR overlooks. (*See, e.g., Keep Our Mountains Quiet v. Cty. of Santa Clara*, 236 Cal. App. 4th 714 (2015) [requiring an EIR before authorizing an event because substantial evidence indicated that noise may impact surrounding residents and biological resources, even if the project would not generate noise in excess of the county's noise ordinance and general plan].)

Impacts from noise include altered vocal behavior to mitigate masking, changes in vigilance and foraging behavior, and impacts on individual fitness and the structure of ecological communities. (Shannon et al., 2016.) In particular, noise can significantly degrade habitat value for migrating songbirds, decreasing feeding behavior and duration. (Ware et al., 2015.) Another study found a 28% decrease in bird abundance in areas when traffic noise was present compared to when there was no traffic noise. (McClure et al., 2013.) And these impacts do not always improve over time: researchers have postulated that some species in areas with chronic noise pollution may become *more* sensitive to noise stressors instead of becoming habituated or less sensitive to them. (Goudie & Jones, 2004.) Therefore, special-status and sensitive species and other native wildlife in and around the Project site could be significantly adversely affected by ongoing noise.

The City should require further mitigation of these noise impacts to address health concerns and impacts on wildlife. For example, an early design-level acoustical analysis can help optimize site layouts and identify noise management strategies. (Ledger, 2024.) Technologies such as rooftop screening, acoustical wraps, physical acoustical screening (such as a noise wall), noise attenuation wraps for air cooled chillers, and other soundproofing materials can reduce data center noise and minimize impacts on the local community. (Ledger, 2024.)

E. The DEIR Fails to Adequately Analyze, Disclose, and Mitigate the Project's Significant GHG Impacts.

The DEIR's analysis of the proposed Project's GHG emissions also falls short of CEQA's requirements. The Project will result in significant and unavoidable amounts of GHG emissions during construction and operation. However, the DEIR fails to adequately assess all sources of those emissions, as well as require all feasible measures to mitigate these significant direct and indirect impacts.

1. Climate Change is a Catastrophic and Pressing Threat to California

There is an international scientific consensus that human-caused climate change is causing widespread, significant, and irreparable harm to human society and natural ecosystems, and that the threats of climate change are becoming increasingly dangerous. The Intergovernmental Panel on Climate Change (IPCC), the leading international scientific body for the assessment of climate change, concluded in its 2023 Sixth Assessment Report that: "[h]uman activities, principally through emissions of greenhouse gases, have unequivocally caused global warming, with global surface temperature reaching 1.1°C above 1850-1900 in 2011-2020." (IPCC, 2023.) The impact of this global temperature increase is stark: as the IPCC further points out, "[h]uman-caused climate change is already affecting many weather and climate extremes in every region across the globe. This has led to widespread adverse impacts and related losses and damages to nature and people." (*Id.*) These findings were further emphasized in the United States' 2023 Fifth National Climate Assessment, prepared by the nation's leading scientific

experts and reviewed by federal government experts and the external National Academy of Sciences, Engineering, and Medicine. The Fifth National Climate Assessment concluded that “[h]uman activities—primarily emissions of greenhouse gases from fossil fuel use—have unequivocally caused the global warming observed over the industrial era” and “[t]he U.S. is warming faster than the global average.” (National Climate Assessment, 2023.) In addition, the Fifth National Climate Assessment found even stronger consensus for the link between greenhouse gas emissions and climate disasters: “[a]dvances have increased confidence in the linkages between many weather disasters and climate change, and scientists can now estimate the role of climate change in some types of extreme events in real time.” (*Id.*)

Immediate and aggressive greenhouse gas emissions reductions are vital to keep warming well below the 2°C above pre-industrial levels threshold to avoid the most dire climate change outcomes. The IPCC Sixth Assessment Report stated that “[l]imiting warming to 1.5°C and 2°C involves rapid, deep and in most cases immediate greenhouse gas emission reductions” across all sectors. (IPCC, 2023.) But from 2019 to 2023, carbon emissions from data centers in California rose from 1.24 to 2.38 million short tons and by 2023 emitted 4.52% of California’s total electricity-related emissions. (Liu, 2025.) This number is expected to rapidly grow in the next two years, as projections indicate that emissions will rise to between 3.55 and 5.56 million short tons by 2028. (Liu, 2025.) Nationwide, Morgan Stanley projects that greenhouse gas emissions by the global data center industry will amount to about 40% of what the entire U.S. emits in a year by 2030. (Reuters, 2024.) And altogether, S&P Global Ratings estimates that data centers will lead to additional demand of between 3 to 6 billion cubic feet of gas per day by 2030—equivalent to the gas consumption of the entire state of Florida. (Samuelson, 2024.)

The impacts of climate change are vast and will be felt by humans, wildlife, and ecosystems. A warmer climate has an impact on soil moisture, precipitation levels, global weather patterns, and natural disasters. (IPCC, 2023.) There will be an increased risk to “health, livelihoods, food security, water supply, human security, and economic growth” with the current rate of climate change. (IPCC, 2023.) Future climate change projections will result in severe impacts across natural and human systems, including risk of species loss, lower food production, and heat risks to human health. (IPCC, 2023.) Further, climate change is placing growing pressure on species and ecosystems, driving shifts in their distribution, timing of biological events, physiology, reproduction, genetics, and the structure and function of ecosystems—while also raising the risk of extinction. (Warren, 2008.) Local extinctions linked to climate change are already widespread and have affected hundreds of species. (Wiens, 2016.) If climate change continues unchecked, catastrophic levels of species extinctions are projected within this century. (Thomas, 2004; Maclean, 2011; Urban, 2015.)

As such, the Project's admittedly significant GHG emissions would be profoundly harmful to the surrounding community and the state's GHG emissions reduction goals. And on a broader scale, emissions from the data center industry will only grow: Data centers could consume as much as 17 percent of all U.S. electricity by 2030, according to research from Bloomberg Intelligence, nearly quadruple what they consume today. (Bloomberg, 2024.) New solar and wind energy may meet up to 40 percent of that new power demand; however, experts predict the rest will come from a vast expansion in natural gas, comparable to adding 15.7 million gas-powered cars on the road. (Halper, 2024.)

2. The DEIR Fails to Adequately Mitigate the Project's GHG Impacts.

Nevertheless, the DEIR failed to adequately mitigate the Project's significant GHG emissions. For example, the DEIR does not *require* solar on parking areas; rather it states only that "the project *may* utilize solar photovoltaic systems mounted on parking-area canopies." (DEIR at 3.5-16 [emphasis added].) And as for rooftop solar, it states only that "non-residential buildings . . . shall install PV systems sized to utilize a substantial portion of feasible roof *or* canopy area." (DEIR at 3.5-16.) Instead, the DEIR should require 100% coverage of solar on each data center rooftop *and* 100% coverage of each parking lot to address the 21,197 metric tons of carbon dioxide equivalent it will emit each year during operation.

CAPCOA has also identified existing and potential mitigation measures that could be applied to projects during the CEQA process to reduce a project's GHG emissions. (CAPCOA 2008). The California Office of the Attorney General also has developed a list of reduction mechanisms to be incorporated through the CEQA process. (CAPCOA 2008 at Table 16.) These resources provide a rich and varied array of measures to be incorporated into the Project. Potential measures include ease of access to public transit, alternative construction materials, and onsite energy generation. Specific measures for the GHG emissions generated by the Project's overall energy consumption, including data centers, include, but are not limited to:

- Requiring that the Applicant seek and obtain the U.S. Green Building Council's LEED or comparable standards for energy- and resource efficient building during pre-design, design, construction, operations and management;
- Designing buildings for passive heating and cooling, and natural light, including building orientation, proper orientation and placement of windows, overhangs, skylights, etc.;
- Designing buildings for maximum energy efficiency including the maximum possible insulation, use of compact fluorescent or other low-energy lighting, use of energy efficient appliances, etc.;
- Reducing the use of pavement and impermeable surfaces;
- Requiring water re-use systems;

- Installing light emitting diodes (LEDs) for traffic, street and other outdoor lighting
- Limiting the hours of operation of outdoor lighting;
- Maximizing water conservation measures in buildings and landscaping, using drought tolerant plants in lieu of turf, planting shade trees;
- Ensure that the Project is fully served by full recycling and composting services;
- Ensure that the Project's wastewater and solid waste will be treated in facilities where GHG emissions are minimized and captured;
- Installing the maximum possible photovoltaic array on the building roofs and/or on the project site to generate all of the electricity required by the Project, and utilizing windenergy to the extent necessary and feasible;
- Installing solar water heating systems to generate all of the Project's hot water requirements;
- Installing solar or wind powered electric vehicle and plug-in hybrid vehicle charging stations to reduce emissions from vehicle trips;

The Project should further utilize the following measures related to construction for all buildings on the Project site:

- Utilize recycled, low-carbon, and otherwise climate-friendly building materials such as salvaged and recycled-content materials for building, hard surfaces, and non-plant landscaping materials;
- Minimize, reuse, and recycle construction-related waste;
- Minimize grading, earth-moving, and other energy-intensive construction practices;
- Landscape to preserve natural vegetation and maintain watershed integrity;
- Utilize alternative fuels in construction equipment and require construction equipment to utilize the best available technology to reduce emissions.

F. The DEIR Fails to Adequately Analyze or Mitigate for Impacts to Numerous Special-Status Species.

The DEIR fails to provide an adequate analysis of significant impacts from the proposed Project on numerous special-status species that would be impacted by the Project. As outlined below, more is required to analyze and mitigate the Project's impacts on these species.

1. Burrowing Owl

Historically, burrowing owls were found broadly across California in wide lowland valley bottoms, flat coastal lowlands, and interior deserts. However, burrowing owls have been eliminated or nearly wiped out as a breeding species from about one-third of their former California range. (Miller, 2024.) Burrowing owl populations are being impacted by urbanization,

which destroys nesting and foraging habitat and increases the likelihood of vehicle collisions (Desmond et al., 2000; Haug et al., 1993; Haug & Oliphant, 1987; Rosenberg et al., 1998); pesticide use (Baril, 1993; Hjertaas, 1997; James et al., 1990; Rosenberg & Haley, 2003; Sheffield, 1997); efforts to eliminate burrowing rodents (Anderson et al., 2001; Gordon, 1996); and predation by non-native species. (Green & Anthony, 1989.)

The DEIR admits that burrowing owls may occur on the Project site and notes that a burrowing owl was seen in the Amoruso Ranch Specific Plan area immediately adjacent to the site and that the earthen berms onsite contain California ground squirrel burrows, which burrowing owls may utilize. (DEIR at 3.7-29.) And it further acknowledges that implementation of the Project would impact onsite burrowing owls, including by disturbing them, injuring them, or even killing them. (*Id.* at 3.7-30.) Yet the DEIR fails to adequately analyze or mitigate the Project's impacts on burrowing owls to maximum extent feasible, as required, and wrongly concludes that, with implementation of the mitigation measure proposed, Project-related impacts on burrowing owls would be less-than-significant. (*Id.* at 3.7-31.)

In reaching its conclusion that, with implementation, Project-related impacts on burrowing owls would be less-than-significant, the DEIR limits its analysis of Project-related impacts on burrowing owl (and other special-status bird species) on the basis that the Project would only impact such species when Project-related construction encroaches on the portion of the Project site they most likely utilize. (*Id.* at 3.7-30.) This conclusion – and this limitation on the DEIR's analysis – ignores the “edge” effects development would have on these species. The edge effects of development, including, but not limited to, Project-related noise and light pollution, can impact a whole host of species, including birds, in various ways. (Benítez-López et al., 2010; Bunkley & Barber, 2015; Cushman, 2006; Delaney et al., 2010; Kociolek et al., 2011; McClure et al., 2013; Shannon et al., 2016; Slabbekoorn & Ripmeester, 2008; Ware et al., 2015.) Noise at levels as low as 55 to 61 dBA have been shown to significantly degrade habitat value for birds by decreasing feeding behavior and increasing vigilance behavior, which increases the risk of starvation. (Ware et al., 2015.) Another study found a 28 percent decrease in bird abundance in areas exposed to traffic noise. (McClure et al., 2013.) Development of new buildings in open spaces can also significantly impair movement of many wildlife species. The impacts of light pollution are varied, and different species respond to artificial light at night in different ways. Individual impacts of light pollution include numerous physiological (*e.g.*, hormone levels) and behavioral changes (*e.g.*, shifts in activity patterns) that can impact an animal's ability to survive and thrive in their environment. (Aulsebrook et al., 2020; Dominoni, 2015; Gaston et al., 2014; Kempenaers et al., 2010.) These individual impacts can cascade into ecological changes like phenological mismatches and shifts in predation patterns that can disrupt population- and ecosystem-level dynamics, including mortality, fecundity, and community productivity, among others. (Ditmer et al., 2021; Gaston et al., 2013; Sanders et al., 2020.) Yet,

the DEIR completely fails to analyze the potential edge effects of the Project on burrowing owls or other onsite special-status species, in violation of CEQA.

The DEIR's proposed mitigation – referred to as Mitigation Measure 3.7-2c – is insufficient to reduce Project-related impacts on burrowing owls to less-than-significant levels. Mitigation Measure 3.7-2c requires a “qualified” biologist to conduct a minimum of four surveys for burrowing owls, including at least one during a portion of the breeding season (i.e., between February 15 and April 15). (*Id.*) And it requires that such surveys also include a survey within 14 days of ground disturbing activities, since “burrowing owls may recolonize a site after only a few days” and that such surveys be undertaken in accordance with CDFW’s 2012 Staff Report on Burrowing Owl Mitigation. (*Id.*) If no burrowing owls are found during these surveys, the DEIR mandates no further mitigation. (*Id.*) If burrowing owls are found onsite during one of the surveys, Mitigation Measure 3.7-2c only requires minimal action be undertaken. (*Id.*) The Applicant would then be required to impose a buffer around the owl(s) of 50 meters during the non-breeding season or 50 meters during the breeding season. (*Id.*) Per the DEIR, even after identifying burrowing owls onsite, the Applicant would only need to obtain an Incidental Take Permit (“ITP”) from CDFW or otherwise mitigate impacts on the species when such buffering is for some reason infeasible. (*Id.*) This is insufficient. The City must amend Mitigation Measure 3.7-2c to require such surveys be conducted by a *CDFW-approved*, qualified biologist and conducted no fewer than fourteen (14) days prior to the start of Project-related activities *and* within 24 hours prior to ground disturbance, in accordance with CDFW directives. (CDFW, 2012.) And it must be further amended to require that habitat assessments and surveys continue to occur throughout Project construction, as conditions may change annually and suitable refugia for burrowing owl, such as small mammal burrows, can be created within a few hours or days.

Further, Mitigation Measure 3.7-2c must be modified to require a 5:1 ratio for compensatory habitat if an Incidental Take Permit is required by CDFW. Multiple scientific studies specifically address the need for higher mitigation ratios (along with long-term monitoring, identified and measurable success criteria, and adaptive management strategies) to improve chances of adequately mitigating impacts to habitats and species. (*See, e.g.,* Matthews & Endress, 2008; Mitsch & Wilson, 1996; Moilanen et al., 2009; Stein et al., 2018; Sudol & Ambrose, 2002; Windmiller & Calhoun, 2007; Zedler & Callaway, 1999.) For example, Moilanen et al. (2009) found that “very high offset ratios may be needed to guarantee a robustly fair exchange” and that “considerations of uncertainty, correlated success/failure, and time discounting should be included in the determination of the offset ratio to avoid a significant risk that the exchange is unfavorable for conservation in the long run.” The preservation of high-quality habitat in and near the Project area should be prioritized, the minimum acreage of habitat mitigation should be greater if habitat is being restored or created, and mitigation should be planned in a way that is protective from edge effects and fragmentation to improve the probability of ecologically functional mitigation. Created and restored habitat mitigation ratios

should be much higher than preservation mitigation ratios, and they should be coupled with extended years of effective monitoring and adaptive management strategies (Ambrose et al., 2006; Moilanen et al., 2009; Sudol & Ambrose, 2002.) Scientists recommend 15-20 years or more of monitoring and adaptive management to determine the success, or lack thereof, of enhanced, restored, or created habitat. (Mitsch & Wilson, 1996; Zedler & Callaway, 1999.)

In addition to Mitigation Measure 3.7-2c, the City should require the Applicant to prepare a Burrowing Owl Exclusion Plan pursuant to CDFW guidance and should further require the Applicant to secure and permanently protect mitigation lands to mitigate for loss of habitat *before* any activities that may impact owls begin. (State of California Department of Fish and Game, 2012.)

2. Swainson's Hawk and Other Special-Status Bird Species

The DEIR acknowledges that approximately eleven other species of special-status birds likely occur onsite and in areas adjacent thereto, including, but not limited to, Swainson's hawk and western yellow-billed cuckoo. (DEIR at 3.7-31.) And the DEIR further asserts that the Project would impact these species, including by damaging or destroying breeding and nesting sites and habitat. (*Id.*) However, the DEIR fails to adequately analyze or mitigate the Project's impacts on these species to the maximum extent feasible, as required, and wrongly concludes that, with implementation of the proposed mitigation program, Project-related impacts on these species would be less-than-significant. (*Id.*)

The eleven special-status bird species that would be impacted by the Project are vulnerable and in desperate need of protection, having already lost much of their habitat to human development. For example, historically Swainson's hawk was common throughout most of California, but now there are less than 2,000 breeding pairs in the state, an 80 percent decrease from historic levels. (CDFW, 2016.) Yet, the DEIR asserts that, with the implementation of modest mitigation measures, the Project would have less-than-significant impacts on Swainson's hawk and the other ten special-status bird species likely to occur onsite. (DEIR at 3.7-32.) This conclusion is unsupported. In reaching that conclusion, the DEIR relies on the fact that most of the Project-related construction would occur on the agricultural land onsite and would not primarily occur in the onsite riparian habitat. (*Id.* at 3.7-31.) This reasoning ignores the edge effects of the proposed development on these species and neglects to consider the fact that some of these species, including Swainson's hawk, rely on agricultural areas for nesting and foraging habitat. (*See, e.g.,* Hartman & Kyle, 2010; Iglay et al., 2017.)

Further, the mitigation proposed to minimize Project-related impacts on Swainson's hawk and the ten other species-status bird species that occur onsite – referred to as Mitigation Measure 3.7-2d – is inadequate. Mitigation Measure 3.7-2d limits construction activities to the non-breeding season only when “feasible” and states that so long as such activities are conducted

during the non-breeding season, no further mitigation is required. (DEIR at 3.7-32.) This would in no way mitigate for the loss of habitat associated with the Project. The City must, in addition to any other mitigation proposed, mandate that the Applicant fund the acquisition and maintenance of compensatory habitat to offset the loss of habitat associated with this Project.

In addition, the proposed mitigation does not protect onsite species from exposure to Project-related chemicals. Though not mentioned in the DEIR, it is reasonable to expect that the Applicant, or subsequent users of Project-related facilities, will utilize rodenticides to limit infestations, to the detriment of Swainson's hawk and other special-status bird species. Secondary poisoning has been documented in many non-target animals, including raptor species. (Lima & Salmon, 2010.) Mitigation Measure 3.7-2d should therefore be amended to also ban the use of anticoagulant rodenticides within the Project site and to instead require the installation of raptor perches and other nesting facilities to attract raptors and reduce the impacts of the Project on onsite special-status bird species. A 2017 study conducted in the Ventura County Watershed Protection District found that attracting raptors to a site by installing raptor perches and nesting facilities (e.g., barn owl boxes, hawk nesting platforms) was 50 percent more effective at preventing rodent infestations compared to rodenticides. (Ventura County Public Works Agency, 2017.)

3. Crotch's Bumble Bee

The DEIR acknowledges that the Project site "contains habitat suitable for Crotch's bumble bee nesting, foraging, and overwintering" and that "Project activities [would] result in loss (i.e., take) of Crotch's bumble bees. . . ." (DEIR at 3.7-35.) This is particularly concerning. Bumble bees, including Crotch's bumble bees, are integral members of native ecosystems, not only due to their pollination services but also for their roles in the food web, nutrient cycling and decomposition, and pest control. (R. G. Hatfield & Jepsen, 2021.) They pollinate countless native plants and thereby play an important role in ecosystem health. (Cameron et al., 2011.) Unfortunately, numerous bumble bee species, including Crotch's bumble bees, have experienced significant declines in recent decades in large part to habitat loss. (Cameron et al., 2011; Colla et al., 2012; Goulson et al., 2015; R. Hatfield et al., 2018) Once widespread, Crotch's bumble bees are now quite rare. (*See, e.g.,* Fisher et al., 2022; R. Hatfield et al., 2018.) The species (along with three other bumble bees) was granted "candidate" status under the California Endangered Species Act ("CESA") in 2022. As such, it is critically important that any impacts to this species be fully avoided or mitigated to prevent further decline and extirpation. (CEQA Guidelines § 15065 [impact on protected species is *per se* significant]; *Defend the Bay v. City of Irvine* (2004) 119 Cal.App.4th 1261, 1273-1274 [project has a significant impact on the environment as a matter of law if it reduces the habitat of a wildlife species or reduces the number or range of an endangered, rare, or threatened species].)

The DEIR fails to adequately analyze or mitigate impacts to Crotch's bumble bees. In fact, the DEIR does not establish a baseline of environmental conditions regarding the presence of Crotch's bumble bee or suitable habitat for the species onsite, making it impossible to evaluate the extent of the impacts the Project would have on the species. CEQA requires lead agencies to evaluate the potential environmental impacts of a project as compared to the existing environmental conditions (i.e., the "baseline"), so that the project's impacts can be meaningfully analyzed and compared to alternatives. (CEQA Guidelines § 15125(a); *see also County of Amador v. El Dorado County Water Agency* (1999) 76 Cal.App.4th 931, 952; *Neighbors for Smart Rail v. LA County Metropolitan Transit Authority* (2013) 57 Cal.4th 310, 315.) The DEIR does not identify where within the Project site Crotch's bumble bee habitat may occur or what Crotch's bumble bee habitat would be destroyed. Without this information, the public cannot meaningfully evaluate or comment on the impacts the Project would have on the species. The mitigation proposed to minimize Project-related impacts on Crotch's bumble bees appears insufficient to reduce Project-related impacts to less-than-significant levels. According to the DEIR, ground-disturbing work would take place between August 15 and March 15, when it would impact Crotch's bumble bees the least, only when "feasible." (DEIR at 3.7-36.) Given that the DEIR does not define feasibility in this context, this mitigation measure is unenforceable, in violation of CEQA; the Applicant could simply assert that it would not be feasible to abide by this requirement and begin construction during that time period. (Pub. Resources Code § 21081.6(b) [requiring mitigation measure to be "fully enforceable through permit conditions, agreements, or other measures"]; CEQA Guidelines § 15126.4(a)(2) [same].) Mitigation Measure 3.7-2g must therefore be amended either to remove this feasibility dynamic or to define "feasible" in this context.

Regardless of the feasibility of the aforementioned limitation, the DEIR requires only that a "qualified" biologist conduct a *single* focused survey for Crotch's bumble bee before the start of ground-disturbing activities. (DEIR at 3.7-36.) This is plainly insufficient, as CDFW recommends at least three onsite surveys take place prior to project implementation. (CDFW, 2023.) Mitigation Measure 3.7-2g must therefore be further amended either to require at least three surveys and to require that such surveys be conducted by a *CDFW-approved*, qualified biologist. (*Id.*)

The preconstruction survey requirement discussed above is the only component of the proposed Crotch's bumble bee mitigation described with sufficient detail to pass CEQA muster. According to the DEIR, if Crotch's bumble bees are detected during the *single* focused survey, the Applicant must undertake "appropriate avoidance measures." (DEIR at 3.7-36.) The DEIR never explains what "appropriate avoidance measures" means in this context and states only that such measures would include, but would not be limited to, the installation and maintenance of "[p]rotective buffers ... around active nest colonies or overwintering queens until these sites are no longer active. . . ." (*Id.*) This limited proposed mitigation violates CEQA, which requires

agencies to adopt concrete, specific, and enforceable actions *before* an agency approves a project. (*California Clean Energy Committee v. City of Woodland* (2014) 225 Cal.App.4th 173, 186.) Agencies can only defer the formulation of mitigation measures where they first explain why doing so is necessary and practical under the circumstances. (*POET, LLC v. State Air Resources Bd.* (2013) 218 Cal.App.4th 681, 736-37; *see also San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal.App.4th 645, 670 [EIR inadequate where the success or failure of mitigation efforts “may largely depend upon management plans that have not yet been formulated, and have not been subject to analysis and review within the EIR”].) Yet, here, the DEIR fails to specify what the Applicant would be obligated to do to minimize its impacts on Crotch’s bumble bees should bees be detected without explaining why doing so is necessary or practical under the circumstances, in violation of CEQA.

Moreover, the DEIR only requires the Applicant to apply to CDFW for an Incidental Take Permit under CESA for Crotch’s bumble bees when bees are detected during the single focused survey and cannot avoided through the implementation of the above-referenced, unlawfully-vague buffers. (DEIR at 3.7-36.) This too is inadequate. The DEIR must require the Applicant to consult with CDFW when bees are detected after adequate surveying, regardless of whether buffering is feasible.

4. Western Spadefoot

The DEIR’s proposed mitigation for impacts to western spadefoot is also insufficient. The mitigation measure for this species (MM 3.7-a) includes pre-construction surveys, avoidance measures, and relocations. However, the preconstruction surveys are required only “within three days of commencement of ground-disturbing activities.” (p. 3.7-27). This is completely inadequate to detect western spadefoot.

Western spadefoots are generally active on the surface from October to May, with breeding occurring from January to May. However, they are opportunistic breeders, and the timing of surface activity can vary depending on rainfall and region. It is highly unlikely to observe western spadefoot above ground outside of the breeding season, and even then, they are unlikely to be active in daylight hours. Additionally, burrows are extremely hard to detect. If surveys occur outside of the breeding season, or even during the breeding season in a dry year, they will not detect western spadefoot, even if many are present in the soil. The survey requirement must be amended to specify that surveys must occur over the course of the breeding season and must include periodic monitoring of potential breeding habitat to search for eggs and tadpoles.

Detection of eggs or tadpoles indicates the presence of a breeding population. While adults can be difficult to observe, successful breeding indicates that adults are certainly present in the soil around the pond. After breeding, individuals return to upland habitat and burrow into the

soil. Adults can burrow anywhere around the breeding pools and have been observed doing so tens to hundreds of meters from breeding pools. (Baumberger et al., 2019; Halstead et al., 2021.) While movement appears to depend strongly on weather conditions, individuals can move relatively long distances even in drought years; one study observed individuals moving up to 82 m in drier years (Baumberger et al., 2019.) During wet years, movements increase; one study observed individuals to dispersing rapidly after breeding and traveling up to 601 m from breeding pools during a relatively wet year (Halstead et al., 2021.) Therefore, western spadefoots may burrow quite far from their breeding pools, depending on available habitat and weather conditions. This was not considered in the DEIR.

While little is known about when juveniles leave the breeding pool area or how far they travel, a study conducted at Carnegie State Vehicular Recreation Area near Tracy, CA suggests that juveniles do not immediately leave dried pools after metamorphosis. Biologists documented newly metamorphosed juveniles on the soil surface immediately adjacent to aquatic breeding habitat, feeding and seeking refuge about 5 to 7 cm from the soil surface in deep cracks in dried pool bottoms for at least two weeks after metamorphosis was completed. (Alvarez & Kerss, 2023.) As juveniles outgrew the cracks, they would partially bury themselves in a moist soil layer under the thin surface crust of the dried pool for about 4 to 6 weeks. (Alvarez & Kerss, 2023.) During that time, the juveniles would explore up to 7 m from the refuge sites at night. (Alvarez & Kerss, 2023.) So, if eggs or tadpoles are detected, the pool area and a minimum 500m buffer area surrounding the pool must be considered occupied.

The DEIR states that the focused survey would include “aquatic and upland habitat suitable for the species on the project site,” but it does not specify how much upland habitat would be included, or what survey methods would be employed. Given the movement ecology of the species described above, any survey for adults or burrows must include a minimum of 500m of upland habitat around each aquatic habitat.

Further, avoidance as described in the DEIR is ineffective. The DEIR states that “If an overwintering western spadefoot, western spadefoot tadpoles, or western spadefoot eggs are observed on the project site during the preconstruction survey, the area shall be fenced off and avoided until the eggs hatch, tadpoles develop, and/or the burrow is no longer active.” However, when tadpoles develop, froglets disperse into the surrounding upland and burrow into the soil, or burrow into the soil of the dried pond. They remain underground for much of the year, emerging only occasionally until the following breeding season. This means for any pool in which tadpoles are observed during breeding season, after the pool dries, many individuals will be present in the soil around the pool, and would be impacted by Project construction. The area will still be “actively occupied” even if no individual spadefoot are visible. If tadpoles are observed in any of the wetlands or riparian areas on or adjacent to the Project site, it should be assumed that western

spadefoot are present in the upland soils up to at least 500m surrounding the aquatic habitat, and this area should be fully avoided or mitigated.

However, the DEIR does not provide any actual mitigation for lost habitat or individuals; only avoidance. The DEIR only states that if the species is listed under the federal ESA before the completion of Project construction, Section 7 consultation would be required, with additional potential conservation requirements. However, if the species is *not* listed by that time, no other mitigation would be required. As such, it is completely insufficient to mitigate for impacts to occupied habitat.

The DEIR must require compensatory habitat mitigation. If occupied habitat is present at the Project site, it is important to consider that habitat loss and species displacement from construction of the proposed Project are immediate, while any gains from their mitigation are uncertain. Moilanen et al. (2009) found that “very high offset ratios may be needed to guarantee a robustly fair exchange” and that “considerations of uncertainty, correlated success/failure, and time discounting should be included in the determination of the offset ratio to avoid a significant risk that the exchange is unfavorable for conservation in the long run.” Restoring complex ecosystems like ephemeral wetlands often results in reduced ecological function. In studies conducted in California on wetland mitigation sites permitted between 1979 and 2002, less than 20% of mitigated wetlands were performing optimally. (Ambrose et al., 2006; Sudol & Ambrose, 2002.)

Given the importance of wetlands and associated upland habitat to western spadefoots, the DEIR should provide compensatory mitigation for any habitat loss. In addition, mitigation ratios need to take the types of mitigation to be implemented into consideration, as not all mitigation is created equal. Preservation of existing habitat where sensitive and/or special-status species are known to occur through avoidance should be the primary focus, as restoration, enhancement, and creation of habitats can have limited success due to the challenges of establishing the appropriate hydrology. (Matthews & Endress, 2008; Stein et al., 2018; Sudol & Ambrose, 2002; Windmiller & Calhoun, 2007.) Scientific studies specifically speak to the need for higher mitigation ratios (along with long-term monitoring, identified and measurable success criteria, and adaptive management strategies) to improve chances of adequately mitigating impacts to habitats and species. (Matthews & Endress, 2008; Mitsch & Wilson, 1996; Moilanen et al., 2009; Stein et al., 2018; Sudol & Ambrose, 2002; Windmiller & Calhoun, 2007; Zedler & Callaway, 1999.) The western spadefoot’s continued survival relies on created wetlands having the appropriate hydrological and biological conditions and adequate upland habitat.

If compensatory mitigation includes enhanced, restored, or created habitats, higher mitigation ratios coupled with extended years of effective monitoring and adaptive management strategies are needed to improve chances of establishing equivalent ecological function as the

lost habitat for species like western spadefoot. (Ambrose et al., 2006; Bronner et al., 2013; Matthews & Endress, 2008; Moilanen et al., 2009; Stein et al., 2018; Sudol & Ambrose, 2002; Windmiller & Calhoun, 2007.) Mitigation for aquatic resources like vernal pools (and associated upland habitats) should be at least 3:1 with in-kind preservation, 5:1 with restoration/enhancement, and 10:1 with created habitat. All mitigation (preservation, restoration/enhancement, creation of vernal pools and associated upland habitat for western spadefoots) should be protected in perpetuity, and the mitigation on these lands should include funded long-term monitoring, specified measurable success criteria, and adaptive management strategies.

Further, we note that western spadefoot may be a candidate species under the California ESA by the time the Project begins construction, in which case the Applicant must procure an ITP from CDFW. The western spadefoot population that would include any spadefoots present at the project site was petitioned for listing as threatened in September 2025. CDFW recently completed its petition evaluation, and has recommended the species be advanced to candidacy. (CDFW, 2026.) The California Fish and Game Commission will decide whether to advance the species to candidacy in the next several months. If western spadefoot is granted candidacy status, it will be afforded the same protections as other CESA-listed species, and the Project would require a CDFW ITP with additional conservation measures.

5. Northwestern Pond Turtle

The DEIR's mitigation for northwestern pond turtle is also insufficient. Similar to the western spadefoot, the primary mitigation for northwestern pond turtle (MM 3.7-2b) is preconstruction surveys, avoidance, and relocation. (DEIR p. 3.7-28.) However, it appears to require only a single "focused survey." While a single survey may help avoid individual turtles, it does not provide information regarding whether the habitat is regularly used by northwestern pond turtles. A simple lack of detection in a single survey does not mean the habitat is unsuitable, or that it is never occupied by western pond turtles. Despite this, the DEIR states that "The qualified biologist shall inspect the project site for northwestern pond turtles as well as burrow habitat suitable for the species. If northwestern pond turtles are not detected during the focused survey... further mitigation will not be required." The DEIR cannot rely on a single survey to determine whether the Project site is occupied. The DEIR must include a more thorough, systematic survey of aquatic and upland habitats over time to determine whether the Project site is occupied by northwestern pond turtles.

Further, it appears that the DEIR's survey would not include nests. Northwestern pond turtles use upland areas around aquatic features, including riparian habitat, to nest. The DEIR fails to provide any description of survey methodology, but a generic focused survey would not detect these nests, especially if it occurred outside the breeding season.

In the absence of a thorough survey effort, it should be assumed that the riparian areas on the Project site are suitable habitat, and impacts to this habitat should be fully avoided or mitigated. However, similar to the case of western spadefoot, the DEIR does not provide any actual mitigation for lost habitat or individuals; only avoidance. The DEIR only states that if the species is listed under the federal ESA before the completion of Project construction, Section 7 consultation would be required, with additional potential conservation requirements. However, if the species is *not* listed by that time, no other mitigation would be required. As such, it is completely insufficient to mitigate for impacts to occupied habitat.

As described above, avoidance is always preferable to mitigation. If avoidance is not possible, the loss of riparian and/or wetland habitat must be fully mitigated. Mitigation for riparian habitat should be at least 3:1 with in-kind preservation, 5:1 with restoration/enhancement, and 10:1 with created habitat. All mitigation (preservation, restoration/enhancement, creation of vernal pools and associated upland habitat for western spadefoots) should be protected in perpetuity, and the mitigation on these lands should include funded long-term monitoring, specified measurable success criteria, and adaptive management strategies, as described above.

6. Vernal Pool Branchiopods

The mitigation for impacts to vernal pool branchiopods, including Conservancy fairy shrimp, vernal pool fairy shrimp, and vernal pool tadpole shrimp, is insufficient and improperly deferred. The primary mitigation for vernal pool branchiopods (MM 3.7-2f) is preconstruction surveys, avoidance, and compensation for loss of vernal pool branchiopods. (DEIR p. 3.7-34.) However, the DEIR does not guarantee avoidance, and the compensatory mitigation is improperly deferred.

The DEIR states that prior to Project implementation, a 100-foot no-disturbance buffer will be implemented around vernal pools, *if feasible*. However, the DEIR provides no information on whether feasibility is likely, or how the Project will determine feasibility of avoidance. By failing to provide any actual requirements or thresholds for avoidance, the DEIR fails to guarantee that these buffers will be effective. In fact, they may not be respected at all.

The DEIR goes on to say that if vernal pool branchiopods are found on the site, the Applicant will initiate ESA Section 7 consultation, and that “measures may include preservation, restoration, or enhancement of habitat on- or off-site; purchase of habitat credits from an agency-approved mitigation/conservation bank; work with a local land trust to preserve land; or any other method acceptable to USFWS at a no-net-loss level.” However, this amounts to improperly deferred mitigation. The DEIR provides no information on what land might be preserved, restored, or enhanced, or how such preservation, restoration, or enhancement will be achieved. Without any such detail, it is impossible to determine whether such mitigation is sufficient. In the

case of mitigation banks, no specific mitigation banks are identified, and it is unclear whether appropriate mitigation credits are even available for any of the impacts listed. The final option listed, “any other method acceptable to USFWS” is incredibly vague. It is therefore impossible to determine whether such mitigation is sufficient to mitigate the impacts of the project on these sensitive habitats.

This improperly deferred mitigation violates CEQA. (see *San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal.App.4th 645, 670 [EIR inadequate where the success or failure of mitigation efforts “may largely depend upon management plans that have not yet been formulated, and have not been subject to analysis and review within the EIR”]). In the limited circumstances in which deferred mitigation is appropriate, the agency must meet all of the following elements: (1) practical considerations prevented the formulation of mitigation measures during the planning process; (2) the agency committed itself to developing mitigation measures in the future; (3) the agency adopted specific performance criteria prior to project approval; and (4) the EIR lists the mitigation measures to be considered, analyzed, and possibly incorporated into the mitigation plan. (See *POET, LLC v. State Air Resources Bd.* (2013) 218 Cal.App.4th 681, 736-37 [review denied].) Here, the DEIR fails to meet these criteria. The lack of adequate details provided in the Mitigation Measure 3.7-2f does not allow the public and decisionmakers to evaluate the adequacy of proposed mitigation for impacts to vernal pool branchiopods.

As described above, The DEIR must require compensatory habitat mitigation for impacts to vernal pool branchiopods. Mitigation for aquatic resources like vernal pools (and associated upland habitats) should be at least 3:1 with in-kind preservation, 5:1 with restoration/enhancement, and 10:1 with created habitat. All mitigation (preservation, restoration/enhancement, creation of vernal pools and associated upland habitat for western spadefoots) should be protected in perpetuity, and the mitigation on these lands should include funded long-term monitoring, specified measurable success criteria, and adaptive management strategies.

G. The DEIR Fails to Adequately Analyze or Mitigate for Impacts to Riparian and Wetland Habitat.

The DEIR states that impacts to riparian woodland and wetlands are potentially significant, but fails to fully analyze and mitigate these impacts. First, the DEIR fails to establish a reliable baseline regarding riparian habitat. The DEIR states that the Project site contains approximately 8.7 acres of valley oak riparian woodland, a CDFW-designated sensitive natural community (p. 3.7-38). However, the DEIR does not explain how much of this would potentially be impacted by the Project, how close the Project footprint is to this riparian habitat, or what the potential impacts are. Without this information, it is impossible to fully assess the adequacy of

the proposed mitigation and ensure that impacts to this sensitive habitat are avoided, minimized or fully mitigated. As described above, this failure to establish a reliable environmental baseline violates CEQA.

However, even without detailed information regarding the extent of potential impacts, it is clear that the proposed mitigation is insufficient to protect the riparian habitat. The DEIR states that the Project will establish a 50-foot setback around oak valley riparian habitat. This buffer is far too small to prevent impacts to riparian habitat. Recommended buffers for wildlife often far exceeded 325 feet, well beyond the largest buffers implemented in practice. (Fischer & Fischenich, 2000; 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; Fellers & Kleeman, 2007; Semlitsch & Bodie, 2003; Trenham & Shaffer, 2005.) For example, western pond turtles have been documented to move regularly between aquatic habitats with long-distance movements of up to 2,018 feet. (Sloan, 2012.) Further, 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.) The limited buffers proposed in the DEIR do not leave sufficient habitat for species living the riparian habitat at the Project site to thrive.

The DEIR also leaves room for the possibility that the proposed 50-foot setback will not be enforced. It states that if Project implementation cannot avoid the riparian habitat, it will compensate for its loss by on-site or off-site restoration, purchasing mitigation bank credits, or preserving off-site habitat at minimum 1:1 ratio (p. 3.7-40). As described above, this mitigation is improperly deferred, in violation of CEQA. Without any details on the feasibility of on- or off-site restoration, the availability of mitigation banks, or potential off-site preservation sites, it is not clear that the DEIR can sufficiently mitigate any impacts to this habitat. Further, as detailed above, a 1:1 mitigation ratio is insufficient. Mitigation for riparian habitat should be at least 3:1 with in-kind preservation, 5:1 with restoration/enhancement, and 10:1 with created habitat.

The same weaknesses are present in the DEIR's analysis of impacts to wetlands. The DEIR states that "where state or federally protected wetlands can be avoided," a boundary will be established around the high-water mark and Project activities will be prohibited (p. 3.7-41). However, this mitigation does not *require* avoidance. And in the case that wetlands are not avoided, the DEIR resorts to the same improperly deferred mitigation approach in which it claims that obtaining future permits with vague requirements will sufficiently mitigate loss of wetlands. Additionally, setting a no-work boundary at the high-water mark essentially leaves no buffer around these sensitive wetlands whatsoever. For species like western spadefoot, upland habitat is essential. And for species that live only in the pools, upland habitat buffers can prevent

erosion, silting, pollution, and other potential Project activities from harming or altering the quality and condition of the pools, which is essential to supporting pool-dwelling plants and animals. Yet the DEIR fails to do this, instead seemingly allowing Project activities to occur up to the very edge of these sensitive habitats. The DEIR thus provides no assurances that impacts to wetlands will be avoided, minimized, or mitigated, in violation of CEQA.

CONCLUSION

Thank you for the opportunity to submit comments on the DEIR for the Phillip Road Project. We urge the City to correct these errors and prepare an EIR that complies with CEQA.

Given the possibility that the Center will be required to pursue legal remedies in order to ensure that the City complies with its legal obligations including those arising under CEQA, we would like to remind the City 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, 762.) The administrative record encompasses any and all documents and communications that relate to any and all actions taken by the City 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.) Maintenance and preservation of the administrative record requires that, inter alia, the City (1) suspend all data destruction policies; and (2) preserve all relevant hardware unless an exact replica of each file is made.

Please add the Center to your notice list for all future updates to the Project using the contact information below, and do not hesitate to contact the Center with any questions at the email listed below.

Sincerely,

Meredith Stevenson, Staff Attorney
Center for Biological Diversity
mstevenson@biologicaldiversity.org

Harrison Beck, Staff Attorney
Center for Biological Diversity
hbeck@biologicaldiversity.org
2100 Franklin St., Suite 375
Oakland, CA 94612
tel: (510) 844-7100

REFERENCES

- Alvarez, J. A., & Kerss, T. S. (2023). Microhabitat use by post-metamorphic western spadefoot (*Spea hammondi*) in Central California. *Sonoran Herpetologist*, 36(1), 13–14.
- Ambrose, R. F., Callaway, J. C., & Lee, S. F. (2006). *An Evaluation of Compensatory Mitigation Projects Permitted Under Clean Water Act Section 401 by the California State Water Quality Control Board, 1991-2002*.
- American Lung Association (ALA), State of the Air 2026.
- Anderson, S. H. L., Ayers, W., Dechant, J. A., Green, M. T., Howe, W. H., Jones, S. L., Klute, D. S., Rosenberg, D. K., Sheffield, S. R., & Zimmerman, T. S. (2001). *Draft status assessment and conservation plan for the western burrowing owl in the United States Administrative Report*. U. S. Department of the Interior, Fish and Wildlife Service.
- Angelo, A. (2023, March 3). Could Everyday Noise be Affecting your Health? UC Davis. Available at: <https://environmentalhealth.ucdavis.edu/blog/could-everyday-noise-be-affecting-your-health>
- Aulsebrook, A. E., Connelly, F., Johnsson, R. D., Jones, T. M., Mulder, R. A., Hall, M. L., Vyssotski, A. L., & Lesku, J. A. (2020). White and Amber Light at Night Disrupt Sleep Physiology in Birds. *Current Biology*, 30(18), 3657-3663.e5. <https://doi.org/10.1016/j.cub.2020.06.085>
- Baril, A. (1993). Pesticides and wildlife in the prairies: Current regulatory issues. In G. L. Holyrod, H. L. Dickson, M. Regnier, & H. C. Smith (Eds.), *Proceedings of the third endangered species and prairie conservation workshop. Natural History Occasional Paper 19* (pp. 44–48). Provincial Museum of Alberta, Edmonton, Alberta.
- Benítez-López, A., Alkemade, R., & Verweij, P. A. (2010). The impacts of roads and other infrastructure on mammal and bird populations: A meta-analysis. *Biological Conservation*, 143(6), 1307–1316. <https://doi.org/10.1016/j.biocon.2010.02.009>
- Berreby, D. (2024, February 6). As Use of A.I. Soars, So Does the Energy and Water It Requires. Yale Environment 360. Available at: <https://e360.yale.edu/features/artificial-intelligence-climate-energy-emissions>
- Bloomberg Intelligence (2024). AI-Driven Energy Demand Outlook. Available at: <https://assets.bbhub.io/professional/sites/41/Bloomberg-Intelligence-AI-Energy-Demand-Deep-Dive.pdf>
- Bosker, B. (2019, November). Why is everything getting louder. The Atlantic. Available at: <https://www.theatlantic.com/magazine/archive/2019/11/the-end-of-silence/598366/>
- Bronner, C. E., Bartlett, A. M., Whiteway, S. L., Lambert, D. C., Bennett, S. J., & Rabideau, A. J. (2013). An Assessment of U.S. Stream Compensatory Mitigation Policy: Necessary

- Changes to Protect Ecosystem Functions and Services. *Journal of the American Water Resources Association*, 49(2), 449–462.
- Bunkley, J. P., & Barber, J. R. (2015). Noise Reduces Foraging Efficiency in Pallid Bats (*Antrozous pallidus*). *Ethology*, 121(11), 1116–1121. <https://doi.org/10.1111/eth.12428>
- California Department of Fish and Wildlife. (2026). *Petition Evaluation for Western Spadefoot (Spea hammondi)*.
- Cameron, S. A., Lozier, J. D., Strange, J. P., Koch, J. B., Cordes, N., Solter, L. F., & Griswold, T. L. (2011). Patterns of widespread decline in North American bumble bees. *Proceedings of the National Academy of Sciences*, 108(2), 662–667. <https://doi.org/10.1073/pnas.1014743108>
- Campbell, D. (2025, June). How data centers are deepening the water crisis. Available at: <https://www.businessinsider.com/how-data-centers-are-deepening-the-water-crisis-2025-6>.
- Capital & Main. (2025, Jan. 23). California needs more data centers—but builders are using a legal loophole to power them with diesel. Fast Company. Available at: <https://www.fastcompany.com/91265352/california-needs-more-data-centers-but-builders-are-using-a-legal-loophole-to-power-them-with-diesel>
- Cary, P. (2023, February 27). Some cities suffering from data center noise turn to tough limits. Prince William Times. Available at: https://www.princewilliamtimes.com/news/some-cities-suffering-from-data-center-noise-turn-to-tough-limits/article_2aa7fb8c-b6aa-11ed-8626-5738aae2f76c.html
- CDFW. (2012). *Staff Report on Burrowing Owl Mitigation* (pp. 36–36). <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83843>
- CDFW. (2016). *Five-Year Status Review for Swainson's Hawk (Buteo swainsoni)* (Five-Year Status Report). California Department of Fish and Wildlife.
- CDFW. (2023). *Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species*.
- Cho, R. (2023, June 9). AI's Growing Carbon Footprint. Available at: <https://news.climate.columbia.edu/2023/06/09/ais-growing-carbon-footprint/>
- Colla, S. R., Gadallah, F., Richardson, L., Wagner, D., & Gall, L. (2012). Assessing declines of North American bumble bees (*Bombus* spp.) using museum specimens. *Biodiversity and Conservation*, 21(14), 3585–3595. <https://doi.org/10.1007/s10531-012-0383-2>
- Cushman, S. A. (2006). Effects of habitat loss and fragmentation on amphibians: A review and prospectus. *Biological Conservation*, 128, 231–240.

- Cushman, S. A., McRae, B., Adriaensen, F., Beier, P., Shirley, M., & Zeller, K. (2013). Biological corridors and connectivity. In D. W. Macdonald & K. J. Willis (Eds.), *Key Topics in Conservation Biology 2* (First Edition, pp. 384–403). John Wiley & Sons, Ltd.
- Darley, J. (2024, Dec. 11). Microsoft's Zero-Water Solution for Data Centre Cooling. Available at: <https://sustainabilitymag.com/articles/microsoft-unveils-zero-water-cooling-for-ai-data-centres>.
- Data Center Knowledge. (2025). What are the 5 Main Causes of Noise in Data Centers? Available at: <https://www.datacenterknowledge.com/data-storage/what-are-the-5-main-causes-of-noise-in-data-centers->.
- Data Center Map. Los Angeles Data Centers. Available at: <https://www.datacentermap.com/usa/california/los-angeles/>.
- Delaney, K. S., Riley, S. P. D., & Fisher, R. N. (2010). A Rapid, Strong, and Convergent Genetic Response to Urban Habitat Fragmentation in Four Divergent and Widespread Vertebrates. *PLoS ONE*, 5(9), e12767. <https://doi.org/10.1371/journal.pone.0012767>
- Desmond, M. J., Savidge, J. A., & Eskridge, K. M. (2000). Correlations between Burrowing Owl and Black-Tailed Prairie Dog Declines: A 7-Year Analysis. *The Journal of Wildlife Management*, 64(4), 1067. <https://doi.org/10.2307/3803217>
- Ditmer, M. A., Stoner, D. C., Francis, C. D., Barber, J. R., Forester, J. D., Choate, D. M., Ironside, K. E., Longshore, K. M., Hersey, K. R., Larsen, R. T., McMillan, B. R., Olson, D. D., Andreasen, A. M., Beckmann, J. P., Holton, P. B., Messmer, T. A., & Carter, N. H. (2021). Artificial nightlight alters the predator–prey dynamics of an apex carnivore. *Ecography*, 44(2), 149–161. <https://doi.org/10.1111/ecog.05251>
- Dominoni, D. M. (2015). The effects of light pollution on biological rhythms of birds: An integrated, mechanistic perspective. *Journal of Ornithology*, 156(S1), 409–418. <https://doi.org/10.1007/s10336-015-1196-3>
- Dutchen, S. (2022). Noise and Health. Harvard Medicine. Available at: <https://magazine.hms.harvard.edu/articles/noise-and-health>
- EPA. What is Cross-State Air Pollution? Available at: <https://www.epa.gov/Cross-State-Air-Pollution/what-cross-state-air-pollution>.
- Fellers, G. M., & Kleeman, P. M. (2007). California Red-Legged Frog (*Rana draytonii*) Movement and Habitat Use: Implications for Conservation. *Journal of Herpetology*, 41(2), 276–286.

- Ferguson, K. et al. (2013, June 28). The physical environment and child development: An international review. *Int J Psychol.* 2013; 48(4): 437–468. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4489931/>
- Fischer, R. A., & Fischenich, J. C. (2000). *Design Recommendations for Riparian Corridors and Vegetated Buffer Strips.*
- Fisher, K., Watrous, K. M., Williams, N. M., Richardson, L. L., & Woodard, S. H. (2022). A contemporary survey of bumble bee diversity across the state of California. *Ecology and Evolution*, 12(3), e8505. <https://doi.org/10.1002/ece3.8505>
- Gaston, K. J., Bennie, J., Davies, T. W., & Hopkins, J. (2013). The ecological impacts of nighttime light pollution: A mechanistic appraisal. *Biological Reviews*, 88(4), 912–927. <https://doi.org/10.1111/brv.12036>
- Gaston, K. J., Duffy, J. P., Gaston, S., Bennie, J., & Davies, T. W. (2014). Human alteration of natural light cycles: Causes and ecological consequences. *Oecologia*, 176(4), 917–931. <https://doi.org/10.1007/s00442-014-3088-2>
- Gordon, B. L. (1996). *Monterey Bay area: Natural history and cultural imprints* (3rd ed.). Boxwood Press, Pacific Grove, California.
- Goudie, R. I., & Jones, I. L. (2004). Dose-response relationships of harlequin duck behaviour to noise from low-level military jet over-flights in central Labrador. *Environmental Conservation*, 31(4), 289–298. <https://doi.org/10.1017/S0376892904001651>
- Goulson, D., Nicholls, E., Botías, C., & Rotheray, E. L. (2015). Bee declines driven by combined stress from parasites, pesticides, and lack of flowers. *Science*, 347(6229), 1255957. <https://doi.org/10.1126/science.1255957>
- Green, G. A., & Anthony, R. G. (1989). Nesting Success and Habitat Relationships of Burrowing Owls in the Columbia Basin, Oregon. *The Condor*, 91(2), 347. <https://doi.org/10.2307/1368313>
- Halper, E. & O'Donovan. (2024, June 21). AI is exhausting the power grid. Tech firms are seeking a miracle solution. Washington Post. Available at: <https://www.washingtonpost.com/business/2024/06/21/artificial-intelligence-nuclear-fusion-climate/>
- Harding, A., et al. (2013). The cost of hypertension-related ill-health attributable to environmental noise. *Noise Health* 2013 Nov-Dec;15(67). Available at: <https://pubmed.ncbi.nlm.nih.gov/24231422/>.
- Hartman, C. A., & Kyle, K. (2010). Farming for Birds: Alfalfa and Forages as Valuable Wildlife Habitat. *Proceedings, 2010 California Alfalfa & Forage Symposium and Corn/Cereal Silage Mini-Symposium.*

- Hatfield, R. G., & Jepsen, S. (2021). A conservation conundrum: Protecting bumble bees under the California Endangered Species Act. *California Fish and Wildlife Journal*, (CESA Special Issue), 98–106. <https://doi.org/10.51492/cfwj.cesasi.5>
- Hatfield, R., Jepsen, S., Jordan, S. F., Blackburn, M., & Code, A. (2018). *A Petition to the State of California Fish and Game Commission to List the Crotch bumble bee (Bombus crotchii), Franklin's bumble bee (Bombus franklini), Suckley cuckoo bumble bee (Bombus suckleyi), and western bumble bee (Bombus occidentalis occidentalis) as Endangered under the California Endangered Species Act*. The Xerces Society for Invertebrate Conservation, Defenders of Wildlife, Center for Food Safety.
- Haug, E. A., Millsap, B. A., & Martell, M. S. (1993). The burrowing owl (*Speotyto cunicularia*). In A. Poole & F. Gill (Eds.), *The birds of North America* (Vol. 61). Philadelphia: The Academy of Natural Sciences.
- Haug, E. A., & Oliphant, L. W. (1987). Breeding biology of burrowing owls in Saskatchewan. In G. L. Holroyd, W. B. McGillivray, P. H. R. Stepney, D. M. Ealey, G. C. Trottier, & K. E. Eberhart (Eds.), *Endangered species in the Prairie Provinces. Provincial Museum of Alberta Occasional Paper, No. 9* (pp. 269–271).
- Heller, N. E., & Zavaleta, E. S. (2009). Biodiversity management in the face of climate change: A review of 22 years of recommendations. *Biological Conservation*, 142, 14–32.
- Hjertaas, D. G. (1997). Recovery plan for the burrowing owl in Canada. In J. L. Lincer & K. Steenhoff (Eds.), *The burrowing owl: Its biology and management. Raptor Research Report Number 9* (pp. 107–111).
- Igley, R. B., Buckingham, B. N., Seamans, T. W., Martin, J. A., Blackwell, B. F., Belant, J. L., & DeVault, T. L. (2017). Bird use of grain fields and implications for habitat management at airports. *Agriculture, Ecosystems & Environment*, 242, 34–42. <https://doi.org/10.1016/j.agee.2017.03.022>
- IPCC, Climate Change 2023: Synthesis Report. Sixth Assessment Report of the Intergovernmental Panel on Climate Change, [Core Writing Team, H. Lee, J. Romero], IPCC, Interlaken, Switzerland (2023), https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_FullVolume.pdf
- IPCC, Hicke, J.A., S. Lucatello, L.D., Mortsch, J. Dawson, M. Domínguez Aguilar, C.A.F. Enquist, E.A. Gilmore, D.S. Gutzler, S. Harper, K. Holsman, E.B. Jewett, T.A. Kohler, and K.A. Miller. (2022). North America. In: Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 1929–2042, doi:10.1017/9781009325844.016.

- Jain, I. (2023). Closed-loop cooling key to curbing thirsty data centres. Available at: <https://dennmagazine.com/data-centres/closed-loop-cooling-key-to-curbing-thirsty-data-centres/>.
- James, P. C., Fox, G. A., & Ethier, T. J. (1990). Is the Operational Use of Strychnine to Control Ground Squirrels Detrimental to Burrowing Owls? *Journal of Raptor Research*, 24(4), 120–123.
- Kempenaers, B., Borgström, P., Loës, P., Schlicht, E., & Valcu, M. (2010). Artificial Night Lighting Affects Dawn Song, Extra-Pair Siring Success, and Lay Date in Songbirds. *Current Biology*, 20(19), 1735–1739. <https://doi.org/10.1016/j.cub.2010.08.028>
- Kilgo, J. C., Sargent, R. A., Chapman, B. R., & Miller, K. V. (1998). Effect of stand width and adjacent habitat on breeding bird communities in bottomland hardwoods. *The Journal of Wildlife Management*, 62(1), 72–83.
- Kociolek, A. V., Clevenger, A. P., St. Clair, C. C., & Proppe, D. S. (2011). Effects of Road Networks on Bird Populations: Effects of Roads on Birds. *Conservation Biology*, no-no. <https://doi.org/10.1111/j.1523-1739.2010.01635.x>
- Laurent, Oliver, et al. (2016). Low birth weight and air pollution in California: Which sources and components drive the risk? *Environment International*, 92-93, 471-77.
- Lazo, A. (2025, Nov.). Data centers are putting new strain on California’s grid. A new report estimates the impacts. Available at: <https://calmatters.org/environment/2025/11/data-center-environmental-report/>.
- Ledger, B. (2024, Dec.). Data centers challenge communities: revising noise ordinances for balance. Available at: <https://www.ramboll.com/en-us/data-centers-challenge-communities-revising-noise-ordinances-for-balance>
- Lima, L. L., & Salmon, T. P. (2010). Assessing some potential environmental impacts from agricultural anticoagulant uses. *Proceedings of the Vertebrate Pest Conference*, 24(24), 199–203.
- Lim, J. at al. (2018). Negative Impact of Noise and Noise Sensitivity on Mental Health in Childhood. Noise Health. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6301087/>
- Liu, R., et al. (2025). An Assessment of California Data Centers’ Environmental and Public Health Impacts. Available at: <https://www.next10.org/sites/default/files/2025-11/ai-environmental-public-health-costs.pdf>.

- Loten, A. (2023, Aug.). AI-Ready Data Centers Are Poised for Fast Growth. Wall Street Journal. Available at: <https://www.wsj.com/articles/ai-ready-data-centers-are-poised-for-fast-growth-fadae952>
- Matthews, J. W., & Endress, A. G. (2008). Performance criteria, compliance success, and vegetation development in compensatory mitigation wetlands. *Environmental Management*, 41(1), 130–141.
- Maclean, Ilya M. D. & Robert J. Wilson. (2011). Recent ecological responses to climate change support predictions of high extinction risk, 108 PNAS 12337.
- McClure, C. J. W., Ware, H. E., Carlisle, J., Kaltenecker, G., & Barber, J. R. (2013). An experimental investigation into the effects of traffic noise on distributions of birds: Avoiding the phantom road. *Proceedings of the Royal Society B: Biological Sciences*, 280.
- Miller, J. (2024). *Petition Before the California Fish and Game Commission To List California Populations of the Western Burrowing Owl (Athene cunicularia hypugaea) as Endangered or Threatened Under the California Endangered Species Act*. Center for Biological Diversity; Defenders of Wildlife; Burrowing Owl Preservation Society; Santa Clara Valley Audubon Society; Urban Bird Foundation; Central Valley Bird Club; San Bernardino Valley Audubon Society.
- Mitsch, W. J., & Wilson, R. F. (1996). Improving the success of wetland creation and restoration with know-how, time, and self-design. *Ecological Applications*, 6(1), 16–17.
- Moilanen, A., Van Teeffelen, A. J. A., Ben-Haim, Y., & Ferrier, S. (2009). How much compensation is enough? A framework for incorporating uncertainty and time discounting when calculating offset ratios for impacted habitat. *Restoration Ecology*, 17(4), 470–478.
- Munzel, T., et al. (2014). Cardiovascular effects of environmental noise exposure. *Eur Heart J*. 35(13). Available at: <https://pmc.ncbi.nlm.nih.gov/articles/PMC3971384/#:~:text=The%20WHO%20considers%20average%20nocturnal,chronic%20stable%20coronary%20artery%20disease.&text=Taken%20together%2C%20these%20observations%20provide,described%20in%20the%20following%20paragraphs>.
- Olague E., Knipping E., Shaw S., Ravindran S. (2016, Aug.). *Microscale air quality impacts of distributed power generation facilities*. J Air Waste Manag Assoc. 66(8):795-806.
- Olivo, A. (2023, February 10). Northern Va. is the heart of the internet. Not everyone is happy about that. Washington Post.

- Polade, S. D., Gershunov, A., Cayan, D. R., Dettinger, M. D. & Pierce, D. W. Precipitation in a warming world: Assessing projected hydro-climate changes in California and other Mediterranean climate regions. *Sci Rep* 7, 10783 (2017).
- Raess, M. et al. (2022, January). Association between community noise and children's cognitive and behavioral development: A prospective cohort study. *Environment International*. Available at: <https://www.sciencedirect.com/science/article/pii/S0160412021005869>
- Ramachandran, K., et al. (2024, Nov.). *As generative AI asks for more power, data centers seek more reliable, cleaner energy solutions*. Deloitte. Available at: <https://www2.deloitte.com/us/en/insights/industry/technology/technology-media-and-telecom-predictions/2025/genai-power-consumption-creates-need-for-more-sustainable-data-centers.html>
- Ren, S. & Wierman, A. (2025). Mitigating the Public Health Impacts of AI Data Centers. Available at: <https://hbr.org/2025/11/mitigating-the-public-health-impacts-of-ai-data-centers>.
- Reuters. (2024, Sept. 3). Global data center industry to emit 2.5 billion tons of CO2 through 2030, Morgan Stanley says. Available at: <https://www.reuters.com/markets/carbon/global-data-center-industry-emit-25-billion-tons-co2-through-2030-morgan-stanley-2024-09-03/>
- Richardson, K. (2024). Understanding the impact of data center noise pollution. Available at: <https://www.techtarget.com/searchdatacenter/tip/Understanding-the-impact-of-data-center-noise-pollution>.
- Robins, J. D. (2002). *Stream Setback Technical Memo*.
- Rosenberg, D. K., Gervais, J. A., Ober, H., & DeSante, D. F. (1998). *An adaptive management plan for the burrowing owl population at NAS Lemoore*. The Institute for Bird Populations. Point Reyes Station, California. Publication No. 95.
- Rosenberg, D. K., & Haley, K. L. (2003). *The ecology of burrowing owls in the agroecosystem of the Imperial Valley, California*. Studies in Avian Biology.
- Samuelson, A. (2024, Dec. 19). AI is guzzling gas. Heated. Available at: https://heated.world/p/ai-is-guzzling-gas?utm_source=post-email-title&publication_id=2473&post_id=153337841&utm_campaign=email-post-title&isFreemail=true&r=2g9jj&triedRedirect=true&utm_medium=email
- Sanders, D., Frago, E., Kehoe, R., Patterson, C., & Gaston, K. J. (2020). A meta-analysis of biological impacts of artificial light at night. *Nature Ecology & Evolution*, 5(1), 74–81. <https://doi.org/10.1038/s41559-020-01322-x>

- Semlitsch, R. D., & Bodie, J. R. (2003). Biological criteria for buffer zones around wetlands and riparian habitats for amphibians and reptiles. *Conservation Biology*, 17(5), 1219–1228.
- Shannon, G., McKenna, M. F., Angeloni, L. M., Crooks, K. R., Fristrup, K. M., Brown, E., Warner, K. A., Nelson, M. D., White, C., Briggs, J., McFarland, S., & Wittemyer, G. (2016). A synthesis of two decades of research documenting the effects of noise on wildlife. *Biological Reviews*, 91(4), 982–1005. <https://doi.org/10.1111/brv.12207>
- Sheffield, S. R. (1997). Owls as biomonitors of environmental contamination. In J. R. Duncan, D. H. Johnson, & T. H. Nichols (Eds.), *Biology and conservation of owls of the Northern Hemisphere: General Technical Report NC-190* (pp. 383–398). U.S.D.A. Forest Service.
- Shehabi, A., et al. (2024). United States Data Center Energy Usage Report. Available at: <https://www.statista.com/statistics/560913/us-retail-electricity-consumption-by-major-state/>.
- Siddik, M., Shehabi,, A., & Marston, L. (2021). The environmental footprint of data centers in the United States. Environmental research letters. Available at: <https://iopscience.iop.org/article/10.1088/1748-9326/abfba1>
- Siirila-Woodburn, E. R., Rhoades, A. M., Hatchett, B. J., Huning, L. S., Szinai, J., Tague, C., Nico, P. S., Feldman, D. R., Jones, A. D., Collins, W. D., & Kaatz, L. (2021). A low-to-no snow future and its impacts on water resources in the western United States. *Nature Reviews Earth & Environment*, 2(11), 800–819. <https://doi.org/10.1038/s43017-021-00219-y>
- Slabbekoorn, H., & Ripmeester, E. A. P. (2008). Birdsong and anthropogenic noise: Implications and applications for conservation. *Molecular Ecology*, 17(1), 72–83. <https://doi.org/10.1111/j.1365-294X.2007.03487.x>
- Sloan, L. M. (2012). *Population structure, life history, and terrestrial movements of western pond turtles (Actinemys marmorata) in lentic habitats along the Trinity River, California*. Humboldt State University.
- South Coast Air Quality Management District. Fact Sheet on Emergency Backup Generators. Available at: <https://www.aqmd.gov/home/permits/emergency-generators>.
- State of California Department of Fish and Game. (2012). *Staff Report on Burrowing Owl Mitigation*.

- Stein, B. A., Edelson, N., Anderson, L., Kanter, J. J., & Stemler, J. (2018). *Reversing America's Wildlife Crisis* (Issue March).
- Sudol, M. F., & Ambrose, R. F. (2002). The US Clean Water Act and habitat replacement: Evaluation of mitigation sites in Orange County, California, USA. *Environmental Management*, 30(5), 727–734.
- Swain, D. L., Langenbrunner, B., Neelin, J. D. & Hall, A. Increasing precipitation volatility in twenty-first-century California. *Nature Clim Change* 8, 427–433 (2018).
- Taylor, P. (2025). Leading countries by number of data centers as of March 2025. Statista. Available at: <https://www.statista.com/statistics/1228433/data-centers-worldwide-by-country/>
- Trenham, P. C., & Shaffer, H. B. (2005). Amphibian upland habitat use and its consequences for population viability. *Ecological Applications*, 15(4), 1158–1168.
- Urban, Mark C., Accelerating extinction risk from climate change, 348 *Science* 571 (2015).
- Ventura County Public Works Agency. (2017). *Raptor Pilot Study for Levee Protection Integrated Pest Management Program*.
<https://vcportal.ventura.org/BOS/District2/RaptorPilotStudy.pdf>
- Ware, H. E., McClure, C. J. W., Carlisle, J. D., & Barber, J. R. (2015). A phantom road experiment reveals traffic noise is an invisible source of habitat degradation. *Proceedings of the National Academy of Sciences*, 112(39), 12105–12109.
- Warren, R., Price, J., Fischlin, A., de la Nava Santos, S., & Midgley, G. (2011). Increasing impacts of climate change upon ecosystems with increasing global mean temperature rise. *Climatic Change*, 106(2), 141–177.
- Washington Department of Ecology. (2025). Diesel pollution from data centers. Available at: <https://ecology.wa.gov/air-climate/air-quality/data-centers>.
- Wiens, J. J. (2016). Climate-related local extinctions are already widespread among plant and animal species. *PLoS Biology*, 14(12), 1–18.
- Windmiller, B., & Calhoun, A. (2007). Conserving Vernal Pool Wildlife in Urbanizing Landscapes. In *Science and Conservation of Vernal Pools in Northeastern North America* (pp. 233–251).
- Zedler, J. B., & Callaway, J. C. (1999). Tracking wetland restoration: Do mitigation sites follow desired trajectories? *Restoration Ecology*, 7(1), 69–73.