Shawn Smallwood, PhD
3108 Finch Street
Davis, CA 95616

Leigha Schmidt, Senior Planner
City of Hayward
777 B Street
Hayward, CA 94541

8 July 2021

RE: 4150 Point Eden Way Industrial Development Project

Dear Ms. Schmidt,

I write to reply to the City of Hayward's responses to comments on the DEIR prepared for the proposed 4150 Point Eden Way Industrial Development Project (City of Hayward 2021). My qualifications as an expert were provided in my original comment letter of 19 May 2021.

I reply to the City's responses to comments presented in the Final EIR (FEIR). My replies appear under each summarized response, which are numbered consistently with their appearance in the FEIR. Responses to my comments, which the FEIR refers to as Exhibit A, are unnumbered, so I preface my replies to these responses under headings that summarize the relevant issue.

Response 4.4 to Letter 4: Citizens Committee to Complete the Refuge
Food waste, which attracts animals that pose threats to salt-marsh harvest mouse and salt-marsh wandering shrew, is generally associated with either residential areas or commercial development with restaurants, but not with industrial projects such as the proposed project.

Reply: The City's response is inaccurate. The industrial sites located east of the site of the proposed project harbor house cats and other non-native species. I witnessed a house cat emerge from the neighboring industrial site to hunt on the trail along the east border of the project site.

Response 4.5 to Letter 4: Citizens Committee to Complete the Refuge
Concern over the loss of options for salt-marsh harvest mouse to escape tidal and flood waters are dismissed on the grounds that project mitigation includes the purchase of credits from the San Francisco Bay Wetland Mitigation Bank for the loss of 0.97 acres of waters of the U.S.

Reply: This response misses the point of the comment and applies the wrong mitigation to the impact at issue. The escape refugia is upland vegetation where the mouse can escape inundated pickleweed. The mouse can swim to refugia, but the farther the mouse must swim, the greater the risks to the mouse. The loss of 0.97 acres of wetlands has little to do with the loss of the upland areas to which salt-marsh harvest mouse can find safety when the surrounding pickleweed is flooded. Neither does the purchase of credits for those 0.97 acres have anything to do with mitigating the impact of 8.31 acres of lost refugia.

Neither would the preservation of 32 on-site acres of former salt ponds qualify as mitigation for the loss of upland refugia. The salt ponds are no longer natural wetlands dominated by pickleweed, but even if they were restored as wetlands, they offer no upland refugia.

Response 4.6 to Letter 4: Citizens Committee to Complete the Refuge
The reply refers to a discussion of noise in the Initial Study (pages 86-89), thereby implying that the issue raised in the comment was already analyzed.

Reply: The response is misleading because the noise analysis in the Initial Study was focused on impacts to humans, not to wildlife. Wildlife live in the wild, so they tend to suffer more prolonged exposures to noise sources than do humans. And much more so than do humans, wildlife rely on sound for communication and predator detection. Analysis of potential impacts to wildlife from noise exposure is needed, but entirely missing from the EIR. The missing analysis is all the more glaring considering the large number of special-status species that occur in the area, and the multiple threatened and endangered species that have been documented at or near the site.

Sound that humans might find innocuous or even pleasant can be devastating noise to wildlife populations. Animal species vary in their perception of sound due to variation in morphology and variation in exposure to sound mediated by the environments in which they live. Animal species also vary in reactions to noise (sound pollution), and in impacts caused by noise. Within each species, impacts vary by sound pressure (dBA), frequency, duration, timing of exposure within a day or season, and to what degree the same noise adversely affects predatory or competitor species; thus, no single metric, such as dBA, can adequately serve to measure impacts (McKenna et al. 2016). Noise can interfere with, and thus debilitate, either or both sound emission and sound reception from an animal species, and it can alter the animals' physiology via tissue damage or release of stress hormones. Costs can be expressed as increased energy needed to overcome noise effects, as diminished productivity (i.e., lower reproductive output), as lower fitness, as increased mortality, and ultimately as extirpation.

City of Hayward has not seriously addressed the issue of project noise impacts to wildlife.

Response 4.6 to Letter 4: Citizens Committee to Complete the Refuge
The response identifies the noise sources as "vehicle circulation noise (e.g., engine startups, alarms, parking) at the on-site parking lot and, heating, ventilation, and air conditioning (HVAC) equipment at the proposed industrial building," and explains that "Vehicle trips generated by the project would be only a small fraction of the total trips that occur daily on State Route 92, adjacent to the project site."

Reply: The response trivializes the effect of noise from the project by suggesting that it would be drowned out by the existing noise of Highway 92, but noise attenuates at a rate of about 6 dBA per doubling of the distance from source. The Initial Study reports that noise is typically measured at 87 dBA at 25 feet from trucks. Therefore, noise from truck traffic on Highway 92 would attenuate to about 58 dBA by the time it reaches the south end of the project site (216 m from the Highway). The attenuation is shown in the table below, in which the first distance is 25 feet expressed in meters.

Distance from source (m)	dBA
7.62	87
15.24	81
30.48	75
60.96	69
121.92	63
244	57
488	51
976	45

The 58 dBA of Highway noise measurable at the south end of the project site would be exceeded by the 87-dBA noise originating from trucks on the project site. This noise originating from the project site would attenuate at the same rate as in the Table above. Therefore, the project site would extend the noise source of trucks by another 216 m toward the wetlands south of Highway 92. Any of this noise that interferes with wildlife communication and predator detection would be noise that degrades habitat; some of this noise would lessen the extent of suitable habitat to at least some species that currently reside in or migrate to the wetlands.

Noise impacts can contribute to habitat fragmentation, which is defined as the reduced numerical capacity of a species caused by the pattern of habitat loss or degradation (Smallwood 2015). Habitat-penetration of noise that interferes with auditory signals related to mate-attraction, territorial defense, foraging, and predator alarm-calling can degrade habitat, thereby reducing the effective population size (Anthony and Blumstein 2000). Another impact of noise is physiological stress associated with startling responses to noise and increased effort to overcome noise interference (Francis and Barber 2013). For example, increasing residential noise from 42 dB to 63 dB forced one bird species to increase its call frequency by 9%, which was significant (Slabbekoorn and Peet 2003). Noise impacts can reduce habitat patch sizes, effective movement corridor widths, and habitat connectivity, which reduces the numerical capacity of a species and therefore contributes to habitat fragmentation (Smallwood 2015). Worse, habitat-penetration of noise can transform habitat patches into ecological sinks for species attracted to the habitat for its structure which visually connotes the availability of cover, forage and breeding opportunities, but where noise will interfere with the species' ability to capitalize on these opportunities. Ecological sinks remove individuals of a species from habitat patches where those individuals could have functioned as members of a population had they selected a different habitat patch unpolluted by noise.

Noise affects animal behaviors, so numerical abundance around noise sources is not always the most useful metric for assessing a species' response to noise (Pater et al. 2009, Francis and Barber 2013). Noise can change activity patterns by time of day or by spatial exposure to noise, and it can be perceived and reacted upon as false threats or false cues. Also, dBA and equivalent continuous sound levels (L_{eq}) are not necessarily the best ways to characterize noise that might adversely affect wildlife (Francis and Barber 2013). Sudden or episodic noises, such as traffic noises, can be more disruptive to some species than continuous or regular noises, so it is helpful to characterize the spectra of noise sources. Noise impacts should be assessed within the auditory frequency range perceived by the species (Pater et al. 2009), so audiograms of each species should be compared to the acoustical spectra of sound sources (Pater et al. 2009).

As an example of what can be learned from comparing avian audiograms to acoustical spectra of sound sources, Warrington et al. (2018) detected most effects of extractive energy noise "*resulted from noise frequencies with the greatest overlap with song features*." Warrington et al. (2018) found particular infrastructure generated noise that affected particular aspects of a bird's call, and these effects were measured at distances of 43 to 451 m from sources. Noise impacts on wildlife can be highly significant, but they are also complex. Whereas thorough analysis of noise impacts on each species of wildlife is likely infeasible, gross analysis is feasible and warranted.

Each special-status species likely occurring at or near the project site should be assessed for potential impacts. Where no scientific data are available for a particular species, one could make careful use of surrogate species for which data *are* available. For example, lacking measurements of noise impacts on willow flycatcher, one could examine impacts on other species of songbirds. In one study of two frog species exposed to 65 dBA traffic noise, mate-calling frequency declined 42% (Caorsi et al. 2017). For these species, if they were to occur next to the project site and roads leading to and from the site, mating call frequency would lessen by 42% across the area within 15 m of the roadways. In this hypothetical example, and applying it to 10 miles of nearby roadways, effective habitat loss could be estimated as 48.27 ha – (48.27 ha × 0.58 normal call frequency) = 20.27 ha, where the 48.27 ha was calculated as 10 miles × 1,609 m/mile × 15 m × 2 sides of the road.

Another species of frog exposed to 7 days of 70 dBA traffic noise experienced 95% increase in corticosterone levels in the blood, resulting in 56% lower sperm count and 25% lower sperm viability (Kaiser et al. 2015). One might estimate effective habitat loss along 10 miles of nearby roadway in this hypothetical case as 48.27 ha – (48.27 ha × 0.44 sperm count × 0.75 viable sperm) = 32.23 ha.

Table 2 in my comment letter of 19 May 2021 includes 24 special-status species of hummingbirds, woodpeckers and songbirds for which impacts can be predicted by existing studies of surrogate species. For example, Ware et al. (2015) measured changes in songbirds exposed to 61 dBA noise compared to 32 dBA "ambient" sound, finding an 8% decrease in foraging, 21% increase in vigilance, and 30% decrease in feeding duration. They also quantified reduced migration stopover efficiency of multiple species of songbird exposed to 61 dBA noise. Ware et al. (2015) showed that although avian habitat might look just as suitable after the introduced noise as before, its suitability declines nevertheless.

Response 4.7 to Letter 4: Citizens Committee to Complete the Refuge
In response to concern over birds colliding with windows facing the Ecological Reserve, City of Hayward writes, "The proposed industrial building was designed to avoid bird strikes, particularly the western-facing windows. As illustrated in the conceptual image of the proposed building below, the western-facing windows would have architectural features that break up the glass surface and protrude outward from the window surface."

Reply: The response treats the bird-window collision issue as the result of two causal factors, which the response characterizes as (1) unbroken expanse of windows on a facade, and (2) the degree to which glass windows protrude from a building. In reality, the bird-window collision problem is much more complex with many hypothesized causal factors. The City's analysis of the issue is overly simplistic and very likely inaccurate.

If the bird-window collision issue was as simple as portrayed by the City's response, window collisions would not be characterized as either the second or third largest source or human-caused bird mortality. The numbers behind these characterizations are often attributed to Klem's (1990) and Dunn's (1993) estimates of about 100 million to 1 billion bird fatalities in the USA, or more recently Loss et al.'s (2014) estimate of 365-988 million bird fatalities in the USA or Calvert et al.'s (2013) and Machtans et al.'s (2013) estimates of 22.4 million and 25 million bird fatalities in Canada, respectively. However, these estimates were likely biased too low, because they were based on opportunistic sampling, volunteer study participation, fatality monitoring by more inexperienced than experienced searchers, and usually no adjustments made for scavenger removals of carcasses before searchers could detect them (Bracey et al. 2016). A high rate of bird-window collisions has been measured in the Bay Area (Kahle et al. 2016), which is within the prominent bird migration route known as the Pacific Flyway, and within which the proposed project is located. The precedent for high bird-window collision mortality exists both worldwide and locally, and the birds that might collide with the building's windows are available in abundance along the Pacific Flyway and locally between two adjacent Ecological Preserves. And the problem is indeed a complicated one.

Below is a list of collision factors I found in the scientific literature, and which I suggest ought to be used to revise the EIR. Following this list are specific notes and findings taken from the literature and my own experience.

(1) Inherent hazard of a structure in the airspace used for nocturnal migration or other flights
(2) Window transparency, falsely revealing passage through structure or to indoor plants

(3) Window reflectance, falsely depicting vegetation, competitors, or open airspace
(4) Black hole or passage effect
(5) Window or façade extent, or proportion of façade consisting of window or other reflective surface
(6) Size of window
(7) Type of glass
(8) Lighting, which is correlated with window extent and building operations
(9) Height of structure (collision mechanisms shift with height above ground)
(10) Orientation of façade with respect to winds and solar exposure
(11) Structural layout causing confusion and entrapment
(12) Context in terms of urban-rural gradient, or surrounding extent of impervious surface vs vegetation
(13) Height, structure, and extent of vegetation grown near home or building
(14) Presence of birdfeeders or other attractants
(15) Relative abundance
(16) Season of the year
(17) Ecology, demography and behavior
(18) Predatory attacks or cues provoking fear of attack
(19) Aggressive social interactions

(1) Inherent hazard of structure in airspace.—Not all of a structure's collision risk can be attributed to windows. Overing (1938) reported 576 birds collided with the Washington Monument in 90 minutes on one night, 12 September 1937. The average annual fatality count had been 328 birds from 1932 through 1936. Gelb and Delacretaz (2009) and Klem et al. (2009) also reported finding collision victims at buildings lacking windows, although many fewer than they found at buildings fitted with widows. The takeaway is that any building going up at the project site would likely kill birds, although mortality would increase with larger expanses of glass.

(2) Window transparency.—Widely believed as one of the two principal factors contributing to avian collisions with buildings is the transparency of glass used in windows on the buildings (Klem 1989). Gelb and Delacretaz (2009) felt that many of the collisions they detected occurred where transparent windows revealed interior vegetation.

(3) Window reflectance.—Widely believed as one of the two principal factors contributing to avian collisions with buildings is the reflectance of glass used in windows on the buildings (Klem 1989). Reflectance can deceptively depict open airspace, vegetation as habitat destination, or competitive rivals as self-images (Klem 1989). Gelb and Delacretaz (2009) felt that many of the collisions they detected occurred toward the lower parts of buildings where large glass exteriors reflected outdoor vegetation. Klem et al. (2009) and Borden et al. (2010) also found that reflected outdoor vegetation associated positively with collisions.

(4) Black hole or passage effect.—Although this factor was not often mentioned in the bird-window collision literature, it was suggested in Sheppard and Phillips (2015). The black hole or passage effect is the deceptive appearance of a cavity or darkened ledge that certain species of bird typically approach with speed when seeking roosting sites. The deception is achieved when

shadows from awnings or the interior light conditions give the appearance of cavities or protected ledges. This factor appears potentially to be nuanced variations on transparency or reflectance or possibly an interaction effect of both of these factors. It might play a significant role in the proposed project, as I am concerned that this factor might also express itself from the shadows cast by the project's design feature intended to break up the glass surface.

(5) Window or façade extent.—Klem et al. (2009), Borden et al. (2010), Hager et al. (2013), Ocampo-Peñuela et al. (2016), Loss et al. (2019), Rebolo-Ifrán et al. (2019), and Riding et al. (2020) reported increased collision fatalities at buildings with larger reflective façades or higher proportions of façades composed of windows. However, Porter and Huang (2015) found a negative relationship between fatalities found and proportion of façade that was glazed.

(6) Size of window.—According to Kahle et al. (2016), collision rates were higher on large-pane windows compared to small-pane windows. Many of the windows of the proposed project would be large, with hundreds of them each about 2.42 m^2 in area, in addition to the expansive bottom-floor windows.

(7) Type of glass.—Klem et al. (2009) found that collision fatalities associated with the type of glass used on buildings. Otherwise, little attention has been directed towards the types of glass in buildings.

(8) Lighting.—Parkins et al. (2015) found that light emission from buildings correlated positively with percent glass on the façade, suggesting that lighting is linked to the extent of windows. Zink and Eckles (2010) reported fatality reductions, including an 80% reduction at a Chicago high-rise, upon the initiation of the Lights-out Program. However, Zink and Eckles (2010) provided no information on their search effort, such as the number of searches or search interval or search area around each building.

(9) Height of structure.—Except for Riding et al. (2020), I found little if any hypothesis-testing related to building height, including whether another suite of factors might relate to collision victims of high-rises. Are migrants more commonly the victims of high-rises or of smaller buildings? Some of the most notorious buildings are low-rise buildings.

(10) Orientation of façade.—Some studies tested façade orientation, but not convincingly. Some evidence that orientation affects collision rates was provided by Winton et al. (2018). Confounding factors such as the extent and types of windows would require large sample sizes of collision victims to parse out the variation so that some portion of it could be attributed to orientation of façade. Whether certain orientations cause disproportionately stronger or more realistic-appearing reflections ought to be testable through measurement, but counting dead birds under façades of different orientations would help.

(11) Structural layout.—Bird-safe building guidelines have illustrated examples of structural layouts associated with high rates of bird-window collisions, but little attention has been directed towards hazardous structural layouts in the scientific literature. An exception was Johnson and Hudson (1976), who found high collision rates at 3 stories of glassed-in walkways atop an open

breezeway, located on a break in slope with trees on one side of the structure and open sky on the other, Washington State University.

(12) Context in urban-rural gradient.—Numbers of fatalities found in monitoring have associated negatively with increasing developed area surrounding the building (Hager et al. 2013), and positively with more rural settings (Kummer et al. 2016).

(13) Height, structure and extent of vegetation near building.—Correlations have sometimes been found between collision rates and the presence or extent of vegetation near windows (Hager et al. 2008, Borden et al. 2010, Kummer et al. 2016, Ocampo-Peñuela et al. 2016). However, Porter and Huang (2015) found a negative relationship between fatalities found and vegetation cover near the building. In my experience, what probably matters most is the distance from the building that vegetation occurs. If the vegetation that is used by birds is very close to a glass façade, then birds coming from that vegetation will be less likely to attain sufficient speed upon arrival at the glass façade to result in a fatal injury. Too far away and there is probably no relationship. But 30 to 50 m away, as proposed for this project (see image used in the response), and birds alighting from vegetation can attain lethal speeds by the time they arrive at the windows.

(14) Presence of birdfeeders.—Dunn (1993) reported a weak correlation ($r = 0.13$, $P < 0.001$) between number of birds killed by home windows and the number of birds counted at feeders. However, Kummer and Bayne (2015) found that experimental installment of birdfeeders at homes increased bird collisions with windows 1.84-fold.

(15) Relative abundance.—Collision rates have often been assumed to increase with local density or relative abundance (Klem 1989), and positive correlations have been measured (Dunn 1993, Hager et al. 2008). However, Hager and Craig (2014) found a negative correlation between fatality rates and relative abundance near buildings.

(16) Season of the year.—Borden et al. (2010) found 90% of collision fatalities during spring and fall migration periods. The significance of this finding is magnified by 7-day carcass persistence rates of 0.45 and 0.35 in spring and fall, rates which were considerably lower than during winter and summer (Hager et al. 2012). In other words, the concentration of fatalities during migration seasons would increase after applying seasonally-explicit adjustments for carcass persistence. Fatalities caused by collisions into the glass façades of the project's building would likely be concentrated in fall and spring migration periods.

(17) Ecology, demography and behavior.—Klem (1989) noted that certain types of birds were not found as common window-caused fatalities, including soaring hawks and waterbirds. Cusa et al. (2015) found that species colliding with buildings surrounded by higher levels of urban greenery were foliage gleaners, and species colliding with buildings surrounded by higher levels of urbanization were ground foragers. Sabo et al. (2016) found no difference in age class, but did find that migrants are more susceptible to collision than resident birds.

(18) Predatory attacks.—Panic flights caused by raptors were mentioned in 16% of window strike reports in Dunn's (1993) study. I have witnessed Cooper's hawks chasing birds into

windows, including house finches next door to my home and a northern mocking bird chased directly into my office window. Predatory birds likely to collide with the project's windows would include Peregrine falcon, red-shouldered hawk, Cooper's hawk, and sharp-shinned hawk.

(19) Aggressive social interactions.—I found no hypothesis-testing of the roles of aggressive social interactions in the literature other than the occasional anecdotal account of birds attacking their self-images reflected from windows. However, I have witnessed birds chasing each other and sometimes these chases resulting in one of the birds hitting a window.

If the project goes forward as proposed and bird-window collisions occur at a high rate, fatality-reduction measures would be the only practical solution. The most efficacious approach to the problem is to avoid or minimize impacts to the degree feasible at the planning side of the project. Any new project should be informed by preconstruction surveys of daytime and nocturnal flight activity. Such surveys can reveal the one or more façades facing the prevailing approach direction of birds, and these revelations can help prioritize where certain types of mitigation can be targeted. It is critical to formulate effective measures prior to construction, because post-construction options will be limited, likely more expensive, and probably less effective.

(1) Retrofitting to reduce impacts
(1A) Marking windows
(1B) Managing outdoor landscape vegetation
(1C) Managing indoor landscape vegetation
(1D) Managing nocturnal lighting

(1A) Marking windows.— Whereas Klem (1990) found no deterrent effect from decals on windows, Johnson and Hudson (1976) reported a fatality reduction of about 69% after placing decals on windows. In an experiment of opportunity, Ocampo-Peñuela et al. (2016) found only 2 of 86 fatalities at one of 6 buildings – the only building with windows treated with a bird deterrent film. At the building with fritted glass, bird collisions were 82% lower than at other buildings with untreated windows. Kahle et al. (2016) added external window shades to some windowed façades to reduce fatalities 82% and 95%. Brown et al. (2020) reported an 84% lower collision probability among fritted glass windows and windows treated with ORNILUX R UV. City of Portland Bureau of Environmental Services and Portland Audubon (2020) reduced bird collision fatalities 94% by affixing marked Solyx window film to existing glass panels of Portland's Columbia Building. Many external and internal glass markers have been tested experimentally, some showing no effect and some showing strong deterrent effects (Klem 1989, 1990, 2009, 2011; Klem and Saenger 2013; Rössler et al. 2015).

Following up on the results of Johnson and Hudson (1976), I decided to mark windows of my home, where I have documented 5 bird collision fatalities between the time I moved in and 6 years later. I marked my windows with decals delivered to me via US Postal Service from a commercial vendor. I have documented no fatalities at my windows during the 10 years hence. In my assessment, markers can be effective in some situations.

The response depicts vertical slats to break up the glass surface. I have seen such slats on another building. However, it would help for the City to provide the scientific foundation for using this design feature. It would help to reveal any scientific evidence of efficacy. Otherwise, if the proposed design feature is in effective, then the following is my prediction of bird mortality based on what has been measured at many other sites across the USA.

By the time of these replies I had reviewed and processed results of bird collision monitoring at 213 buildings and façades for which bird collisions per m^2 of glass per year could be calculated and averaged (Johnson and Hudson 1976, O'Connell 2001, Somerlot 2003, Hager et al. 2008, Borden et al. 2010, Hager et al. 2013, Porter and Huang 2015, Parkins et al. 2015, Kahle et al. 2016, Ocampo-Peñuela et al. 2016, Sabo et al. 2016, Barton et al. 2017, Gomez-Moreno et al. 2018, Schneider et al. 2018, Loss et al. 2019, Brown et al. 2020, , City of Portland Bureau of Environmental Services and Portland Audubon 2020, Riding et al. 2020). These study results averaged 0.073 bird deaths per m^2 of glass per year (95% CI: 0.042-0.102). Looking over the proposed building design, I estimated the portion of the building that protrudes with expansive glass surfaces would include at least 1,155.3 m^2 of glass panels, which applied to the mean fatality rate would predict at least **84 bird deaths per year (95% CI: 50-119)** at just this portion of the building. The 100-year toll from this average annual fatality rate would be at least **8,400 bird deaths (95% CI: 5,000-11,900)**. These estimates would be perhaps 3 times higher after accounting for the proportions of fatalities removed by scavengers or missed by fatality searchers where studies have been performed. The mortality of collision fatalities would continue until the building is either renovated to reduce bird collisions or it comes down. If the project moves forward as proposed, and annually kills 84 birds protected by state and federal laws, then the project will cause significant unmitigated impacts.

The project should not go forward as proposed unless the design features can be proven effective. Unless evidence can be provided to soundly support the implementation of the proposed design features, then the City should adhere to available guidelines prepared by American Bird Conservancy and New York and San Francisco. The American Bird Conservancy (ABC) produced an excellent set of guidelines recommending actions to: (1) Minimize use of glass; (2) Placing glass behind some type of screening (grilles, shutters, exterior shades); (3) Using glass with inherent properties to reduce collisions, such as patterns, window films, decals or tape; and (4) Turning off lights during migration seasons (Sheppard and Phillips 2015). The City of San Francisco (San Francisco Planning Department 2011) also has a set of building design guidelines, based on the excellent guidelines produced by the New York City Audubon Society (Orff et al. 2007). The ABC document and both the New York and San Francisco documents provide excellent alerting of potential bird-collision hazards as well as many visual examples. The San Francisco Planning Department's (2011) building design guidelines are more comprehensive than those of New York City, but they could have gone further. For example, the San Francisco guidelines probably should have also covered scientific monitoring of impacts as well as compensatory mitigation for impacts that could not be avoided, minimized or reduced.

Monitoring and the use of compensatory mitigation should be incorporated at any new building project because the measures recommended in the available guidelines remain of uncertain efficacy, and even if these measures are effective, they will not reduce collision fatalities to zero. The only way to assess efficacy and to quantify post-construction fatalities is to monitor the project for fatalities.

Response 5.1: Paige Fenny, Lozeau Drury LLP
"The commenter does not provide detail on additional mitigation measures that could be imposed to reduce project impacts."

Reply: The response is incorrect. Ms. Fenny attached my comments to her letter. My comments included feasible mitigation measures to minimize project impacts.

Response 5.5: Paige Fenny, Lozeau Drury LLP
"The commenter's opinion - that the Initial Study or Draft EIR conclusion is that no special-status species occur on the project site and that the baseline condition assessment is inadequate – is inaccurate." And "Neither the Draft EIR or the Initial Study state that special-status wildlife species do not occur on the project site."

Reply: By a thin margin, I can agree with the response. WRA (2020:17) began by summarily dismissing the possibility of half of the 26 special-status species that WRA determined to occur in the vicinity of the project. (In my comment letter, I determined 79 special-status species of wildlife likely use the site at one time or another). On pages 17-18, WRA wrote that many of the other 13 species "are unlikely to occur on the project site." Each of the 13 species is then assessed in more detail, and for all but a few of them, the determination was that the species is not expected to occur or similar language to the same effect. WRA concluded that Alameda song sparrow "may nest in the shrubs onsite, or near the project site in the surrounding marshes," although the DEIR did not report that Alameda song sparrow could nest on the site. WRA also concluded that burrowing owl "may use the levees surrounding the project site for wintering and nesting habitat," and for white-tailed kite, "shrubs in the eastern portion of the project site may provide marginal nesting habitat for this species." These are not strong endorsements for potential presence on the project site. The strongest endorsement for presence of a special-status species was "salt marsh harvest mice could potentially be present within the Project Site." Contributing further to the DEIR's dwindling of occurrence likelihoods, the DEIR reported that no such species had been seen during the biological surveys. The DEIR presents this outcome in the context of species occurrence likelihood determinations, which in my read of it implies it is evidence of absence. As I pointed out in my comments, this outcome is not evidence of absence.

Response 5.5: Paige Fenny, Lozeau Drury LLP
"The Biological Resources Technical Report prepared by WRA for the project, which is included as an appendix to the Initial Study, analyses 31 special-status wildlife species known from the region, not ten species as the comment letter states."

Reply: See my reply above. WRA started with 26 species (not 31), then summarily dismissed half of them. Actual analyses were presented only for 16 species. Of these 16 species, I determined that 6 should not have been considered in the first place because it was not reasonable to consider the possibility that those species might occur at the project site. The analyses for those 6 species were empty analyses. I considered that 10 species were legitimately analyzed for occurrence potential.

Response 5.5: Paige Fenny, Lozeau Drury LLP

"It should be further noted with respect to the adequacy of the baseline surveys that the methods section of WRA's Biological Resources Technical Report states that Monk & Associates biologists Mr. Geoff Monk and Ms. Hope Kingma conducted surveys of the project site on January 7, 2015, July 1, 2015, and August 29, 2016."

Reply: Understood, but where are the results of these surveys. The EIR does not report what species were detected by these biologists during the stated surveys.

Response 5.5: Paige Fenny, Lozeau Drury LLP
"It is important to note that CEQA does not require an exhaustive list of all bird species that could occur on a site..."

Reply: No suggestion was made for the need of an exhaustive list of all bird species that use the site. What is important, however, is to more accurately characterize the existing environment, because this characterization serves as the baseline for analysis of impacts to wildlife. What is also needed is for the EIR to not characterize its 4 reconnaissance-level surveys as sufficient for characterizing the wildlife community of the existing environmental setting. Those surveys performed by Monk & Associates could not possibly have detected anywhere near the complete suite of species that use the site. There should be no implication that they did, just as there should be no implication that those surveys provide evidence of absence of special-status species.

Response 5.6: Paige Fenny, Lozeau Drury LLP
Quotes paragraphs from WRA (2019) as "background" to a speculative argument downplaying the value of the project site to wildlife migration and movement through the area.

Reply: The entire argument is speculative and built on vague, nearly meaningless terms. The same argument used to downplay the value of the site to wildlife would apply equally to the adjacent Ecological Preserves, which also abut Highway 92 and the existing industrial facilities. According to the argument of the response, neither of the adjacent Ecological Preserves provide any habitat and movement value to wildlife. But I do not agree with this. Furthermore, the documented occurrences of wildlife on the Preserves and on the project site soundly refute the response's argument.

Response 5.7: Paige Fenny, Lozeau Drury LLP
"The commenter asserts that the project would generate 1,192,862 vehicle miles per year but does not explain how the mileage was calculated and what percentage increase this may represent for the local area."

Reply: This is not true. I identified where the number came from, which was the DEIR.

The rest of the response is misleading in multiple ways. First, the Vasco Road study I cited was intended as an example foundation for performing an appropriate analysis; it was intended to show the possible magnitude of the impact. Second, the response mischaracterizes the environment of the study area along Vasco Road. There was no agriculture there, nor oak woodlands or riparian. It was grassland. Third, the response conflates a significance finding typically made for traffic analysis to a significance finding regarding wildlife mortality. Traffic analysis in CEQA reviews do not consider impacts to wildlife, so the response's conflation of significance findings from such analyses is misdirected here. The reality is that adding 1,192,862 vehicle miles per year is going to kill many wild animals. Note that the response was silent on the calculation per my prediction of mortality. The fatality rate might differ between the project site and the Vasco Road study site, but the number of fatalities per year would still be substantial, and significant.

Thank you for your attention,

Shawn Smallwood, Ph.D.

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