Appendix L

Final Response to Comments (includes Mitigation Monitoring and Reporting Program)

LOCKWOOD III APARTMENTS

Response to Comments on Public Review Draft Initial Study/Mitigated Negative Declaration

State Clearinghouse Number 2024030528

Prepared for
City of Oxnard
Community Development Department

July 2024

ESA

LOCKWOOD III APARTMENTS

Response to Comments on Public Review Draft Initial Study/Mitigated Negative Declaration

Prepared for

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Lockwood III Apartments: Response to Comments on Public Review Draft Initial Study/Mitigated Negative Declaration

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CHAPTER 1
Introduction

This Response to Comments document was prepared to respond to comments that were received on the Public Review Draft Initial Study/Mitigated Negative Declaration (Public Review Draft IS/MND). The Final Initial Study/Mitigated Negative Declaration (Final IS/MND) consists of the Public Review Draft IS/MND and this Response to Comments document. The Final IS/MND has been prepared in accordance with the California Environmental Quality Act (CEQA) as amended (Public Resources Code Section 21000 et seq.) and *CEQA Guidelines* (California Administrative Code Section 15000 et seq.). Documents relating to this Final IS/MND were cited and incorporated. All documents are available for review at the City of Oxnard website: https://www.oxnard.org/city-department/community-development/planning/environmental-documents/.

1.1 CEQA Requirements

Before the City of Oxnard may approve the project, it must certify that the Final IS/MND: a) has been completed in compliance with CEQA; b) was presented to the Oxnard City Council who reviewed and considered it prior to approving the project; and c) reflects the City's independent judgment and analysis.

CEQA Guidelines Section 15074 states that prior to approving a project, the decision-making body of the lead agency shall consider the proposed mitigated negative declaration together with any comments received during the public review process. Therefore, the decision making body will be considering the following documents that constitute the Final IS/MND prior to making a decision on the project.

- The Public Review Draft IS/MND
- Response to Comment Document which includes:
  - Comments and recommendations received on the Public Review Draft IS/MND;
  - A list of persons, organizations, and public agencies commenting on the Public Review Draft IS/MND;
  - The response of the Lead Agency to substantive environmental points raised in the review and consultation process.

This Response to Comments document for the Lockwood III Apartments Project presents the following chapters:

- Chapter 1: Introduction – this chapter includes an introduction to the Response to Comments and the CEQA process and requirements.
- Chapter 2: Comment Letters – this chapter includes a list of persons, organizations, and public agencies commenting on the Public Review Draft IS/MND.
- Chapter 3: Response to Comments – this chapter includes the written comments received on the Public Review Draft IS/MND as well as the written responses to each comment.
- Chapter 4: Errata – this chapter includes any revisions made to the Public Review Draft IS/MND in response to comments received or initiated by the Lead Agency.
- Chapter 5: Mitigation and Monitoring Program (MMRP) – this chapter includes a list of the mitigation measures, identification of the responsible implementation agency, agency responsible for monitoring, timing of implementation, and date of compliance for each mitigation measure.

1.2 CEQA Process

1.2.1 Public Participation Process

Notice of Intent of the Public Review Draft IS/MND

The Notice of Intent (NOI) of the Public Review Draft IS/MND was posted on March 18, 2024, with the Ventura County Clerk Recorder. The Public Review Draft IS/MND was circulated for a 30-day public review until April 17, 2024. The NOI for the Public Review Draft IS/MND was circulated to state and local agencies and interested parties requesting a copy of the NOI. Copies of the Public Review Draft IS/MND were made available for review at the City of Oxnard Community Development Department located at 214 South C Street, Oxnard, California, 93030 and at the Oxnard Public Library, 251 South A Street. The document was also available at the City of Oxnard website:https://www.oxnard.org/city-department/community-development/planning/environmental-documents/.

1.2.2 Evaluation and Response to Comments

In accordance with Article 6 of the *CEQA Guidelines*, the City of Oxnard, as the Lead Agency, was required to evaluate substantive environmental comments received on the Public Review Draft IS/MND. This Response to Comments document provides written responses to each comment received on the Public Review Draft IS/MND.

1.2.3 Final IS/MND Approval

As the Lead Agency, the City of Oxnard is required to determine the adequacy of the Final IS/MND (Public Review Draft IS/MND and Response to Comments). The City can adopt the Final IS/MND if they find on the basis of the whole record before it (including the Public Review Draft IS/MND and Response to Comments) that there is no substantial evidence that the project will have a significant effect on the environment and that the Final IS/MND reflects the City's independent judgment and analysis.

1.2.4 Notice of Determination

Pursuant to Section 15094 of the *CEQA Guidelines*, the City of Oxnard will file a Notice of Determination (NOD) with the Ventura County Clerk Recorder within five working days of project approval.

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CHAPTER 2
Comment Letters

The Public Review Draft Initial Study/Mitigated Negative Declaration (Public Review Draft IS/MND) for Lockwood III Apartments was circulated for public review for 30 days (March 18, 2024, through April 17, 2024). The City of Oxnard received five comment letters from public agencies during the public review period, as listed in the table below. Each comment letter has been assigned an alphabetical designation (A through E). Each comment within each letter has been assigned a numerical designation so that each comment could be cross-referenced with an individual response. The comments and responses are provided in Chapter 3.

COMMENT LETTERS RECEIVED

Comment No.	Commenting Agency	Date of Comment
A	Lozeau Drury LLP on behalf of Supporters Alliance for Environmental Responsibility (SAFER)	April 12, 2024
B	California Department of Transportation (Caltrans)	April 15, 2024
C	Ventura County Air Pollution Control District (VCAPCD)	April 17, 2024
D	Ventura County Environmental Health Division	April 17, 2024
E	Ventura County Public Works - Watershed Protection District (Groundwater)	April 17, 2024

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CHAPTER 3
Responses to Comments

Following are the comment letters and the written responses to each of the comments that were received during the public review period of the Public Review Draft Initial Study/Mitigated Negative Declaration (Public Review Draft IS/MND). In some instances, in response to the comment, the City of Oxnard has made additions or deletions to the text of the Public Review Draft IS/MND; additions are included as <u>underlined text</u> and deletions are shown as ~~stricken text~~.

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Via Email

April 12, 2024

Joe Pearson II, Planning Manager
Community Development Department,
City of Oxnard
214 South C Street
Oxnard, CA 93030
Joe.Pearson@oxnard.org

Re: Comment on the Mitigated Negative Declaration
Lockwood III Apartments Project (Record No. Record No. 24-01)

Dear Mr. Pearson and Honorable Members of the Planning Commission:

I am writing on behalf of Supporters Alliance for Environmental Responsibility ("SAFER") and its members living and working in and around the City of Oxnard ("City"). This letter is with regard to the Initial Study and Mitigated Negative Declaration ("IS/MND") prepared for the Lockwood III Apartments Project (Record No. 24-01), which proposes development of a 225,348 square foot multifamily development building ("Project").

After careful review of the IS/MND and its accompanying documents prepared by Environmental Science Associates ("ESA"), SAFER believes that the IS/MND is improper under the California Environmental Quality Act, and that an environmental impact report ("EIR") is required. As explained in more detail below, there is a fair argument that the Project may have adverse environmental impacts related to biological resources, air quality, and noise. A-1

Furthermore, the MND's proposed mitigated measures inadequately address the Project's environmental impacts, and as such conflict with the air quality policies pursuant to the Ventura County Air Pollution Control District. SAFER's review of the MND was assisted by expert biologist Dr. Shawn Smallwood, indoor air quality expert Francis Offermann, CIH, and the expert acoustical consulting firm Wilson Ihrig. Our expert comments and CVs are attached as Exhibits A, B, and C, respectively. A-2

SAFER requests that the City not proceed with certifying the MND and to instead prepare an EIR to ensure that potentially significant adverse impacts of this Project are fully disclosed, analyzed, and mitigated. A-3

PROJECT DESCRIPTION

The Project is located at 2151 Lockwood Street, in Oxnard, California. The Applicant, SVM Development LLC, Inc., proposes the construction of a new multifamily residential development comprised of 234 dwelling units located within buildings up to five-stories, all situated atop a two-level subterranean parking garage with 351 parking spaces.

The Project gross floor area measures 225,348 square feet and the Project site sits on approximately 5.17 acres, with sensitive receptors surrounding the site. The total residential space would be 201,115 SF; covered balconies, patios, parking and walkways would comprise 75,250 SF; corridors would comprise 40,497 SF; balconies 22,610 SF; utility space 16,710 SF; and community space 13,609 SF. The remaining SF would be comprised of corridor and vertical circulation (2,668 SF) and non-conditioned building (592 SF). A-4

LEGAL STANDARD

As the California Supreme Court has held "[i]f no EIR has been prepared for a nonexempt project, but substantial evidence in the record supports a fair argument that the project may result in significant adverse impacts, the proper remedy is to order preparation of an EIR." (*Communities for a Better Env't v. South Coast Air Quality Mgmt. Dist.* (2010) 48 Cal.4th 310, 319-320 [citing *No Oil, Inc. v. City of Los Angeles* (1974) 13 Cal.3d 68, 75, 88; *Brentwood Assn. for No Drilling, Inc. v. City of Los Angeles* (1982) 134 Cal.App.3d 491, 504–505].) "Significant environmental effect" is defined very broadly as "a substantial or potentially substantial adverse change in the environment." (Pub. Res. Code § 21068; *see also* 14 CCR § 15382.)

The EIR is the very heart of CEQA. *Bakersfield Citizens for Local Control v. City of Bakersfield (*2004) 124 Cal.App.4th 1184, 1214 (*Bakersfield Citizens*); *Pocket Protectors v. City of Sacramento* (2004) 124 Cal.App.4th 903, 927. The EIR is an "environmental 'alarm bell' whose purpose is to alert the public and its responsible officials to environmental changes before they have reached the ecological points of no return." *Bakersfield Citizens*, 124 Cal.App.4th at 1220. The EIR also functions as a "document of accountability," intended to "demonstrate to an apprehensive citizenry that the agency has, in fact, analyzed and considered the ecological implications of its action." *Laurel Heights Improvements Assn. v. Regents of Univ. of Cal.* (1988) 47 Cal.3d 376, 392. The EIR process "protects not only the environment but also informed self-government." *Pocket Protectors*, 124 Cal.App.4th at 927. A-5

Where an initial study shows that the project may have a significant effect on the environment, a mitigated negative declaration may be appropriate. However, a mitigated negative declaration is proper *only* if the project revisions would avoid or mitigate the potentially significant effects identified in the initial study "to a point where clearly no significant effect on the environment would occur, and…there is no substantial evidence in light of the whole record before the public agency that the project, as revised, may have a significant effect on the environment." PRC §§ 21064.5 and 21080(c)(2); *Mejia v. City of Los Angeles* (2005) 130 Cal.App.4th 322, 331. In that context, "may" means a reasonable possibility of a significant

effect on the environment. PRC §§ 21082.2(a), 21100, 21151(a); *Pocket Protectors*, 124 Cal.App.4th at 927; *League for Protection of Oakland's etc. Historic Res. v. City of Oakland* (1997) 52 Cal.App.4th 896, 904–05.

Under the "fair argument" standard, an EIR is required if any substantial evidence in the record indicates that a project may have an adverse environmental effect—even if contrary evidence exists to support the agency's decision. 14 CCR § 15064(f)(1); *Pocket Protectors,* 124 Cal.App.4th at 931; *Stanislaus Audubon Society v. County of Stanislaus* (1995) 33 Cal.App.4th 144, 150-51; *Quail Botanical Gardens Found., Inc. v. City of Encinitas* (1994) 29 Cal.App.4th 1597, 1602. The "fair argument" standard creates a "low threshold" favoring environmental review through an EIR rather than through issuance of negative declarations or notices of exemption from CEQA. *Pocket Protectors*, 124 Cal.App.4th at 928. The "fair argument" standard is virtually the opposite of the typical deferential standard accorded to agencies. As a leading CEQA treatise explains:

> This 'fair argument' standard is very different from the standard normally followed by public agencies in making administrative determinations. Ordinarily, public agencies weigh the evidence in the record before them and reach a decision based on a preponderance of the evidence. [Citations]. The fair argument standard, by contrast, prevents the lead agency from weighing competing evidence to determine who has a better argument concerning the likelihood or extent of a potential environmental impact. The lead agency's decision is thus largely legal rather than factual; it does not resolve conflicts in the evidence but determines only whether substantial evidence exists in the record to support the prescribed fair argument.
>
> Kostka & Zischke*, Practice Under CEQA*, §6.29, pp. 273–74.

The Courts have explained that "it is a question of law, not fact, whether a fair argument exists, and the courts owe no deference to the lead agency's determination. Review is de novo, with *a preference for resolving doubts in favor of environmental review*." *Pocket Protectors*, 124 Cal.App.4th at 928 (emphasis in original).

A-5 (cont)

DISCUSSION

I. There is Substantial Evidence of a Fair Argument that the Project Will Have Significant Biological Resources Impacts.

An EIR is required because substantial evidence in the record indicates a fair argument that the Project will have significant biological impacts. Specifically, expert wildlife biologist Dr. Shawn Smallwood, Ph.D. reviewed the Project and MND document and concluded that the Project site has value as a habitat for special status species and that the Project will have significant impacts on biological resources. Dr. Smallwood's comments are supported by a site visit by wildlife biologist Noriko Smallwood ("Ms. Smallwood"). (Ex. A, p. 1.) Ms. Smallwood is an expert wildlife ecologist with a focus on urban ecology, avian ecology, and habitat conservation. Ms. Smallwood visited the site for approximately 3.5 hours on March 28, 2024,

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starting at 7:26 am. (*Id*.) She walked the site's perimeter, using binoculars to scan and a camera to capture wildlife. (*Id*.) Dr. Smallwood's comments and CVs are attached Exhibit A. A-6 (cont)

For the following reasons set forth below, the City should not certify the MND and must instead prepare and circulate an EIR for the Project.

A. The IS/MND Fails to Adequately Describe the Project's Environmental Setting.

The City inadequately characterized the existing environmental setting and the site's ability to provide habitat for special-status species. Every CEQA document must start from a "baseline" assumption. The CEQA "baseline" is the set of environmental conditions against which to compare a project's anticipated impacts. *Communities for a Better Envt. v. So. Coast Air Qual. Mgmt. Dist*. (2010) 48 Cal. 4th 310, 321. Section 15125(a) of the CEQA Guidelines (14 C.C.R., § 15125(a)) states in pertinent part that a lead agency's environmental review under CEQA:

> "…must include a description of the physical environmental conditions in the vicinity of the project, ***as they exist at the time [environmental analysis] is commenced***, from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a Lead Agency determines whether an impact is significant." (Emphasis added.)

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(See, *Save Our Peninsula Committee v. County of Monterey* (2001) 87 Cal.App.4th 99, 124-125.) As the court of appeal has explained, "the impacts of the project must be measured against the 'real conditions on the ground,'" and not against hypothetical permitted levels. (*Save Our Peninsula, supra*, 87 Cal.App.4th 99, 121-123.)

The field survey prepared by ESA, which was used to inform the environmental setting, is deficient. The reconnaissance survey concluded that a mere three species were detected at the Project site. However, as Dr. Smallwood notes, ESA failed to include the methodological details that shaped the survey findings, information that is essential "to characterize the environmental setting as a basis for opining on, or predicting, potential project impacts to biological resources." (Ex. A, p. 15.) Of the three species detected by ESA, Ms. Smallwood detected one during her site visit, but the rest of ESA's findings and subsequent conclusion starkly differs from Ms. Smallwood's site visit and findings. (*Id*.) As Dr. Smallwood explains, it remains unclear as to why and how ESA's survey omitted wildlife that were so abundant when Ms. Smallwood visited the Project site (*Id*.) The clear disparities between what ESA's and Ms. Smallwood's surveys as well as the unclear method in which ESA's survey was performed and documented require additional review.

Furthermore, Ms. Smallwood observed 25 species of vertebrate wildlife at and/or near the Project site, three of which were special-status species. (Ex. A, p. 3, Table 1.) These species include the Western gull (Larus occidentalis), which is classified as "Birds of Conservation A-8

Concern."[1] (*Id*.) Birds of Conservation Concern include "migratory nongame birds that without additional conservation action are likely to become candidates for listing under the Endangered Species Act (ESA) of 1973."[2] Ms. Smallwood also observed the American kestrel (Falco sparverius) actively hunting on-site as well as Red-tailed hawk flying nearby. Both species are considered Birds of Prey, which are a valuable resource to the State of California, and are therefore protected under state law.[3] (*Id*.) "Special Status Species" is a universal term used in the scientific community for species that are considered sufficiently rare that they require special consideration and/or protection and should be, or have been, listed as rare, threatened or endangered by the Federal and/or State governments."[4] A-8 (cont)

In addition, Dr. Smallwood opines that ESA's survey may not have been performed thoroughly. While ESA instituted a 200-foot buffer surrounding the Project site, it failed to report on the California ground squirrels, which "is especially significant because burrowing owls rely on ground squirrels and their burrows, and the occurrence of ground squirrels greatly increases the likelihood of use of the site by burrowing owls." (*Id*.) These observations undermine ESA's survey credibility because the survey's failure to identify suitable habitat for burrowing owls is incorrect. Therefore, the ESA survey underestimates the Project site's suitability for habitat, especially for burrowing owls. A-9

The desktop survey performed by ESA also is misleading, making the resulting MND document inaccurate. In omitting all special-status plant and wildlife species from its analysis, the MND explains that the disturbed conditions of the Project site mean that there is no suitable habitat on it. That is an incorrect conclusion to reach. Dr. Smallwood explains that even though most places in the state is disturbed to some degree, "no explanation is provided of why disturbance at the project site prevents all of these species whereas disturbance elsewhere does not prevent the occurrences of the same species." (Ex. A, 17.) In fact, "[o]f the seven species the IS/MND determines to have low occurrence potential, two have been documented within 1.5 miles of the project site and three have been documented within 1.5 and 4 miles of the site. The documented proximities of these species do not comport with the IS/MND's determinations." (*Id*.) A-10

As further explained by Dr. Smallwood, the MND makes numerous incorrect assertions based on the same logic that the Project site's disturbed nature prevents any habitat from being deemed suitable. Given the abundance of wildlife detected on the Project site, the MND is deficient in explaining why habitat for special-status species is not available on the site whereas both common and special-status species have been observed utilizing the Project site as habitat. Unfortunately, ESA's lack of detail in preparing the survey does not answer the logical gaps in the MND. A-11

[1] *See*, US Fish & Wildlife Service ("USFW"), Birds of Conservation Concern 2021, pp. 18-19 https://www.fws.gov/sites/default/files/documents/birds-of-conservation-concern-2021.pdf.
[2] *Id*., p. 4.
[3] *See*, Fish and Game Code, Sections 3503, 3503.5, 3505 and 3513, and California Code of Regulation, Title 14, Sections 251.1, 652 and 783-786.6
[4] Sacramento County, Planning and Environmental Review, "Special Status Species," https://planning.saccounty.net/InterestedCitizens/Pages/ER_SpecialStatusSpecies.

Dr. Smallwood recommends preparing additional, and more detailed, surveys in order to better capture the existing environmental setting and site conditions for both wildlife and plant species. He also adds that there needs to be a clearer explanation as to why the MND reaches its conclusions regarding wildlife habitat for special-status species whereas the site conditions observed in the March 28, 2024 site visit by Ms. Smallwood underline the critical importance of the Project site for both common and special-status wildlife species alike. Dr. Smallwood thus explains that the City must prepare additional surveys to obtain a true inventory of the wildlife at the Project site.

A-11 (cont)

Clearly, the IS/MND fails to accurately describe the Project's environmental setting. A new CEQA document is therefore required.

B. The Project Will Have Significant Adverse Impacts on Wildlife.

An EIR is required if any substantial evidence in the record indicates that a project may have an adverse environmental effect—even if contrary evidence exists to support the agency's decision. (CEQA Guidelines § 15064(f)(1); *Stanislaus Audubon v. Stanislaus* (1995) 33 Cal.App.4th 144, 150-151 (1995)). Dr. Smallwood's findings related to habitat loss, wildlife movement, collisions from windows and traffic, as well as impacts from domesticated animals underline the importance of preparing an EIR.

a. Habitat Loss.

Dr. Smallwood concludes that the Project will have adverse impacts on special status species through direct loss of habitat. (Ex. A, 24.) For example, Dr. Smallwood's analysis of the Project site's productive capacity finds that the Project would deny the ability to host 26 bird nests and close to a hundred birds every season. (Ex. A. p. 17.) This is especially concerning since at least four special-status species have been observed utilizing or flying over the Project site. In conjunction, then, the Project will result in the loss of foraging area for special status species. (*Id*, 25.).

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b. Wildlife Movement.

Dr. Smallwood additionally points out that the Project will adversely impacts wildlife movement. He concludes that volant wildlife use the site as a stopover area. The project would cut wildlife off from one of the last remaining stopovers and staging opportunities in the project area, forcing volant wildlife to travel even farther between remaining stopover sites." (Ex. A. p. 17.) Dr. Smallwood points out that the nearby Rubio Wash is a feature likely to be followed by wildlife, which increases the importance of the Project site to wildlife. (*Id*.)

c. Collisions and Traffic.

The IS/MND fails to analyze the Project's impacts due to bird-window collisions. Dr. Smallwood concludes that the extensive use of glass in the 5-story buildings will lead to

increased bird-window collisions, and that the Project does not adequately consider the impacts that the height of the building would have on birds, during both the day and at night. (Ex.A, 26-27.) He notes that there are "96 special status species of birds with potential to use the site's aerosphere." (*Id*.) While MND does not adequately detail to what extent glass windows will be used for the Project, Dr. Smallwood predicts that many of these birds are likely to experience window collisions. (*Id*.) As such, Dr. Smallwood calculates that the Project will cause 292 bird deaths due to window collisions each year, with a significant amount of these birds being protected under the Migratory Bird Treaty Act. (*Id*., 29.)

Furthermore, the IS/MND fails to analyze the Project's impacts related to wildlife traffic fatalities. Dr. Smallwood calculates that the Project will generate 22,242,187.5 annual vehicle miles travelled. (*Id*. p. 31). He predicts that this will result in 2,008 wildlife fatalities per year. (*Id*.).

d. Impacts from Domestic Animals.

Domesticated animals like cats and dogs will be introduced to the Project site and will pose a potentially significant impact on wildlife species. In particular, the Project proposed to integrate infrastructures such as a dog run on the Project site, thereby encouraging dogs on and around the Project site, but does not analyze how the introduction of dogs may adversely impact wildlife that interact on the Project site. Furthermore, it is well documented that domesticated animals such as dogs carry parasites and other diseases that may likely "spill-over to wildlife of the immediate area or downstream to marine mammals at the coast. A fair argument can be made for the need to prepare an EIR to appropriately analyze the potential impacts to wildlife caused by the dog park." (*Id*., 32.)

Dr. Smallwood proposes numerous mitigation measures that could vastly reduce the above impacts, such as avoiding construction during nesting season, applying bird-safe window treatments, landscaping measures and many others. These mitigation measures should be analyzed in an EIR and implemented if feasible. Since there is substantial evidence of a fair argument that the Project will have adverse biological impacts, an EIR is required to analyze and mitigate those impacts.

A-12 (cont)

II. The MND Fails to Adequately Address the Project's Cumulative Impacts on Biological Resources.

An EIR must be prepared to discuss significant cumulative impacts. Dr. Smallwood found the MND's discussion of cumulative impacts to wildlife to be flawed. (Ex. A, p. 27.) CEQA Guidelines section 15130(a). This requirement flows from CEQA section 21083, which requires a finding that a project may have a significant effect on the environment if "the possible effects of a project are individually limited but cumulatively considerable. . . . 'Cumulatively considerable' means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." "Cumulative impacts" are defined as "two or more individual effects which, when considered together, are considerable or which compound or

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increase other environmental impacts." CEQA Guidelines section 15355(a). "[I]ndividual effects may be changes resulting from a single project or a number of separate projects." CEQA Guidelines section 15355(a).

"The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time." *Communities for a Better Environment v. Cal. Resources Agency* ("CBE v. CRA"), (2002) 103 Cal.App.4th 98, 117. A legally adequate cumulative impacts analysis views a particular project over time and in conjunction with other related past, present, and reasonably foreseeable probable future projects whose impacts might compound or interrelate with those of the project at hand. "Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time." CEQA Guidelines § 15355(b). As the court stated in *CBE v. CRA*, 103 Cal. App. 4th at 114:

> Cumulative impact analysis is necessary because the full environmental impact of a proposed project cannot be gauged in a vacuum. One of the most important environmental lessons that has been learned is that environmental damage often occurs incrementally from a variety of small sources. These sources appear insignificant when considered individually, but assume threatening dimensions when considered collectively with other sources with which they interact.
> (Citations omitted).

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(cont)

In *Kings County Farm Bureau v. City of Hanford,* 221 Cal.App.3d at 718, the court concluded that an EIR inadequately considered an air pollution (ozone) cumulative impact. The court said: "The [ ] EIR concludes the project's contributions to ozone levels in the area would be immeasurable and, therefore, insignificant because the [cogeneration] plant would emit relatively minor amounts of [ozone] precursors compared to the total volume of [ozone] precursors emitted in Kings County. The EIR's analysis uses the magnitude of the current ozone problem in the air basin in order to trivialize the project's impact." The court concluded: "The relevant question to be addressed in the EIR is not the relative amount of precursors emitted by the project when compared with preexisting emissions, but whether any additional amount of precursor emissions should be considered significant in light of the serious nature of the ozone problems in this air basin."[5] The *Kings County* case was reaffirmed in *CBE v. CRA*, 103 Cal.App.4th at 116, where the court rejected cases with a narrower construction of "cumulative impacts."

[5] *Los Angeles Unified v. City of Los Angeles*, 58 Cal.App.4th at 1024-1026 found an EIR inadequate for concluding that a project's additional increase in noise level of another 2.8 to 3.3 dBA was insignificant given that the existing noise level of 72 dBA already exceeded the regulatory recommended maximum of 70 dBA. The court concluded that this "ratio theory" trivialized the project's noise impact by focusing on individual inputs rather than their collective significance. The relevant issue was not the relative amount of traffic noise resulting from the project when compared to existing traffic noise, but whether any additional amount of traffic noise should be considered significant given the nature of the existing traffic noise problem.

Similarly, in *Friends of Eel River v. Sonoma County Water Agency*, (2003) 108 Cal. App. 4th 859, the court recently held that the EIR for a project that would divert water from the Eel River had to consider the cumulative impacts of the project together with other past, present and reasonably foreseeable future projects that also divert water from the same river system. The court held that the EIR even had to disclose and analyze projects that were merely proposed, but not yet approved. The court stated, CEQA requires "the Agency to consider 'past, present, and probable future projects producing related or cumulative impacts . . . .' (Guidelines, § 15130, subd. (b)(1)(A).) The Agency must interpret this requirement in such a way as to 'afford the fullest possible protection of the environment.'" *Id*., at 867, 869. The court held that the failure of the EIR to analyze the impacts of the project together with other proposed projects rendered the document invalid. "The absence of this analysis makes the EIR an inadequate informational document." (*Id*., at 872.)

The court in *Citizens to Preserve Ojai v. Bd. of Supervisors*, 176 Cal.App.3d 421 (1985), held that an EIR prepared to consider the expansion and modification of an oil refinery was inadequate because it failed to consider the cumulative air quality impacts of other oil refining and extraction activities combined with the project. The court held that the EIR's use of an Air District Air Emissions Inventory did not constitute an adequate cumulative impacts analysis. The court ordered the agency to prepare a new EIR analyzing the combined impacts of the proposed refinery expansion together with the other oil extraction projects.

A-13 (cont)

Here, the MND falsely assumes that cumulative impacts would be less than significant under the false understanding that a given impact is a residual effect of incomplete mitigation of project-specific impacts. (Ex. A, p. 32.) Furthermore, the MND implies that implementation of Mitigation Measure BIO-1 will resolve such residual impacts. However, not only is that incorrect, as explained in more detail below, but such conclusion runs counter to CEQA's cumulative impacts assessment. As Dr. Smallwood's own research has highlighted, "[e]ven should project-level mitigation be implemented as proposed in the IS/MND, development projects are causing cumulative impacts in California." (*Id*.) Dr. Smallwood has explained the wildlife impacts associated with the Project, but the MND fails to provide an adequate analysis and how such cumulative impacts can be mitigated. Thus, the MND's conclusion that the cumulative impacts would be less than significant is unfounded and should be revised.

III. There is Substantial Evidence of a Fair Argument that the Project Will Have Significant Health Risks from Indoor Air Quality Emissions.

The Project cannot proceed with an MND because there is substantial evidence of a fair argument that the Project will result in adverse air quality impacts. Certified Industrial Hygienist, Francis Offermann, PE, CIH, conducted a review of the Project and relevant documents regarding the Project's indoor air emissions. (Indoor Environmental Engineering Comments (April 2, 2024)). Mr. Offermann concludes that it is likely that the Project will expose residents of the Project to significant impacts related to indoor air quality, and in particular, emissions of the cancer-causing chemical formaldehyde. Mr. Offermann is one of the world's leading experts on indoor air quality and has published extensively on the topic. As discussed below and in Mr.

A-14

Offermann's comments, the Project's emissions of formaldehyde to the air will result in very significant cancer risks to future residents of the Project's residential units. Mr. Offermann's expert comments and CV are attached as Exhibit B.

Formaldehyde is a known human carcinogen and is listed by the State as a toxic air contaminant ("TAC"). The South Coast Air Quality Management District ("SCAQMD") has established a significance threshold of health risks for carcinogenic TACs of 10 in one million. (Ex. B, p. 3.) Mr. Offermann explains that many composite wood products used in building materials and furnishings commonly found in offices, warehouses, residences, hotels, and commercial spaces contain formaldehyde-based glues which off-gas formaldehyde over a long period of time. He states, "The primary source of formaldehyde indoors is composite wood products manufactured with urea-formaldehyde resins, such as plywood, medium density fiberboard, and particleboard. These materials are commonly used in building construction for flooring, cabinetry, baseboards, window shades, interior doors, and window and door trims." (*Id*., pp. 2-3.) Notably, the MND includes some discussion of impacts or health risks, but no required mitigations for significant emissions of formaldehyde to air from the Project.

Mr. Offermann states that there is a fair argument that future residents will be exposed to a cancer risk from formaldehyde of approximately 120 per million, even assuming all materials are compliant with the California Air Resources Board's ("CARB") formaldehyde airborne toxics control measure. (Ex. B, pp. 3-4.) This is more than 12 times SCAQMD's CEQA significance threshold of 10 per million.

A-14
(cont)

Mr. Offermann also notes that the high cancer risk that may be posed by the Project's indoor air emissions likely will be exacerbated by the additional cancer risk that exists as a result of the Project's location near roadways with moderate to high traffic (i.e. Lakewood Street, East Gonzalez Road, and the Ventura Freeway (HWY 101), etc.) and the high levels of PM2.5 already present in the ambient air. (Ex. B, p. 10.) No analysis has been conducted of the significant cumulative health impacts that will result to future residents of the Project, meaning that the City cannot conclude with substantial evidence that the Project will not result in significant air quality impacts.

Mr. Offermann concludes that these significant environmental impacts should be analyzed in an EIR, and mitigation measures should be imposed to reduce the risk of formaldehyde exposure. (Ex. B, p. 5.) Mr. Offermann identifies mitigation measures that are available to reduce these significant health risks, including the installation of air filters and a requirement that the applicant use only composite wood materials (e.g. hardwood plywood, medium density fiberboard, particleboard) for all interior finish systems that are made with CARB approved no-added formaldehyde (NAF) resins or ultra-low emitting formaldehyde (ULEF) resins in the buildings' interiors. (*Id*., pp. 12-13.)

The City has a duty to investigate issues relating to a project's potential environmental impacts, especially those issues raised by an expert's comments. (See, *Cty. Sanitation Dist. No. 2 v. Cty. of Kern*, (2005) 127 Cal.App.4th 1544, 1597–98 ["under CEQA, the lead agency bears a burden to investigate potential environmental impacts"].) In addition to assessing the Project's

potential health impacts to residents, Mr. Offermann identifies the investigatory path that the City should be following in developing an EIR to more precisely evaluate the Projects' future formaldehyde emissions and establishing mitigation measures that reduce the cancer risk below the SCAQMD level. (Ex. B, pp. 6-10.) Such an analysis would be similar in form to the air quality modeling and traffic modeling typically conducted as part of a CEQA review.

While the MND includes some analysis of indoor air quality impacts and associated toxic air contaminants, it ultimately concludes that the Project will have less than significant air quality impacts. (MND, p. 31.) This conclusion is contrasted by the MND's Air Quality analysis, which finds that "[i]nstallation of MERV filters with a minimum rating of 14 would reduce cancer risk impacts to levels below the significance threshold. Thus, the cancer and chronic risk for residential receptors due would not be considered significant for all residential receptors at the Project site with installation of MERV filters with a minimum rating of 14." (Air Quality, Health Risk Assessment, Greenhouse Gas, Energy Analysis, p. 2.) While this may not seem to be in conflict with the MND's analysis, the Air Quality analysis implicitly requires the installation of filters, a mitigation measure, in order to reach its finding of no significance. As such, the Air Quality analysis supports Mr. Offermann's findings, and, as explained in detail below, more adequate enforcement mechanisms must be in place in order to ensure that the proposed mitigation measure is implemented.

A-14
(cont)

The failure to adequately address the Project's formaldehyde emissions is contrary to the California Supreme Court's decision in *California Building Industry Ass'n v. Bay Area Air Quality Mgmt. Dist.* (2015) 62 Cal.4th 369, 386 ("*CBIA*"). At issue in *CBIA* was whether the Air District could enact CEQA guidelines that advised lead agencies that they must analyze the impacts of adjacent environmental conditions on a project. The Supreme Court held that CEQA does not generally require lead agencies to consider the environment's effects on a project. (*CBIA*, 62 Cal.4th at 800-801.) However, to the extent a project may exacerbate existing adverse environmental conditions at or near a project site, those would still have to be considered pursuant to CEQA. (*Id*. at 801 ["CEQA calls upon an agency to evaluate existing conditions in order to assess whether a project could exacerbate hazards that are already present"].) In so holding, the Court expressly held that CEQA's statutory language required lead agencies to disclose and analyze "impacts on a project's users or residents that arise from the project's effects on the environment." (*Id*. at 800 [emph. added].)

The carcinogenic formaldehyde emissions identified by Mr. Offermann are not an existing environmental condition. Those emissions to the air will be from the Project. Residents and commercial employees will be users of the Project. Currently, there is presumably little if any formaldehyde emissions at the site. Once the project is built, emissions will begin at levels that pose significant health risks. Rather than excusing the City from addressing the impacts of carcinogens emitted into the indoor air from the project, the Supreme Court in *CBIA* expressly finds that this type of effect by the project on the environment and a "project's users and residents" must be addressed in the CEQA process.

The Supreme Court's reasoning is well-grounded in CEQA's statutory language. CEQA expressly includes a project's effects on human beings as an effect on the environment that must

be addressed in an environmental review. "Section 21083(b)(3)'s express language, for example, requires a finding of a 'significant effect on the environment' (§ 21083(b)) whenever the 'environmental effects of a project will cause substantial adverse effects on human beings, directly or indirectly.'" (*CBIA*, 62 Cal.4th at 800 [emph. in original].) Likewise, "the Legislature has made clear—in declarations accompanying CEQA's enactment—that public health and safety are of great importance in the statutory scheme." (*Id*., citing e.g., §§ 21000, subds. (b), (c), (d), (g), 21001, subds. (b), (d).) It goes without saying that the future residents of the Project are human beings and the health and safety of those residents and workers is as important to CEQA's safeguards as nearby residents currently living near the project site.

A-14 (cont)

Because Mr. Offermann's expert review is substantial evidence of a fair argument of a significant environmental impact to future users of the Project, an EIR must be prepared to disclose and mitigate those impacts.

IV. The MND's Proposed Mitigation Measures are Unenforceable and Ineffective.

CEQA requires that policies and mitigation measures be enforceable and effective. (CEQA Guidelines, § 15126.4(a)(1) & (2).) Policies that have no standards cannot be enforced. Mitigation measures must be effective. In *Sundstrom v County of Mendocino* (1988) 202 Cal.App.3d 296, 308-309, mitigation calling for a permit for sludge disposal was improperly deferred because there was no evidence of feasibility: "the record discloses that the applicant presented no plans for sludge disposal and that no solution was readily available." (*Id*. at 308.)

A-15

a. Biological Resources.

The Project's only proposed mitigation measures for biological resources will certainly not reduce Project-related impacts to a level below significance. Mitigation Measure BIO-1 only discusses the preparation of a preconstruction survey. First, the mitigation measure incorrectly relies on an outdated breeding season because the California Department of Fish and Wildlife ("CDFW") now recognizes the breeding season to be between February 1 to September 15. The MND skips a couple weeks as a result. Secondly, Dr. Smallwood explains that a preconstruction survey is not an adequate substitute for a detection survey, which this Project needs. The measure is therefore ineffective at reducing impacts below significance.

A-16

Additionally, as described in the MND, performance of the preconstruction survey means that the measure's protections will not extend to future breeding seasons and would likely lead to the permanent destruction of the site's productive capacity for burrowing owls. (Ex. A, 34.) Also, Dr. Smallwood's comments above prove that the site is being used by many species in addition to just burrowing owls. This mitigation measure does nothing to protect the other species that have already been identified on the Project site, including special-status species. As such, this mitigation measure is inadequate because it also does nothing to mitigate the impacts to the identified special-status species.

The mitigation measure also allows unfettered control for a biologist to make critical determinations. In particular, the language of this mitigation measure "allows a single individual

(qualified biologist) to make a subjective decision, outside the public's view, to determine and adjust the buffer area for any given species. This measure lacks objective criteria and is unenforceable." (Ex. A, p. 34.) As a result of the absence of objective enforcement mechanisms, this mitigation measure is insufficient and cannot be reflied on to adequately bring the potentially significant impacts to a level below significance.

A-16 (cont)

An EIR is required to analyze the feasibility, enforceability, and effectiveness of such proposed mitigation measure. Dr. Smallwood also suggests multiple mitigation measures related to protecting wildlife from traffic, controlling pests, funding wildlife rehabilitation facilities, and applying native landscaping on the Project site, among others. (Ex. A, p. 36.)

b. Air Quality Impacts.

The MND fails to mandate mitigation measures related to indoor air quality. A public agency may not rely on mitigation measures of uncertain efficacy or feasibility. (*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 727 (finding groundwater purchase agreement inadequate mitigation measure because no record evidence existed that replacement water was available).) Mitigation measures must be fully enforceable through permit conditions, agreements or other legally binding instruments. (14 CCR § 15126.4(a)(2).)

A-17

The Air Quality analysis and related technical documents of the MND address the indoor air quality impacts associated with exposure to formaldehyde. Specifically, the MND explains that high efficiency minimum efficiency reporting value (MERV) filters of MERV 14 or greater will be installed throughout the Project, thereby bringing the cancer risk at the maximum exposed receptor to 5.18 in one million. (MND, p. 37.) However, there are a few issues related to this evaluation.

While filters are proposed to be installed for the Project, there is no guarantee that such feature will actually take place. As explained above, Mr. Offermann's findings constitute substantial evidence of a fair argument of the Project's adverse environmental impacts. As such, the installation of filters as mitigation measures should not be read as a suggestion, but rather a mandate to reduce impacts below significance. While the MND document explains that installation will occur in compliance with local ordinances, there is no binding guarantee that such mitigation measure will be enforced. (MND, p. 37.) This is apparent from the fact that the Air Quality analysis does not identify any air quality-related mitigation measures to be included for the Project.

Tfhe proposed mitigation measure of installing high-quality MERV filters must be included as a mitigation measure in an amended MND and must be enforceable to ensure that cancer risk impacts are assuredly brought down to a level below significance.

V. The Project Conflicts and is Inconsistent With Ventura County Air Pollution Control District Policy.

Where a local or regional policy of general applicability, such as an ordinance, is adopted to avoid or mitigate environmental effects, a conflict with that policy in itself indicates a potentially significant impact on the environment. (*Pocket Protectors v. Sacramento* (2005) 124 Cal.App.4th 903.) Indeed, any inconsistencies between a proposed project and applicable plans must be discussed in an EIR. (14 CCR § 15125(d); *City of Long Beach v. Los Angeles Unif. School Dist.* (2009) 176 Cal. App. 4th 889, 918; *Friends of the Eel River v. Sonoma County Water Agency* (2003) 108 Cal. App. 4th 859, 874 (EIR inadequate when Lead Agency failed to identify relationship of project to relevant local plans).)

A Project's inconsistencies with local plans and policies constitute significant impacts under CEQA. (*Endangered Habitats League, Inc. v. County of Orange* (2005) 131 Cal.App.4th 777, 783-4, 32 Cal.Rptr.3d 177; see also, *County of El Dorado v. Dept. of Transp.* (2005) 133 Cal.App.4th 1376 (fact that a project may be consistent with a plan, such as an air plan, does not necessarily mean that it does not have significant impacts).) *Californians for Alternatives to Toxics v. Department of Food and Agriculture* (2005) 136 Ca1.App.4th 1, 17 ("[c]ompliance with the law is not enough to support a finding of no significant impact under the CEQA."). The recent *Georgetown Preservation Society v. County of El Dorado* (2018) 30 Cal.App.5th 358 echoes *Pocket Protectors*. These both apply the fair argument standard to a potential inconsistency with a plan adopted for environmental protection. *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099 says an EIR needs to analyze any topic for which a fair argument of significant impact is raised.

A-18

As applied here, an EIR is warranted because of the Project's conflict with the Ventura County Air Pollution Control District ("VCAPCD") policy. According to the MND, VCAPCD cancer risk threshold is 10 in one million. To reduce cancer below significance, the MND implies the installation of MERV filters. (MND, p. 37.) As explained above, however, installation of the filters is not a binding measure, thereby failing to guarantee that cancer risk will fall below significance thresholds pursuant to VCAPCD. Because there is no guarantee of filter installation, cancer risk would not be reduced to a level in compliance with VCAPCD's threshold, thereby being in direct conflict with VCAPCD.

Since the project is inconsistent with a VCAPCD policy intended to protect human health and the environment, this is evidence of a fair argument that that the project may have significant

adverse environmental impacts. As such, approval of the Project under the IS/MND is improper, and the City must instead prepare and analyze Project impacts under an EIR. A-18 (cont)

VI. There is Substantial Evidence of a Fair Argument that the Project Will Have Significant Noise Impacts that were Inadequately Addressed.

CEQA prohibits the use of an MND where there is substantial evidence of a fair argument of environmental impacts. SAFER's independent experts at Wilson Ihrig reviewed the Project and related documents, including the Noise Study, and concluded that the MND's noise report is unsubstantiated and there exists potentially significant noise impacts. Wilson Ihrig is an expert and renowned firm within the field of noise and vibration consulting. For this reason, an MND is improper and the City should instead prepare an EIR. Wilson Ihrig's comments and CV are attached as Exhibit C. A-19

The MND's Noise Study potentially underestimates the Project's noise impacts because it erroneously utilizes a less stringent threshold assessment. In particular, the Noise Study relies on a threshold adopted from the FTA Construction Noise Handbook, but "the FTA advises assuming a usage factor of 1 when using a general assessment", which this Project's Noise Study does. Reviewing the Noise Study's assessment, Wilson Ihrig underlines that such approach "significantly underestimates the potential impact of construction noise, especially since the modeled noise for the Site Preparation and Grading phases are 7 dBA over the 80 dBA threshold." (*Id*.) In fact, Wilson Ihrig predicts that the Noise Study's general assessment underestimates the noise impacts by seven decibels across the board. (*Id*.) The MND's Noise Study, therefore, fails to capture the true extent of the Project's noise impacts, and must instead review and assess these issues in an EIR.

a. The MND Fails to Accurately Analyze the Project's Noise Impacts.

The MND additionally fails to sufficiently review or completely omits critical analyses related to the Project's noise impacts. For example, the Noise Study fails to evaluate the Project's construction-related vibration impacts on off-site sensitive receptors. Wilson Ihrig underlines that the FTA guidance relied on for the Noise Study explains that "[b]uildings founded on the soil near the construction site [can] respond to these [construction] vibrations with … slight damage at the highest [vibration] levels." (FTA Guidance, p. 182.) While the MND acknowledges the presence of multiple sensitive receptors near the Project site, including medical buildings, senior living facilities, and a university campus, there is a reasonable possibility that the Project's construction vibration may adversely affect such buildings. (MND, pp. 88-89.) Yet, the MND fails to do so. The omission of construction vibration effects on sensitive receptors under-analyzes the Project's impacts, and Wilson Ihrig asserts that it should studied in an EIR. (Ex. C, p. 3.) A-20

Furthermore, the MND's analysis of operational noise impacts is incomplete. For example, operational noise impacts from rooftop mechanical equipment would increase ambient

levels beyond significance thresholds. (Ex. C, p. 3.) However, Wilson Ihrig explains that "[t]here are no calculations nor any evidence provided that demonstrates mechanical equipment used in the Project will not be potentially significant at nearby sensitive receivers." (*Id*.)

The MND fails to adequately analyze the Project's impacts from off-site operations. While the Noise Study assesses the Project's noise impacts along some streets and roads, it does not evaluate the potential traffic noise increase along Lockwood Avenue and Outlet Center Drive (Ex. C, p. 3.) Wilson Ihrig explains that "[t]his is particularly egregious for Lockwood Street, which is the main access road in and out of the [Project] site. Current traffic levels are presumably low," and the potential of doubling traffic also means the increase of noise levels. (*Id*.) Wilson Ihrig asserts that such noise levels must be assessed in an EIR and ensure that the Project's noise levels during operation would not exceed significance thresholds and that no mitigation measures must be implemented. (*Id*.)

A-20 (cont)

CONCLUSION

SAFER has submitted substantial evidence of a fair argument that the Project will have adverse environmental effects, and the MND prepared for the Project does not adequately analyze or mitigated the potentially significant environmental impacts stemming from the Project. For the foregoing reasons, SAFER requests that the City decline to certify the MND and to instead prepare an Environmental Impact Report ("EIR") to analyze and mitigate the Project's significant adverse environmental impacts. Thank you.

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Sincerely,

Marjan R. Abubo
LOZEAU DRURY LLP

Exhibit A

Shawn Smallwood, PhD
3108 Finch Street
Davis, CA 95616

Attn: Joe Pearson II
City of Oxnard Community Development Department
Planning Division
214 South C Street
Oxnard, California 93030

31 March 2024

RE: Lockwood III Apartments IS/MND

Dear Mr. Pearson,

I write to comment on potential impacts to biological resources that could result from the proposed Lockwood III Apartments Project, which I understand would add a five-story, 67.5-foot-tall, 373,069-square-foot residential building with 234 residential units and a 1,247 square-foot dog run among other amenities on 5.17 acres on Lockwood Street. I comment on the characterization of the existing environmental setting and on analyses of impacts to biological resources in the IS/MND (City of Oxnard 2024).

My qualifications for preparing expert comments are the following. I hold a Ph.D. degree in Ecology from University of California at Davis, where I also worked as a post-graduate researcher in the Department of Agronomy and Range Sciences. My research has been on animal density and distribution, habitat selection, wildlife interactions with the anthrosphere, and conservation of rare and endangered species. I authored many papers on these and other topics. I served as Chair of the Conservation Affairs Committee for The Wildlife Society – Western Section. I am a member of The Wildlife Society and Raptor Research Foundation, and I've lectured part-time at California State University, Sacramento. I was Associate Editor of wildlife biology's premier scientific journal, The Journal of Wildlife Management, as well as of Biological Conservation, and I was on the Editorial Board of Environmental Management. I have performed wildlife surveys in California for thirty-seven years. My CV is attached.

A-22

SITE VISIT

On my behalf, Noriko Smallwood, a wildlife biologist with a Master's Degree from California State University Los Angeles, visited the site of the proposed project for 3.63 hours from 07:26 to 11:04 hours on 28 March 2024. She walked the site's perimeter, stopping to scan for wildlife with use of binoculars. Noriko recorded all species of vertebrate wildlife she detected, including those whose members flew over the site or were seen nearby, off the site. Animals of uncertain species identity were either omitted or, if possible, recorded to the Genus or higher taxonomic level.

A-23

Conditions were cloudy to sunny with 3 mph north wind and temperatures of 51-61° F. The site was covered in annual grass with a few native shrubs and bordered by ornamental trees (Photos 1-3).

Photos 1-3. *Views of the project site, 28 March 2024. Photos by Noriko Smallwood.*

A-23
(cont)

Noriko detected 25 species of vertebrate wildlife at or adjacent to the project site, including three species with special status (Table 1). Noriko saw American kestrel hunting on site (Photos 4 and 5), bushtit (Photos 6 and 16), western gull and barn swallow (Photos 7 and 8), white-crowned sparrow (Photos 9 and 10), yellow-rumped warbler (Photos 11 and 12), Cassin's kingbird and American crow (Photos, 13, 14, and 17), European starling (Photos 15 and 20), common raven (Photo 18), house sparrow

(Photo 19), house finch and rock pigeon (Photos 21 and 22), Botta's pocket gopher (Photo 23), Great Basin fence lizard and western side-blotched lizard (Photos 24 and 25), among the other species listed in Table 1.

Noriko Smallwood certifies that the foregoing and following survey results are true and accurately reported.

Noriko Smallwood

Table 1. *Species of wildlife Noriko observed during 3.63 hours of survey on 28 March 2024.*

Common name	***Species name***	**Status**[1]	**Notes**
Great Basin fence lizard	*Sceloporus occidentalis longipes*		Many, displays to each other
Western side-blotched lizard	*Uta stansburiana elegans*		
Mallard	*Anas platyrhynchos*		Flew over
Rock pigeon	*Columba livia*	Non-native	
Eurasian collared-dove	*Streptopelia decaocto*	Non-native	Flew over
Mourning dove	*Zenaida macroura*		Flew over
Anna's hummingbird	*Calypte anna*		Flew over, calling
Western gull	*Larus occidentalis*	BCC	Many flew over, perched nearby
Red-tailed hawk	*Buteo jamaicensis*	BOP	Two soaring nearby
American kestrel	*Falco sparverius*	BOP	Caught two lizards on site
Cassin's kingbird	*Tyrannus vociferans*		Displayed to each other
American crow	*Corvus brachyrhynchos*		
Common raven	*Corvus corax*		
Barn swallow	*Hirundo rustica*		Flew over, foraged nearby
Bushtit	*Psaltriparus minimus*		Gathered nest material
Northern mockingbird	*Mimus polyglottos*		Just off site
European starling	*Sturnus vulgaris*	Non-native	Gathered nest material, nesting in tower on site
House sparrow	*Passer domesticus*	Non-native	Just off site
House finch	*Haemorphous mexicanus*		
Lesser goldfinch	*Spinus psaltria*		
White-crowned sparrow	*Zonotrichia leucophrys*		Many, foraged
California towhee	*Melozone crissalis*		Just off site
Yellow-rumped warbler	*Setophaga coronata*		Foraged
California ground squirrel	*Otospermophilus beecheyi*		Calling from adjacent site
Botta's pocket gopher	*Thomomys bottae*		Many burrows

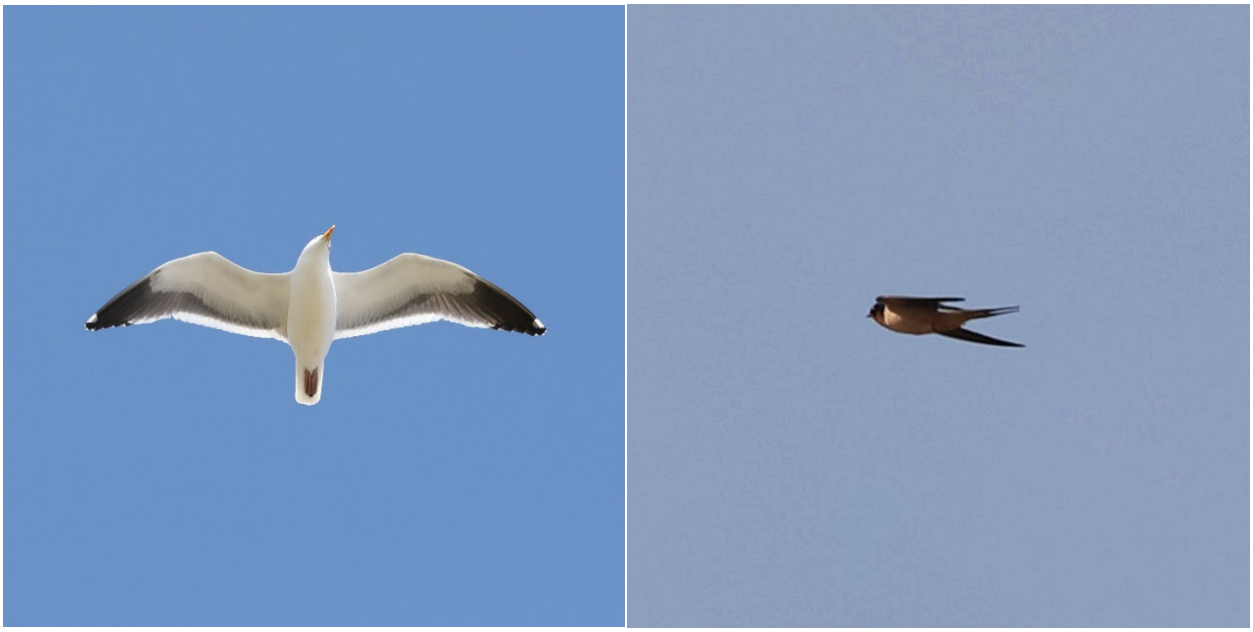
[1] BCC = U.S. Fish and Wildlife Service Bird of Conservation Concern, and BOP = Birds of Prey (California Fish and Game Code 3503.5).

A-23 (cont)

Photos 4 and 5. *American kestrel flying with two separate lizards that it caught on site, 28 March 2024. Photos by Noriko Smallwood.*

Photo 6. *Bushtit on the project site, 28 March 2024. Photo by Noriko Smallwood.*

A-23
(cont)



Photos 7 and 8. *Western gull (left), and barn swallow (right) flying over the project site, 28 March 2024. Photos by Noriko Smallwood.*

A-23
(cont)

Photos 9 and 10. *White-crowned sparrows on the project site, 28 March 2024. Photos by Noriko Smallwood.*

Photos 11 and 12. *Yellow-rumped warblers on the project site, 28 March 2024. Photos by Noriko Smallwood.*

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(cont)

Photos 13 and 14. *Cassin's kingbirds displaying to each other (left) and an American crow sitting on its nest just off site (left), 28 March 2024. Photos by Noriko Smallwood.*

Photos 15 and 16. *European starling with nest material (left), and bushtit with nest material (right) on the project site, 28 March 2024. Photos by Noriko Smallwood.*

A-23
(cont)

Photos 17 and 18. *American crow (left), and common raven (right) on the project site, 28 March 2024. Photos by Noriko Smallwood.*

Photos 19 and 20. *House sparrow adjacent to the project site (left), and European starling on the project site (right), 28 March 2024. Photos by Noriko Smallwood.*

A-23
(cont)

Photos 21 and 22. *House finch (left), and rock pigeon (right) on the project site, 28 March 2024. Photos by Noriko Smallwood.*

A-23
(cont)

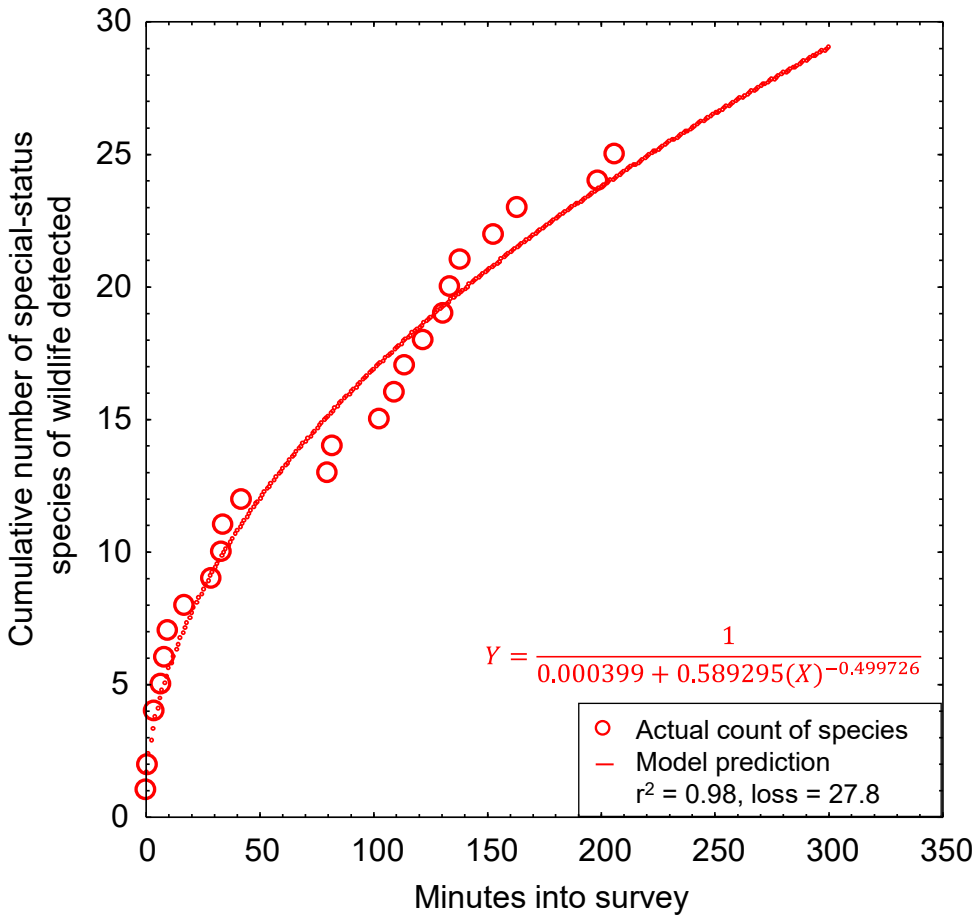
Photo 23. *Botta's pocket gopher across the street from the project site, 28 March 2024. Photo by Noriko Smallwood.*

A-23
(cont)

Photos 24 and 25. *Great Basin fence lizard (left) and western side-blotched lizard (bottom) on the project site, 28 March 2024. Photos by Noriko Smallwood.*

I fit a nonlinear regression model to Noriko's cumulative number of vertebrate species detected with time into her 28 March 2024 survey to predict the number of species that she would have detected with a longer survey or perhaps with additional biologists available to assist her. The model is a logistic growth model which reaches an asymptote that corresponds with the maximum number of vertebrate wildlife species that could have been detected during the survey. In this case, the model predicts many more species of vertebrate wildlife were available to be detected on the morning of March 28th (Figure 1). Unfortunately, I do not know the identities of the undetected species, but the pattern in her data indicates more species could have been detected after more survey time at the site. Importantly, however, the species that Noriko did and did not detect on 28 March 2024 composed only a fraction of the species that would occur at the project site over the period of a year or longer. This is because many species are seasonal in their occurrences.

Figure 1. *Actual and predicted relationships between the number of vertebrate wildlife species detected and the elapsed survey time based on Noriko's visual-scan survey on 28 March 2024. Note that the relationship would differ if the survey was based on another method or during another season.*



At least a year's worth of surveys would be needed to more accurately report the number of vertebrate species that occur at the project site, but I only have Noriko's one survey. However, by use of an analytical bridge, a modeling effort applied to a large, robust data set from a research site can predict the number of vertebrate wildlife species that likely make use of the site over the longer term. As part of my research, I completed a much larger survey effort across 167 km² of annual grasslands of the Altamont Pass Wind

A-23 (cont)

Resource Area, where from 2015 through 2019 I performed 721 1-hour visual-scan surveys, or 721 hours of surveys, at 46 stations. I used binoculars and otherwise the methods were the same as the methods I and other consulting biologists use for surveys at proposed project sites. At each of the 46 survey stations, I tallied new species detected with each sequential survey at that station, and then related the cumulative species detected to the hours (number of surveys, as each survey lasted 1 hour) used to accumulate my counts of species detected. I used combined quadratic and simplex methods of estimation in Statistica to estimate least-squares, best-fit nonlinear models of the number of cumulative species detected regressed on hours of survey (number of surveys) at the station: $\hat{R} = \frac{1}{1/a+b\times(Hours)^c}$, where $\hat{R}$ represented cumulative species richness detected. The coefficients of determination, r^2, of the models ranged 0.88 to 1.00, with a mean of 0.97 (95% CI: 0.96, 0.98); or in other words, the models were excellent fits to the data.

I projected the predictions of each model to thousands of hours to find predicted asymptotes of wildlife species richness. The mean model-predicted asymptote of species richness was 57 after 11,857 hours of visual-scan surveys among the 46 stations of my research site. I also averaged model predictions of species richness at each incremental increase of number of surveys, i.e., number of hours (Figure 2). On average I would have detected 14.3 species over my first 3.63 hours of surveys at my research site in the Altamont Pass (3.63 hours to match the 3.63 hours Noriko surveyed at the project site), which composed 25% of the predicted total number of species I would detect with a much larger survey effort at the research site. Given the example illustrated in Figure 2, the 25 species Noriko detected after her 3.63 hours of survey at the project site likely represented 25% of the species to be detected after many more visual-scan surveys over another year or longer. With many more repeat surveys through the year, Noriko would likely detect $25/0.25 = 100$ species of vertebrate wildlife at the site. Assuming Noriko's ratio of special-status to non-special-status species was to hold through the detections of all 100 predicted species, then continued surveys would eventually detect 12 special-status species of vertebrate wildlife.

A-23 (cont)

Because my prediction of 100 species of vertebrate wildlife, including 12 special-status species of vertebrate wildlife, is derived from daytime visual-scan surveys, and would detect few nocturnal mammals such as bats, the true number of species composing the wildlife community of the site must be larger. Noriko's reconnaissance survey should serve only as a starting point toward characterization of the site's wildlife community, but it certainly cannot alone inform of the inventory of species that use the site. More surveys are needed than her survey to inventory use of the project site by wildlife. Nevertheless, the large number of species I predict at the project site is indicative of a much more species-rich wildlife community than characterized in the IS/MND (see below), and warrants a serious survey effort.

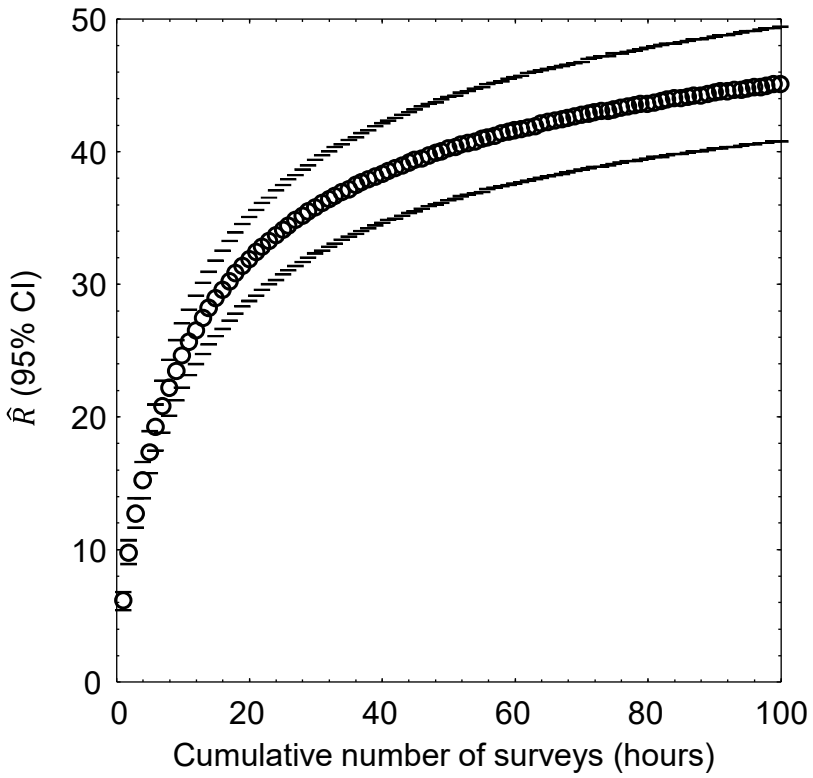


Figure 2. *Mean (95% CI) predicted wildlife species richness, $\hat{R}$, as a nonlinear function of hour-long survey increments across 46 visual-scan survey stations across the Altamont Pass Wind Resource Area, Alameda and Contra Costa Counties, 2015–2019. Note that the location of the study is largely irrelevant to the utility of the graph to the interpretation of survey outcomes at the project site. It is the pattern in the data that is relevant, because the pattern is typical of the pattern seen elsewhere.*

A-23 (cont)

EXISTING ENVIRONMENTAL SETTING

The first step in analysis of potential project impacts to biological resources is to accurately characterize the existing environmental setting, including the biological species that use the site, their relative abundances, how they use the site, key ecological relationships, and known and ongoing threats to those species with special status. A reasonably accurate characterization of the environmental setting can provide the basis for determining whether the site holds habitat value to wildlife, as well as a baseline against which to analyze potential project impacts. For these reasons, characterization of the environmental setting, including the project site's regional setting, is one of CEQA's essential analytical steps. Methods to achieve this first step typically include (1) surveys of the site for biological resources, and (2) reviews of literature, databases and local experts for documented occurrences of special-status species. In the case of the proposed project, these needed steps have been inadequate.

A-24

Environmental Setting informed by Field Surveys

To CEQA's primary objective to disclose potential environmental impacts of a proposed project, the analysis should be informed of which biological species are known to occur at the proposed project site, which special-status species are likely to occur, as well as the limitations of the survey effort directed to the site. Analysts need this information to characterize the environmental setting as a basis for opining on, or predicting, potential project impacts to biological resources.

On 8 August 2023, ESA deployed a biologist to perform a reconnaissance survey "to characterize existing conditions and determine the potential for sensitive biological resources [later said to be special-status species of plants and wildlife] to occur within the Project site or in a 200-foot buffer area." According to the IS/MND, "land cover types were characterized and delineated," as well. Unfortunately, the IS/MND does not report important methodological details that the reader needs to assess the meaning of the survey results. The IS/MND neglects to report when the survey started and how long the survey lasted. As far as I know, the survey could have started at the worst time of day for detecting wildlife, e.g., at 14:00 hours, and it could have lasted a mere 15 minutes. Also unreported is how ESA's biologist assessed the project site's potential for supporting various special-status species.

The only quantifiable outcome of ESA's survey was the number of wildlife species detected. ESA's biologist saw three species of vertebrate wildlife: American crow, California gull and black phoebe. Two of these species were not detected by Noriko Smallwood, who surveyed the site on 28 March 2024 on my behalf. However, ESA's biologist did not detect 24 of the 25 species that Noriko detected. In only 3.63 hours of survey, Noriko detected more than eight times the number of species that ESA's biologist detected. Whereas there are nearly always differences in which species are detected between surveys at a given site, Noriko and I do not experience anywhere near this magnitude of difference when we repeat our own surveys at a given site. The reconnaissance survey completed by ESA is inadequate, and it has been used to inaccurately characterize the existing environmental setting of the project site. Many more than three species of vertebrate wildlife exist at the project site.

ESA documented little of the breeding activity that Noriko saw and photographed (see Table 1 and Photos 13 to 16 and 24). Given the body sizes and ubiquity of some of the species, it is difficult to understand how they could have been missed by ESA. Noriko saw many western gulls at the site. Western gulls are large birds. How did ESA not see the western gulls? Red-tailed hawks are large birds. Cassin's kingbirds and mourning doves are highly noticeable. Botta's pocket gophers leave evidence of their presence all over the place, and Noriko even photo-captured at least one gopher looking about from one of its burrows (Photo 23). According to Noriko, lizards were abundant at the site, and sufficiently abundant that she witnessed one or more American kestrels capture at least two of them (see Photos 4 and 5). How did ESA miss all of these species?

Whereas ESA reportedly surveyed a 200-foot buffer around the project site, it missed the California ground squirrels just to the south side of Lockwood Street. The occurrence of the squirrels is especially significant because burrowing owls rely on ground squirrels and their burrows, and the occurrence of ground squirrels greatly increases the likelihood of use of the site by burrowing owls. According to ESA, "Suitable habitat for this species [Burrowing owl] was not detected. The vegetation was dense and tall and the small mammal burrows detected were not the appropriate size or morphology for this species." That ESA failed to detect burrowing owl is of no surprise to me, considering that ESA detected 12% of the species Noriko did, but ESA's determination of the site's unsuitability to burrowing owls is grossly inaccurate. Photos 1–3 depict a grassland environment that typifies the environments where I have studied

A-24 (cont)

burrowing owls in the highest-recorded densities in the published literature (Smallwood et al. 2013, Smallwood and Morrison 2018)). Furthermore, there were ground squirrels across the street.

A protocol-level detection survey (CDFW 2012) is warranted for burrowing owls at the project site, but has yet to be completed. Furthermore, ESA's reconnaissance survey achieved very few if any of the minimum standards of reconnaissance survey for special-status species of plants (CDFW 2018). Conclusions of potential project impacts to biological resources are too poorly founded on wildlife and plant surveys to be relied upon for decision-making.

Environmental Setting informed by Desktop Review

The purpose of literature and database review and of consulting with local experts is to inform the field survey, and to augment interpretation of its outcome. Analysts need this information to identify which species are known to have occurred at or near the project site, and to identify which other special-status species could conceivably occur at the site due to geographic range overlap and migration flight paths.

ESA did not reportedly review eBird (https://eBird.org) or iNaturalist (https://www.inaturalist.org) for documented occurrence records at or near the project site. Instead, ESA queried the California Natural Diversity Data Base (CNDDB) for documented occurrences of special-status species within the USGS Quadrangle of the project site and the immediately surrounding Quadrangles. By taking this approach, the IS/MND immediately screens out many special-status species from further consideration in the characterization of the wildlife community as part of the existing environmental setting. CNDDB is not designed to support absence determinations or to screen out species from characterization of a site's wildlife community. As noted by CNDDB, "*The CNDDB is a positive sighting database. It does not predict where something may be found. We map occurrences only where we have documentation that the species was found at the site. There are many areas of the state where no surveys have been conducted and therefore there is nothing on the map. That does not mean that there are no special status species present.*" ESA and the IS/MND misuse CNDDB.

A-24 (cont)

CNDDB relies entirely on volunteer reporting from biologists who were allowed access to whatever properties they report from. Many properties have never been surveyed by biologists. Many properties have been surveyed, but the survey outcomes never reported to CNDDB. Many properties have been surveyed multiple times, but not all survey outcomes reported to CNDDB. Furthermore, CNDDB is interested only in the findings of special-status species, which means that species more recently assigned special status will have been reported many fewer times to CNDDB than were species assigned special status since the inception of CNDDB. The lack of many CNDDB records for species recently assigned special status had nothing to do with whether the species' geographic ranges overlap the project site, but rather more to do with the brief time for records to have accumulated since the species were assigned special status. And because negative

findings are not reported to CNDDB, CNDDB cannot provide the basis for estimating occurrence likelihoods of species undocumented on the project site.

In my assessment based on database reviews and site visits, 121 special-status species of wildlife are known to occur near enough to the site to warrant analysis of occurrence potential (Table 2). Of these 121 species, 4 (3%) were recorded on or just off of the project site, and another 23 (19%) species have been documented within 1.5 miles of the site ('Very close'), another 52 (43%) within 1.5 and 4 miles ('Nearby'), and another 33 (27%) within 4 to 30 miles ('In region'). Nearly two-thirds (65%) of the species in Table 2 have been reportedly seen within 4 miles of the project site. The site therefore supports multiple special-status species of wildlife and carries the potential for supporting many more special-status species of wildlife based on proximity of recorded occurrences. The site is far richer in special-status species than is characterized in the IS/MND.

The IS/MND analyzes the occurrence likelihoods of only 8 (6.6%) of the special-status species in my Table 2. The IS/MND's smaller analytical effort results from its misuse of CNDDB to screen out most of the species that could potentially occur at the project site (see comments above). Of the species the IS/MND analyzes, the IS/MND determines the occurrence likelihoods to be moderate for one species – California horned lark, and low for the other seven species. And for 113 special-status species in my Table 2, the IS/MND provides no occurrence likelihood determinations at all, including for four species documented on or next to the project site. The analysis is flawed from the IS/MND's initial misuse of CNDDB to screen out special-status species from next-steps. Its determinations of occurrence likelihoods are also flawed (see below).

A-24 (cont)

The IS/MND provides one over-arching reason for its decision to omit all special-status plant species and 45 special-status species of wildlife from its analysis, which was the disturbed nature of the study area and the absence of suitable habitat. However, no explanation is provided of why disturbance at the project site prevents all of these species whereas disturbance elsewhere does not prevent the occurrences of the same species. Every place in California is disturbed to some degree. The IS/MND provides no evidence of a threshold of disturbance that prevents the occurrences of special-status species of plants and animals, nor does it prevent evidence that such a threshold has been breached.

Of the seven species the IS/MND determines to have low occurrence potential, two have been documented within 1.5 miles of the project site and three have been documented within 1.5 and 4 miles of the site. The documented proximities of these species do not comport with the IS/MND's determinations.

Based on environmental conditions where I have observed California horned larks at other locations, I see no reason why horned larks should be determined to have a high rather than a moderate occurrence likelihood at the project site. Photos 1–3 show an environment that typifies where I have found this species. The site appears like the type of site where California horned larks breed.

Table 2. *Occurrence likelihoods of special-status bird species at or near the proposed project site, according to eBird/iNaturalist records (https://eBird.org, https://www.inaturalist.org) and on-site survey findings, where 'Very close' indicates within 1.5 miles of the site, "nearby" indicates within 1.5 and 4 miles, and "in region" indicates within 4 and 30 miles, and 'in range' means the species' geographic range overlaps the site. Entries in bold font identify species detected by Noriko.*

Common name	***Species name***	**Status[1]**	**Occurrence potentials**	
			IS/MND	**Data base records, Site visits**
Monarch	*Danaus plexippus*	FC	Low	Very close
Crotch's bumble bee	*Bombus crotchii*	CCE	Low	In region
Western spadefoot	*Spea hammondii*	SSC		In region
Western pond turtle	*Emys marmorata*	SSC		In region
Blainville's horned lizard	*Phrynosoma blainvillii*	SSC	Low	Nearby
Coastal whiptail	*Aspidoscelis tigris stejnegeri*	SSC	Low	In region
San Diegan legless lizard	*Anniella stebbinsi*	SSC		Nearby
California glossy snake	*Arizona elegans occidentalis*	SSC		In range
Coast patch-nosed snake	*Salvadora hexalepis virgultea*	SSC		In region
Two-striped gartersnake	*Thamnophis hammondii*	SSC		In region
South coast gartersnake	*Thamnophis sirtalis pop. 1*	SSC		In region
Brant	*Branta bernicla*	SSC2		Nearby
Cackling goose (Aleutian)	*Branta hutchinsii leucopareia*	WL		Nearby
Redhead	*Aythya americana*	SSC2		Nearby
Harlequin duck	*Histrionicus histrionicus*	SSC2		In region
Western grebe	*Aechmophorus occidentalis*	BCC		Nearby
Clark's grebe	*Aechmophorus clarkii*	BCC		Nearby
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	FT, CE, BCC		Nearby
Black swift	*Cypseloides niger*	SSC3, BCC		Nearby
Vaux's swift	*Chaetura vauxi*	SSC2, BCC		Nearby
Costa's hummingbird	*Calypte costae*	BCC		Nearby
Rufous hummingbird	*Selasphorus rufus*	BCC		Very close
Allen's hummingbird	*Selasphorus sasin*	BCC		Very close
Lesser sandhill crane	*Antigone canadensis canadensis*	SSC3		In region
American avocet[2]	*Recurvirostra americana*	BCC		Nearby

A-24 (cont)

Common name	*Species name*	Status[1]	Occurrence potentials	
			IS/MND	Data base records, Site visits
Mountain plover	*Charadrius montanus*	SSC2, BCC		In region
Snowy plover	*Charadrius nivosus*	BCC		Nearby
Western snowy plover	*Charadrius nivosus nivosus*	FT, SSC, BCC		In region
Whimbrel[2]	*Numenius phaeopus*	BCC		Very close
Long-billed curlew	*Numenius americanus*	WL		Nearby
Marbled godwit	*Limosa fedoa*	BCC		Nearby
Red knot (Pacific)	*Calidris canutus*	BCC		In region
Short-billed dowitcher	*Limnodromus griseus*	BCC		In region
Willet	*Tringa semipalmata*	BCC		Nearby
Laughing gull	*Leucophaeus atricilla*	WL		In region
Heermann's gull	*Larus heermanni*	BCC		Nearby
Western gull	*Larus occidentalis*	BCC		**On site**
California gull	*Larus californicus*	BCC, WL	Observed	On site
California least tern	*Sternula antillarum browni*	FE, CE, FP		Nearby
Black tern	*Chlidonias niger*	SSC2, BCC		Nearby
Elegant tern	*Thalasseus elegans*	BCC, WL		Nearby
Black skimmer	*Rynchops niger*	BCC, SSC3		Nearby
Common loon	*Gavia immer*	SSC		Nearby
Wood stork	*Mycteria americana*	SSC1		Nearby
Brandt's cormorant	*Urile penicillatus*	BCC		Nearby
Double-crested cormorant	*Phalacrocorax auritus*	WL		Nearby
American white pelican	*Pelacanus erythrorhynchos*	SSC1, BCC		Very close
California brown pelican	*Pelecanus occidentalis californicus*	FP		In region
Least bittern	*Ixobrychus exilis*	SSC2		In region
White-faced ibis	*Plegadis chihi*	WL		Very close
Turkey vulture	*Cathartes aura*	BOP		Very close
Osprey	*Pandion haliaetus*	WL, BOP		Very close
White-tailed kite	*Elanus luecurus*	CFP, BOP		Very close
Golden eagle	*Aquila chrysaetos*	BGEPA, CFP, BOP, WL		Nearby

A-24 (cont)

Common name	*Species name*	Status[1]	Occurrence potentials	
			IS/MND	Data base records, Site visits
Northern harrier	*Circus cyaneus*	BCC, SSC3, BOP		Very close
Sharp-shinned hawk	*Accipiter striatus*	WL, BOP		Nearby
Cooper's hawk	*Accipiter cooperii*	WL, BOP		Very close
Bald eagle	*Haliaeetus leucocephalus*	CE, BGEPA, BOP		Nearby
Red-shouldered hawk	*Buteo lineatus*	BOP		Very close
Swainson's hawk	*Buteo swainsoni*	CT, BOP		Nearby
Red-tailed hawk	*Buteo jamaicensis*	BOP		**Very close**
Ferruginous hawk	*Buteo regalis*	WL, BOP	Low	Nearby
Zone-tailed hawk	*Buteo albonotatus*	BOP		Nearby
Harris' hawk	*Parabuteo unicinctus*	WL, BOP		In region
Rough-legged hawk	*Buteo lagopus*	BOP		In region
Barn owl	*Tyto alba*	BOP		Nearby
Western screech-owl	*Megascops kennicotti*	BOP		Nearby
Great horned owl	*Bubo virginianus*	BOP		Very close
Burrowing owl	*Athene cunicularia*	BCC, SSC2, BOP	Low	Nearby
Long-eared owl	*Asio otus*	BCC, SSC3, BOP		In region
Short-eared owl	*Asia flammeus*	BCC, SSC3, BOP		In region
Lewis's woodpecker	*Melanerpes lewis*	BCC		Nearby
Nuttall's woodpecker	*Picoides nuttallii*	BCC		Nearby
American kestrel	*Falco sparverius*	BOP		**On site**
Merlin	*Falco columbarius*	WL, BOP		Very close
Peregrine falcon	*Falco peregrinus*	BOP	Low	Very close
Prairie falcon	*Falco mexicanus*	WL, BOP		Nearby
Olive-sided flycatcher	*Contopus cooperi*	BCC, SSC2		Nearby
Willow flycatcher	*Empidonax trailii*	CE		Nearby
Southwestern willow flycatcher	*Empidonax traillii extimus*	FE, CE		In region
Vermilion flycatcher	*Pyrocephalus rubinus*	SSC2		Nearby
Least Bell's vireo	*Vireo bellii pusillus*	FE, CE		Nearby
Loggerhead shrike	*Lanius ludovicianus*	SSC2		Nearby

A-24 (cont)

Common name	*Species name*	Status[1]	Occurrence potentials	
			IS/MND	Data base records, Site visits
Oak titmouse	*Baeolophus inornatus*	BCC		Very close
California horned lark	*Eremophila alpestris actia*	WL	Moderate	Very close
Bank swallow	*Riparia riparia*	CT		Nearby
Purple martin	*Progne subis*	SSC2		Nearby
Wrentit	*Chamaea fasciata*	BCC		Very close
California gnatcatcher	*Polioptila c. californica*	FT, SSC2		In region
California thrasher	*Toxostoma redivivum*	BCC		Very close
Cassin's finch	*Haemorhous cassinii*	BCC		In region
Lawrence's goldfinch	*Spinus lawrencei*	BCC		Nearby
Grasshopper sparrow	*Ammodramus savannarum*	SSC2		Very close
Black-chinned sparrow	*Spizella atrogularis*	BCC		In region
Gray-headed junco	*Junco hyemalis caniceps*	WL		In region
Bell's sparrow	*Amphispiza b. belli*	WL		In region
Belding's savannah sparrow [3]	*Passerculus sandwichensis beldingi*	CE, BCC		Nearby
Large-billed savannah sparrow [3]	*Passerculus sandwichensis rostratus*	SSC2		In region
Southern California rufous-crowned sparrow	*Aimophila ruficeps canescens*	WL		Nearby
Yellow-breasted chat	*Icteria virens*	SSC3		Nearby
Yellow-headed blackbird	*Xanthocephalus xanthocephalus*	SSC3		Nearby
Bullock's oriole	*Icterus bullockii*	BCC		Very close
Tricolored blackbird	*Agelaius tricolor*	CT, BCC, SSC1		Nearby
Lucy's warbler	*Leiothlypis luciae*	SSC3, BCC		Very close
Virginia's warbler	*Leiothlypis virginiae*	WL, BCC		Nearby
Yellow warbler	*Setophaga petechia*	SSC2		Very close
Summer tanager	*Piranga rubra*	SSC1		Nearby
Pallid bat	*Antrozous pallidus*	SSC, WBWG:H		In region
Townsend's big-eared bat	*Corynorhinus townsendii*	SSC, WBWG:H		In range
Silver-haired bat	*Lasionycteris noctivagans*	WBWG:M		In range
Western red bat	*Lasiurus blossevillii*	SSC, WBWG:H		In range

A-24 (cont)

Common name	*Species name*	Status[1]	Occurrence potentials	
			IS/MND	Data base records, Site visits
Hoary bat	*Lasiurus cinereus*	WBWG:M		In region
Western yellow bat	*Lasiurus xanthinus*	SSC, WBWG:H		In range
Western small-footed myotis	*Myotis cililabrum*	WBWG:M		In range
Miller's myotis	*Myotis evotis*	WBWG:M		In region
Little brown myotis	*Myotis lucifugus*	WBWG:M		In region
Fringed myotis	*Myotis thysanodes*	WBWG:H		In range
Long-legged myotis	*Myotis volans*	WBWG:H		In range
Yuma myotis	*Myotis yumanensis*	WBWG:LM		In region
Western mastiff bat	*Eumops perotis*	SSC, WBWG:H		In range
American badger	*Taxidea taxus*	SSC		In region

A-24 (cont)

[1] Listed as FT or FE = federal threatened or endangered, FC = federal candidate for listing, BCC = U.S. Fish and Wildlife Service Bird of Conservation Concern, CT or CE = California threatened or endangered, CCT or CCE = Candidate California threatened or endangered, CFP = California Fully Protected (California Fish and Game Code 3511), SSC = California Species of Special Concern (not threatened with extinction, but rare, very restricted in range, declining throughout range, peripheral portion of species' range, associated with habitat that is declining in extent), SSC1, SSC2 and SSC3 = California Bird Species of Special Concern priorities 1, 2 and 3, respectively (Shuford and Gardali 2008), WL = Taxa to Watch List (Shuford and Gardali 2008), and BOP = Birds of Prey (CFG Code 3503.5), and WBWG = Western Bat Working Group with priority rankings, of low (L), moderate (M), and high (H).

[2] Uncertain if BCC based on 2021 Bird of Conservation Concern list.

[3] Uncertain of subspecies, but either resident Belding's or wintering large-billed savannah sparrows.

For each of the species of wildlife the IS/MND determines to have low occurrence potential, flawed reasons are reported. For example, the IS/MND reports that "the site is frequently disturbed and lacks connectivity to high quality habitat" of Crotch's bumble bee. Again, the IS/MND fails to define a disturbance threshold that prevents the species at issue. The IS/MND fails to define that level of connectivity to high quality habitat that is needed, nor does it explain what it means by high quality habitat. (Habitat quality is typically represented by measures of productivity.)

Referring to Monarch, the IS/MND reports that "Suitable roosting habitat for this species does not occur within the site and host plant species were not detected." However, this reporting implies that roosting habitat is the only resource that needs to be considered for Monarch. It is not. According to the conservation strategy of the Western Monarch Butterfly Conservation Plan, migratory habitats are no less important to the conservation of monarchs than are overwintering groves, and the Plan identifies urban areas as contributive to migratory habitat.

Referring to both coastal whiptail and coast horned lizard, the IS/MND reports that "Suitable habitat for this species does not occur within the site due to the existing level of disturbance from operating activities." Repeating the flaw noted above, the IS/MND fails to define a disturbance threshold that prevents either species from occurring at the project site. How is it that western side-blotched lizards and Great Basin fence lizards both occur at the project site in abundance, but the disturbance of the site prevents the occurrences of special-status species? The IS/MND presents no evidence that either of these species should be determined to have low occurrence potential.

A-24 (cont)

As for Ferruginous hawk, the IS/MND points out that "Suitable nesting habitat does not occur within the project site, however, there is low potential for foraging." Whether nesting habitat is suitable on the project site is not an issue for this species. Ferruginous hawks nest far to the north, but must find sufficient forage in southern California over the winter in order to successfully nest up north. Ferruginous hawks are winter migrants to the area, and in my experience, they hunt over fields just like the project site (Photo 26). The project does not provide "low potential for foraging," as there are many of the pocket gophers and other animals that ferruginous hawks hunt.

Referring to peregrine falcon, the IS/MND claims, "the closest foraging habitat is located over 2 miles northwest." However, this assertion is inaccurate. The closest foraging opportunities are to be found on the project site. I have many times witnessed peregrine falcons foraging over fields just like the project site. For example, I witnessed multiple members of a family of peregrine falcons forage over a field I surveyed 14 times in Bakersfield, California – a field that was repeatedly disked and sometimes covered in trash. These peregrine falcons captured ground squirrels and birds (one was a mourning dove, which is a species Noriko saw on the project site) and carried them to their nest on a water tower 800 m away. Peregrine falcons could very well forage successfully at the project site, and they could nest in the tower mentioned by the ESA biologist.

Photo 26. *A ferruginous hawk attempts to grab a pocket gopher on a southern California field that looks not too unlike the project site.*

A-24 (cont)

POTENTIAL BIOLOGICAL IMPACTS

An impacts analysis should consider whether and how a proposed project would affect members of a species, larger demographic units of the species, the whole of a species, and ecological communities. The accuracy of this analysis depends on an accurate characterization of the existing environmental setting. In the case of the proposed project, the existing environmental setting has not been accurately characterized, and several important types of potential project impacts have been inadequately analyzed. These types of impacts include habitat loss, interference with wildlife movement, bird-window collision mortality, wildlife-automobile collision mortality, house cat depredation, and parasitic loading from the dog run.

HABITAT LOSS

Between ESA's and Noriko's surveys, 27 species of vertebrate wildlife were documented on the project site, including 4 special-status species. Noriko's findings examined through an analytical bridge to my research work at an expansive study site predicts use of the project site by at least 100 species of vertebrate wildlife including 12 special-status species. Converting the site to the impervious surfaces of an apartment complex and to open space to be used as a dog run would eliminate the project site's productive capacity to all of the wildlife species that currently use it.

A-25

The IS/MND makes no attempt to estimate this lost capacity for any of the wildlife species potentially affected. In the case of birds, two methods exist for estimating the loss of productive capacity that would be caused by the project. One method would involve surveys to count the number of bird nests and chicks produced. The alternative method would be to infer productive capacity from estimates of total nest density elsewhere.

Because the project is located within an area that has undergone severe habitat fragmentation, the habitat that remains in fragmented patches probably no longer supports its original productive capacity of wildlife (Smallwood 2015). Habitat fragmentation and habitat loss have been recognized as the most likely leading causes of a documented 29% decline in overall bird abundance across North America over the last 48 years (Rosenberg et al. 2019). Habitat loss not only results in the immediate numerical decline of wildlife, but it also results in permanent loss of productive capacity. Habitat fragmentation multiplies the negative effects of habitat loss on the productive capacities of biological species (Smallwood 2015). Several studies have estimated total avian nest density at locations that had likewise been highly fragmented. Two study sites in grassland/wetland/woodland complexes within agricultural matrices had total bird nesting densities of 32.8 and 35.8 nests per acre (Young 1948, Yahner 1982) for an average 34.3 nests per acre. To acquire a total nest density closer to conditions in California, Noriko surveyed through the breeding season of 2023 over 4.29 acres of grassland in the San Jacinto Wildlife Area, where she tabulated 3.72 bird nests/acre. Applying her estimated total nest density to the project site's 5.17 acres of grassland predicts 19 bird nest sites. Assuming 1.39 broods per nest site based on Noriko's review of 322 North American bird species, which averaged 1.39 broods per year, then I predict the project would cost California 26 nest attempts/year.

The loss of 19 nest sites and 26 nest attempts/year would qualify as significant project impacts that has not been quantitatively addressed in the IS/MND. But the impact would not end with the immediate loss of nest sites as nest substrate is removed and foraging grounds graded in preparation for impervious surfaces. The reproductive capacity of the site would be lost. The average number of fledglings per nest in Young's (1948) study was 2.9. Assuming Young's (1948) study site typifies bird productivity, the project would prevent the production of 183 fledglings per year. Assuming an average bird generation time of 5 years, the lost capacity of both breeders and annual fledgling production can be estimated from an equation in Smallwood (2022): {(nests/year × chicks/nest × number of years) + (2 adults/nest × nests/year) × (number of years ÷ years/generation)} ÷ (number of years) = 83 birds per year denied to California.

A-25 (cont)

INTERFERENCE WITH WILDLIFE MOVEMENT

One of CEQA's principal concerns regarding potential project impacts is whether a proposed project would interfere with wildlife movement in the region. Unfortunately, the IS/MND's analysis of whether the project would interfere with wildlife movement in the region is flawed and misleading. According to the IS/MND, "Wildlife corridors are not present within the Project site, which is surrounded by fencing and urban development. Thus, the Project would not result in impacts to existing wildlife corridors or affect wildlife movement." The IS/MND's conclusion lacks supporting evidence. The IS/MND reports no survey methodology designed to determine whether wildlife rely on the site for movement in the region. ESA implemented no sampling regime nor any program of observation to record wildlife movement patterns. ESA attempted neither to quantify nor even to qualitatively assess wildlife movement as evidence of the project's contribution to movement in the region. The conclusion in the IS/MND regarding wildlife movement is only speculative and conclusory. Not only is the IS/MND's

conclusion unfounded, but Noriko found that the site was heavily used by wildlife, including by birds flying to, from, and over the site. Because much of the surrounding area is developed, the site is one of the last remaining wildlife stopover opportunities in the region.

Furthermore, the IS/MND's premise that a wildlife corridor must overlap the project site in order for the project to interfere with wildlife movement represents a false CEQA standard, and is therefore inappropriate to the analysis. The primary phrase of the CEQA standard goes to wildlife movement regardless of whether the movement is channeled by a corridor. A site such as the proposed project site is critically important for wildlife movement because it composes an increasingly diminishing area of open space within a growing expanse of anthropogenic uses, forcing more species of volant wildlife to use the site for stopover and staging during migration, dispersal, and home range patrol (Warnock 2010, Taylor et al. 2011, Runge et al. 2014). The project would cut wildlife off from stopover and staging opportunities, forcing volant wildlife to travel even farther between remaining stopover sites. The project would interfere with wildlife movement in the region.

BIRD-WINDOW COLLISIONS

Considering the project would add a five-story, 67.5-foot-tall, 373,069-square-foot residential building with 234 residential units, along with many glass windows on the building's facades, the IS/MND neglects a large portion of habitat that is essential to many species. To understand this part of their habitat, one must consider the definition of habitat, which is a species' use of the environment (Hall et al. 1997, Morrison et al. 1998, Smallwood 2002). The gaseous atmosphere, or aerosphere, is a principal medium of life to volant animals such as birds (Davy et al. 2017, Diehl et al. 2017). The aerosphere is where birds and bats and other volant animals with wings migrate, disperse, forage, perform courtship and where some of them mate. Birds are some of the many types of animals that evolved wings as a morphological adaptation to thrive by moving through the medium of the aerosphere. The aerosphere is habitat. Indeed, an entire discipline of ecology has emerged to study this essential aspect of habitat – the discipline of aeroecology (Kunz et al. 2008).

A-25 (cont)

Many special-status species of birds have been recorded at or near the aerosphere of the project site. My database review and the site visits indicate there are 96 special-status species of birds with potential to use the site's aerosphere (Table 2). Of these, 3 have been recorded on or over the project site, 23 within 1.5 miles of the site ('Very close'), 50 within 1.5 and 4 miles ('Nearby'), and another 20 within 4 to 30 miles ('In region'). The birds reported within all these distance domains from the project site can quickly fly those distances, so they would all be within short flights of the proposed project's windows.

Window collisions are often 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 by 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. The proposed project would impose windows in the airspace normally used by birds.

Glass-façades of buildings intercept and kill many birds, but these façades are differentially hazardous to birds based on spatial extent, contiguity, orientation, and other factors. At Washington State University, Johnson and Hudson (1976) found 266 bird fatalities of 41 species within 73 months of monitoring of a three-story glass walkway (no fatality adjustments attempted). Prior to marking the windows to warn birds of the collision hazard, the collision rate was 84.7 per year. At that rate, and not attempting to adjust the fatality estimate for the proportion of fatalities not found, 4,574 birds were likely killed over the 54 years since the start of their study, and that's at a relatively small building façade. Accounting for the proportion of fatalities not found, the number of birds killed by this walkway over the last 54 years would have been about 14,270. And this is just for one 3-story, glass-sided walkway between two college campus buildings.

Klem's (1990) estimate was based on speculation that 1 to 10 birds are killed per building per year, and this speculated range was extended to the number of buildings estimated by the US Census Bureau in 1986. Klem's speculation was supported by fatality monitoring at only two houses, one in Illinois and the other in New York. Also, the basis of his fatality rate extension has changed greatly since 1986. Whereas his estimate served the need to alert the public of the possible magnitude of the bird-window collision issue, it was highly uncertain at the time and undoubtedly outdated more than three decades hence. Indeed, by 2010 Klem (2010) characterized the upper end of his estimated range – 1 billion bird fatalities – as conservative. Furthermore, the estimate lumped species together as if all birds are the same and the loss of all birds to windows has the same level of impact.

A-25 (cont)

By the time Loss et al. (2014) performed their effort to estimate annual USA bird-window fatalities, many more fatality monitoring studies had been reported or were underway. Loss et al. (2014) incorporated many more fatality rates based on scientific monitoring, and they were more careful about which fatality rates to include. However, they included estimates based on fatality monitoring by homeowners, which in one study were found to detect only 38% of the available window fatalities (Bracey et al. 2016). Loss et al. (2014) excluded all fatality records lacking a dead bird in hand, such as injured birds or feather or blood spots on windows. Loss et al.'s (2014) fatality metric was the number of fatalities per building (where in this context a building can include a house, low-rise, or high-rise structure), but they assumed that this metric was based on window collisions. Because most of the bird-window collision studies were limited to migration seasons, Loss et al. (2014) developed an admittedly assumption-laden correction factor for making annual estimates. Also, only 2 of the studies included adjustments for carcass persistence and searcher detection error, and it was unclear how and to what degree fatality rates were adjusted for these factors. Although Loss et al. (2014) attempted to account for some biases as well as for large sources of uncertainty mostly resulting from an opportunistic rather than systematic sampling data source,

their estimated annual fatality rate across the USA was highly uncertain and vulnerable to multiple biases, most of which would have resulted in fatality estimates biased low.

In my review of bird-window collision monitoring, I found that the search radius around homes and buildings was very narrow, usually 2 meters. Based on my experience with bird collisions in other contexts, I would expect that a large portion of bird-window collision victims would end up farther than 2 m from the windows, especially when the windows are higher up on tall buildings. In my experience, searcher detection rates tend to be low for small birds deposited on ground with vegetation cover or woodchips or other types of organic matter. Also, vertebrate scavengers entrain on anthropogenic sources of mortality and quickly remove many of the carcasses, thereby preventing the fatality searcher from detecting these fatalities. Adjusting fatality rates for these factors – search radius bias, searcher detection error, and carcass persistence rates – would greatly increase nationwide estimates of bird-window collision fatalities.

Buildings can intercept many nocturnal migrants as well as birds flying in daylight. As mentioned above, Johnson and Hudson (1976) found 266 bird fatalities of 41 species within 73 months of monitoring of a four-story glass walkway at Washington State University (no adjustments attempted for undetected fatalities). Somerlot (2003) found 21 bird fatalities among 13 buildings on a university campus within only 61 days. Monitoring twice per week, Hager at al. (2008) found 215 bird fatalities of 48 species, or 55 birds/building/year, and at another site they found 142 bird fatalities of 37 species for 24 birds/building/year. Gelb and Delacretaz (2009) recorded 5,400 bird fatalities under buildings in New York City, based on a decade of monitoring only during migration periods, and some of the high-rises were associated with hundreds of fatalities each. Klem et al. (2009) monitored 73 building façades in New York City during 114 days of two migratory periods, tallying 549 collision victims, nearly 5 birds per day. Borden et al. (2010) surveyed a 1.8 km route 3 times per week during 12-month period and found 271 bird fatalities of 50 species. Parkins et al. (2015) found 35 bird fatalities of 16 species within only 45 days of monitoring under 4 building façades. From 24 days of survey over a 48-day span, Porter and Huang (2015) found 47 fatalities under 8 buildings on a university campus. Sabo et al. (2016) found 27 bird fatalities over 61 days of searches under 31 windows. In San Francisco, Kahle et al. (2016) found 355 collision victims within 1,762 days under a 5-story building. Ocampo-Peñuela et al. (2016) searched the perimeters of 6 buildings on a university campus, finding 86 fatalities after 63 days of surveys. One of these buildings produced 61 of the 86 fatalities, and another building with collision-deterrent glass caused only 2 of the fatalities, thereby indicating a wide range in impacts likely influenced by various factors. There is ample evidence available to support my prediction that the proposed project would result in many collision fatalities of birds.

A-25 (cont)

Project Impact Prediction

By the time of these comments, 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). This average and its 95% confidence interval provide a robust basis for predicting fatality rates at a proposed new project.

The IS/MND does not disclose the extent of glass windows and glass railings on the proposed new building. I therefore used the building schematics in the IS/MND to measure the extent of windows. I measured windows along 10% of the building's façades, and then protected the total area of the windows measured to the entire building. I estimated 4,000 m^2 of exterior glass, not including glass railings. Applying the mean fatality rate (above) to my estimate of 4,000 m^2 of window glass in the project, I predict annual bird deaths of 292 (95% CI: 174–411).

The vast majority of these deaths would be of birds protected under the Migratory Bird Treaty Act and under the recently revised California Migratory Bird Protection Act, thus causing significant unmitigated impacts. Given the predicted level of bird-window collision mortality, and the lack of any proposed mitigation, it is my opinion that the proposed project would result in potentially significant adverse biological impacts. There is at least a fair argument for the need to prepare an EIR to appropriately analyze the impact of bird-glass collisions that might be caused by the project.

A-25 (cont)

TRAFFIC IMPACTS TO WILDLIFE

Project-generated traffic would endanger wildlife that must, for various reasons, cross roads used by the project's traffic to get to and from the project site (Photos 27—29), including along roads far from the project footprint. Vehicle collisions have accounted for the deaths of many thousands of amphibian, reptile, mammal, bird, and arthropod fauna, and the impacts have often been found to be significant at the population level (Forman et al. 2003). Across North America traffic impacts have taken devastating tolls on wildlife (Forman et al. 2003). In Canada, 3,562 birds were estimated killed per 100 km of road per year (Bishop and Brogan 2013), and the US estimate of avian mortality on roads is 2,200 to 8,405 deaths per 100 km per year, or 89 million to 340 million total per year (Loss et al. 2014). Local impacts can be more intense than nationally.

Photo 27. *A Gambel's quail dashes across a road* on *3 April 2021. Such road crossings are usually successful, but too often prove fatal to the animal. Photo by Noriko Smallwood.*

Photo 28. *Mourning dove killed by vehicle on a California road. Photo by Noriko Smallwood, 21 June 2020.*

Photo 29 *Raccoon killed on Road 31 just east of Highway 505 in Solano County. Photo taken on 10 November 2018.*

A-25
(cont)

The nearest study of traffic-caused wildlife mortality was performed along a 2.5-mile stretch of Vasco Road in Contra Costa County, California. Fatality searches in this study found 1,275 carcasses of 49 species of mammals, birds, amphibians and reptiles over 15 months of searches (Mendelsohn et al. 2009). This fatality number needs to be adjusted for the proportion of fatalities that were not found due to scavenger removal and searcher error. This adjustment is typically made by placing carcasses for searchers to find (or not find) during their routine periodic fatality searches. This step was not taken at Vasco Road (Mendelsohn et al. 2009), but it was taken as part of another study next to Vasco Road (Brown et al. 2016). Brown et al.'s (2016) adjustment factors for carcass persistence resembled those of Santos et al. (2011). Also applying searcher detection rates from Brown et al. (2016), the adjusted total number of fatalities was estimated at 12,187 animals killed by traffic on the road. This fatality number over 1.25 years and 2.5 miles of road translates to 3,900 wild animals per mile per year. In terms comparable to the national estimates, the estimates from the Mendelsohn et al. (2009) study would translate to 243,740 animals killed per 100 km of road per year, or 29 times that of Loss

et al.'s (2014) upper bound estimate and 68 times the Canadian estimate. An analysis is needed of whether increased traffic generated by the project site would similarly result in local impacts on wildlife.

For wildlife vulnerable to front-end collisions and crushing under tires, road mortality can be predicted from the study of Mendelsohn et al. (2009) as a basis. My analysis of the Mendelsohn et al. (2009) data resulted in an estimated 3,900 animals killed per mile along a county road in Contra Costa County. Two percent of the estimated number of fatalities were birds, and the balance was composed of 34% mammals (many mice and pocket mice, but also ground squirrels, desert cottontails, striped skunks, American badgers, raccoons, and others), 52.3% amphibians (large numbers of California tiger salamanders and California red-legged frogs, but also Sierran treefrogs, western toads, arboreal salamanders, slender salamanders and others), and 11.7% reptiles (many western fence lizards, but also skinks, alligator lizards, and snakes of various species). VMT is useful for predicting wildlife mortality because I was able to quantify miles traveled along the studied reach of Vasco Road during the time period of the Mendelsohn et al. (2009), hence enabling a rate of fatalities per VMT that can be projected to other sites, assuming similar collision fatality rates.

Predicting project-generated traffic impacts to wildlife

The IS/MND predicts 3,664,270 annual VMT. During the Mendelsohn et al. (2009) study, 19,500 cars traveled Vasco Road daily, so the vehicle miles that contributed to my estimate of non-volant fatalities was 19,500 cars and trucks × 2.5 miles × 365 days/year × 1.25 years = 22,242,187.5 vehicle miles per 12,187 wildlife fatalities, or 1,825 vehicle miles per fatality. This rate divided into the predicted annual VMT, above, would predict 2,008 vertebrate wildlife fatalities per year.

A-25 (cont)

Based on my analysis, the project-generated traffic would cause significant impacts to wildlife. The IS/MND does not address this potential impact, let alone propose to mitigate it. Mitigation measures to improve wildlife safety along roads are available and are feasible, and they need exploration for their suitability with the proposed project. Given the predicted level of project-generated, traffic-caused mortality, and the lack of any proposed mitigation, it is my opinion that the proposed project would result in potentially significant adverse biological impacts. A fair argument can be made for the need to prepare an EIR to appropriately analyze the potential impacts of project-generated automobile traffic on wildlife.

WILDLIFE DEPREDATION BY HOUSE CATS

Considering national trends, it is safe to assume that house cats would be introduced to the project area by residents of the proposed 234 residential units. This is significant because house cats serve as one of the largest sources of avian mortality in North America (Dauphiné and Cooper 2009, Blancher 2013, Loss et al. 2013, Loyd et al. 2017). Loss et al. (2013) estimated 139 million cats in the USA in 2013 (range 114 to 164 million), which killed an estimated 16.95 billion vertebrate wildlife annually (range 7.6 to 26.3 billion). In 2012 there were 0.44 house cats per human, and 122 vertebrate

animals were killed per cat, free-ranging members of which killed disproportionately larger numbers of vertebrate wildlife. The IS/MND predicts the project would add 912 new residents The above rates of cat ownership applied to this number of new residents **would predict 401 new house cats, which would kill 48,922 vertebrate wildlife per year**.

House cats also contribute to downstream loading of *Toxoplasma gondii*. According to a UC Davis wildlife health research program, "*Toxoplasma gondii is a parasite that can infect virtually all warm-blooded animals, but the only known definitive hosts are cats – domesticated and feral house cats included. Cats catch the parasite through hunting rodents and birds and they offload it into the environment through their feces… and …rain that falls on cement creates more runoff than rain that falls on natural earth, which contributes to increased runoff that can carry fecal pathogens to the sea*" (http://www.evotis.org/ toxoplasma-gondii- sea-otters/).

Impacts to wildlife from the introduction of house cats into the environment would be significant, and yet these impacts are not considered in the IS/MND. A fair argument can be made for the need to prepare an EIR to appropriately analyze potential impacts to wildlife due to depredation and parasite-loading by free-ranging house cats introduced by residents of the project. An obvious mitigation measure would be to constrain house cat ownership such as requiring cats to remain indoors.

A-25 (cont)

DOG RUN

The project proposes the inclusion of a dog run, but the IS/MND does not analyze potential impacts to wildlife that could result from it. Dogs disturb and displace wildlife (Hennings 2016), and dog parks accumulate parasites. In one study of dog parks in Portugal (Ferreira et al. 2017), at least 7 different types of parasites were found in fecal and soil samples, and "the soil of all the parks was contaminated with hookworm eggs." The parasite loading of the dog park could spill-over to wildlife of the immediate area or downstream to marine mammals at the coast. A fair argument can be made for the need to prepare an EIR to appropriately analyze the potential impacts to wildlife caused by the dog park.

CUMULATIVE IMPACTS

The IS/MND's cumulative effects analysis is flawed. According to the IS/MND, "Because the Project could result in significant impacts related to biological resources …, the Project could contribute to cumulative impacts to these resources. This contribution could be cumulatively considerable and thus significant. With the implementation of [mitigation measure BIO-1] …, the Project's impact related to biological resources … would be reduced to less than cumulatively considerable and thus less than significant." Essentially, the IS/MND implies that cumulative effects are simply residual impacts of incomplete mitigation of project-level impacts, and that no residual impacts would remain after the implementation of mitigation measure BIO-1 – the only measure proposed. This notion is inconsistent with CEQA's definition of cumulative impacts and how to analyze them. If this was CEQA's standard, then cumulative effects analysis

would be merely an analysis of mitigation efficacy. This is not how cumulative effects are to be analyzed; the cumulative effects analysis is fundamentally flawed.

Even should project-level mitigation be implemented as proposed in the IS/MND, development projects are causing cumulative impacts in California. To measure the impacts of habitat loss to wildlife caused by mitigated development projects, Noriko Smallwood and I revisited 80 sites of proposed projects that we had originally surveyed in support of comments on CEQA review documents (Smallwood and Smallwood 2023). We revisited the sites to repeat the survey methods at the same time of year, the same start time in the day, and the same methods and survey duration in order to measure the effects of mitigated development on wildlife. We structured the experiment in a before-after, control-impact experimental design, as some of the sites had been developed since our initial survey and some had remained undeveloped. We found that mitigated development resulted in a 66% loss of species on site, and 48% loss of species in the project area. Counts of vertebrate animals declined 90%. "Development impacts measured by the mean number of species detected per survey were greatest for amphibians (-100%), followed by mammals (-86%), grassland birds (-75%), raptors (-53%), special-status species (-49%), all birds as a group (-48%), non-native birds (-44%), and synanthropic birds (-28%). Our results indicated that urban development substantially reduced vertebrate species richness and numerical abundance, even after richness and abundance had likely already been depleted by the cumulative effects of loss, fragmentation, and degradation of habitat in the urbanizing environment," and despite all of the mitigation measures and existing policies and regulations.

A-25 (cont)

A fair argument can be made for the need to prepare an EIR to appropriately analyze potential project contributions to cumulative impacts to wildlife and plants in the region.

INSUFFICIENT MITIGATION

The only mitigation measure proposed in the IS/MND is a preconstruction survey for nesting birds:

Mitigation Measure BIO-1: *If construction activities occur within the bird nesting season (generally defined as February 15 through September 15), a qualified biologist shall conduct a nesting bird survey within 7 days prior to the start of construction. If an active nest is observed within 500 feet of the proposed construction, the nest shall be avoided, and a suitable buffer zone shall be delineated in the field such that no impacts shall occur until the nest has been determined to be inactive by a qualified biologist. Construction buffers are generally 300 feet for passerines and up to 500 feet for raptor species; however, avoidance buffers may be reduced at the discretion of the biologist, depending on the location of the nest and species tolerance to human presence and construction-related noise.*

A-26

If activities must take place within an established buffer, steps shall be taken to reduce indirect effects to nesting activity by actively reducing construction noise within proximity to a presumed nest location and/or installing temporary construction noise

barriers. If the reduction of noise is not feasible, construction activities shall be postponed until the nest is deemed inactive and/or the breeding season has concluded.

First, the avian breeding season recognized by the CDFW is now 1 February through 15 September. The IS/MND is skipping the first two weeks of the recognized avian breeding season.

Second, I concur with the implementation of preconstruction surveys, but it should be understood that preconstruction surveys are no substitute for detection surveys. It should be understood that preconstruction surveys, although warranted, actually achieve very little. Preconstruction, take-avoidance surveys consist of two steps, both of which are very difficult. First, the biologist(s) performing the survey must identify birds that are breeding. Second, the biologist(s) must locate the breeding birds' nests. The first step is typically completed by observing bird behaviors such as food deliveries and nest territory defense. These types of observations typically require many surveys on many dates spread throughout the breeding season, and these observations are to find the nest sites of single targeted species (Smallwood et al. 2013, Smallwood and Smallwood 2021). To identify the birds of all species nesting on a site requires a much greater survey effort.

To attempt to find all of the nest sites of all avian species, I completed surveys to complete the steps needed to count nest attempts of all birds on a research site. I constrained my surveys to a relatively small area of 12.74 acres, because I knew that finding all of the nest sites would be extremely difficult. I surveyed this site 30 times from March through mid-August 2023. Any one of my surveys might have resulted in one or a few nest detections, but my estimated total number of nests was 216. Cavity nests proved the easiest to find, because cavity nesters can more effectively defend their nests against predators and therefore have less need to hide the whereabouts of their nests. Nests of large raptors and herons were also relatively easy to find. I could also identify other birds engaged in nest attempts, but those birds using small cup nests in trees and shrubs and nests on the ground carefully avoided visits to their nests in my presence. Small birds in trees and shrubs and ground nesters are highly vulnerable to predation, and thus the most cryptic of nesters. Whereas I estimated lesser goldfinch as the most prolific nester on the study site, I found not one of their nest structures. Even the nesters that nest right out in the open are highly capable of hiding their nests sites from human eyes.

A-26
(cont)

Even assuming all the nests could be found, the mitigation measure would apply only to the breeding season of the survey. After project construction, California would be denied the production of birds from the project site in every subsequent year. The impacts of the project to birds would be permanent and of large magnitude (see my prediction above, under Habitat Loss).

Finally, the mitigation language allows a single individual to make a subjective decision, outside the public's view, to determine and adjust the buffer area for any given species. This measure lacks objective criteria, and is unenforceable.

RECOMMENDED MEASURES

Protocol-level Detection Surveys in Support of Mitigation: If the project goes forward, detection surveys need to be completed for burrowing owl, white-tailed kite, peregrine falcon, and other special-status species. Detection survey protocols and guidelines are available from resource agencies for multiple special-status species. Otherwise, professional standards can be learned from the scientific literature and species' experts.

Pest Control: The project should commit to minimal use of rodenticides and avicides. It should commit to no placement of poison bait stations outside the buildings.

Guidelines on Building Design to Minimize Bird-Window Collisions: If the project goes forward, it should at a minimum adhere to available Bird-Safe Guidelines, such as those 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.

A-26 (cont)

New research results inform of the efficacy of 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). For example, Feather Friendly® circular adhesive markers applied in a grid pattern across all windows reduced bird-window collision mortality by 95% in one study (Riggs et al. 2023) and by 95% in another (de Groot et al. 2021).

Another study tested the efficacy of two filmshades to be applied exteriorly to windows prior to installations: BirdShades increased bird-window avoidance by 47% and Haverkamp increased avoidance by 39% (Swaddle et al. 2023).

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 mitigation efficacy and to quantify post-construction fatalities is to monitor the project for fatalities, including at residential dwelling units.

Road Mortality: Compensatory mitigation is needed for the increased wildlife mortality that would be caused by bird-window collisions and the project-generated road traffic in the region. I suggest that this mitigation can be directed toward funding research to identify fatality patterns and effective impact reduction measures such as reduced speed limits and wildlife under-crossings or overcrossings of particularly dangerous road segments. Compensatory mitigation can also be provided in the form of donations to wildlife rehabilitation facilities (see below).

House Cats: If the Specific Plan goes forward, homeowners should not be allowed to let their cats range free. A fund should be established for long-term management of house cats in the project. Management could include public education about the environmental effects of outdoor and free-ranging cats. It could also include a program to spade and neuter cats, especially free-ranging cats. It could also involve some removals of feral cats.

A-26 (cont)

Fund Wildlife Rehabilitation Facilities: Compensatory mitigation ought also to include funding contributions to wildlife rehabilitation facilities to cover the costs of injured animals that will be delivered to these facilities for care. Many animals would likely be injured by collisions with windows and automobiles, and by attacks by house cats.

Landscaping: If the project goes forward, California native plant landscaping (i.e. chaparral, grassland, and locally appropriate scrub plants) should be considered to be used in residential yards, street-ways, and parks, as opposed to landscaping with lawn and exotic shrubs. Native plants offer more structure, cover, food resources, and nesting substrate for wildlife than landscaping with lawn. Native plant landscaping has been shown to increase the abundance of arthropods which act as importance sources of food for wildlife and are crucial for pollination and plant reproduction (Narango et al. 2017, Adams et al. 2020, Smallwood and Wood 2022.). Further, many endangered and threated insects require native host plants for reproduction and migration (e.g. El Segundo blue butterfly, monarch butterfly). Around the world, landscaping with native plants over exotic plants increases the abundance and diversity of birds, and is particularly valuable to native birds (Lerman and Warren 2011, Burghardt et al. 2008, Berthon et al. 2021, Smallwood and Wood 2022). Landscaping with native plants is a way to maintain or to bring back some of the natural habitat and lessen the footprint of urbanization by acting as interconnected patches of habitat for wildlife (Goddard et al.

2009, Tallamy 2020). Lastly, not only does native plant landscaping benefit wildlife, it requires less water and maintenance than traditional landscaping with lawn and hedges.

A-26 (cont)

Thank you for your attention,

Shawn Smallwood, Ph.D.

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Photo 40. *Yellow-rumped warbler at the project site. Noriko Smallwood.*

Kenneth Shawn Smallwood
Curriculum Vitae

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Born May 3, 1963 in
Sacramento, California.
Married, father of two.

Ecologist

Expertise

- Finding solutions to controversial problems related to wildlife interactions with human industry, infrastructure, and activities;
- Wildlife monitoring and field study using GPS, thermal imaging, behavior surveys;
- Using systems analysis and experimental design principles to identify meaningful ecological patterns that inform management decisions.

Education

Ph.D. Ecology, University of California, Davis. September 1990.
M.S. Ecology, University of California, Davis. June 1987.
B.S. Anthropology, University of California, Davis. June 1985.
Corcoran High School, Corcoran, California. June 1981.

Experience

- 762 professional reports, including:
- 90 peer reviewed publications
- 24 in non-reviewed proceedings
- 646 reports, declarations, posters and book reviews
- 8 in mass media outlets
- 92 public presentations of research results

Editing for scientific journals: Guest Editor, *Wildlife Society Bulletin*, 2012-2013, of invited papers representing international views on the impacts of wind energy on wildlife and how to mitigate the impacts. Associate Editor, *Journal of Wildlife Management*, March 2004 to 30 June 2007. Editorial Board Member, *Environmental Management*, 10/1999 to 8/2004. Associate Editor, *Biological Conservation*, 9/1994 to 9/1995.

Member, Alameda County Scientific Review Committee (SRC), August 2006 to April 2011. The five-member committee investigated causes of bird and bat collisions in the Altamont Pass Wind Resource Area, and recommended mitigation and monitoring measures. The SRC reviewed the science underlying the Alameda County Avian Protection Program, and advised

the County on how to reduce wildlife fatalities.

Consulting Ecologist, 2004-2007, California Energy Commission (CEC). Provided consulting services as needed to the CEC on renewable energy impacts, monitoring and research, and produced several reports. Also collaborated with Lawrence-Livermore National Lab on research to understand and reduce wind turbine impacts on wildlife.

Consulting Ecologist, 1999-2013, U.S. Navy. Performed endangered species surveys, hazardous waste site monitoring, and habitat restoration for the endangered San Joaquin kangaroo rat, California tiger salamander, California red-legged frog, California clapper rail, western burrowing owl, salt marsh harvest mouse, and other species at Naval Air Station Lemoore; Naval Weapons Station, Seal Beach, Detachment Concord; Naval Security Group Activity, Skaggs Island; National Radio Transmitter Facility, Dixon; and, Naval Outlying Landing Field Imperial Beach.

Part-time Lecturer, 1998-2005, California State University, Sacramento. Instructed Mammalogy, Behavioral Ecology, and Ornithology Lab, Contemporary Environmental Issues, Natural Resources Conservation.

Senior Ecologist, 1999-2005, BioResource Consultants. Designed and implemented research and monitoring studies related to avian fatalities at wind turbines, avian electrocutions on electric distribution poles across California, and avian fatalities at transmission lines.

Chairman, Conservation Affairs Committee, The Wildlife Society--Western Section, 1999-2001. Prepared position statements and led efforts directed toward conservation issues, including travel to Washington, D.C. to lobby Congress for more wildlife conservation funding.

Systems Ecologist, 1995-2000, Institute for Sustainable Development. Headed ISD's program on integrated resources management. Developed indicators of ecological integrity for large areas, using remotely sensed data, local community involvement and GIS.

Associate, 1997-1998, Department of Agronomy and Range Science, University of California, Davis. Worked with Shu Geng and Mingua Zhang on several studies related to wildlife interactions with agriculture and patterns of fertilizer and pesticide residues in groundwater across a large landscape.

Lead Scientist, 1996-1999, National Endangered Species Network. Informed academic scientists and environmental activists about emerging issues regarding the Endangered Species Act and other environmental laws. Testified at public hearings on endangered species issues.

Ecologist, 1997-1998, Western Foundation of Vertebrate Zoology. Conducted field research to determine the impact of past mercury mining on the status of California red-legged frogs in Santa Clara County, California.

Senior Systems Ecologist, 1994-1995, EIP Associates, Sacramento, California. Provided consulting services in environmental planning, and quantitative assessment of land units for their conservation and restoration opportunities basedon ecological resource requirements of 29 special-status species. Developed ecological indicators for prioritizing areas within Yolo County

to receive mitigation funds for habitat easements and restoration.

Post-Graduate Researcher, 1990-1994, Department of Agronomy and Range Science, *U.C. Davis*. Under Dr. Shu Geng's mentorship, studied landscape and management effects on temporal and spatial patterns of abundance among pocket gophers and species of Falconiformes and Carnivora in the Sacramento Valley. Managed and analyzed a data base of energy use in California agriculture. Assisted with landscape (GIS) study of groundwater contamination across Tulare County, California.

Work experience in graduate school: Co-taught Conservation Biology with Dr. Christine Schonewald, 1991 & 1993, UC Davis Graduate Group in Ecology; Reader for Dr. Richard Coss's course on Psychobiology in 1990, UC Davis Department of Psychology; Research Assistant to Dr. Walter E. Howard, 1988-1990, UC Davis Department of Wildlife and Fisheries Biology, testing durable baits for pocket gopher management in forest clearcuts; Research Assistant to Dr. Terrell P. Salmon, 1987-1988, UC Wildlife Extension, Department of Wildlife and Fisheries Biology, developing empirical models of mammal and bird invasions in North America, and a rating system for priority research and control of exotic species based on economic, environmental and human health hazards in California. Student Assistant to Dr. E. Lee Fitzhugh, 1985-1987, UC Cooperative Extension, Department of Wildlife and Fisheries Biology, developing and implementing statewide mountain lion track count for long-term monitoring.

Fulbright Research Fellow, Indonesia, 1988. Tested use of new sampling methods for numerical monitoring of Sumatran tiger and six other species of endemic felids, and evaluated methods used by other researchers.

Projects

Repowering wind energy projects through careful siting of new wind turbines using map-based collision hazard models to minimize impacts to volant wildlife. Funded by wind companies (principally NextEra Renewable Energy, Inc.), California Energy Commission and East Bay Regional Park District, I have collaborated with a GIS analyst and managed a crew of five field biologists performing golden eagle behavior surveys and nocturnal surveys on bats and owls. The goal is to quantify flight patterns for development of predictive models to more carefully site new wind turbines in repowering projects. Focused behavior surveys began May 2012 and continue. Collision hazard models have been prepared for seven wind projects, three of which were built. Planning for additional repowering projects is underway.

Test avian safety of new mixer-ejector wind turbine (MEWT). Designed and implemented a before-after, control-impact experimental design to test the avian safety of a new, shrouded wind turbine developed by Ogin Inc. (formerly known as FloDesign Wind Turbine Corporation). Supported by a $718,000 grant from the California Energy Commission's Public Interest Energy Research program and a 20% match share contribution from Ogin, I managed a crew of seven field biologists who performed periodic fatality searches and behavior surveys, carcass detection trials, nocturnal behavior surveys using a thermal camera, and spatial analyses with the collaboration of a GIS analyst. Field work began 1 April 2012 and ended 30 March 2015 without Ogin installing its MEWTs, but we still achieved multiple important scientific advances.

Reduce avian mortality due to wind turbines at Altamont Pass. Studied wildlife impacts caused by 5,400 wind turbines at the world's most notorious wind resource area. Studied how impacts are perceived by monitoring and how they are affected by terrain, wind patterns, food resources, range management practices, wind turbine operations, seasonal patterns, population cycles, infrastructure management such as electric distribution, animal behavior and social interactions.

Reduce avian mortality on electric distribution poles. Directed research toward reducing bird electrocutions on electric distribution poles, 2000-2007. Oversaw 5 founds of fatality searches at 10,000 poles from Orange County to Glenn County, California, and produced two large reports.

Cook *et al*. v. Rockwell International *et al*., No. 90-K-181 (D. Colorado). Provided expert testimony on the role of burrowing animals in affecting the fate of buried and surface-deposited radioactive and hazardous chemical wastes at the Rocky Flats Plant, Colorado. Provided expert reports based on four site visits and an extensive document review of burrowing animals. Conducted transect surveys for evidence of burrowing animals and other wildlife on and around waste facilities. Discovered substantial intrusion of waste structures by burrowing animals. I testified in federal court in November 2005, and my clients were subsequently awarded a $553,000,000 judgment by a jury. After appeals the award was increased to two billion dollars.

Hanford Nuclear Reservation Litigation. Provided expert testimony on the role of burrowing animals in affecting the fate of buried radioactive wastes at the Hanford Nuclear Reservation, Washington. Provided three expert reports based on three site visits and extensive document review. Predicted and verified a certain population density of pocket gophers on buried waste structures, as well as incidence of radionuclide contamination in body tissue. Conducted transect surveys for evidence of burrowing animals and other wildlife on and around waste facilities. Discovered substantial intrusion of waste structures by burrowing animals.

Expert testimony and declarations on proposed residential and commercial developments, gas-fired power plants, wind, solar and geothermal projects, water transfers and water transfer delivery systems, endangered species recovery plans, Habitat Conservation Plans and Natural Communities Conservation Programs. Testified before multiple government agencies, Tribunals, Boards of Supervisors and City Councils, and participated with press conferences and depositions. Prepared expert witness reports and court declarations, which are summarized under Reports (below).

Protocol-level surveys for special-status species. Used California Department of Fish and Wildlife and US Fish and Wildlife Service protocols to search for California red-legged frog, California tiger salamander, arroyo southwestern toad, blunt-nosed leopard lizard, western pond turtle, giant kangaroo rat, San Joaquin kangaroo rat, San Joaquin kit fox, western burrowing owl, Swainson's hawk, Valley elderberry longhorn beetle and other special-status species.

Conservation of San Joaquin kangaroo rat. Performed research to identify factors responsible for the decline of this endangered species at Lemoore Naval Air Station, 2000-2013, and implemented habitat enhancements designed to reverse the trend and expand the population.

Impact of West Nile Virus on yellow-billed magpies. Funded by Sacramento-Yolo Mosquito and Vector Control District, 2005-2008, compared survey results pre- and post-West Nile Virus epidemic for multiple bird species in the Sacramento Valley, particularly on yellow-billed magpie and American crow due to susceptibility to WNV.

Workshops on HCPs. Assisted Dr. Michael Morrison with organizing and conducting a 2-day workshop on Habitat Conservation Plans, sponsored by Southern California Edison, and another 1-day workshop sponsored by PG&E. These Workshops were attended by academics, attorneys, and consultants with HCP experience. We guest-edited a Proceedings published in Environmental Management.

Mapping of biological resources along Highways 101, 46 and 41. Used GPS and GIS to delineate vegetation complexes and locations of special-status species along 26 miles of highway in San Luis Obispo County, 14 miles of highway and roadway in Monterey County, and in a large area north of Fresno, including within reclaimed gravel mining pits.

GPS mapping and monitoring at restoration sites and at Caltrans mitigation sites. Monitored the success of elderberry shrubs at one location, the success of willows at another location, and the response of wildlife to the succession of vegetation at both sites. Also used GPS to monitor the response of fossorial animals to yellow star-thistle eradication and natural grassland restoration efforts at Bear Valley in Colusa County and at the decommissioned Mather Air Force Base in Sacramento County.

Mercury effects on Red-legged Frog. Assisted Dr. Michael Morrison and US Fish and Wildlife Service in assessing the possible impacts of historical mercury mining on the federally listed California red-legged frog in Santa Clara County. Also measured habitat variables in streams.

Opposition to proposed No Surprises rule. Wrote a white paper and summary letter explaining scientific grounds for opposing the incidental take permit (ITP) rules providing ITP applicants and holders with general assurances they will be free of compliance with the Endangered Species Act once they adhere to the terms of a "properly functioning HCP." Submitted 188 signatures of scientists and environmental professionals concerned about No Surprises rule US Fish and Wildlife Service, National Marine Fisheries Service, all US Senators.

Natomas Basin Habitat Conservation Plan alternative. Designed narrow channel marsh to increase the likelihood of survival and recovery in the wild of giant garter snake, Swainson's hawk and Valley Elderberry Longhorn Beetle. The design included replication and interspersion of treatments for experimental testing of critical habitat elements. I provided a report to Northern Territories, Inc.

Assessments of agricultural production system and environmental technology transfer to China. Twice visited China and interviewed scientists, industrialists, agriculturalists, and the Directors of the Chinese Environmental Protection Agency and the Department of Agriculture to assess the need and possible pathways for environmental clean-up technologies and trade opportunities between the US and China.

Yolo County Habitat Conservation Plan. Conducted landscape ecology study of Yolo County to spatially prioritize allocation of mitigation efforts to improve ecosystem functionality within the County from the perspective of 29 special-status species of wildlife and plants. Used a hierarchically structured indicators approach to apply principles of landscape and ecosystem ecology, conservation biology, and local values in rating land units. Derived GIS maps to help guide the conservation area design, and then developed implementation strategies.

Mountain lion track count. Developed and conducted a carnivore monitoring program throughout California since 1985. Species counted include mountain lion, bobcat, black bear, coyote, red and gray fox, raccoon, striped skunk, badger, and black-tailed deer. Vegetation and land use are also monitored. Track survey transect was established on dusty, dirt roads within randomly selected quadrats.

Sumatran tiger and other felids. Upon award of Fulbright Research Fellowship, I designed and initiated track counts for seven species of wild cats in Sumatra, including Sumatran tiger, fishing cat, and golden cat. Spent four months on Sumatra and Java in 1988, and learned Bahasa Indonesia, the official Indonesian language.

Wildlife in agriculture. Beginning as post-graduate research, I studied pocket gophers and other wildlife in 40 alfalfa fields throughout the Sacramento Valley, and I surveyed for wildlife along a 200 mile road transect since 1989 with a hiatus of 1996-2004. The data are analyzed using GIS and methods from landscape ecology, and the results published and presented orally to farming groups in California and elsewhere. I also conducted the first study of wildlife in cover crops used on vineyards and orchards.

Agricultural energy use and Tulare County groundwater study. Developed and analyzed a data base of energy use in California agriculture, and collaborated on a landscape (GIS) study of groundwater contamination across Tulare County, California.

Pocket gopher damage in forest clear-cuts. Developed gopher sampling methods and tested various poison baits and baiting regimes in the largest-ever field study of pocket gopher management in forest plantations, involving 68 research plots in 55 clear-cuts among 6 National Forests in northern California.

Risk assessment of exotic species in North America. Developed empirical models of mammal and bird species invasions in North America, as well as a rating system for assigning priority research and control to exotic species in California, based on economic, environmental, and human health hazards.

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Comments on Environmental Documents (Year; pages)

I was retained or commissioned to comment on environmental planning and review documents, including:

- Shirk & Riggin Industrial Park Application, Visalia (2022; 22);
- Duarte Industrial Application, Visalia (2022; 17);
- Amond World Cold Storage Warehouse IS/MND, Madera (2022; 23);
- Replies on Schulte Logistics Centre EIR, Tracy (2022; 28);
- Alta Cuvee Mixed Use Project Recirculated IS/MND, Ranch Cucamonga (2022; 8);
- Fourth visit, Veterans Affairs Site Plan Review No. 20-0102 MND, Bakersfield (2022; 9);
- Replies on 1242 20th Street Wellness Center Project FEIR, Santa Monica (2022; 5);
- 656 South San Vicente Medical Office Project EIR, Los Angeles (2022; 21);
- UCSF New Hospital at Parnassus Heights DEIR. San Francisco (2022; 40);
- DPR-21-021Warehouse IS, Modesto (2022; 19);
- Ormat Brawley Solar Project DEIR, Brawley (2022; 37);
- Site visits to Heber 1 Geothermal Repower Project IS/MND (2022; 31);
- Heritage Industrial Center Design Review, Chula Vista (2022; 13);
- Temporary Outdoor Vehicle Storage DEIR, Port of Hueneme (2022; 29);
- CNU Medical Center and Innovation Park DEIR, Natomas (2022; 35);
- Beverly Boulevard Warehouse IS/MND, Pico Rivera (2021; 28);
- Hagemon Properties IS/MND Amendment, Bakersfield (2022; 23);
- Airport Distribution Center IS/MND, Redding (2021; 22);
- Orchard on Nevada Warehouse Staff Report, Redlands (2021; 24);
- Landings Logistics Center Exemption, Bakersfield (2021; 19);
- Replies on Hearn Veterans Village IS/MND, Santa Rosa (2021; 22);
- North Central Valley BESS Project IS/MND, Stockton (2021; 37);
- 2nd Replies on Heber 1 Geothermal Repower Project IS/MND (2022; 21);
- Stagecoach Solar DEIR, Barstow (2021; 24);
- Updated Sun Lakes Village North EIR Amendment 5, Banning, Riverside County (2021; 35);
- Freedom Circle Focus Area and Greystar General Plan Amendment Project EIR, San Jose (2021; 43);
- Operon HKI Warehouse IS/MND, Perris (2021; 26);
- Fairway Business Park Phase III IS/MND, Lake Elsinore (2021; 23);
- South Stockton Commerce Center IS/MND, Stockton (2021; 31);
- Starpoint Warehouse IS/MND, San Bernardino (2021; 24);
- Replies on Heber 1 Geothermal Repower Project IS/MND (2021; 15);
- Heber 1 Geothermal Repower Project IS/MND (2021; 11);

- Alviso Hotel Project IS/MND, San Jose (2021; 43);
- Replies on Easton Research Park West IS/MND, Rancho Cordova (2021; 3);
- Easton Research Park West IS/MND, Rancho Cordova (2021; 31);
- US Cold Storage DEIR, Hesperia (2021; 30);
- 1242 20th Street Wellness Center Project FEIR, Santa Monica (2021; 23);
- Third visit, Veterans Affairs Site Plan Review No. 20-0102 MND, Bakersfield (2021; 10);
- Roseland Creek Community Park Project IS/MND, Santa Rosa (2021; 23);
- Vista Mar Declaration of Irreparable Harm, Pacifica (2021; 3);
- LogistiCenter at Fairfield IS/MND (2021; 25);
- Alta Cuvee Mixed Use Project IS/MND, Ranch Cucamonga (2021; 29);
- Caligrows Architectural and Site Plan Review, Patterson (2021; 21);
- 1055 E. Sandhill Avenue Warehouse IS/MND, Carson (2021; 10);
- Chestnut & Tenth Street Commercial Project IS/MND, Gilroy (2021; 27);
- Libitzky Management Warehouse IS/MND, Modesto (2021; 20);
- 3rd Replies on Heber 2 Geothermal Repower Project IS/MND, El Centro (2021; 10);
- Medical Office Building DEIR, Santa Cruz (2021; 30);
- Scannell Warehouse DEIR, Richmond (2021; 24);
- Diamond Heights Application, San Francisco (2021; 24);
- Costa Azul Mixed-Use EIR Addendum, San Diego (2021; 25);
- Woodland Research Park DEIR (2021; 45);
- 2nd Replies on Diamond Street Industrial IS/MND, San Marcos (2021; 9);
- Replies on Diamond Street Industrial IS/MND, San Marcos (2021; 3);
- Diamond Street Industrial IS/MND, San Marcos (2021; 28);
- DHS 109 Industrial Park IS/MND, Desert Hot Springs (2021; 33);
- Jersey Industrial Complex Rancho Cucamonga (2022; 22);
- 1188 Champions Drive Parking Garage Staff Report, San Jose (2021; 5);
- San Pedro Mountain, Pacifica (2021; 22);
- Pixior Warehouse IS/MND, Hesperia (2021; 29);
- 2nd Replies on Heber 2 Geothermal Repower Project IS/MND, El Centro (2021; 9);
- Hearn Veterans Village IS/MND, Santa Rosa (2021; 23);
- Second visit, Veterans Affairs Site Plan Review No. 20-0102 MND, Bakersfield (2021; 11);
- Replies on Station East Residential/Mixed Use EIR, Union City (2021; 26);
- Schulte Logistics Centre EIR, Tracy (2021; 30);
- 4150 Point Eden Way Industrial Development EIR, Hayward (2021; 13);
- Airport Business Centre IS/MND, Manteca (2021; 27);
- Dual-branded Hotel IS/MND, Santa Clara (2021; 26);
- Legacy Highlands Specific Plan EIR, Beaumont (2021; 47);
- UC Berkeley LRDP and Housing Projects #1 and #2 EIR (2021; 27);
- Santa Maria Airport Business Park EIR, Santa Maria (2021; 27);
- Replies on Coachella Valley Arena EIR Addendum, Thousand Palms (2021; 20);
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- Inland Harbor Warehouse NOD, Ontario (2021; 8);
- Alvarado Specific Plan DEIR, La Mesa (2021; 35);
- Harvill Avenue and Rider Street Terminal Project MND, Riverside (2021; 23);

- Gillespie Field EIR Addendum, El Cajon (2021; 28);
- Heritage Wind Energy Project section 94-c siting process, New York (2021: 99);
- Commercial Street Hotels project Site Plans, Oakland (2021; 19);
- Heber 1 Geothermal Repower Project MND, El Centro (2021; 11);
- Citrus-Slover Warehouse Project MND, Fontana (2021; 20);
- Scott Ranch Project RDEIR (Davidon Homes), Petaluma (2021; 31);
- Replies on StratosFuel Renewable H2 Project MND, Victorville (2021; 5);
- StratosFuel Renewable H2 Project MND, Victorville (2021; 25);
- Replies on PARS Global Storage MND, Murietta (2021; 22);
- Baldwin-Zacharias Master Plans EIR, Patterson (2021; 38);
- 1000 Gibraltar Drive EIR, Milpitas (2021; 20);
- Mango Avenue Industrial Warehouse Project, Fontana, MND (2021; 20);
- Veterans Affairs Site Plan Review No. 20-0102 MND, Bakersfield (2021; 25);
- Replies on UCSF Comprehensive Parnassus Heights Plan EIR (2021; 13);
- 14 Charles Hill Circle Design Review (2021; 11);
- SDG Commerce 217 Warehouse IS, American Canyon (2021; 26);
- Mulqueeney Ranch Wind Repowering Project DSEIR (2021; 98);
- Clawiter Road Industrial Project IS/MND, Hayward (2021; 18);
- Garnet Energy Center Stipulations, New York (2020);
- Heritage Wind Energy Project, New York (2020: 71);
- Ameresco Keller Canyon RNG Project IS/MND, Martinez (2020; 11);
- Cambria Hotel Project Staff Report, Dublin (2020; 19);
- Central Pointe Mixed-Use Staff Report, Santa Ana (2020; 20);
- Oak Valley Town Center EIR Addendum, Calimesa (2020; 23);
- Coachillin Specific Plan MND Amendment, Desert Hot Springs (2020; 26);
- Stockton Avenue Hotel and Condominiums Project Tiering to EIR, San Jose (2020; 19);
- Cityline Sub-block 3 South Staff Report, Sunyvale (2020; 22);
- Station East Residential/Mixed Use EIR, Union City (2020; 21);
- Multi-Sport Complex & Southeast Industrial Annexation Suppl. EIR, Elk Grove (2020; 24);
- Sun Lakes Village North EIR Amendment 5, Banning, Riverside County (2020; 27);
- 2nd comments on 1296 Lawrence Station Road, Sunnyvale (2020; 4);
- 1296 Lawrence Station Road, Sunnyvale (2020; 16);
- Mesa Wind Project EA, Desert Hot Springs (2020; 31);
- 11th Street Development Project IS/MND, City of Upland (2020; 17);
- Vista Mar Project IS/MND, Pacifica (2020; 17);
- Emerson Creek Wind Project Application, Ohio (2020; 64);
- Replies on Wister Solar Energy Facility EIR, Imperial County (2020; 12);
- Wister Solar Energy Facility EIR, Imperial County (2020; 28);
- Crimson Solar EIS/EIR, Mojave Desert (2020, 35) not submitted;
- Sakioka Farms EIR tiering, Oxnard (2020; 14);
- 3440 Wilshire Project IS/MND, Los Angeles (2020; 19);
- Replies on 2400 Barranca Office Development Project EIR, Irvine (2020; 8);
- 2400 Barranca Office Development Project EIR, Irvine (2020; 25);
- Replies on Heber 2 Geothermal Repower Project IS/MND, El Centro (2020; 4);

- 2nd comments on Heber 2 Geothermal Repower Project IS/MND, El Centro (2020; 8);
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- Lots 4-12 Oddstad Way Project IS/MND, Pacifica (2020; 16);
- Declaration on DDG Visalia Warehouse project (2020; 5);
- Terraces of Lafayette EIR Addendum (2020; 24);
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- Replies to responses on Casmalia and Linden Warehouse, Rialto (2020; 15);
- Clover Project MND, Petaluma (2020; 27);
- Ruby Street Apartments Project Env. Checklist, Hayward (2020; 20);
- Replies to responses on 3721 Mt. Diablo Boulevard Staff Report (2020; 5);
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- Steeno Warehouse IS/MND, Hesperia (2020; 19);
- UCSF Comprehensive Parnassus Heights Plan EIR (2020; 24);
- North Pointe Business Center MND, Fresno (2020; 14);
- Casmalia and Linden Warehouse IS, Fontana (2020; 15);
- Rubidoux Commerce Center Project IS/MND, Jurupa Valley (2020; 27);
- Haun and Holland Mixed Use Center MND, Menifee (2020; 23);
- First Industrial Logistics Center II, Moreno Valley IS/MND (2020; 23);
- GLP Store Warehouse Project Staff Report (2020; 15);
- Replies on Beale WAPA Interconnection Project EA & CEQA checklist (2020; 29);
- 2nd comments on Beale WAPA Interconnection Project EA & CEQA checklist (2020; 34);
- Beale WAPA Interconnection Project EA & CEQA checklist (2020; 30);
- Levine-Fricke Softball Field Improvement Addendum, UC Berkeley (2020; 16);
- Greenlaw Partners Warehouse and Distribution Center Staff Report, Palmdale (2020; 14);
- Humboldt Wind Energy Project DEIR (2019; 25);
- Sand Hill Supplemental EIR, Altamont Pass (2019; 17);
- 1700 Dell Avenue Office Project, Campbell (2019, 28);
- 1180 Main Street Office Project MND, Redwood City (2019; 19:
- Summit Ridge Wind Farm Request for Amendment 4, Oregon (2019; 46);
- Shafter Warehouse Staff Report (2019; 4);
- Park & Broadway Design Review, San Diego (2019; 19);
- Pinnacle Pacific Heights Design Review, San Diego (2019; 19);
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- Preserve at Torrey Highlands EIR, San Diego (2019; 24);
- Santana West Project EIR Addendum, San Jose (2019; 18);
- The Ranch at Eastvale EIR Addendum, Riverside County (2020; 19);
- Hageman Warehouse IS/MND, Bakersfield (2019; 13);
- Oakley Logistics Center EIR, Antioch (2019; 22);
- 27 South First Street IS, San Jose (2019; 23);
- 2nd replies on Times Mirror Square Project EIR, Los Angeles (2020; 11);
- Replies on Times Mirror Square Project EIR, Los Angeles (2020; 13);
- Times Mirror Square Project EIR, Los Angeles (2019; 18);
- East Monte Vista & Aviator General Plan Amend EIR Addendum, Vacaville (2019; 22);
- Hillcrest LRDP EIR, La Jolla (2019; 36);

- 555 Portola Road CUP, Portola Valley (2019; 11);
- Johnson Drive Economic Development Zone SEIR, Pleasanton (2019; 27);
- 1750 Broadway Project CEQA Exemption, Oakland (2019; 19);
- Mor Furniture Project MND, Murietta Hot Springs (2019; 27);
- Harbor View Project EIR, Redwood City (2019; 26);
- Visalia Logistics Center (2019; 13);
- Cordelia Industrial Buildings MND (2019; 14);
- Scheu Distribution Center IS/ND, Rancho Cucamonga (2019; 13);
- Mills Park Center Staff Report, San Bruno (2019; 22);
- Site visit to Desert Highway Farms IS/MND, Imperial County (2019; 9);
- Desert Highway Farms IS/MND, Imperial County (2019; 12);
- ExxonMobil Interim Trucking for Santa Ynez Unit Restart SEIR, Santa Barbara (2019; 9);
- Olympic Holdings Inland Center Warehouse Project MND, Rancho Cucamonga (2019; 14);
- Replies to responses on Lawrence Equipment Industrial Warehouse, Banning (2019; 19);
- PARS Global Storage MND, Murietta (2019; 13);
- Slover Warehouse EIR Addendum, Fontana (2019; 16);
- Seefried Warehouse Project IS/MND, Lathrop (2019; 19)
- World Logistics Center Site Visit, Moreno Valley (2019; 19);
- Merced Landfill Gas-To-Energy Project IS/MND (2019; 12);
- West Village Expansion FEIR, UC Davis (2019; 11);
- Site visit, Doheny Ocean Desalination EIR, Dana Point (2019; 11);
- Replies to responses on Avalon West Valley Expansion EIR, San Jose (2019; 10);
- Avalon West Valley Expansion EIR, San Jose (2019; 22);
- Sunroad – Otay 50 EIR Addendum, San Diego (2019; 26);
- Del Rey Pointe Residential Project IS/MND, Los Angeles (2019; 34);
- 1 AMD Redevelopment EIR, Sunnyvale (2019; 22);
- Lawrence Equipment Industrial Warehouse IS/MND, Banning (2019; 14);
- SDG Commerce 330 Warehouse IS, American Canyon (2019; 21);
- PAMA Business Center IS/MND, Moreno Valley (2019; 23);
- Cupertino Village Hotel IS (2019; 24);
- Lake House IS/ND, Lodi (2019; 33);
- Campo Wind Project DEIS, San Diego County (DEIS, (2019; 14);
- Stirling Warehouse MND site visit, Victorville (2019; 7);
- Green Valley II Mixed-Use Project EIR, Fairfield (2019; 36);
- We Be Jammin rezone MND, Fresno (2019; 14);
- Gray Whale Cove Pedestrian Crossing IS/ND, Pacifica (2019; 7);
- Visalia Logistics Center & DDG 697V Staff Report (2019; 9);
- Mather South Community Masterplan Project EIR (2019; 35);
- Del Hombre Apartments EIR, Walnut Creek (2019; 23);
- Otay Ranch Planning Area 12 EIR Addendum, Chula Vista (2019; 21);
- The Retreat at Sacramento IS/MND (2019; 26);
- Site visit to Sunroad – Centrum 6 EIR Addendum, San Diego (2019; 9);
- Sunroad – Centrum 6 EIR Addendum, San Diego (2018; 22);
- North First and Brokaw Corporate Campus Buildings EIR Addendum, San Jose (2018; 30);

- South Lake Solar IS, Fresno County (2018; 18);
- Galloo Island Wind Project Application, New York (not submitted) (2018; 44);
- Doheny Ocean Desalination EIR, Dana Point (2018; 15);
- Stirling Warehouse MND, Victorville (2018; 18);
- LDK Warehouse MND, Vacaville (2018; 30);
- Gateway Crossings FEIR, Santa Clara (2018; 23);
- South Hayward Development IS/MND (2018; 9);
- CBU Specific Plan Amendment, Riverside (2018; 27);
- 2nd replies to responses on Dove Hill Road Assisted Living Project MND (2018; 11);
- Replies to responses on Dove Hill Road Assisted Living Project MND (2018; 7);
- Dove Hill Road Assisted Living Project MND (2018; 12);
- Deer Ridge/Shadow Lakes Golf Course EIR, Brentwood (2018; 21);
- Pyramid Asphalt BLM Finding of No Significance, Imperial County (2018; 22);
- Amáre Apartments IS/MND, Martinez (2018; 15);
- Petaluma Hill Road Cannabis MND, Santa Rosa (2018; 21);
- 2nd comments on Zeiss Innovation Center IS/MND, Dublin (2018: 12);
- Zeiss Innovation Center IS/MND, Dublin (2018: 32);
- City of Hope Campus Plan EIR, Duarte (2018; 21);
- Palo Verde Center IS/MND, Blythe (2018; 14);
- Logisticenter at Vacaville MND (2018; 24);
- IKEA Retail Center SEIR, Dublin (2018; 17);
- Merge 56 EIR, San Diego (2018; 15);
- Natomas Crossroads Quad B Office Project P18-014 EIR, Sacramento (2018; 12);
- 2900 Harbor Bay Parkway Staff Report, Alameda (2018; 30);
- At Dublin EIR, Dublin (2018; 25);
- Fresno Industrial Rezone Amendment Application No. 3807 IS (2018; 10);
- Nova Business Park IS/MND, Napa (2018; 18);
- Updated Collision Risk Model Priors for Estimating Eagle Fatalities, USFWS (2018; 57);
- 750 Marlborough Avenue Warehouse MND, Riverside (2018; 14);
- Replies to responses on San Bernardino Logistics Center IS (2018; 12);
- San Bernardino Logistics Center IS (2018; 19);
- CUP2017-16, Costco IS/MND, Clovis (2018; 11);
- Desert Land Ventures Specific Plan EIR, Desert Hot Springs (2018; 18);
- Ventura Hilton IS/MND (2018; 30);
- North of California Street Master Plan Project IS, Mountain View (2018: 11);
- Tamarind Warehouse MND, Fontana (2018; 16);
- Lathrop Gateway Business Park EIR Addendum (2018; 23);
- Centerpointe Commerce Center IS, Moreno Valley (2019; 18);
- Amazon Warehouse Notice of Exemption, Bakersfield (2018; 13);
- CenterPoint Building 3 project Staff Report, Manteca (2018; 23);
- Cessna & Aviator Warehouse IS/MND, Vacaville (2018; 24);
- Napa Airport Corporate Center EIR, American Canyon (2018, 15);
- 800 Opal Warehouse Initial Study, Mentone, San Bernardino County (2018; 18);
- 2695 W. Winton Ave Industrial Project IS, Hayward (2018; 22);

- Trinity Cannabis Cultivation and Manufacturing Facility DEIR, Calexico (2018; 15);
- Shoe Palace Expansion IS/MND, Morgan Hill (2018; 21);
- Newark Warehouse at Morton Salt Plant Staff Report (2018; 15);
- Northlake Specific Plan FEIR "Peer Review", Los Angeles County (2018; 9);
- Replies to responses on Northlake Specific Plan SEIR, Los Angeles County (2018; 13);
- Northlake Specific Plan SEIR, Los Angeles County (2017; 27);
- Bogle Wind Turbine DEIR, east Yolo County (2017; 48);
- Ferrante Apartments IS/MND, Los Angeles (2017; 14);
- The Villages of Lakeview EIR, Riverside (2017; 28);
- Data Needed for Assessing Trail Management Impacts on Northern Spotted Owl, Marin County (2017; 5);
- Notes on Proposed Study Options for Trail Impacts on Northern Spotted Owl (2017; 4);
- Pyramid Asphalt IS, Imperial County (Declaration) (2017; 5);
- San Gorgonio Crossings EIR, Riverside County (2017; 22);
- Replies to responses on Jupiter Project IS and MND, Apple Valley (2017; 12);
- Proposed World Logistics Center Mitigation Measures, Moreno Valley (2017, 2019; 12);
- MacArthur Transit Village Project Modified 2016 CEQA Analysis (2017; 12);
- PG&E Company Bay Area Operations and Maintenance HCP (2017; 45);
- Central SoMa Plan DEIR (2017; 14);
- Suggested mitigation for trail impacts on northern spotted owl, Marin County (2016; 5);
- Colony Commerce Center Specific Plan DEIR, Ontario (2016; 16);
- Fairway Trails Improvements MND, Marin County (2016; 13);
- Review of Avian-Solar Science Plan (2016; 28);
- Replies on Pyramid Asphalt IS, Imperial County (2016; 5);
- Pyramid Asphalt IS, Imperial County (2016; 4);
- Agua Mansa Distribution Warehouse Project Initial Study (2016; 14);
- Santa Anita Warehouse MND, Rancho Cucamonga (2016; 12);
- CapRock Distribution Center III DEIR, Rialto (2016: 12);
- Orange Show Logistics Center IS/MND, San Bernardino (2016; 9);
- City of Palmdale Oasis Medical Village Project IS/MND (2016; 7);
- Comments on proposed rule for incidental eagle take, USFWS (2016, 49);
- Replies on Grapevine Specific and Community Plan FEIR, Kern County (2016; 25);
- Grapevine Specific and Community Plan DEIR, Kern County (2016; 15);
- Clinton County Zoning Ordinance for Wind Turbine siting (2016);
- Hallmark at Shenandoah Warehouse Project Initial Study, San Bernardino (2016; 6);
- Tri-City Industrial Complex Initial Study, San Bernardino (2016; 5);
- Hidden Canyon Industrial Park Plot Plan 16-PP-02, Beaumont (2016; 12);
- Kimball Business Park DEIR (2016; 10);
- Jupiter Project IS and MND, Apple Valley, San Bernardino County (2016; 9);
- Revised Draft Giant Garter Snake Recovery Plan of 2015 (2016, 18);
- Palo Verde Mesa Solar Project EIR, Blythe (2016; 27);
- Reply on Fairview Wind Project Natural Heritage Assessment, Ontario, Canada (2016; 14);
- Fairview Wind Project Natural Heritage Assessment, Ontario, Canada (2016; 41);
- Reply on Amherst Island Wind Farm Natural Heritage Assessment, Ontario (2015, 38);

- Amherst Island Wind Farm Natural Heritage Assessment, Ontario (2015, 31);
- Second Reply on White Pines Wind Farm, Ontario (2015, 6);
- Reply on White Pines Wind Farm Natural Heritage Assessment, Ontario (2015, 10);
- White Pines Wind Farm Natural Heritage Assessment, Ontario (2015, 9);
- Proposed Section 24 Specific Plan Agua Caliente Band of Cahuilla Indians DEIS (2015, 9);
- Replies on 24 Specific Plan Agua Caliente Band of Cahuilla Indians FEIS (2015, 6);
- Sierra Lakes Commerce Center Project DEIR, Fontana (2015, 9);
- Columbia Business Center MND, Riverside (2015; 8);
- West Valley Logistics Center Specific Plan DEIR, Fontana (2015, 10);
- Willow Springs Solar Photovoltaic Project DEIR (2015, 28);
- Alameda Creek Bridge Replacement Project DEIR (2015, 10);
- World Logistic Center Specific Plan FEIR, Moreno Valley (2015, 12);
- Elkhorn Valley Wind Power Project Impacts, Oregon (2015; 143);
- Bay Delta Conservation Plan EIR/EIS, Sacramento (2014, 21);
- Addison Wind Energy Project DEIR, Mojave (2014, 32);
- Replies on the Addison Wind Energy Project DEIR, Mojave (2014, 15);
- Addison and Rising Tree Wind Energy Project FEIR, Mojave (2014, 12);
- Palen Solar Electric Generating System FSA (CEC), Blythe (2014, 20);
- Rebuttal testimony on Palen Solar Energy Generating System (2014, 9);
- Seven Mile Hill and Glenrock/Rolling Hills impacts + Addendum, Wyoming (2014; 105);
- Rising Tree Wind Energy Project DEIR, Mojave (2014, 32);
- Replies on the Rising Tree Wind Energy Project DEIR, Mojave (2014, 15);
- Soitec Solar Development Project PEIR, Boulevard, San Diego County (2014, 18);
- Oakland Zoo expansion on Alameda whipsnake and California red-legged frog (2014; 3);
- Alta East Wind Energy Project FEIS, Tehachapi Pass (2013, 23);
- Blythe Solar Power Project Staff Assessment, California Energy Commission (2013, 16);
- Clearwater and Yakima Solar Projects DEIR, Kern County (2013, 9);
- West Antelope Solar Energy Project IS/MND, Antelope Valley (2013, 18);
- Cuyama Solar Project DEIR, Carrizo Plain (2014, 19);
- Desert Renewable Energy Conservation Plan (DRECP) EIR/EIS (2015, 49);
- Kingbird Solar Photovoltaic Project EIR, Kern County (2013, 19);
- Lucerne Valley Solar Project IS/MND, San Bernardino County (2013, 12);
- Tule Wind project FEIR/FEIS (Declaration) (2013; 31);
- Sunlight Partners LANDPRO Solar Project MND (2013; 11);
- Declaration in opposition to BLM fracking (2013; 5);
- Blythe Energy Project (solar) CEC Staff Assessment (2013;16);
- Rosamond Solar Project EIR Addendum, Kern County (2013; 13);
- Pioneer Green Solar Project EIR, Bakersfield (2013; 13);
- Replies on Soccer Center Solar Project MND (2013; 6);
- Soccer Center Solar Project MND, Lancaster (2013; 10);
- Plainview Solar Works MND, Lancaster (2013; 10);
- Alamo Solar Project MND, Mojave Desert (2013; 15);
- Replies on Imperial Valley Solar Company 2 Project (2013; 10);
- Imperial Valley Solar Company 2 Project (2013; 13);

- FRV Orion Solar Project DEIR, Kern County (PP12232) (2013; 9);
- Casa Diablo IV Geothermal Development Project (2013; 6);
- Reply on Casa Diablo IV Geothermal Development Project (2013; 8);
- Alta East Wind Project FEIS, Tehachapi Pass (2013; 23);
- Metropolitan Air Park DEIR, City of San Diego (2013;);
- Davidon Homes Tentative Subdivision Rezoning Project DEIR, Petaluma (2013; 9);
- Oakland Zoo Expansion Impacts on Alameda Whipsnake (2013; 10);
- Campo Verde Solar project FEIR, Imperial Valley (2013; 11pp);
- Neg Dec comments on Davis Sewer Trunk Rehabilitation (2013; 8);
- North Steens Transmission Line FEIS, Oregon (Declaration) (2012; 62);
- Summer Solar and Springtime Solar Projects IS/MND Lancaster (2012; 8);
- J&J Ranch, 24 Adobe Lane Environmental Review, Orinda (2012; 14);
- Replies on Hudson Ranch Power II Geothermal Project and Simbol Calipatria Plant II (2012; 8);
- Hudson Ranch Power II Geothermal Project and Simbol Calipatria Plant II (2012; 9);
- Desert Harvest Solar Project EIS, near Joshua Tree (2012; 15);
- Solar Gen 2 Array Project DEIR, El Centro (2012; 16);
- Ocotillo Sol Project EIS, Imperial Valley (2012; 4);
- Beacon Photovoltaic Project DEIR, Kern County (2012; 5);
- Butte Water District 2012 Water Transfer Program IS/MND (2012; 11);
- Mount Signal and Calexico Solar Farm Projects DEIR (2011; 16);
- City of Elk Grove Sphere of Influence EIR (2011; 28);
- Sutter Landing Park Solar Photovoltaic Project MND, Sacramento (2011; 9);
- Rabik/Gudath Project, 22611 Coleman Valley Road, Bodega Bay (CPN 10-0002) (2011; 4);
- Ivanpah Solar Electric Generating System (ISEGS) (Declaration) (2011; 9);
- Draft Eagle Conservation Plan Guidance, USFWS (2011; 13);
- Niles Canyon Safety Improvement Project EIR/EA (2011; 16);
- Route 84 Safety Improvement Project (Declaration) (2011; 7);
- Rebuttal on Whistling Ridge Wind Energy Power DEIS, Skamania County, (2010; 6);
- Whistling Ridge Wind Energy Power DEIS, Skamania County, Washington (2010; 41);
- Klickitat County's Decisions on Windy Flats West Wind Energy Project (2010; 17);
- St. John's Church Project DEIR, Orinda (2010; 14);
- Results Radio Zone File #2009-001 IS/MND, Conaway site, Davis (2010; 20);
- Rio del Oro Specific Plan Project FEIR, Rancho Cordova (2010;12);
- Results Radio Zone File #2009-001, Mace Blvd site, Davis (2009; 10);
- Answers to Questions on 33% RPS Implementation Analysis Preliminary Results Report (2009; 9);
- SEPA Determination of Non-significance regarding zoning adjustments for Skamania County, Washington (Second Declaration) (2008; 17);
- Draft 1A Summary Report to CAISO (2008; 10);
- Hilton Manor Project Categorical Exemption, County of Placer (2009; 9);
- Protest of CARE to Amendment to the Power Purchase and Sale Agreement for Procurement of Eligible Renewable Energy Resources Between Hatchet Ridge Wind LLC and PG&E (2009; 3);

- Tehachapi Renewable Transmission Project EIR/EIS (2009; 142);
- Delta Shores Project EIR, south Sacramento (2009; 11 + addendum 2);
- Declaration in Support of Care's Petition to Modify D.07-09-040 (2008; 3);
- The Public Utility Commission's Implementation Analysis December 16 Workshop for the Governor's Executive Order S-14-08 to implement a 33% Renewable Portfolio Standard by 2020 (2008; 9);
- The Public Utility Commission's Implementation Analysis Draft Work Plan for the Governor's Executive Order S-14-08 to implement a 33% Renewable Portfolio Standard by 2020 (2008; 11);
- Draft 1A Summary Report to California Independent System Operator for Planning Reserve Margins (PRM) Study (2008; 7.);
- SEPA Determination of Non-significance regarding zoning adjustments for Skamania County, Washington (Declaration) (2008; 16);
- Colusa Generating Station, California Energy Commission PSA (2007; 24);
- Rio del Oro Specific Plan Project Recirculated DEIR, Mather (2008: 66);
- Replies on Regional University Specific Plan EIR, Roseville (2008; 20);
- Regional University Specific Plan EIR, Roseville (2008: 33);
- Clark Precast, LLC's "Sugarland" project, ND, Woodland (2008: 15);
- Cape Wind Project DEIS, Nantucket (2008; 157);
- Yuba Highlands Specific Plan EIR, Spenceville, Yuba County (2006; 37);
- Replies to responses on North Table Mountain MND, Butte County (2006; 5);
- North Table Mountain MND, Butte County (2006; 15);
- Windy Point Wind Farm EIS (2006; 14 and Powerpoint slide replies);
- Shiloh I Wind Power Project EIR, Rio Vista (2005; 18);
- Buena Vista Wind Energy Project NOP, Byron (2004; 15);
- Callahan Estates Subdivision ND, Winters (2004; 11);
- Winters Highlands Subdivision IS/ND (2004; 9);
- Winters Highlands Subdivision IS/ND (2004; 13);
- Creekside Highlands Project, Tract 7270 ND (2004; 21);
- Petition to California Fish and Game Commission to list Burrowing Owl (2003; 10);
- Altamont Pass Wind Resource Area CUP renewals, Alameda County (2003; 41);
- UC Davis Long Range Development Plan: Neighborhood Master Plan (2003; 23);
- Anderson Marketplace Draft Environmental Impact Report (2003; 18);
- Negative Declaration of the proposed expansion of Temple B'nai Tikyah (2003; 6);
- Antonio Mountain Ranch Specific Plan Public Draft EIR (2002; 23);
- Replies on East Altamont Energy Center evidentiary hearing (2002; 9);
- Revised Draft Environmental Impact Report, The Promenade (2002; 7);
- Recirculated Initial Study for Calpine's proposed Pajaro Valley Energy Center (2002; 3);
- UC Merced -- Declaration (2002; 5);
- Replies on Atwood Ranch Unit III Subdivision FEIR (2003; 22);
- Atwood Ranch Unit III Subdivision EIR (2002; 19);
- California Energy Commission Staff Report on GWF Tracy Peaker Project (2002; 20);
- Silver Bend Apartments IS/MND, Placer County (2002; 13);
- UC Merced Long-range Development Plan DEIR and UC Merced Community Plan DEIR (2001; 26);

- Colusa County Power Plant IS, Maxwell (2001; 6);
- Dog Park at Catlin Park, Folsom, California (2001; 5);
- Calpine and Bechtel Corporations' Biological Resources Implementation and Monitoring Program (BRMIMP) for the Metcalf Energy Center (2000; 10);
- Metcalf Energy Center, California Energy Commission FSA (2000);
- US Fish and Wildlife Service Section 7 consultation with the California Energy Commission regarding Calpine and Bechtel Corporations' Metcalf Energy Center (2000; 4);
- California Energy Commission's Preliminary Staff Assessment of the proposed Metcalf Energy Center (2000: 11);
- Site-specific management plans for the Natomas Basin Conservancy's mitigation lands, prepared by Wildlands, Inc. (2000: 7);
- Affidavit of K. Shawn Smallwood in Spirit of the Sage Council, et al. (Plaintiffs) vs. Bruce Babbitt, Secretary, U.S. Department of the Interior, et al. (Defendants), Injuries caused by the No Surprises policy and final rule which codifies that policy (1999: 9).
- California Board of Forestry's proposed amended Forest Practices Rules (1999);
- Sunset Skyranch Airport Use Permit IS/MND (1999);
- Ballona West Bluffs Project Environmental Impact Report (1999; oral presentation);
- Draft Recovery Plan for Giant Garter Snake (Fed. Reg. 64(176): 49497-49498) (1999; 8);
- Draft Recovery Plan for Arroyo Southwestern Toad (1998);
- Pacific Lumber Co. (Headwaters) HCP & EIR, Fortuna (1998; 28);
- Natomas Basin HCP Permit Amendment, Sacramento (1998);
- San Diego Multi-Species Conservation Program FEIS/FEIR (1997; 10);

Comments on other Environmental Review Documents:

- Proposed Regulation for California Fish and Game Code Section 3503.5 (2015: 12);
- Statement of Overriding Considerations related to extending Altamont Winds, Inc.'s Conditional Use Permit PLN2014-00028 (2015; 8);
- Covell Village PEIR, Davis (2005; 19);
- Bureau of Land Management Wind Energy Programmatic EIS Scoping (2003; 7.);
- NEPA Environmental Analysis for Biosafety Level 4 National Biocontainment Laboratory (NBL) at UC Davis (2003: 7);
- Notice of Preparation of UC Merced Community and Area Plan EIR, on behalf of The Wildlife Society—Western Section (2001: 8.);
- Preliminary Draft Yolo County Habitat Conservation Plan (2001; 2 letters totaling 35.);
- Merced County General Plan Revision, notice of Negative Declaration (2001: 2.);
- Notice of Preparation of Campus Parkway EIR/EIS (2001: 7.);
- Draft Recovery Plan for the bighorn sheep in the Peninsular Range (*Ovis candensis*) (2000);
- Draft Recovery Plan for the California Red-legged Frog (*Rana aurora draytonii*), on behalf of The Wildlife Society—Western Section (2000: 10.);
- Sierra Nevada Forest Plan Amendment Draft Environmental Impact Statement, on behalf of The Wildlife Society—Western Section (2000: 7.);
- State Water Project Supplemental Water Purchase Program, Draft Program EIR (1997);
- Davis General Plan Update EIR (2000);
- Turn of the Century EIR (1999: 10);

- Proposed termination of Critical Habitat Designation under the Endangered Species Act (Fed. Reg. 64(113): 31871-31874) (1999);
- NOA Draft Addendum to the Final Handbook for Habitat Conservation Planning and Incidental Take Permitting Process, termed the HCP 5-Point Policy Plan (Fed. Reg. 64(45): 11485 - 11490) (1999; 2 + attachments);
- Covell Center Project EIR and EIR Supplement (1997).

Position Statements I prepared the following position statements for the Western Section of The Wildlife Society, and one for nearly 200 scientists:

- Recommended that the California Department of Fish and Game prioritize the extermination of the introduced southern water snake in northern California. The Wildlife Society--Western Section (2001);
- Recommended that The Wildlife Society—Western Section appoint or recommend members of the independent scientific review panel for the UC Merced environmental review process (2001);
- Opposed the siting of the University of California's 10th campus on a sensitive vernal pool/grassland complex east of Merced. The Wildlife Society--Western Section (2000);
- Opposed the legalization of ferret ownership in California. The Wildlife Society--Western Section (2000);
- Opposed the Proposed "No Surprises," "Safe Harbor," and "Candidate Conservation Agreement" rules, including permit-shield protection provisions (Fed. Reg. Vol. 62, No. 103, pp. 29091-29098 and No. 113, pp. 32189-32194). This statement was signed by 188 scientists and went to the responsible federal agencies, as well as to the U.S. Senate and House of Representatives.

Posters at Professional Meetings

Leyvas, E. and K. S. Smallwood. 2015. Rehabilitating injured animals to offset and rectify wind project impacts. Conference on Wind Energy and Wildlife Impacts, Berlin, Germany, 9-12 March 2015.

Smallwood, K. S., J. Mount, S. Standish, E. Leyvas, D. Bell, E. Walther, B. Karas. 2015. Integrated detection trials to improve the accuracy of fatality rate estimates at wind projects. Conference on Wind Energy and Wildlife Impacts, Berlin, Germany, 9-12 March 2015.

Smallwood, K. S. and C. G. Thelander. 2005. Lessons learned from five years of avian mortality research in the Altamont Pass WRA. AWEA conference, Denver, May 2005.

Neher, L., L. Wilder, J. Woo, L. Spiegel, D. Yen-Nakafugi, and K.S. Smallwood. 2005. Bird's eye view on California wind. AWEA conference, Denver, May 2005.

Smallwood, K. S., C. G. Thelander and L. Spiegel. 2003. Toward a predictive model of avian fatalities in the Altamont Pass Wind Resource Area. Windpower 2003 Conference and Convention, Austin, Texas.

Smallwood, K.S. and Eva Butler. 2002. Pocket Gopher Response to Yellow Star-thistle Eradication as part of Grassland Restoration at Decommissioned Mather Air Force Base, Sacramento County,

California. White Mountain Research Station Open House, Barcroft Station.

Smallwood, K.S. and Michael L. Morrison. 2002. Fresno kangaroo rat (*Dipodomys nitratoides*) Conservation Research at Resources Management Area 5, Lemoore Naval Air Station. White Mountain Research Station Open House, Barcroft Station.

Smallwood, K.S. and E.L. Fitzhugh. 1989. Differentiating mountain lion and dog tracks. Third Mountain Lion Workshop, Prescott, AZ.

Smith, T. R. and K. S. Smallwood. 2000. Effects of study area size, location, season, and allometry on reported *Sorex* shrew densities. Annual Meeting of the Western Section of The Wildlife Society.

Presentations at Professional Meetings and Seminars

Long-Term Population Trend of Burrowing Owls in the Altamont. Golden Gate Audubon, 21 October 2020.

Long-Term Population Trend of Burrowing Owls in the Altamont. East Bay Regional Park District 2020 Stewardship Seminar, Oakland, California, 18 November 2020.

Smallwood, K.S., D.A. Bell, and S, Standish. Dogs detect larger wind energy effects on bats and birds. The Wildlife Society, 28 September 2020.

Smallwood, K.S. and D.A. Bell. Effects of wind turbine curtailment on bird and bat fatalities in the Altamont Pass Wind Resource Area. The Wildlife Society, 28 September 2020.

Smallwood, K.S., D.A. Bell, and S, Standish. Dogs detect larger wind energy effects on bats and birds. The Wildlife Survey, 7 February 2020.

Smallwood, K.S. and D.A. Bell. Effects of wind turbine curtailment on bird and bat fatalities in the Altamont Pass Wind Resource Area. The Wildlife Survey, 7 February 2020.

Dog detections of bat and bird fatalities at wind farms in the Altamont Pass Wind Resource Area. East Bay Regional Park District 2019 Stewardship Seminar, Oakland, California, 13 November 2019.

Repowering the Altamont Pass. Altamont Symposium, The Wildlife Society – Western Section, 5 February 2017.

Developing methods to reduce bird mortality in the Altamont Pass Wind Resource Area, 1999-2007. Altamont Symposium, The Wildlife Society – Western Section, 5 February 2017.

Conservation and recovery of burrowing owls in Santa Clara Valley. Santa Clara Valley Habitat Agency, Newark, California, 3 February 2017.

Mitigation of Raptor Fatalities in the Altamont Pass Wind Resource Area. Raptor Research Foundation Meeting, Sacramento, California, 6 November 2015.

From burrows to behavior: Research and management for burrowing owls in a diverse landscape. California Burrowing Owl Consortium meeting, 24 October 2015, San Jose, California.

The Challenges of repowering. Keynote presentation at Conference on Wind Energy and Wildlife Impacts, Berlin, Germany, 10 March 2015.

Research Highlights Altamont Pass 2011-2015. Scientific Review Committee, Oakland, California, 8 July 2015.

Siting wind turbines to minimize raptor collisions: Altamont Pass Wind Resource Area. US Fish and Wildlife Service Golden Eagle Working Group, Sacramento, California, 8 January 2015.

Evaluation of nest boxes as a burrowing owl conservation strategy. Sacramento Chapter of the Western Section, The Wildlife Society. Sacramento, California, 26 August 2013.

Predicting collision hazard zones to guide repowering of the Altamont Pass. Conference on wind power and environmental impacts. Stockholm, Sweden, 5-7 February 2013.

Impacts of Wind Turbines on Wildlife. California Council for Wildlife Rehabilitators, Yosemite, California, 12 November 2012.

Impacts of Wind Turbines on Birds and Bats. Madrone Audubon Society, Santa Rosa, California, 20 February 2012.

Comparing Wind Turbine Impacts across North America. California Energy Commission Staff Workshop: Reducing the Impacts of Energy Infrastructure on Wildlife, 20 July 2011.

Siting Repowered Wind Turbines to Minimize Raptor Collisions. California Energy Commission Staff Workshop: Reducing the Impacts of Energy Infrastructure on Wildlife, 20 July 2011.

Siting Repowered Wind Turbines to Minimize Raptor Collisions. Alameda County Scientific Review Committee meeting, 17 February 2011

Comparing Wind Turbine Impacts across North America. Conference on Wind energy and Wildlife impacts, Trondheim, Norway, 3 May 2011.

Update on Wildlife Impacts in the Altamont Pass Wind Resource Area. Raptor Symposium, The Wildlife Society—Western Section, Riverside, California, February 2011.

Siting Repowered Wind Turbines to Minimize Raptor Collisions. Raptor Symposium, The Wildlife Society - Western Section, Riverside, California, February 2011.

Wildlife mortality caused by wind turbine collisions. Ecological Society of America, Pittsburgh, Pennsylvania, 6 August 2010.

Map-based repowering and reorganization of a wind farm to minimize burrowing owl fatalities. California burrowing Owl Consortium Meeting, Livermore, California, 6 February 2010.

Environmental barriers to wind power. Getting Real About Renewables: Economic and Environmental Barriers to Biofuels and Wind Energy. A symposium sponsored by the Environmental & Energy Law & Policy Journal, University of Houston Law Center, Houston, 23 February 2007.

Lessons learned about bird collisions with wind turbines in the Altamont Pass and other US wind farms. Meeting with Japan Ministry of the Environment and Japan Ministry of the Economy, Wild Bird Society of Japan, and other NGOs Tokyo, Japan, 9 November 2006.

Lessons learned about bird collisions with wind turbines in the Altamont Pass and other US wind farms. Symposium on bird collisions with wind turbines. Wild Bird Society of Japan, Tokyo, Japan, 4 November 2006.

Responses of Fresno kangaroo rats to habitat improvements in an adaptive management framework. California Society for Ecological Restoration (SERCAL) 13th Annual Conference, UC Santa Barbara, 27 October 2006.

Fatality associations as the basis for predictive models of fatalities in the Altamont Pass Wind Resource Area. EEI/APLIC/PIER Workshop, 2006 Biologist Task Force and Avian Interaction with Electric Facilities Meeting, Pleasanton, California, 28 April 2006.

Burrowing owl burrows and wind turbine collisions in the Altamont Pass Wind Resource Area. The Wildlife Society - Western Section Annual Meeting, Sacramento, California, February 8, 2006.

Mitigation at wind farms. Workshop: Understanding and resolving bird and bat impacts. American Wind Energy Association and Audubon Society. Los Angeles, CA. January 10 and 11, 2006.

Incorporating data from the California Wildlife Habitat Relationships (CWHR) system into an impact assessment tool for birds near wind farms. Shawn Smallwood, Kevin Hunting, Marcus Yee, Linda Spiegel, Monica Parisi. Workshop: Understanding and resolving bird and bat impacts. American Wind Energy Association and Audubon Society. Los Angeles, CA. January 10 and 11, 2006.

Toward indicating threats to birds by California's new wind farms. California Energy Commission, Sacramento, May 26, 2005.

Avian collisions in the Altamont Pass. California Energy Commission, Sacramento, May 26, 2005.

Ecological solutions for avian collisions with wind turbines in the Altamont Pass Wind Resource Area. EPRI Environmental Sector Council, Monterey, California, February 17, 2005.

Ecological solutions for avian collisions with wind turbines in the Altamont Pass Wind Resource Area. The Wildlife Society—Western Section Annual Meeting, Sacramento, California, January 19, 2005.

Associations between avian fatalities and attributes of electric distribution poles in California. The Wildlife Society - Western Section Annual Meeting, Sacramento, California, January 19, 2005.

Minimizing avian mortality in the Altamont Pass Wind Resources Area. UC Davis Wind Energy Collaborative Forum, Palm Springs, California, December 14, 2004.

Selecting electric distribution poles for priority retrofitting to reduce raptor mortality. Raptor Research Foundation Meeting, Bakersfield, California, November 10, 2004.

Responses of Fresno kangaroo rats to habitat improvements in an adaptive management framework. Annual Meeting of the Society for Ecological Restoration, South Lake Tahoe, California, October 16, 2004.

Lessons learned from five years of avian mortality research at the Altamont Pass Wind Resources Area in California. The Wildlife Society Annual Meeting, Calgary, Canada, September 2004.

The ecology and impacts of power generation at Altamont Pass. Sacramento Petroleum Association, Sacramento, California, August 18, 2004.

Burrowing owl mortality in the Altamont Pass Wind Resource Area. California Burrowing Owl Consortium meeting, Hayward, California, February 7, 2004.

Burrowing owl mortality in the Altamont Pass Wind Resource Area. California Burrowing Owl Symposium, Sacramento, November 2, 2003.

Raptor Mortality at the Altamont Pass Wind Resource Area. National Wind Coordinating Committee, Washington, D.C., November 17, 2003.

Raptor Behavior at the Altamont Pass Wind Resource Area. Annual Meeting of the Raptor Research Foundation, Anchorage, Alaska, September, 2003.

Raptor Mortality at the Altamont Pass Wind Resource Area. Annual Meeting of the Raptor Research Foundation, Anchorage, Alaska, September, 2003.

California mountain lions. Ecological & Environmental Issues Seminar, Department of Biology, California State University, Sacramento, November, 2000.

Intra- and inter-turbine string comparison of fatalities to animal burrow densities at Altamont Pass. National Wind Coordinating Committee, Carmel, California, May, 2000.

Using a Geographic Positioning System (GPS) to map wildlife and habitat. Annual Meeting of the Western Section of The Wildlife Society, Riverside, CA, January, 2000.

Suggested standards for science applied to conservation issues. Annual Meeting of the Western Section of The Wildlife Society, Riverside, CA, January, 2000.

The indicators framework applied to ecological restoration in Yolo County, California. Society for Ecological Restoration, September 25, 1999.

Ecological restoration in the context of animal social units and their habitat areas. Society for Ecological Restoration, September 24, 1999.

Relating Indicators of Ecological Health and Integrity to Assess Risks to Sustainable Agriculture and Native Biota. International Conference on Ecosystem Health, August 16, 1999.

A crosswalk from the Endangered Species Act to the HCP Handbook and real HCPs. Southern California Edison, Co. and California Energy Commission, March 4-5, 1999.

Mountain lion track counts in California: Implications for Management. Ecological & Environmental Issues Seminar, Department of Biological Sciences, California State University, Sacramento, November 4, 1998.

"No Surprises" -- Lack of science in the HCP process. California Native Plant Society Annual Conservation Conference, The Presidio, San Francisco, September 7, 1997.

In Your Interest. A half hour weekly show aired on Channel 10 Television, Sacramento. In this episode, I served on a panel of experts discussing problems with the implementation of the Endangered Species Act. Aired August 31, 1997.

Spatial scaling of pocket gopher (*Geomyidae*) density. Southwestern Association of Naturalists 44th Meeting, Fayetteville, Arkansas, April 10, 1997.

Estimating prairie dog and pocket gopher burrow volume. Southwestern Association of Naturalists 44th Meeting, Fayetteville, Arkansas, April 10, 1997.

Ten years of mountain lion track survey. Fifth Mountain Lion Workshop, San Diego, February 27, 1996.

Study and interpretive design effects on mountain lion density estimates. Fifth Mountain Lion Workshop, San Diego, February 27, 1996.

Small animal control. Session moderator and speaker at the California Farm Conference, Sacramento, California, Feb. 28, 1995.

Small animal control. Ecological Farming Conference, Asylomar, California, Jan. 28, 1995.

Habitat associations of the Swainson's Hawk in the Sacramento Valley's agricultural landscape. 1994 Raptor Research Foundation Meeting, Flagstaff, Arizona.

Alfalfa as wildlife habitat. Seed Industry Conference, Woodland, California, May 4, 1994.

Habitats and vertebrate pests: impacts and management. Managing Farmland to Bring Back Game Birds and Wildlife to the Central Valley. Yolo County Resource Conservation District, U.C. Davis, February 19, 1994.

Management of gophers and alfalfa as wildlife habitat. Orland Alfalfa Production Meeting and Sacramento Valley Alfalfa Production Meeting, February 1 and 2, 1994.

Patterns of wildlife movement in a farming landscape. Wildlife and Fisheries Biology Seminar

Series: Recent Advances in Wildlife, Fish, and Conservation Biology, U.C. Davis, Dec. 6, 1993.

Alfalfa as wildlife habitat. California Alfalfa Symposium, Fresno, California, Dec. 9, 1993.

Management of pocket gophers in Sacramento Valley alfalfa. California Alfalfa Symposium, Fresno, California, Dec. 8, 1993.

Association analysis of raptors in a farming landscape. Plenary speaker at Raptor Research Foundation Meeting, Charlotte, North Carolina, Nov. 6, 1993.

Landscape strategies for biological control and IPM. Plenary speaker, International Conference on Integrated Resource Management and Sustainable Agriculture, Beijing, China, Sept. 11, 1993.

Landscape Ecology Study of Pocket Gophers in Alfalfa. Alfalfa Field Day, U.C. Davis, July 1993.

Patterns of wildlife movement in a farming landscape. Spatial Data Analysis Colloquium, U.C. Davis, August 6, 1993.

Sound stewardship of wildlife. Veterinary Medicine Seminar: Ethics of Animal Use, U.C. Davis. May 1993.

Landscape ecology study of pocket gophers in alfalfa. Five County Grower's Meeting, Tracy, California. February 1993.

Turbulence and the community organizers: The role of invading species in ordering a turbulent system, and the factors for invasion success. Ecology Graduate Student Association Colloquium, U.C. Davis. May 1990.

Evaluation of exotic vertebrate pests. Fourteenth Vertebrate Pest Conference, Sacramento, California. March 1990.

Analytical methods for predicting success of mammal introductions to North America. The Western Section of the Wildlife Society, Hilo, Hawaii. February 1988.

A state-wide mountain lion track survey. Sacramento County Dept Parks and Recreation. April 1986.

The mountain lion in California. Davis Chapter of the Audubon Society. October 1985.

Ecology Graduate Student Seminars, U.C. Davis, 1985-1990: Social behavior of the mountain lion; Mountain lion control; Political status of the mountain lion in California.

Other forms of Participation at Professional Meetings

- Scientific Committee, Conference on Wind energy and Wildlife impacts, Berlin, Germany, March 2015.

- Scientific Committee, Conference on Wind energy and Wildlife impacts, Stockholm,

Sweden, February 2013.

- Workshop co-presenter at Birds & Wind Energy Specialist Group (BAWESG) Information sharing week, Bird specialist studies for proposed wind energy facilities in South Africa, Endangered Wildlife Trust, Darling, South Africa, 3-7 October 2011.

- Scientific Committee, Conference on Wind energy and Wildlife impacts, Trondheim, Norway, 2-5 May 2011.

- Chair of Animal Damage Management Session, The Wildlife Society, Annual Meeting, Reno, Nevada, September 26, 2001.

- Chair of Technical Session: Human communities and ecosystem health: Comparing perspectives and making connection. Managing for Ecosystem Health, International Congress on Ecosystem Health, Sacramento, CA August 15-20, 1999.

- Student Awards Committee, Annual Meeting of the Western Section of The Wildlife Society, Riverside, CA, January, 2000.

- Student Mentor, Annual Meeting of the Western Section of The Wildlife Society, Riverside, CA, January, 2000.

Printed Mass Media

Smallwood, K.S., D. Mooney, and M. McGuinness. 2003. We must stop the UCD biolab now. Op-Ed to the Davis Enterprise.

Smallwood, K.S. 2002. Spring Lake threatens Davis. Op-Ed to the Davis Enterprise.

Smallwood, K.S. Summer, 2001. Mitigation of habitation. The Flatlander, Davis, California.

Entrikan, R.K. and K.S. Smallwood. 2000. Measure O: Flawed law would lock in new taxes. Op-Ed to the Davis Enterprise.

Smallwood, K.S. 2000. Davis delegation lobbies Congress for Wildlife conservation. Op-Ed to the Davis Enterprise.

Smallwood, K.S. 1998. Davis Visions. The Flatlander, Davis, California.

Smallwood, K.S. 1997. Last grab for Yolo's land and water. The Flatlander, Davis, California.

Smallwood, K.S. 1997. The Yolo County HCP. Op-Ed to the Davis Enterprise.

Radio/Television

PBS News Hour,

FOX News, Energy in America: Dead Birds Unintended Consequence of Wind Power

Development, August 2011.

KXJZ Capital Public Radio -- Insight (Host Jeffrey Callison). Mountain lion attacks (with guest Professor Richard Coss). 23 April 2009;

KXJZ Capital Public Radio -- Insight (Host Jeffrey Callison). Wind farm Rio Vista Renewable Power. 4 September 2008;

KQED QUEST Episode #111. Bird collisions with wind turbines. 2007;

KDVS Speaking in Tongues (host Ron Glick), Yolo County HCP: 1 hour. December 27, 2001;

KDVS Speaking in Tongues (host Ron Glick), Yolo County HCP: 1 hour. May 3, 2001;

KDVS Speaking in Tongues (host Ron Glick), Yolo County HCP: 1 hour. February 8, 2001;

KDVS Speaking in Tongues (host Ron Glick & Shawn Smallwood), California Energy Crisis: 1 hour. Jan. 25, 2001;

KDVS Speaking in Tongues (host Ron Glick), Headwaters Forest HCP: 1 hour. 1998;

Davis Cable Channel (host Gerald Heffernon), Burrowing owls in Davis: half hour. June, 2000;

Davis Cable Channel (hosted by Davis League of Women Voters), Measure O debate: 1 hour. October, 2000;

KXTV 10, In Your Interest, The Endangered Species Act: half hour. 1997.

Committees

- Scientific Review Committee, Alameda County, Altamont Pass Wind Resource Area
- Ph.D. Thesis Committee, Steve Anderson, University of California, Davis
- MS Thesis Committee, Marcus Yee, California State University, Sacramento

Other Professional Activities or Products

Testified in Federal Court in Denver during 2005 over the fate of radio-nuclides in the soil at Rocky Flats Plant after exposure to burrowing animals. My clients won a judgment of $553,000,000. I have also testified in many other cases of litigation under CEQA, NEPA, the Warren-Alquist Act, and other environmental laws. My clients won most of the cases for which I testified.

Testified before Environmental Review Tribunals in Ontario, Canada regarding proposed White Pines, Amherst Island, and Fairview Wind Energy projects.

Testified in Skamania County Hearing in 2009 on the potential impacts of zoning the County for development of wind farms and hazardous waste facilities.

Testified in deposition in 2007 in the case of O'Dell et al. vs. FPL Energy in Houston, Texas.

Testified in Klickitat County Hearing in 2006 on the potential impacts of the Windy Point Wind Farm.

Memberships in Professional Societies

The Wildlife Society
Raptor Research Foundation

Honors and Awards

Fulbright Research Fellowship to Indonesia, 1987
J.G. Boswell Full Academic Scholarship, 1981 college of choice
Certificate of Appreciation, The Wildlife Society—Western Section, 2000, 2001
Northern California Athletic Association Most Valuable Cross Country Runner, 1984
American Legion Award, Corcoran High School, 1981, and John Muir Junior High, 1977
CIF Section Champion, Cross Country in 1978
CIF Section Champion, Track & Field 2 mile run in 1981
National Junior Record, 20 kilometer run, 1982
National Age Group Record, 1500 meter run, 1978

Community Activities

District 64 Little League Umpire, 2003-2007
Dixon Little League Umpire, 2006-07
Davis Little League Chief Umpire and Board member, 2004-2005
Davis Little League Safety Officer, 2004-2005
Davis Little League Certified Umpire, 2002-2004
Davis Little League Scorekeeper, 2002
Davis Visioning Group member
Petitioner for Writ of Mandate under the California Environmental Quality Act against City of Woodland decision to approve the Spring Lake Specific Plan, 2002
Served on campaign committees for City Council candidates

Exhibit B

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Date: April 2, 2024

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From: Francis J. Offermann PE CIH

Subject: Indoor Air Quality: Lockwood III Apartments Project, Oxnard, CA.
(IEE File Reference: P-4789)

Pages: 18

Indoor Air Quality Impacts

Indoor air quality (IAQ) directly impacts the comfort and health of building occupants, and the achievement of acceptable IAQ in newly constructed and renovated buildings is a well-recognized design objective. For example, IAQ is addressed by major high-performance building rating systems and building codes (California Building Standards Commission, 2014; USGBC, 2014). Indoor air quality in homes is particularly important because occupants, on average, spend approximately ninety percent of their time indoors with the majority of this time spent at home (EPA, 2011). Some segments of the population that are most susceptible to the effects of poor IAQ, such as the very young and the elderly, occupy their homes almost continuously. Additionally, an increasing number of adults are working from home at least some of the time during the workweek. Indoor air quality also is a serious concern for workers in hotels, offices and other business establishments.

The concentrations of many air pollutants often are elevated in homes and other buildings relative to outdoor air because many of the materials and products

used indoors contain and release a variety of pollutants to air (Hodgson et al., 2002; Offermann and Hodgson, 2011). With respect to indoor air contaminants for which inhalation is the primary route of exposure, the critical design and construction parameters are the provision of adequate ventilation and the reduction of indoor sources of the contaminants.

A-27 (cont)

Indoor Formaldehyde Concentrations Impact. In the California New Home Study (CNHS) of 108 new homes in California (Offermann, 2009), 25 air contaminants were measured, and formaldehyde was identified as the indoor air contaminant with the highest cancer risk as determined by the California Proposition 65 Safe Harbor Levels (OEHHA, 2017a), No Significant Risk Levels (NSRL) for carcinogens. The NSRL is the daily intake level calculated to result in one excess case of cancer in an exposed population of 100,000 (i.e., ten in one million cancer risk) and for formaldehyde is 40 µg/day. The NSRL concentration of formaldehyde that represents a daily dose of 40 µg is 2 µg/m^3, assuming a continuous 24-hour exposure, a total daily inhaled air volume of 20 m^3, and 100% absorption by the respiratory system. All of the CNHS homes exceeded this NSRL concentration of 2 µg/m^3. The median indoor formaldehyde concentration was 36 µg/m^3, and ranged from 4.8 to 136 µg/m^3, which corresponds to a median exceedance of the 2 µg/m^3 NSRL concentration of 18 and a range of 2.3 to 68.

A-28

Therefore, the cancer risk of a resident living in a California home with the median indoor formaldehyde concentration of 36 µg/m^3, is 180 per million as a result of formaldehyde alone. The CEQA significance threshold for airborne cancer risk is 10 per million, as established by the San Diego County Air Pollution Control District (SDAPCD, 2021).

Besides being a human carcinogen, formaldehyde is also a potent eye and respiratory irritant. In the CNHS, many homes exceeded the non-cancer reference exposure levels (RELs) prescribed by California Office of Environmental Health Hazard Assessment (OEHHA, 2017b). The percentage of homes exceeding the RELs ranged from 98% for the Chronic REL of 9 µg/m^3 to 28% for the Acute REL of 55 µg/m^3.

The primary source of formaldehyde indoors is composite wood products manufactured with urea-formaldehyde resins, such as plywood, medium density fiberboard, and particleboard. These materials are commonly used in building construction for flooring, cabinetry, baseboards, window shades, interior doors, and window and door trims.

In January 2009, the California Air Resources Board (CARB) adopted an airborne toxics control measure (ATCM) to reduce formaldehyde emissions from composite wood products, including hardwood plywood, particleboard, medium density fiberboard, and also furniture and other finished products made with these wood products (California Air Resources Board 2009). While this formaldehyde ATCM has resulted in reduced emissions from composite wood products sold in California, they do not preclude that homes built with composite wood products meeting the CARB ATCM will have indoor formaldehyde concentrations below cancer and non-cancer exposure guidelines.

A follow up study to the California New Home Study (CNHS) was conducted in 2016-2018 (Singer et. al., 2019), and found that the median indoor formaldehyde in new homes built after 2009 with CARB Phase 2 Formaldehyde ATCM materials had lower indoor formaldehyde concentrations, with a median indoor concentrations of 22.4 $\mu g/m^3$ (18.2 ppb) as compared to a median of 36 $\mu g/m^3$ found in the 2007 CNHS. Unlike in the CNHS study where formaldehyde concentrations were measured with pumped DNPH samplers, the formaldehyde concentrations in the HENGH study were measured with passive samplers, which were estimated to under-measure the true indoor formaldehyde concentrations by approximately 7.5%. Applying this correction to the HENGH indoor formaldehyde concentrations results in a median indoor concentration of 24.1 $\mu g/m^3$, which is 33% lower than the 36 $\mu g/m^3$ found in the 2007 CNHS.

A-28
(cont)

Thus, while new homes built after the 2009 CARB formaldehyde ATCM have a 33% lower median indoor formaldehyde concentration and cancer risk, the median lifetime cancer risk is still 120 per million for homes built with CARB compliant composite wood products. This median lifetime cancer risk is more than 12 times the OEHHA 10 in a million cancer risk threshold (OEHHA, 2017a).

With respect to the Lockwood III Apartments Project, Oxnard, CA, the buildings consist of residential spaces.

The residential occupants will potentially have continuous exposure (e.g. 24 hours per day, 52 weeks per year). These exposures are anticipated to result in significant cancer risks resulting from exposures to formaldehyde released by the building materials and furnishing commonly found in residential construction.

Because these residences will be constructed with CARB Phase 2 Formaldehyde ATCM materials, and be ventilated with the minimum code required amount of outdoor air, the indoor residential formaldehyde concentrations are likely similar to those concentrations observed in residences built with CARB Phase 2 Formaldehyde ATCM materials, which is a median of 24.1 $\mu g/m^3$ (Singer et. al., 2020)

Assuming that the residential occupants inhale 20 m^3 of air per day, the average 70-year lifetime formaldehyde daily dose is 482 µg/day for continuous exposure in the residences. This exposure represents a cancer risk of 120 per million, which is more than 12 times the CEQA cancer risk of 10 per million. For occupants that do not have continuous exposure, the cancer risk will be proportionally less but still substantially over the CEQA cancer risk of 10 per million (e.g. for 12/hour/day occupancy, more than 6 times the CEQA cancer risk of 10 per million). A-29

In addition, we note that the average outdoor air concentration of formaldehyde in California is 3 ppb, or 3.7 $\mu g/m^3$, (California Air Resources Board, 2004), and thus represents an average pre-existing background airborne cancer risk of 1.85 per million. Thus, the indoor air formaldehyde exposures describe above exacerbate this pre-existing risk resulting from outdoor air formaldehyde exposures.

Appendix A, Indoor Formaldehyde Concentrations and the CARB Formaldehyde ATCM, provides analyses that show utilization of CARB Phase 2 Formaldehyde ATCM materials will not ensure acceptable cancer risks with respect to formaldehyde emissions from composite wood products.

Even composite wood products manufactured with CARB certified ultra low emitting formaldehyde (ULEF) resins do not insure that the indoor air will have concentrations of formaldehyde the meet the OEHHA cancer risks that substantially exceed 10 per million. The permissible emission rates for ULEF composite wood products are only 11-15% lower than the CARB Phase 2 emission rates. Only use of composite wood products made with no-added formaldehyde resins (NAF), such as resins made from soy, polyvinyl acetate, or methylene diisocyanate can insure that the OEHHA cancer risk of 10 per million is met.

A-29 (cont)

The following describes a method that should be used, prior to construction in the environmental review under CEQA, for determining whether the indoor concentrations resulting from the formaldehyde emissions of specific building materials/furnishings selected exceed cancer and non-cancer guidelines. Such a design analyses can be used to identify those materials/furnishings prior to the completion of the City's CEQA review and project approval, that have formaldehyde emission rates that contribute to indoor concentrations that exceed cancer and non-cancer guidelines, so that alternative lower emitting materials/furnishings may be selected and/or higher minimum outdoor air ventilation rates can be increased to achieve acceptable indoor concentrations and incorporated as mitigation measures for this project.

A-30

Pre-Construction Building Material/Furnishing Formaldehyde Emissions Assessment

This formaldehyde emissions assessment should be used in the environmental review under CEQA to assess the indoor formaldehyde concentrations from the proposed loading of building materials/furnishings, the area-specific formaldehyde emission rate data for building materials/furnishings, and the design minimum outdoor air ventilation rates. This assessment allows the applicant (and the City) to determine, before the conclusion of the environmental review process and the building materials/furnishings are specified, purchased, and installed, if the total chemical emissions will exceed cancer and non-cancer guidelines, and if so, allow for changes in the selection of specific

material/furnishings and/or the design minimum outdoor air ventilations rates such that cancer and non-cancer guidelines are not exceeded.

1.) Define Indoor Air Quality Zones. Divide the building into separate indoor air quality zones, (IAQ Zones). IAQ Zones are defined as areas of well-mixed air. Thus, each ventilation system with recirculating air is considered a single zone, and each room or group of rooms where air is not recirculated (e.g. 100% outdoor air) is considered a separate zone. For IAQ Zones with the same construction material/furnishings and design minimum outdoor air ventilation rates. (e.g. hotel rooms, apartments, condominiums, etc.) the formaldehyde emission rates need only be assessed for a single IAQ Zone of that type.

2.) Calculate Material/Furnishing Loading. For each IAQ Zone, determine the building material and furnishing loadings (e.g., m^2 of material/m^2 floor area, units of furnishings/m^2 floor area) from an inventory of all potential indoor formaldehyde sources, including flooring, ceiling tiles, furnishings, finishes, insulation, sealants, adhesives, and any products constructed with composite wood products containing urea-formaldehyde resins (e.g., plywood, medium density fiberboard, particleboard).

A-30
(cont)

3.) Calculate the Formaldehyde Emission Rate. For each building material, calculate the formaldehyde emission rate (µg/h) from the product of the area-specific formaldehyde emission rate (µg/m^2-h) and the area (m^2) of material in the IAQ Zone, and from each furnishing (e.g. chairs, desks, etc.) from the unit-specific formaldehyde emission rate (µg/unit-h) and the number of units in the IAQ Zone.

NOTE: As a result of the high-performance building rating systems and building codes (California Building Standards Commission, 2014; USGBC, 2014), most manufacturers of building materials furnishings sold in the United States conduct chemical emission rate tests using the California Department of Health "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions for Indoor Sources Using Environmental Chambers," (CDPH, 2017), or other equivalent chemical emission rate testing methods. Most manufacturers of building furnishings sold in the United States conduct chemical emission rate tests using ANSI/BIFMA M7.1 Standard Test Method for

Determining VOC Emissions (BIFMA, 2018), or other equivalent chemical emission rate testing methods.

CDPH, BIFMA, and other chemical emission rate testing programs, typically certify that a material or furnishing does not create indoor chemical concentrations in excess of the maximum concentrations permitted by their certification. For instance, the CDPH emission rate testing requires that the measured emission rates when input into an office, school, or residential model do not exceed one-half of the OEHHA Chronic Exposure Guidelines (OEHHA, 2017b) for the 35 specific VOCs, including formaldehyde, listed in Table 4-1 of the CDPH test method (CDPH, 2017). These certifications themselves do not provide the actual area-specific formaldehyde emission rate (i.e., $\mu g/m^2$-h) of the product, but rather provide data that the formaldehyde emission rates do not exceed the maximum rate allowed for the certification. Thus, for example, the data for a certification of a specific type of flooring may be used to calculate that the area-specific emission rate of formaldehyde is less than 31 $\mu g/m^2$-h, but not the actual measured specific emission rate, which may be 3, 18, or 30 $\mu g/m^2$-h. These area-specific emission rates determined from the product certifications of CDPH, BIFA, and other certification programs can be used as an initial estimate of the formaldehyde emission rate.

A-30
(cont)

If the actual area-specific emission rates of a building material or furnishing is needed (i.e. the initial emission rates estimates from the product certifications are higher than desired), then that data can be acquired by requesting from the manufacturer the complete chemical emission rate test report. For instance if the complete CDPH emission test report is requested for a CDHP certified product, that report will provide the actual area-specific emission rates for not only the 35 specific VOCs, including formaldehyde, listed in Table 4-1 of the CDPH test method (CDPH, 2017), but also all of the cancer and reproductive/developmental chemicals listed in the California Proposition 65 Safe Harbor Levels (OEHHA, 2017a), all of the toxic air contaminants (TACs) in the California Air Resources Board Toxic Air Contamination List (CARB, 2011), and the 10 chemicals with the greatest emission rates.

Alternatively, a sample of the building material or furnishing can be submitted to a chemical emission rate testing laboratory, such as Berkeley Analytical Laboratory (https://berkeleyanalytical.com), to measure the formaldehyde emission rate.

4.) Calculate the Total Formaldehyde Emission Rate. For each IAQ Zone, calculate the total formaldehyde emission rate (i.e. µg/h) from the individual formaldehyde emission rates from each of the building material/furnishings as determined in Step 3.

5.) Calculate the Indoor Formaldehyde Concentration. For each IAQ Zone, calculate the indoor formaldehyde concentration (µg/m^3) from Equation 1 by dividing the total formaldehyde emission rates (i.e. µg/h) as determined in Step 4, by the design minimum outdoor air ventilation rate (m^3/h) for the IAQ Zone.

(Equation 1)

where:

C_{in} = indoor formaldehyde concentration (µg/m^3)

E_{total} = total formaldehyde emission rate (µg/h) into the IAQ Zone.

Q_{oa} = design minimum outdoor air ventilation rate to the IAQ Zone (m^3/h)

A-30
(cont)

The above Equation 1 is based upon mass balance theory, and is referenced in Section 3.10.2 "Calculation of Estimated Building Concentrations" of the California Department of Health "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions for Indoor Sources Using Environmental Chambers", (CDPH, 2017).

6.) Calculate the Indoor Exposure Cancer and Non-Cancer Health Risks. For each IAQ Zone, calculate the cancer and non-cancer health risks from the indoor formaldehyde concentrations determined in Step 5 and as described in the OEHHA Air Toxics Hot Spots Program Risk Assessment Guidelines; Guidance Manual for Preparation of Health Risk Assessments (OEHHA, 2015).

7.) Mitigate Indoor Formaldehyde Exposures of exceeding the CEQA Cancer and/or Non-Cancer Health Risks. In each IAQ Zone, provide mitigation for any formaldehyde exposure risk as determined in Step 6, that exceeds the CEQA cancer risk of 10 per

million or the CEQA non-cancer Hazard Quotient of 1.0.

Provide the source and/or ventilation mitigation required in all IAQ Zones to reduce the health risks of the chemical exposures below the CEQA cancer and non-cancer health risks.

Source mitigation for formaldehyde may include:

1.) reducing the amount materials and/or furnishings that emit formaldehyde
2.) substituting a different material with a lower area-specific emission rate of formaldehyde

Ventilation mitigation for formaldehyde emitted from building materials and/or furnishings may include:

1.) increasing the design minimum outdoor air ventilation rate to the IAQ Zone.

A-30 (cont)

NOTE: Mitigating the formaldehyde emissions through use of less material/furnishings, or use of lower emitting materials/furnishings, is the preferred mitigation option, as mitigation with increased outdoor air ventilation increases initial and operating costs associated with the heating/cooling systems.

Further, we are not asking that the builder "speculate" on what and how much composite materials be used, but rather at the design stage to select composite wood materials based on the formaldehyde emission rates that manufacturers routinely conduct using the California Department of Health "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions for Indoor Sources Using Environmental Chambers," (CDPH, 2017), and use the procedure described earlier above (i.e. Pre-Construction Building Material/Furnishing Formaldehyde Emissions Assessment) to insure that the materials selected achieve acceptable cancer risks from material off gassing of formaldehyde.

Outdoor Air Ventilation Impact. Another important finding of the CNHS, was that the outdoor air ventilation rates in the homes were very low. Outdoor air ventilation is a very

A-31

important factor influencing the indoor concentrations of air contaminants, as it is the primary removal mechanism of all indoor air generated contaminants. Lower outdoor air exchange rates cause indoor generated air contaminants to accumulate to higher indoor air concentrations. Many homeowners rarely open their windows or doors for ventilation as a result of their concerns for security/safety, noise, dust, and odor concerns (Price, 2007). In the CNHS field study, 32% of the homes did not use their windows during the 24-hour Test Day, and 15% of the homes did not use their windows during the entire preceding week. Most of the homes with no window usage were homes in the winter field session. Thus, a substantial percentage of homeowners never open their windows, especially in the winter season. The median 24-hour measurement was 0.26 air changes per hour (ach), with a range of 0.09 ach to 5.3 ach. A total of 67% of the homes had outdoor air exchange rates below the minimum California Building Code (2001) requirement of 0.35 ach. Thus, the relatively tight envelope construction, combined with the fact that many people never open their windows for ventilation, results in homes with low outdoor air exchange rates and higher indoor air contaminant concentrations.

A-31 (cont)

The Lockwood III Apartments Project, Oxnard, CA is close to roads with moderate to high traffic (e.g., Lakewood Street, East Gonzalez Road, Ventura Freeway -101, etc.) and thus the Project site is a sound impacted site.

According to the Initial Study/Mitigated Negative Declaration- Lockwood III Apartments Project, Oxnard, CA (ESA, 2024), Appendix I, Table 10, the ambient noise levels with the Project range from 66.1 to 71.2 dBA CNEL.

However, these ambient noise levels were only measured during a single 24-hour period (August 1-2, 2022). In order to design the building for this Project such that interior noise levels are acceptable, an acoustic study with actual on-site measurements of the existing ambient noise levels and modeled future ambient noise levels needs to be conducted. The acoustic study of the existing ambient noise levels should be conducted over a one-week period. and report the dBA CNEL or Ldn. This study will allow for the selection of a building envelope and windows with a sufficient STC such that the indoor noise levels are acceptable. A mechanical supply of outdoor air ventilation to allow for a habitable interior

A-32

environment with closed windows and doors will also be requires. Such a ventilation system would allow windows and doors to be kept closed at the occupant's discretion to control exterior noise within building interiors.

A-32 (cont)

$PM_{2.5}$ Outdoor Concentrations Impact. An additional impact of the nearby motor vehicle traffic associated with this project, are the outdoor concentrations of $PM_{2.5}$. Initial Study/Mitigated Negative Declaration- Lockwood III Apartments Project, Oxnard, CA (ESA, 2024), the Project is located in the South Coast Air Basin, which is a State and Federal non-attainment area for $PM_{2.5}$.

An air quality analyses should be conducted to determine the concentrations of $PM_{2.5}$ in the outdoor and indoor air that people inhale each day. This air quality analyses needs to consider the cumulative impacts of the project related emissions, existing and projected future emissions from local $PM_{2.5}$ sources (e.g. stationary sources, motor vehicles, and airport traffic) upon the outdoor air concentrations at the Project site. If the outdoor concentrations are determined to exceed the California and National annual average $PM_{2.5}$ exceedence concentration of 12 $\mu g/m^3$, or the National 24-hour average exceedence concentration of 35 $\mu g/m^3$, then the buildings need to have a mechanical supply of outdoor air that has air filtration with sufficient removal efficiency, such that the indoor concentrations of outdoor $PM_{2.5}$ particles is less than the California and National $PM_{2.5}$ annual and 24-hour standards.

A-33

It is my experience that based on the projected high traffic noise levels, the annual average concentration of $PM_{2.5}$ will exceed the California and National $PM_{2.5}$ annual and 24-hour standards and warrant installation of high efficiency air filters (i.e. MERV 13 or higher) in all mechanically supplied outdoor air ventilation systems.

Indoor Air Quality Impact Mitigation Measures

The following are recommended mitigation measures to minimize the impacts upon indoor quality:

A-34

Indoor Formaldehyde Concentrations Mitigation. Use only composite wood materials (e.g. hardwood plywood, medium density fiberboard, particleboard) for all interior finish systems that are made with CARB approved no-added formaldehyde (NAF) resins (CARB, 2009). CARB Phase 2 certified composite wood products, or ultra-low emitting formaldehyde (ULEF) resins, do not insure indoor formaldehyde concentrations that are below the CEQA cancer risk of 10 per million. Only composite wood products manufactured with CARB approved no-added formaldehyde (NAF) resins, such as resins made from soy, polyvinyl acetate, or methylene diisocyanate can insure that the OEHHA cancer risk of 10 per million is met.

Alternatively, conduct the previously described Pre-Construction Building Material/Furnishing Chemical Emissions Assessment, to determine that the combination of formaldehyde emissions from building materials and furnishings do not create indoor formaldehyde concentrations that exceed the CEQA cancer and non-cancer health risks.

A-34 (cont)

It is important to note that we are not asking that the builder "speculate" on what and how much composite materials be used, but rather at the design stage to select composite wood materials based on the formaldehyde emission rates that manufacturers routinely conduct using the California Department of Health "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions for Indoor Sources Using Environmental Chambers", (CDPH, 2017), and use the procedure described above (i.e. Pre-Construction Building Material/Furnishing Formaldehyde Emissions Assessment) to insure that the materials selected achieve acceptable cancer risks from material off gassing of formaldehyde.

Outdoor Air Ventilation Mitigation. Provide each habitable room with a continuous mechanical supply of outdoor air that meets or exceeds the California 2016 Building Energy Efficiency Standards (California Energy Commission, 2015) requirements of the greater of 15 cfm/occupant or 0.15 cfm/ft^2 of floor area. Following installation of the system conduct testing and balancing to insure that required amount of outdoor air is entering each habitable room and provide a written report documenting the outdoor airflow rates. Do not use exhaust only mechanical outdoor air systems, use only balanced

outdoor air supply and exhaust systems or outdoor air supply only systems. Provide a manual for the occupants or maintenance personnel, that describes the purpose of the mechanical outdoor air system and the operation and maintenance requirements of the system.

$PM_{2.5}$ Outdoor Air Concentration Mitigation. Install air filtration with sufficient $PM_{2.5}$ removal efficiency (e.g. MERV 13 or higher) to filter the outdoor air entering the mechanical outdoor air supply systems, such that the indoor concentrations of outdoor $PM_{2.5}$ particles are less than the California and National $PM_{2.5}$ annual and 24-hour standards. Install the air filters in the system such that they are accessible for replacement by the occupants or maintenance personnel. Include in the mechanical outdoor air ventilation system manual instructions on how to replace the air filters and the estimated frequency of replacement.

A-34 (cont)

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APPENDIX A

INDOOR FORMALDEHYDE CONCENTRATIONS
AND THE
CARB FORMALDEHYDE ATCM

With respect to formaldehyde emissions from composite wood products, the CARB ATCM regulations of formaldehyde emissions from composite wood products, do not assure healthful indoor air quality. The following is the stated purpose of the CARB ATCM regulation - *The purpose of this airborne toxic control measure is to "reduce formaldehyde emissions from composite wood products, and finished goods that contain composite wood products, that are sold, offered for sale, supplied, used, or manufactured for sale in California"*. In other words, the CARB ATCM regulations do not "assure healthful indoor air quality", but rather "reduce formaldehyde emissions from composite wood products".

A-35

Just how much protection do the CARB ATCM regulations provide building occupants from the formaldehyde emissions generated by composite wood products? Definitely some, but certainly the regulations do not "*assure healthful indoor air quality"* when CARB Phase 2 products are utilized. As shown in the Chan 2019 study of new California homes, the median indoor formaldehyde concentration was of 22.4 μg/m^3 (18.2 ppb), which corresponds to a cancer risk of 112 per million for occupants with continuous exposure, which is more than 11 times the CEQA cancer risk of 10 per million.

Another way of looking at how much protection the CARB ATCM regulations provide building occupants from the formaldehyde emissions generated by composite wood products is to calculate the maximum number of square feet of composite wood product that can be in a residence without exceeding the CEQA cancer risk of 10 per million for occupants with continuous occupancy.

For this calculation I utilized the floor area (2,272 ft^2), the ceiling height (8.5 ft), and the number of bedrooms (4) as defined in Appendix B (New Single-Family Residence Scenario) of the Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions for Indoor Sources Using Environmental Chambers, Version 1.1,

2017, California Department of Public Health, Richmond, CA. https://www.cdph.ca.gov/Programs/CCDPHP/ DEODC/EHLB/IAQ/Pages/VOC.aspx.

For the outdoor air ventilation rate I used the 2019 Title 24 code required mechanical ventilation rate (ASHRAE 62.2) of 106 cfm (180 m^3/h) calculated for this model residence. For the composite wood formaldehyde emission rates I used the CARB ATCM Phase 2 rates.

The calculated maximum number of square feet of composite wood product that can be in a residence, without exceeding the CEQA cancer risk of 10 per million for occupants with continuous occupancy are as follows for the different types of regulated composite wood products.

Medium Density Fiberboard (MDF) – 15 ft^2 (0.7% of the floor area), or
Particle Board – 30 ft^2 (1.3% of the floor area), or
Hardwood Plywood – 54 ft^2 (2.4% of the floor area), or
Thin MDF – 46 ft^2 (2.0 % of the floor area).

A-35
(cont)

For offices and hotels the calculated maximum amount of composite wood product (% of floor area) that can be used without exceeding the CEQA cancer risk of 10 per million for occupants, assuming 8 hours/day occupancy, and the California Mechanical Code minimum outdoor air ventilation rates are as follows for the different types of regulated composite wood products.

Medium Density Fiberboard (MDF) – 3.6 % (offices) and 4.6% (hotel rooms), or
Particle Board – 7.2 % (offices) and 9.4% (hotel rooms), or
Hardwood Plywood – 13 % (offices) and 17% (hotel rooms), or
Thin MDF – 11 % (offices) and 14 % (hotel rooms)

Clearly the CARB ATCM does not regulate the formaldehyde emissions from composite wood products such that the potentially large areas of these products, such as for flooring, baseboards, interior doors, window and door trims, and kitchen and bathroom cabinetry,

could be used without causing indoor formaldehyde concentrations that result in CEQA cancer risks that substantially exceed 10 per million for occupants with continuous occupancy.

Even composite wood products manufactured with CARB certified ultra low emitting formaldehyde (ULEF) resins do not insure that the indoor air will have concentrations of formaldehyde the meet the OEHHA cancer risks that substantially exceed 10 per million. The permissible emission rates for ULEF composite wood products are only 11-15% lower than the CARB Phase 2 emission rates. Only use of composite wood products made with no-added formaldehyde resins (NAF), such as resins made from soy, polyvinyl acetate, or methylene diisocyanate can insure that the OEHHA cancer risk of 10 per million is met.

A-35 (cont)

If CARB Phase 2 compliant or ULEF composite wood products are utilized in construction, then the resulting indoor formaldehyde concentrations should be determined in the design phase using the specific amounts of each type of composite wood product, the specific formaldehyde emission rates, and the volume and outdoor air ventilation rates of the indoor spaces, and all feasible mitigation measures employed to reduce this impact (e.g. use less formaldehyde containing composite wood products and/or incorporate mechanical systems capable of higher outdoor air ventilation rates). See the procedure described earlier (i.e. Pre-Construction Building Material/Furnishing Formaldehyde Emissions Assessment) to insure that the materials selected achieve acceptable cancer risks from material off gassing of formaldehyde.

Alternatively, and perhaps a simpler approach, is to use only composite wood products (e.g. hardwood plywood, medium density fiberboard, particleboard) for all interior finish systems that are made with CARB approved no-added formaldehyde (NAF) resins.

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Education

M.S. Mechanical Engineering (1985)
Stanford University, Stanford, CA.

Graduate Studies in Air Pollution Monitoring and Control (1980)
University of California, Berkeley, CA.

B.S. in Mechanical Engineering (1976)
Rensselaer Polytechnic Institute, Troy, N.Y.

Professional Experience

President: Indoor Environmental Engineering, San Francisco, CA. December, 1981 - present.

Direct team of environmental scientists, chemists, and mechanical engineers in conducting State and Federal research regarding indoor air quality instrumentation development, building air quality field studies, ventilation and air cleaning performance measurements, and chemical emission rate testing.

Provide design side input to architects regarding selection of building materials and ventilation system components to ensure a high quality indoor environment.

Direct Indoor Air Quality Consulting Team for the winning design proposal for the new State of Washington Ecology Department building.

Develop a full-scale ventilation test facility for measuring the performance of air diffusers; ASHRAE 129, Air Change Effectiveness, and ASHRAE 113, Air Diffusion Performance Index.

Develop a chemical emission rate testing laboratory for measuring the chemical emissions from building materials, furnishings, and equipment.

Principle Investigator of the California New Homes Study (2005-2007). Measured ventilation and indoor air quality in 108 new single family detached homes in northern and southern California.

Develop and teach IAQ professional development workshops to building owners, managers, hygienists, and engineers.

Air Pollution Engineer: Earth Metrics Inc., Burlingame, CA, October, 1985 to March, 1987.

Responsible for development of an air pollution laboratory including installation a forced choice olfactometer, tracer gas electron capture chromatograph, and associated calibration facilities. Field team leader for studies of fugitive odor emissions from sewage treatment plants, entrainment of fume hood exhausts into computer chip fabrication rooms, and indoor air quality investigations.

Staff Scientist: Building Ventilation and Indoor Air Quality Program, Energy and Environment Division, Lawrence Berkeley Laboratory, Berkeley, CA. January, 1980 to August, 1984.

Deputy project leader for the Control Techniques group; responsible for laboratory and field studies aimed at evaluating the performance of indoor air pollutant control strategies (i.e. ventilation, filtration, precipitation, absorption, adsorption, and source control).

Coordinated field and laboratory studies of air-to-air heat exchangers including evaluation of thermal performance, ventilation efficiency, cross-stream contaminant transfer, and the effects of freezing/defrosting.

Developed an *in situ* test protocol for evaluating the performance of air cleaning systems and introduced the concept of effective cleaning rate (ECR) also known as the Clean Air Delivery Rate (CADR).

Coordinated laboratory studies of portable and ducted air cleaning systems and their effect on indoor concentrations of respirable particles and radon progeny.

Co-designed an automated instrument system for measuring residential ventilation rates and radon concentrations.

Designed hardware and software for a multi-channel automated data acquisition system used to evaluate the performance of air-to-air heat transfer equipment.

Assistant Chief Engineer: Alta Bates Hospital, Berkeley, CA, October, 1979 to January, 1980.

Responsible for energy management projects involving installation of power factor correction capacitors on large inductive electrical devices and installation of steam meters on physical plant steam lines. Member of Local 39, International Union of Operating Engineers.

Manufacturing Engineer: American Precision Industries, Buffalo, NY, October, 1977 to October, 1979.

Responsible for reorganizing the manufacturing procedures regarding production of shell and tube heat exchangers. Designed customized automatic assembly, welding, and testing equipment. Designed a large paint spray booth. Prepared economic studies justifying new equipment purchases. Safety Director.

Project Engineer: Arcata Graphics, Buffalo, N.Y. June, 1976 to October, 1977.

Responsible for the design and installation of a bulk ink storage and distribution system and high speed automatic counting and marking equipment. Also coordinated material handling studies which led to the purchase and installation of new equipment.

PROFESSIONAL ORGANIZATION MEMBERSHIP

American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE)

- Chairman of SPC-145P, Standards Project Committee - Test Method for Assessing the Performance of Gas Phase Air Cleaning Equipment (1991-1992)
- Member SPC-129P, Standards Project Committee - Test Method for Ventilation Effectiveness (1986-97)
  - Member of Drafting Committee
- Member Environmental Health Committee (1992-1994, 1997-2001, 2007-2010)
  - Chairman of EHC Research Subcommittee
  - Member of Man Made Mineral Fiber Position Paper Subcommittee
  - Member of the IAQ Position Paper Committee
  - Member of the Legionella Position Paper Committee
  - Member of the Limiting Indoor Mold and Dampness in Buildings Position Paper Committee
- Member SSPC-62, Standing Standards Project Committee - Ventilation for Acceptable Indoor Air Quality (1992 to 2000)
  - Chairman of Source Control and Air Cleaning Subcommittee
- Chairman of TC-4.10, Indoor Environmental Modeling (1988-92)
  - Member of Research Subcommittee
- Chairman of TC-2.3, Gaseous Air Contaminants and Control Equipment (1989-92)
  - Member of Research Subcommittee

American Society for Testing and Materials (ASTM)

- D-22 Sampling and Analysis of Atmospheres
  - Member of Indoor Air Quality Subcommittee
- E-06 Performance of Building Constructions

American Board of Industrial Hygiene (ABIH)

American Conference of Governmental Industrial Hygienists (ACGIH)

- Bioaerosols Committee (2007-2013)

American Industrial Hygiene Association (AIHA)

Cal-OSHA Indoor Air Quality Advisory Committee

International Society of Indoor Air Quality and Climate (ISIAQ)

- Co-Chairman of Task Force on HVAC Hygiene

U. S. Green Building Council (USGBC)
- Member of the IEQ Technical Advisory Group (2007-2009)
- Member of the IAQ Performance Testing Work Group (2010-2012)

Western Construction Consultants (WESTCON)

PROFESSIONAL CREDENTIALS

Licensed Professional Engineer - Mechanical Engineering

Certified Industrial Hygienist - American Board of Industrial Hygienists

SCIENTIFIC MEETINGS AND SYMPOSIA

Biological Contamination, Diagnosis, and Mitigation, Indoor Air'90, Toronto, Canada, August, 1990.

Models for Predicting Air Quality, Indoor Air'90, Toronto, Canada, August, 1990.

Microbes in Building Materials and Systems, Indoor Air '93, Helsinki, Finland, July, 1993.

Microorganisms in Indoor Air Assessment and Evaluation of Health Effects and Probable Causes, Walnut Creek, CA, February 27, 1997.

Controlling Microbial Moisture Problems in Buildings, Walnut Creek, CA, February 27, 1997.

Scientific Advisory Committee, Roomvent 98, 6th International Conference on Air Distribution in Rooms, KTH, Stockholm, Sweden, June 14-17, 1998.

Moisture and Mould, Indoor Air '99, Edinburgh, Scotland, August, 1999.

Ventilation Modeling and Simulation, Indoor Air '99, Edinburgh, Scotland, August, 1999.

Microbial Growth in Materials, Healthy Buildings 2000, Espoo, Finland, August, 2000.

Co-Chair, Bioaerosols X- Exposures in Residences, Indoor Air 2002, Monterey, CA, July 2002.

Healthy Indoor Environments, Anaheim, CA, April 2003.

Chair, Environmental Tobacco Smoke in Multi-Family Homes, Indoor Air 2008, Copenhagen, Denmark, July 2008.

Co-Chair, ISIAQ Task Force Workshop; HVAC Hygiene, Indoor Air 2002, Monterey, CA, July 2002.

Chair, ETS in Multi-Family Housing: Exposures, Controls, and Legalities Forum, Healthy Buildings 2009, Syracuse, CA, September 14, 2009.

Chair, Energy Conservation and IAQ in Residences Workshop, Indoor Air 2011, Austin, TX, June 6, 2011.

Chair, Electronic Cigarettes: Chemical Emissions and Exposures Colloquium, Indoor Air 2016, Ghent, Belgium, July 4, 2016.

SPECIAL CONSULTATION

Provide consultation to the American Home Appliance Manufacturers on the development of a standard for testing portable air cleaners, AHAM Standard AC-1.

Served as an expert witness and special consultant for the U.S. Federal Trade Commission regarding the performance claims found in advertisements of portable air cleaners and residential furnace filters.

Conducted a forensic investigation for a San Mateo, CA pro se defendant, regarding an alleged homicide where the victim was kidnapped in a steamer trunk. Determined the air exchange rate in the steamer trunk and how long the person could survive.

Conducted *in situ* measurement of human exposure to toluene fumes released during nailpolish application for a plaintiffs attorney pursuing a California Proposition 65 product labeling case. June, 1993.

Conducted a forensic *in situ* investigation for the Butte County, CA Sheriff's Department of the emissions of a portable heater used in the bedroom of two twin one year old girls who suffered simultaneous crib death.

Consult with OSHA on the 1995 proposed new regulation regarding indoor air quality and environmental tobacco smoke.

Consult with EPA on the proposed Building Alliance program and with OSHA on the proposed new OSHA IAQ regulation.

Johnson Controls Audit/Certification Expert Review; Milwaukee, WI. May 28-29, 1997.

Winner of the nationally published 1999 Request for Proposals by the State of Washington to conduct a comprehensive indoor air quality investigation of the Washington State Department of Ecology building in Lacey, WA.

Selected by the State of California Attorney General's Office in August, 2000 to conduct a comprehensive indoor air quality investigation of the Tulare County Court House.

Lawrence Berkeley Laboratory IAQ Experts Workshop: "Cause and Prevention of Sick Building Problems in Offices: The Experience of Indoor Environmental Quality Investigators", Berkeley, California, May 26-27, 2004.

Provide consultation and chemical emission rate testing to the State of California Attorney General's Office in 2013-2015 regarding the chemical emissions from e-cigarettes.

PEER-REVIEWED PUBLICATIONS :

F.J.Offermann, C.D.Hollowell, and G.D.Roseme, "Low-Infiltration Housing in Rochester, New York: A Study of Air Exchange Rates and Indoor Air Quality," *Environment International*, *8*, pp. 435-445, 1982.

W.W.Nazaroff, F.J.Offermann, and A.W.Robb, "Automated System for Measuring Air Exchange Rate and Radon Concentration in Houses," *Health Physics*, *45*, pp. 525-537, 1983.

F.J.Offermann, W.J.Fisk, D.T.Grimsrud, B.Pedersen, and K.L.Revzan, "Ventilation Efficiencies of Wall- or Window-Mounted Residential Air-to-Air Heat Exchangers," *ASHRAE Annual Transactions*, *89-2B*, pp 507-527, 1983.

W.J.Fisk, K.M.Archer, R.E Chant, D. Hekmat, F.J.Offermann, and B.Pedersen, "Onset of Freezing in Residential Air-to-Air Heat Exchangers," *ASHRAE Annual Transactions*, *91-1B*, 1984.

W.J.Fisk, K.M.Archer, R.E Chant, D. Hekmat, F.J.Offermann, and B.Pedersen, "Performance of Residential Air-to-Air Heat Exchangers During Operation with Freezing and Periodic Defrosts," *ASHRAE Annual Transactions*, *91-1B*, 1984.

F.J.Offermann, R.G.Sextro, W.J.Fisk, D.T.Grimsrud, W.W.Nazaroff, A.V.Nero, and K.L.Revzan, "Control of Respirable Particles with Portable Air Cleaners," *Atmospheric Environment*, Vol. 19, pp.1761-1771, 1985.

R.G.Sextro, F.J.Offermann, W.W.Nazaroff, A.V.Nero, K.L.Revzan, and J.Yater, "Evaluation of Indoor Control Devices and Their Effects on Radon Progeny Concentrations," *Atmospheric Environment*, *12*, pp. 429-438, 1986.

W.J. Fisk, R.K.Spencer, F.J.Offermann, R.K.Spencer, B.Pedersen, R.Sextro, "Indoor Air Quality Control Techniques," *Noyes Data Corporation*, Park Ridge, New Jersey, (1987).

F.J.Offermann, "Ventilation Effectiveness and ADPI Measurements of a Forced Air Heating System," *ASHRAE Transactions* , Volume 94, Part 1, pp 694-704, 1988.

F.J.Offermann and D. Int-Hout "Ventilation Effectiveness Measurements of Three Supply/Return Air Configurations," *Environment International* , Volume 15, pp 585-592 1989.

F.J. Offermann, S.A. Loiselle, M.C. Quinlan, and M.S. Rogers, "A Study of Diesel Fume Entrainment in an Office Building," *IAQ '89*, The Human Equation: Health and Comfort, pp 179-183, ASHRAE, Atlanta, GA, 1989.

R.G.Sextro and F.J.Offermann, "Reduction of Residential Indoor Particle and Radon Progeny Concentrations with Ducted Air Cleaning Systems," submitted to *Indoor Air*, 1990.

S.A.Loiselle, A.T.Hodgson, and F.J.Offermann, "Development of An Indoor Air Sampler for Polycyclic Aromatic Compounds", *Indoor Air* , Vol 2, pp 191-210, 1991.

F.J.Offermann, S.A.Loiselle, A.T.Hodgson, L.A. Gundel, and J.M. Daisey, "A Pilot Study to Measure Indoor Concentrations and Emission Rates of Polycyclic Aromatic Compounds", *Indoor Air* , Vol 4, pp 497-512, 1991.

F.J. Offermann, S. A. Loiselle, R.G. Sextro, "Performance Comparisons of Six Different Air Cleaners Installed in a Residential Forced Air Ventilation System," *IAQ'91*, Healthy Buildings, pp 342-350, ASHRAE, Atlanta, GA (1991).

F.J. Offermann, J. Daisey, A. Hodgson, L. Gundell, and S. Loiselle, "Indoor Concentrations and Emission Rates of Polycyclic Aromatic Compounds", *Indoor Air,* Vol 4, pp 497-512 (1992).

F.J. Offermann, S. A. Loiselle, R.G. Sextro, "Performance of Air Cleaners Installed in a Residential Forced Air System," *ASHRAE Journal*, pp 51-57, July, 1992.

F.J. Offermann and S. A. Loiselle, "Performance of an Air-Cleaning System in an Archival Book Storage Facility," *IAQ'92*, ASHRAE, Atlanta, GA, 1992.

S.B. Hayward, K.S. Liu, L.E. Alevantis, K. Shah, S. Loiselle, F.J. Offermann, Y.L. Chang, L. Webber, “Effectiveness of Ventilation and Other Controls in Reducing Exposure to ETS in Office Buildings,” Indoor Air ’93, Helsinki, Finland, July 4-8, 1993.

F.J. Offermann, S. A. Loiselle, G. Ander, H. Lau, "Indoor Contaminant Emission Rates Before and After a Building Bake-out," *IAQ'93*, Operating and Maintaining Buildings for Health, Comfort, and Productivity, pp 157-163, ASHRAE, Atlanta, GA, 1993.

L.E. Alevantis, Hayward, S.B., Shah, S.B., Loiselle, S., and Offermann, F.J. "Tracer Gas Techniques for Determination of the Effectiveness of Pollutant Removal From Local Sources," *IAQ '93*, Operating and Maintaining Buildings for Health, Comfort, and Productivity, pp 119-129, ASHRAE, Atlanta, GA, 1993.

L.E. Alevantis, Liu, L.E., Hayward, S.B., Offermann, F.J., Shah, S.B., Leiserson, K. Tsao, E., and Huang, Y., "Effectiveness of Ventilation in 23 Designated Smoking Areas in California Buildings," *IAQ '94*, Engineering Indoor Environments, pp 167-181, ASHRAE, Atlanta, GA, 1994.

L.E. Alevantis, Offermann, F.J., Loiselle, S., and Macher, J.M., "Pressure and Ventilation Requirements of Hospital Isolation Rooms for Tuberculosis (TB) Patients: Existing Guidelines in the United States and a Method for Measuring Room Leakage", Ventilation and Indoor air quality in Hospitals, M. Maroni, editor, Kluwer Academic publishers, Netherlands, 1996.

F.J. Offermann, M. A. Waz, A.T. Hodgson, and H.M. Ammann, "Chemical Emissions from a Hospital Operating Room Air Filter," *IAQ'96*, Paths to Better Building Environments, pp 95-99, ASHRAE, Atlanta, GA, 1996.

F.J. Offermann, "Professional Malpractice and the Sick Building Investigator," *IAQ'96*, Paths to Better Building Environments, pp 132-136, ASHRAE, Atlanta, GA, 1996.

F.J. Offermann, "Standard Method of Measuring Air Change Effectiveness," *Indoor Air,* Vol 1, pp.206-211, 1999.

F. J. Offermann, A. T. Hodgson, and J. P. Robertson, "Contaminant Emission Rates from PVC Backed Carpet Tiles on Damp Concrete", Healthy Buildings 2000, Espoo, Finland, August 2000.

K.S. Liu, L.E. Alevantis, and F.J. Offermann, "A Survey of Environmental Tobacco Smoke Controls in California Office Buildings", *Indoor Air*, Vol 11, pp. 26-34, 2001.

F.J. Offermann, R. Colfer, P. Radzinski, and J. Robertson, "Exposure to Environmental Tobacco Smoke in an Automobile", Indoor Air 2002, Monterey, California, July 2002.

F. J. Offermann, J.P. Robertson, and T. Webster, "The Impact of Tracer Gas Mixing on Airflow Rate Measurements in Large Commercial Fan Systems", Indoor Air 2002, Monterey, California, July 2002.

M. J. Mendell, T. Brennan, L. Hathon, J.D. Odom, F.J.Offermann, B.H. Turk, K.M. Wallingford, R.C. Diamond, W.J. Fisk, "Causes and prevention of Symptom Complaints

in Office Buildings: Distilling the Experience of Indoor Environmental Investigators", submitted to Indoor Air 2005, Beijing, China, September 4-9, 2005.

F.J. Offermann, "Ventilation and IAQ in New Homes With and Without Mechanical Outdoor Air Systems", Healthy Buildings 2009, Syracuse, CA, September 14, 2009.

F.J. Offermann, "ASHRAE 62.2 Intermittent Residential Ventilation: What's It Good For, Intermittently Poor IAQ", IAQVEC 2010, Syracuse, CA, April 21, 2010.

F.J. Offermann and A.T. Hodgson, "Emission Rates of Volatile Organic Compounds in New Homes", Indoor Air 2011, Austin, TX, June, 2011.

P. Jenkins, R. Johnson, T. Phillips, and F. Offermann, "Chemical Concentrations in New California Homes and Garages", Indoor Air 2011, Austin, TX, June, 2011.

W. J. Mills, B. J. Grigg, F. J. Offermann, B. E. Gustin, and N. E. Spingarm, "Toluene and Methyl Ethyl Ketone Exposure from a Commercially Available Contact Adhesive", Journal of Occupational and Environmental Hygiene, 9:D95-D102 May, 2012.

F. J. Offermann, R. Maddalena, J. C. Offermann, B. C. Singer, and H, Wilhelm, "The Impact of Ventilation on the Emission Rates of Volatile Organic Compounds in Residences", HB 2012, Brisbane, AU, July, 2012.

F. J. Offermann, A. T. Hodgson, P. L. Jenkins, R. D. Johnson, and T. J. Phillips, "Attached Garages as a Source of Volatile Organic Compounds in New Homes", HB 2012, Brisbane, CA, July, 2012.

R. Maddalena, N. Li, F. Offermann, and B. Singer, "Maximizing Information from Residential Measurements of Volatile Organic Compounds", HB 2012, Brisbane, AU, July, 2012.

W. Chen, A. Persily, A. Hodgson, F. Offermann, D. Poppendieck, and K. Kumagai, "Area-Specific Airflow Rates for Evaluating the Impacts of VOC emissions in U.S. Single-Family Homes", Building and Environment, Vol. 71, 204-211, February, 2014.

F. J. Offermann, A. Eagan A. C. Offermann, and L. J. Radonovich, "Infectious Disease Aerosol Exposures With and Without Surge Control Ventilation System Modifications", Indoor Air 2014, Hong Kong, July, 2014.

F. J. Offermann, "Chemical Emissions from E-Cigarettes: Direct and Indirect Passive Exposures", Building and Environment, Vol. 93, Part 1, 101-105, November, 2015.

F. J. Offermann, "Formaldehyde Emission Rates From Lumber Liquidators Laminate Flooring Manufactured in China", Indoor Air 2016, Belgium, Ghent, July, 2016.

F. J. Offermann, "Formaldehyde and Acetaldehyde Emission Rates for E-Cigarettes", Indoor Air 2016, Belgium, Ghent, July, 2016.

OTHER REPORTS:

W.J.Fisk, P.G.Cleary, and F.J.Offermann, "Energy Saving Ventilation with Residential Heat Exchangers," a Lawrence Berkeley Laboratory brochure distributed by the Bonneville Power Administration, 1981.

F.J.Offermann, J.R.Girman, and C.D.Hollowell, "Midway House Tightening Project: A Study of Indoor Air Quality," Lawrence Berkeley Laboratory, Berkeley, CA, Report LBL-12777, 1981.

F.J.Offermann, J.B.Dickinson, W.J.Fisk, D.T.Grimsrud, C.D.Hollowell, D.L.Krinkle, and G.D.Roseme, "Residential Air-Leakage and Indoor Air Quality in Rochester, New York," Lawrence Berkeley Laboratory, Berkeley, CA, Report LBL-13100, 1982.

F.J.Offermann, W.J.Fisk, B.Pedersen, and K.L.Revzan, Residential Air-to-Air Heat Exchangers: A Study of the Ventilation Efficiencies of Wall- or Window- Mounted Units," Lawrence Berkeley Laboratory, Berkeley, CA, Report LBL-14358, 1982.

F.J.Offermann, W.J.Fisk, W.W.Nazaroff, and R.G.Sextro, "A Review of Portable Air Cleaners for Controlling Indoor Concentrations of Particulates and Radon Progeny," An interim report for the Bonneville Power Administration, 1983.

W.J.Fisk, K.M.Archer, R.E.Chant, D.Hekmat, F.J.Offermann, and B.S. Pedersen, "Freezing in Residential Air-to-Air Heat Exchangers: An Experimental Study," Lawrence Berkeley Laboratory, Berkeley, CA, Report LBL-16783, 1983.

R.G.Sextro, W.W.Nazaroff, F.J.Offermann, and K.L.Revzan, "Measurements of Indoor Aerosol Properties and Their Effect on Radon Progeny," Proceedings of the American Association of Aerosol Research Annual Meeting, April, 1983.

F.J.Offermann, R.G.Sextro, W.J.Fisk, W.W. Nazaroff, A.V.Nero, K.L.Revzan, and J.Yater, "Control of Respirable Particles and Radon Progeny with Portable Air Cleaners," Lawrence Berkeley Laboratory, Berkeley, CA, Report LBL-16659, 1984.

W.J.Fisk, R.K.Spencer, D.T.Grimsrud, F.J.Offermann, B.Pedersen, and R.G.Sextro, "Indoor Air Quality Control Techniques: A Critical Review," Lawrence Berkeley Laboratory, Berkeley, CA, Report LBL-16493, 1984.

F.J.Offermann, J.R.Girman, and R.G.Sextro, "Controlling Indoor Air Pollution from Tobacco Smoke: Models and Measurements,", Indoor Air, Proceedings of the 3rd International Conference on Indoor Air Quality and Climate, Vol 1, pp 257-264, Swedish Council for Building Research, Stockholm (1984), Lawrence Berkeley Laboratory, Berkeley, CA, Report LBL-17603, 1984.

R.Otto, J.Girman, F.Offermann, and R.Sextro,"A New Method for the Collection and Comparison of Respirable Particles in the Indoor Environment," Lawrence Berkeley Laboratory, Berkeley, CA, Special Director Fund's Study, 1984.

A.T.Hodgson and F.J.Offermann, "Examination of a Sick Office Building," Lawrence Berkeley Laboratory, Berkeley, CA, an informal field study, 1984.

R.G.Sextro, F.J.Offermann, W.W.Nazaroff, and A.V.Nero, "Effects of Aerosol Concentrations on Radon Progeny," Aerosols, Science, & Technology, and Industrial Applications of Airborne Particles, editors B.Y.H.Liu, D.Y.H.Pui, and H.J.Fissan, p525, Elsevier, 1984.

K.Sexton, S.Hayward, F.Offermann, R.Sextro, and L.Weber, "Characterization of Particulate and Organic Emissions from Major Indoor Sources, Proceedings of the Third International Conference on Indoor Air Quality and Climate, Stockholm, Sweden, August 20-24, 1984.

F.J.Offermann, "Tracer Gas Measurements of Laboratory Fume Entrainment at a Semi-Conductor Manufacturing Plant," an Indoor Environmental Engineering R&D Report, 1986.

F.J.Offermann, "Tracer Gas Measurements of Ventilation Rates in a Large Office Building," an Indoor Environmental Engineering R&D Report, 1986.

F.J.Offermann, "Measurements of Volatile Organic Compounds in a New Large Office Building with Adhesive Fastened Carpeting," an Indoor Environmental Engineering R&D Report, 1986.

F.J.Offermann, "Designing and Operating Healthy Buildings", an Indoor Environmental Engineering R&D Report, 1986.

F.J.Offermann, "Measurements and Mitigation of Indoor Spray-Applicated Pesticides", an Indoor Environmental Engineering R&D Report, 1988.

F.J.Offermann and S. Loiselle, "Measurements and Mitigation of Indoor Mold Contamination in a Residence", an Indoor Environmental Engineering R&D Report, 1989.

F.J.Offermann and S. Loiselle, "Performance Measurements of an Air Cleaning System in a Large Archival Library Storage Facility", an Indoor Environmental Engineering R&D Report, 1989.

F.J. Offermann, J.M. Daisey, L.A. Gundel, and A.T. Hodgson, S. A. Loiselle, "Sampling, Analysis, and Data Validation of Indoor Concentrations of Polycyclic Aromatic Hydrocarbons", Final Report, Contract No. A732-106, California Air Resources Board, March, 1990.

L.A. Gundel, J.M. Daisey, and F.J. Offermann, "A Sampling and Analytical Method for Gas Phase Polycyclic Aromatic Hydrocarbons", Proceedings of the 5th International Conference on Indoor Air Quality and Climate, Indoor Air '90, July 29-August 1990.

A.T. Hodgson, J.M. Daisey, and F.J. Offermann "Development of an Indoor Sampling and Analytical Method for Particulate Polycyclic Aromatic Hydrocarbons", Proceedings of the 5th International Conference on Indoor Air Quality and Climate, Indoor Air '90, July 29-August, 1990.

F.J. Offermann, J.O. Sateri, "Tracer Gas Measurements in Large Multi-Room Buildings", Indoor Air '93, Helsinki, Finland, July 4-8, 1993.

F.J.Offermann, M. T. O'Flaherty, and M. A. Waz "Validation of ASHRAE 129 - Standard Method of Measuring Air Change Effectiveness", Final Report of ASHRAE Research Project 891, December 8, 1997.

S.E. Guffey, F.J. Offermann et. al., "Proceedings of the Workshop on Ventilation Engineering Controls for Environmental Tobacco smoke in the Hospitality Industry", U.S. Department of Labor Occupational Safety and Health Administration and ACGIH, 1998.

F.J. Offermann, R.J. Fiskum, D. Kosar, and D. Mudaari, "A Practical Guide to Ventilation Practices & Systems for Existing Buildings", *Heating/Piping/Air Conditioning Engineering* supplement to April/May 1999 issue.

F.J. Offermann, P. Pasanen, "Workshop 18: Criteria for Cleaning of Air Handling Systems", Healthy Buildings 2000, Espoo, Finland, August 2000.

F.J. Offermann, Session Summaries: Building Investigations, and Design & Construction, Healthy Buildings 2000, Espoo, Finland, August 2000.

F.J. Offermann, "The IAQ Top 10", Engineered Systems, November, 2008.

L. Kincaid and F.J. Offermann, "Unintended Consequences: Formaldehyde Exposures in Green Homes, AIHA Synergist, February, 2010.

F.J. Offermann, " IAQ in Air Tight Homes", ASHRAE Journal, November, 2010.

F.J. Offermann, "The Hazards of E-Cigarettes", ASHRAE Journal, June, 2014.

PRESENTATIONS :

"Low-Infiltration Housing in Rochester, New York: A Study of Air Exchange Rates and Indoor Air Quality," Presented at the International Symposium on Indoor Air Pollution, Health and Energy Conservation, Amherst, MA, October 13-16,1981.

"Ventilation Efficiencies of Wall- or Window-Mounted Residential Air-to-Air Heat Exchangers," Presented at the American Society of Heating, Refrigeration, and Air Conditioning Engineers Summer Meeting, Washington, DC, June, 1983.

"Controlling Indoor Air Pollution from Tobacco Smoke: Models and Measurements," Presented at the Third International Conference on Indoor Air Quality and Climate, Stockholm, Sweden, August 20-24, 1984.

"Indoor Air Pollution: An Emerging Environmental Problem", Presented to the Association of Environmental Professionals, Bar Area/Coastal Region 1, Berkeley, CA, May 29, 1986.

"Ventilation Measurement Techniques," Presented at the Workshop on Sampling and Analytical Techniques, Georgia Institute of Technology, Atlanta, Georgia, September 26, 1986 and September 25, 1987.

"Buildings That Make You Sick: Indoor Air Pollution", Presented to the Sacramento Association of Professional Energy Managers, Sacramento, CA, November 18, 1986.

"Ventilation Effectiveness and Indoor Air Quality", Presented to the American Society of Heating, Refrigeration, and Air Conditioning Engineers Northern Nevada Chapter, Reno, NV, February 18, 1987, Golden Gate Chapter, San Francisco, CA, October 1, 1987, and the San Jose Chapter, San Jose, CA, June 9, 1987.

"Tracer Gas Techniques for Studying Ventilation," Presented at the Indoor Air Quality Symposium, Georgia Tech Research Institute, Atlanta, GA, September 22-24, 1987.

"Indoor Air Quality Control: What Works, What Doesn't," Presented to the Sacramento Association of Professional Energy Managers, Sacramento, CA, November 17, 1987.

"Ventilation Effectiveness and ADPI Measurements of a Forced Air Heating System," Presented at the American Society of Heating, Refrigeration, and Air Conditioning Engineers Winter Meeting, Dallas, Texas, January 31, 1988.

"Indoor Air Quality, Ventilation, and Energy in Commercial Buildings", Presented at the Building Owners &Managers Association of Sacramento, Sacramento, CA, July 21, 1988.

"Controlling Indoor Air Quality: The New ASHRAE Ventilation Standards and How to Evaluate Indoor Air Quality", Presented at a conference "Improving Energy Efficiency and Indoor Air Quality in Commercial Buildings," National Energy Management Institute, Reno, Nevada, November 4, 1988.

"A Study of Diesel Fume Entrainment Into an Office Building," Presented at Indoor Air '89: The Human Equation: Health and Comfort, American Society of Heating, Refrigeration, and Air Conditioning Engineers, San Diego, CA, April 17-20, 1989.

"Indoor Air Quality in Commercial Office Buildings," Presented at the Renewable Energy Technologies Symposium and International Exposition, Santa Clara, CA June 20, 1989.

"Building Ventilation and Indoor Air Quality", Presented to the San Joaquin Chapter of the American Society of Heating, Refrigeration, and Air Conditioning Engineers, September 7, 1989.

"How to Meet New Ventilation Standards: Indoor Air Quality and Energy Efficiency," a workshop presented by the Association of Energy Engineers; Chicago, IL, March 20-21, 1989; Atlanta, GA, May 25-26, 1989; San Francisco, CA, October 19-20, 1989; Orlando, FL, December 11-12, 1989; Houston, TX, January 29-30, 1990; Washington D.C., February 26-27, 1990; Anchorage, Alaska, March 23, 1990; Las Vegas, NV, April 23-24, 1990; Atlantic City, NJ, September 27-28, 1991; Anaheim, CA, November 19-20, 1991; Orlando, FL, February 28 - March 1, 1991; Washington, DC, March 20-21, 1991; Chicago, IL, May 16-17, 1991; Lake Tahoe, NV, August 15-16, 1991; Atlantic City, NJ, November 18-19, 1991; San Jose, CA, March 23-24, 1992.

"Indoor Air Quality," a seminar presented by the Anchorage, Alaska Chapter of the American Society of Heating, Refrigeration, and Air Conditioning Engineers, March 23, 1990.

"Ventilation and Indoor Air Quality", Presented at the 1990 HVAC & Building Systems Congress, Santa, Clara, CA, March 29, 1990.

"Ventilation Standards for Office Buildings", Presented to the South Bay Property Managers Association, Santa Clara, May 9, 1990.

"Indoor Air Quality", Presented at the Responsive Energy Technologies Symposium & International Exposition (RETSIE), Santa Clara, CA, June 20, 1990.

"Indoor Air Quality - Management and Control Strategies", Presented at the Association of Energy Engineers, San Francisco Bay Area Chapter Meeting, Berkeley, CA, September 25, 1990.

"Diagnosing Indoor Air Contaminant and Odor Problems", Presented at the ASHRAE Annual Meeting, New York City, NY, January 23, 1991.

"Diagnosing and Treating the Sick Building Syndrome", Presented at the Energy 2001, Oklahoma, OK, March 19, 1991.

"Diagnosing and Mitigating Indoor Air Quality Problems" a workshop presented by the Association of Energy Engineers, Chicago, IL, October 29-30, 1990; New York, NY, January 24-25, 1991; Anaheim, April 25-26, 1991; Boston, MA, June 10-11, 1991; Atlanta, GA, October 24-25, 1991; Chicago, IL, October 3-4, 1991; Las Vegas, NV, December 16-17, 1991; Anaheim, CA, January 30-31, 1992; Atlanta, GA, March 5-6, 1992; Washington, DC, May 7-8, 1992; Chicago, IL, August 19-20, 1992; Las Vegas,

NV, October 1-2, 1992; New York City, NY, October 26-27, 1992, Las Vegas, NV, March 18-19, 1993; Lake Tahoe, CA, July 14-15, 1994; Las Vegas, NV, April 3-4, 1995; Lake Tahoe, CA, July 11-12, 1996; Miami, Fl, December 9-10, 1996.

"Sick Building Syndrome and the Ventilation Engineer", Presented to the San Jose Engineers Club, May, 21, 1991.

"Duct Cleaning: Who Needs It ? How Is It Done ? What Are The Costs ?" What Are the Risks ?, Moderator of Forum at the ASHRAE Annual Meeting, Indianapolis ID, June 23, 1991.

"Operating Healthy Buildings", Association of Plant Engineers, Oakland, CA, November 14, 1991.

"Duct Cleaning Perspectives", Moderator of Seminar at the ASHRAE Semi-Annual Meeting, Indianapolis, IN, June 24, 1991.

"Duct Cleaning: The Role of the Environmental Hygienist," ASHRAE Annual Meeting, Anaheim, CA, January 29, 1992.

"Emerging IAQ Issues", Fifth National Conference on Indoor Air Pollution, University of Tulsa, Tulsa, OK, April 13-14, 1992.

"International Symposium on Room Air Convection and Ventilation Effectiveness", Member of Scientific Advisory Board, University of Tokyo, July 22-24, 1992.

"Guidelines for Contaminant Control During Construction and Renovation Projects in Office Buildings," Seminar paper at the ASHRAE Annual Meeting, Chicago, IL, January 26, 1993.

"Outside Air Economizers: IAQ Friend or Foe", Moderator of Forum at the ASHRAE Annual Meeting, Chicago, IL, January 26, 1993.

"Orientation to Indoor Air Quality," an EPA two and one half day comprehensive indoor air quality introductory workshop for public officials and building property managers; Sacramento, September 28-30, 1992; San Francisco, February 23-24, 1993; Los Angeles, March 16-18, 1993; Burbank, June 23, 1993; Hawaii, August 24-25, 1993; Las Vegas, August 30, 1993; San Diego, September 13-14, 1993; Phoenix, October 18-19, 1993; Reno, November 14-16, 1995; Fullerton, December 3-4, 1996; Fresno, May 13-14, 1997.

"Building Air Quality: A Guide for Building Owners and Facility Managers," an EPA one half day indoor air quality introductory workshop for building owners and facility managers. Presented throughout Region IX 1993-1995.

“Techniques for Airborne Disease Control”, EPRI Healthcare Initiative Symposium; San Francisco, CA; June 7, 1994.

“Diagnosing and Mitigating Indoor Air Quality Problems”, CIHC Conference; San Francisco, September 29, 1994.

”Indoor Air Quality: Tools for Schools,” an EPA one day air quality management workshop for school officials, teachers, and maintenance personnel; San Francisco, October 18-20, 1994; Cerritos, December 5, 1996; Fresno, February 26, 1997; San Jose, March 27, 1997; Riverside, March 5, 1997; San Diego, March 6, 1997; Fullerton, November 13, 1997; Santa Rosa, February 1998; Cerritos, February 26, 1998; Santa Rosa, March 2, 1998.

ASHRAE 62 Standard “Ventilation for Acceptable IAQ”, ASCR Convention; San Francisco, CA, March 16, 1995.

“New Developments in Indoor Air Quality: Protocol for Diagnosing IAQ Problems”, AIHA-NC; March 25, 1995.

"Experimental Validation of ASHRAE SPC 129, Standard Method of Measuring Air Change Effectiveness", 16th AIVC Conference, Palm Springs, USA, September 19-22, 1995.

“Diagnostic Protocols for Building IAQ Assessment”, American Society of Safety Engineers Seminar: ‘Indoor Air Quality – The Next Door’; San Jose Chapter, September 27, 1995; Oakland Chapter, 9, 1997.

“Diagnostic Protocols for Building IAQ Assessment”, Local 39; Oakland, CA, October 3, 1995.

“Diagnostic Protocols for Solving IAQ Problems”, CSU-PPD Conference; October 24, 1995.

“Demonstrating Compliance with ASHRAE 62-1989 Ventilation Requirements”, AIHA; October 25, 1995.

“IAQ Diagnostics: Hands on Assessment of Building Ventilation and Pollutant Transport”, EPA Region IX; Phoenix, AZ, March 12, 1996; San Francisco, CA, April 9, 1996; Burbank, CA, April 12, 1996.

“Experimental Validation of ASHRAE 129P: Standard Method of Measuring Air Change Effectiveness”, Room Vent ‘96 / International Symposium on Room Air Convection and Ventilation Effectiveness"; Yokohama, Japan, July 16-19, 1996.

“IAQ Diagnostic Methodologies and RFP Development”, CCEHSA 1996 Annual Conference, Humboldt State University, Arcata, CA, August 2, 1996.

“The Practical Side of Indoor Air Quality Assessments”, California Industrial Hygiene Conference ‘96, San Diego, CA, September 2, 1996.

"ASHRAE Standard 62: Improving Indoor Environments", Pacific Gas and Electric Energy Center, San Francisco, CA, October 29, 1996.

"Operating and Maintaining Healthy Buildings", April 3-4, 1996, San Jose, CA; July 30, 1997, Monterey, CA.

"IAQ Primer", Local 39, April 16, 1997; Amdahl Corporation, June 9, 1997; State Compensation Insurance Fund's Safety & Health Services Department, November 21, 1996.

"Tracer Gas Techniques for Measuring Building Air Flow Rates", ASHRAE, Philadelphia, PA, January 26, 1997.

"How to Diagnose and Mitigate Indoor Air Quality Problems"; Women in Waste; March 19, 1997.

"Environmental Engineer: What Is It?", Monte Vista High School Career Day; April 10, 1997.

"Indoor Environment Controls: What's Hot and What's Not", Shaklee Corporation; San Francisco, CA, July 15, 1997.

"Measurement of Ventilation System Performance Parameters in the US EPA BASE Study", Healthy Buildings/IAQ'97, Washington, DC, September 29, 1997.

"Operations and Maintenance for Healthy and Comfortable Indoor Environments", PASMA; October 7, 1997.

"Designing for Healthy and Comfortable Indoor Environments", Construction Specification Institute, Santa Rosa, CA, November 6, 1997.

"Ventilation System Design for Good IAQ", University of Tulsa 10th Annual Conference, San Francisco, CA, February 25, 1998.

"The Building Shell", Tools For Building Green Conference and Trade Show, Alameda County Waste Management Authority and Recycling Board, Oakland, CA, February 28, 1998.

"Identifying Fungal Contamination Problems In Buildings", The City of Oakland Municipal Employees, Oakland, CA, March 26, 1998.

"Managing Indoor Air Quality in Schools: Staying Out of Trouble", CASBO, Sacramento, CA, April 20, 1998.

"Indoor Air Quality", CSOOC Spring Conference, Visalia, CA, April 30, 1998.

"Particulate and Gas Phase Air Filtration", ACGIH/OSHA, Ft. Mitchell, KY, June 1998.

"Building Air Quality Facts and Myths", The City of Oakland / Alameda County Safety Seminar, Oakland, CA, June 12, 1998.

"Building Engineering and Moisture", Building Contamination Workshop, University of California Berkeley, Continuing Education in Engineering and Environmental Management, San Francisco, CA, October 21-22, 1999.

"Identifying and Mitigating Mold Contamination in Buildings", Western Construction Consultants Association, Oakland, CA, March 15, 2000; AIG Construction Defect Seminar, Walnut Creek, CA, May 2, 2001; City of Oakland Public Works Agency, Oakland, CA, July 24, 2001; Executive Council of Homeowners, Alamo, CA, August 3, 2001.

"Using the EPA BASE Study for IAQ Investigation / Communication", Joint Professional Symposium 2000, American Industrial Hygiene Association, Orange County & Southern California Sections, Long Beach, October 19, 2000.

"Ventilation," Indoor Air Quality: Risk Reduction in the 21st Century Symposium, sponsored by the California Environmental Protection Agency/Air Resources Board, Sacramento, CA, May 3-4, 2000.

"Workshop 18: Criteria for Cleaning of Air Handling Systems", Healthy Buildings 2000, Espoo, Finland, August 2000.

"Closing Session Summary: 'Building Investigations' and 'Building Design & Construction', Healthy Buildings 2000, Espoo, Finland, August 2000.

"Managing Building Air Quality and Energy Efficiency, Meeting the Standard of Care", BOMA, MidAtlantic Environmental Hygiene Resource Center, Seattle, WA, May 23rd, 2000; San Antonio, TX, September 26-27, 2000.

"Diagnostics & Mitigation in Sick Buildings: When Good Buildings Go Bad," University of California Berkeley, September 18, 2001.

"Mold Contamination: Recognition and What To Do and Not Do", Redwood Empire Remodelers Association; Santa Rosa, CA, April 16, 2002.

"Investigative Tools of the IAQ Trade", Healthy Indoor Environments 2002; Austin, TX; April 22, 2002.

"Finding Hidden Mold: Case Studies in IAQ Investigations", AIHA Northern California Professionals Symposium; Oakland, CA, May 8, 2002.

"Assessing and Mitigating Fungal Contamination in Buildings", Cal/OSHA Training; Oakland, CA, February 14, 2003 and West Covina, CA, February 20-21, 2003.

"Use of External Containments During Fungal Mitigation", Invited Speaker, ACGIH Mold Remediation Symposium, Orlando, FL, November 3-5, 2003.

Building Operator Certification (BOC), 106-IAQ Training Workshops, Northwest Energy Efficiency Council; Stockton, CA, December 3, 2003; San Francisco, CA, December 9, 2003; Irvine, CA, January 13, 2004; San Diego, January 14, 2004; Irwindale, CA, January 27, 2004; Downey, CA, January 28, 2004; Santa Monica, CA, March 16, 2004; Ontario, CA, March 17, 2004; Ontario, CA, November 9, 2004, San Diego, CA, November 10, 2004; San Francisco, CA, November 17, 2004; San Jose, CA, November 18, 2004; Sacramento, CA, March 15, 2005.

"Mold Remediation: The National QUEST for Uniformity Symposium", Invited Speaker, Orlando, Florida, November 3-5, 2003.

"Mold and Moisture Control", Indoor Air Quality workshop for The Collaborative for High Performance Schools (CHPS), San Francisco, December 11, 2003.

"Advanced Perspectives In Mold Prevention & Control Symposium", Invited Speaker, Las Vegas, Nevada, November 7-9, 2004.

"Building Sciences: Understanding and Controlling Moisture in Buildings", American Industrial Hygiene Association, San Francisco, CA, February 14-16, 2005.

"Indoor Air Quality Diagnostics and Healthy Building Design", University of California Berkeley, Berkeley, CA, March 2, 2005.

"Improving IAQ = Reduced Tenant Complaints", Northern California Facilities Exposition, Santa Clara, CA, September 27, 2007.

"Defining Safe Building Air", Criteria for Safe Air and Water in Buildings, ASHRAE Winter Meeting, Chicago, IL, January 27, 2008.

"Update on USGBC LEED and Air Filtration", Invited Speaker, NAFA 2008 Convention, San Francisco, CA, September 19, 2008.

"Ventilation and Indoor air Quality in New California Homes", National Center of Healthy Housing, October 20, 2008.

"Indoor Air Quality in New Homes", California Energy and Air Quality Conference, October 29, 2008.

"Mechanical Outdoor air Ventilation Systems and IAQ in New Homes", ACI Home Performance Conference, Kansas City, MO, April 29, 2009.

"Ventilation and IAQ in New Homes with and without Mechanical Outdoor Air Systems", Healthy Buildings 2009, Syracuse, CA, September 14, 2009.

"Ten Ways to Improve Your Air Quality", Northern California Facilities Exposition, Santa Clara, CA, September 30, 2009.

"New Developments in Ventilation and Indoor Air Quality in Residential Buildings", Westcon meeting, Alameda, CA, March 17, 2010.

"Intermittent Residential Mechanical Outdoor Air Ventilation Systems and IAQ", ASHRAE SSPC 62.2 Meeting, Austin, TX, April 19, 2010.

"Measured IAQ in Homes", ACI Home Performance Conference, Austin, TX, April 21, 2010.

"Respiration: IEQ and Ventilation", AIHce 2010, How IH Can LEED in Green buildings, Denver, CO, May 23, 2010.

"IAQ Considerations for Net Zero Energy Buildings (NZEB)", Northern California Facilities Exposition, Santa Clara, CA, September 22, 2010.

"Energy Conservation and Health in Buildings", Berkeley High SchoolGreen Career Week, Berkeley, CA, April 12, 2011.

"What Pollutants are Really There ?", ACI Home Performance Conference, San Francisco, CA, March 30, 2011.

"Energy Conservation and Health in Residences Workshop", Indoor Air 2011, Austin, TX, June 6, 2011.

"Assessing IAQ and Improving Health in Residences", US EPA Weatherization Plus Health, September 7, 2011.

"Ventilation: What a Long Strange Trip It's Been", Westcon, May 21, 2014.

"Chemical Emissions from E-Cigarettes: Direct and Indirect Passive Exposures", Indoor Air 2014, Hong Kong, July, 2014.

"Infectious Disease Aerosol Exposures With and Without Surge Control Ventilation System Modifications", Indoor Air 2014, Hong Kong, July, 2014.

"Chemical Emissions from E-Cigarettes", IMF Health and Welfare Fair, Washington, DC, February 18, 2015.

"Chemical Emissions and Health Hazards Associated with E-Cigarettes", Roswell Park Cancer Institute, Buffalo, NY, August 15, 2014.

"Formaldehyde Indoor Concentrations, Material Emission Rates, and the CARB ATCM", Harris Martin's Lumber Liquidators Flooring Litigation Conference, WQ Minneapolis Hotel, May 27, 2015.

"Chemical Emissions from E-Cigarettes: Direct and Indirect Passive Exposure", FDA Public Workshop: Electronic Cigarettes and the Public Health, Hyattsville, MD June 2, 2015.

"Creating Healthy Homes, Schools, and Workplaces", Chautauqua Institution, Athenaeum Hotel, August 24, 2015.

"Diagnosing IAQ Problems and Designing Healthy Buildings", University of California Berkeley, Berkeley, CA, October 6, 2015.

"Diagnosing Ventilation and IAQ Problems in Commercial Buildings", BEST Center Annual Institute, Lawrence Berkeley National Laboratory, January 6, 2016.

"A Review of Studies of Ventilation and Indoor Air Quality in New Homes and Impacts of Environmental Factors on Formaldehyde Emission Rates From Composite Wood Products", AIHce2016, May, 21-26, 2016.

"Admissibility of Scientific Testimony", Science in the Court, Proposition 65 Clearinghouse Annual Conference, Oakland, CA, September 15, 2016.

"Indoor Air Quality and Ventilation", ASHRAE Redwood Empire, Napa, CA, December 1, 2016.

Exhibit C

WILSON IHRIG
ACOUSTICS, NOISE & VIBRATION

CALIFORNIA
WASHINGTON
NEW YORK

WI #24-002.07

April 8th, 2023

Ms. Marjan Kris Abubo
Lozeau | Drury LLP
1939 Harrison Street, Suite 150
Oakland, CA 94612

SUBJECT: Lockwood III Apartments
Oxnard, California
Review and Comment on Noise Study

Dear Mr. Abubo,

Per your request, Wilson Ihrig has reviewed the information and noise impact analysis in the Initial Study/Mitigated Negative Declaration (IS/MND) for the Lockwood III apartments, with an emphasis on the Appendix I, the Noise Study, developed by Meridian Consultants and dated September 2023. The Proposed Project is construction of a 5-story approximately 234-unit multi-family residential building on undeveloped land in the City of Oxnard. The projected is surrounded by sensitive uses, including the California Lutheran University Satellite Campus at 2201 Outlet Center Drive, as well as medical office buildings at 1900, 1901, and 2024 Outlet Center Drive

Wilson Ihrig, Acoustical Consultants, has practiced exclusively in the field of acoustics since 1966. During our 57 years of operation, we have prepared hundreds of noise studies for Environmental Impact Reports and Statements. We have one of the largest technical laboratories in the acoustical consulting industry. We also utilize industry-standard acoustical programs such as Roadway Construction Noise Model (RCNM), SoundPLAN, and CADNA. In short, we are well qualified to prepare environmental noise studies and review studies prepared by others.

A-36

Adverse Effects of Noise[1]

Although the health effects of noise are not taken as seriously in the United States as they are in other countries, they are real and, in many parts of the country, pervasive.

A-37

Noise-Induced Hearing Loss. If a person is repeatedly exposed to loud noises, he or she may experience noise-induced hearing impairment or loss. In the United States, both the Occupational Health and Safety Administration (OSHA) and the National Institute for Occupational Safety and

[1] More information on these and other adverse effects of noise may be found in *Guidelines for Community Noise*, eds B Berglund, T Lindvall, and D Schwela, World Health Organization, Geneva, Switzerland, 1999. (https://www.who.int/docstore/peh/noise/Comnoise-1.pdf)

Health (NIOSH) promote standards and regulations to protect the hearing of people exposed to high levels of industrial noise.

Speech Interference. Another common problem associated with noise is speech interference. In addition to the obvious issues that may arise from misunderstandings, speech interference also leads to problems with concentration fatigue, irritation, decreased working capacity, and automatic stress reactions. For complete speech intelligibility, the sound level of the speech should be 15 to 18 dBA higher than the background noise. Typical indoor speech levels are 45 to 50 dBA at 1 meter, so any noise above 30 dBA begins to interfere with speech intelligibility. The common reaction to higher background noise levels is to raise one's voice. If this is required persistently for long periods of time, stress reactions and irritation will likely result.

Sleep Disturbance. Noise can disturb sleep by making it more difficult to fall asleep, by waking someone after they are asleep, or by altering their sleep stage, e.g., reducing the amount of rapid eye movement (REM) sleep. Noise exposure for people who are sleeping has also been linked to increased blood pressure, increased heart rate, increase in body movements, and other physiological effects. Not surprisingly, people whose sleep is disturbed by noise often experience secondary effects such as increased fatigue, depressed mood, and decreased work performance.

Cardiovascular and Physiological Effects. Human's bodily reactions to noise are rooted in the "fight or flight" response that evolved when many noises signaled imminent danger. These include increased blood pressure, elevated heart rate, and vasoconstriction. Prolonged exposure to acute noises can result in permanent effects such as hypertension and heart disease.

Impaired Cognitive Performance. Studies have established that noise exposure impairs people's abilities to perform complex tasks (tasks that require attention to detail or analytical processes) and it makes reading, paying attention, solving problems, and memorizing more difficult. This is why there are standards for classroom background noise levels and why offices and libraries are designed to provide quiet work environments.

A-37 (cont)

Construction Noise Threshold is Misinterpreted

The Noise Memo in Appendix I errs by using the Federal Transit Administration (FTA) detailed assessment methodology with the contradictory and less stringent general assessment threshold. Appendix I states on page 11 that "a construction-related noise level threshold is adopted from the FTA Construction Noise Handbook for General Assessment Construction Noise Criteria" and that "The construction noise criteria threshold for residential uses is 90 dBA (Leq-1hour) during the daytime." This is correctly cited from the manual.

Additionally, on Page 15, the Noise Appendix states that in order to "calculate construction noise levels, hourly activity or utilization factors … are estimated based on the temporal characteristics of other previous and current construction projects." These values are then given as an input in Table 6, which affects the construction noise source level used in the model (and thus the final modeled construction noise level).

A-38

However, it should be noted that the FTA advises assuming a usage factor of 1 when using a general assessment in the Transit Noise and Vibration Impact Assessment Manual.[2] The same document notes that usage factors are only utilized in the detailed assessment. Included usage factors in a general assessment underestimates noise by as much as 7 decibels for pieces of equipment that are used in the analysis, such as cranes. This difference is baked into the different criteria. The general assessment will almost always have higher levels than the detailed assessment since there is no usage factor adjustment, and thus has a higher criterion of 90 dBA. The detailed assessment is the inverse; typically lower modeled construction noise levels with a lower criterion of 80 dBA. The document's approach of using FTA general assessment criteria while incorporating usage factors significantly underestimates the potential impact of construction noise, especially since the modeled noise for the Site Preparation and Grading phases are 7 dBA over the 80 dBA threshold. This error should be fixed in an updated EIR, with more attention paid to consistency different construction noise modeling methodologies and thresholds.

A-38 (cont)

On-Site Operational Noise Analysis is Incomplete

The Noise Analysis does not study impacts generated by noise produced by this project on nearby receivers. As such, it's possible the rooftop mechanical equipment, among other things, would raise nearby ambient levels over impact thresholds. This is especially a concern at night since HVAC systems can run at any hour.

There are no calculations nor any evidence provided that demonstrates mechanical equipment used in the Project will not be potentially significant at nearby sensitive receivers. Typical noise levels associated with mechanical equipment can be placed in a noise model with distance attenuation and project geometry to determine if there is an impact that would require mitigation. To confirm a less than significant impact, the Project Applicant should demonstrate in an Environmental Impact Report that the level generated by these sources is below reasonable significance thresholds.

A-39

The Potential for Building Damage Caused by Construction Vibration is Not Studied

Table 8 presents modeled construction vibration annoyance levels along with associated thresholds for applicable sensitive receivers. The FTA guidance manual states on Page 182 that "Buildings founded on the soil near the construction site [can] respond to these [construction] vibrations with … slight damage at the highest [vibration] levels." As such, it is imperative that all nearby sensitive receivers are analyzed for construction vibration damage to nearby structures, as such levels are within the realm of possibility. This should be included in an Environmental Impact Report.

A-40

Off-Site Operational Noise Analysis is Incomplete

Table 9 in the Noise Analysis presents Existing Plus Project Noise Levels with and without the project traffic and compares this difference to significance thresholds. However, the analysis only considers Rice Avene, Gonzales Road, and Rose Avenue. This means that potential traffic noise increases on Lockwood Ave and Outlet Center Drive are not considered.

This is particularly egregious for Lockwood Street, which is the main access road in and out of the site. Current traffic levels are presumably low, and even slight increases may double traffic, which

A-41

[2] https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf page 177

could increase noise levels by 3 dBA[3]. As such, there is a potential for significant impacts, and the issue should be studied in an Environmental Impact Report. A-41 (cont)

Conclusion

The IS/MND includes several errors, including an improper interpretation of construction noise guidelines, and little to no analysis on rooftop mechanical noise, construction vibration damage to buildings, and off-site noise on Lockwood Ave and Outlet Center Drive. These error and omissions should be corrected in a revised IS/MND or in and Environmental Impact Report. A-42

Please feel free to contact me with any questions on this information.

Very truly yours,
WILSON IHRIG

John Meighan
Associate

lockwood 3 apartments mnd - comments on noise analysis - j meighan.docx

[3]Since 3dBA represents a doubling of sound energy https://www.nps.gov/subjects/sound/mapfaq.htm

WILSON IHRIG
ACOUSTICS, NOISE & VIBRATION

JACK MEIGHAN

Associate

Jack joined Wilson Ihrig in 2021 and works out of our Los Angeles office. He is an experienced acoustical engineer with expertise in projects involving rail transit systems, highways, CEQA analysis, environmental noise reduction, mechanical drawing reviews, and construction noise and vibration mitigation. He has hands-on experience with project management, including client coordination and presentations, as well as in designing, developing, and testing MATLAB code used in acoustics applications. His expertise includes field measurements, developing test plans and specifying, purchasing, setting up and repairing acoustic measurement equipment. He has experience in using Traffic Noise Model (TNM), CadnaA, EASE, Visual Basic, LabView, and CAD software.

Education

- B.S. in Mechanical Engineering, University of Southern California, Los Angeles, CA

Project Experience

LA Metro Regional Connector, Los Angeles CA
Planned, took, and processed measurements as part of a team to determine the effectiveness of floating slab trackwork for a new subway in downtown Los Angeles that travels below the Walt Disney Concert Hall and the Colburn School of Music.

Rodeo Credit Enterprise CEQA Analysis for New Construction, Palmdale, CA
Wrote an accepted proposal and executed it for a noise study project to determine noise mitigation requirements on a new housing development. Led all aspects of the project and managed the budget during all phases of project completion. Completed five separate projects of this type for this company.

Blackhall Studios, Santa Clarita, CA
Led the vibration measurement effort for a new soundstage directly adjacent to an existing freight and commuter rail line. Tested equipment, processed data, and analyzed results to determine the vibration propagation through the soil to the proposed soundstage locations, and was part of the team that developed mitigation techniques for the office spaces directly next to the rail line.

Octavia Residential Condos CEQA Study, San Francisco, CA
Calculated the STC ratings for the proposed windows to meet Title 24 requirements, modeled the acoustic performance of floor and ceiling structures, researched noise codes, helped with a mechanical design review, and wrote a report summarizing the results for a new Condominium project being developed in San Francisco.

ARRIVE San Diego Airport Terminal 1 Replacement, CA
Conducted interior noise and vibration measurements, analyzed measurement data to help determine project criteria, modeled the existing and future terminals in CadnaA, and was part of a team that did a complete HVAC analysis of the entire terminal, as part of a CEQA analysis where a new terminal for the airport is being designed.
Five Points Apartments Noise Study, Whittier, CA

Conducted measurements, researched sound data and solutions, and recommended mitigation for a new apartment complex that was located next to an existing car wash, as part of a CEQA review.

USC Ellison Vibration Survey, Los Angeles, CA
Conducted vibration measurements as part of a survey to determine the effectiveness of vibration isolation platforms that are used to insulate cell growth in a cancer research facility. Determined the effectiveness and presented this information to the client. Researched and recommended a permanent monitoring system so the client could view data in real time.

TEN50 Condos Noise Investigation, Los Angeles, CA
Was part of a team that investigated the noise source of an unwanted popping noise in luxury condominiums in Downtown Los Angeles. Helped isolate the noise source location with accelerometers to determine where vibrations were occurring first and used an acoustic camera to determine where in the condo the noise was coming from.

2000 University Mixed-Use Building, Berkely, CA
Wrote a construction noise monitoring plan based on environmental noise calculations, as required by CEQA, wrote a report summarizing the results, and attended a client meeting to discuss options.

Bay Area Rapid Transit (BART) On-Track, CA, San Francisco Bay Area, CA*
Day to day project manager, responsible for meetings, presentations, and coordination with the client for an ongoing noise study on the BART system. Developed MATLAB code to process measurements and determine areas where high corrugation was present, contributing to excessively high in-car noise levels. Performed noise measurements inside both the right of way and the vehicle cabin, in addition to rail corrugation measurements.

California I-605/SR-60 Interchange Improvement, Los Angeles, CA*
Developed a noise model of the area that predicted sound levels for abatement design, in addition to conducting noise measurements and analysis. Led the Team in use of the FHWA Traffic Noise Model Software for the project, involving three major highways and two busy interchanges extending over 17 miles in southern California.

Sound Transit On-Track, Seattle, WA*
Took measurements, fixed equipment, and developed software in MATLAB to process Corrugation Analysis Trolley measurements as part of an ongoing noise study on the Sound Transit Link system. Tested vibration data to determine the best measurement and processing techniques to store the data in an online database for in-car measurements.

LA Metro CRRC Railcar Testing, Los Angeles, CA*
Led the effort to plan the measurements, determine measurement locations and finalize the test plan. Formulated a method to capture speed data directly from legacy train vehicles. Executed noise and vibration specification measurements for new rail cars delivered by CRRC.

City of Los Angeles, Pershing Square Station Rehabilitation Noise Monitoring, CA*
Built noise models, wrote a construction noise plan, and assisted in on-site construction noise issues as they arose for a renovation of the Pershing Square metro station in downtown Los

Angeles. Trained construction personnel in techniques for noise reduction and how to conduct noise monitoring measurements to meet project specifications.

City of Orange Metrolink Parking Garage Construction Monitoring, CA*
Wrote an adaptive management vibration monitoring plan, set up equipment to monitor live vibration levels, and generated weekly reports as part of an effort to build a new parking garage. Designed, planned, and completed measurements to predict and mitigate pile driving construction impacts at three historic building locations adjacent to the construction site. Coordinated with the client whenever an on-site problem arose.

LA Metro Westside Subway Construction, Los Angeles, CA*
Planned, organized, and processed noise measurements for the Purple Line extension construction. Implemented both long term microphones to measure noise levels and accelerometers to measure vibration levels in existing subway tunnels. Oversaw noise monitoring at sensitive construction sites for the project and worked with the contractor to find ways to reduce construction noise levels by approximately 10dB.

Montreal Réseau Express Métropolitain, Canada*
Conducted vibration propagation measurements used to create models to predict operational vibration levels for an under-construction transit line. Managed equipment, solved problems in the field, and wrote parts of the report summarizing the findings of the acoustic study.

NCHRP Research Report 882 & 886, Multiple Locations (Dayton and Columbus, OH)
Took on-highway measurements and wrote, designed, developed, and tested MATLAB code to identify specific spectrograms to use for analyses for a project evaluating barrier reflected highway traffic noise differences in the presence of a single absorptive or reflective noise barrier.

Siemens Railcar Testing for Sound Transit, Seattle, WA*
Measured in-car noise and vibration for new rail cars delivered by Siemens. Developed new internal techniques for measurements based on the written specifications. Contributed to the team that helped identify issues that new cars had in meeting the Sound Transit specifications for noise and vibration. Participated in developing the test plan and specified then acquired new equipment for the measurement.

Toronto/Ontario Eglinton Crosstown Light Rail, Final Design, Canada*
Assisted in vibration propagation measurements, analysis, and recommendations for mitigation for a 12-mile light-rail line both on and under Eglinton Avenue. Set up and ran equipment for at-grade measurements with an impact hammer for underground measurements with an impact load cell that was used during pre-construction borehole drilling.

Letter A Response — Lozeau Drury LLP on behalf of Supporters Alliance for Environmental Responsibility (SAFER) April 12, 2024

A-1 The comment introduces the commenter and asserts that SAFER believes that the Public Review Draft IS/MND is improper under the California Environmental Quality Act (CEQA), and that an Environmental Impact Report (EIR) is required as the Project may have adverse environmental impacts related to biological resources, air quality, and noise. The City disagrees with the commenter and has prepared the proper CEQA documentation for the Project.

A-2 The Comment asserts that the Project's proposed mitigation measures inadequately address the Project's environmental impacts and conflict with the air quality policies pursuant to the Ventura County Air Pollution Control District (VCAPCD), and notes that SAFER's review was supported by a number of technical reviewers. The City disagrees with the commenter and has adequately addressed the Project's potential environmental effects and incorporated applicable mitigation measures within the Public Review Draft IS/MND. This City also acknowledges that this comment is an introduction to the comments that follow.

A-3 This comment requests that the City not proceed with certifying the MND and to instead prepare an EIR. This comment is an opinion and does not raise a significant environmental issue regarding the adequacy of the information presented in the Public Review Draft IS/MND.

A-4 This comment provides a brief summary of the Project description. This comment does not raise any specific comments on the environmental documentation provided in the Public Review Draft IS/MND. No further response is required.

A-5 This comment provides information on the definition of legal standard of review, the "fair argument" standard and notes numerous examples of case law relating to this. As this comment is informative in nature and does not raise any specific comments on the environmental documentation provided in the Public Review Draft IS/MND, no further response is required.

A-6 This comment presents the credentials of Dr. Shawn Smallwood and wildlife biologist Noriko Smallwood and asserts that based on the results of a site visit, it was determined that the Project site supports habitat for special-status species and that the Project would have a significant impact on biological resources. The City notes that Ms. Smallwood was only able to survey the site from publicly accessible areas and did not have full site access, unlike ESA's biologists who undertook the biological resources assessment on the Project site. The commenter's assertion that significant impacts to biological resources, other than to nesting birds, is not supported. The Public Review Draft IS/MND identified potential significant impacts to nesting birds; however, with the implementation of Mitigation

Measure BIO-1, potential impacts to nesting birds would be reduced to less than significant. Please see Responses to Comments A-24 through A-26 that address the specific biological resources issues raised in comments below related to asserted impacts.

A-7 The comment asserts that the field survey and baseline conditions prepared by ESA, and required under CEQA guidelines, is deficient. The comment also asserts that the survey methodology was unclear. The baseline conditions presented in the Public Review Draft IS/MND adequately describe the environmental setting of the biological resources on the Project site. As described in Section 3.4 of the Public Review Draft EIR, resource inventory databases and various publications were reviewed as well as a site survey conducted to characterize the Project site's baseline conditions of biological resources. The methodology of conducting the site survey is also discussed in Section 3.4 of the Public Review Draft IS/MND. The biological survey consisted of walking throughout the accessible portions of the survey area that included the Project site and the 200-foot buffer area. Walking within the Project site allowed visual observations of flora and fauna, including signs (i.e., presence of scat) as well as audible detections. These observations allowed visual coverage of potentially suitable plant and wildlife habitat that assisted in characterizing the existing conditions as well as to determine the potential for special-status plant and wildlife species to occur.

A-8 This comment describes the wildlife species observed by Ms. Smallwood during her site visit and identifies three of the species observed, including western gull (*Larus occidentalis*), American kestrel (*Falco sparverius*), and red-tailed hawk (*Buteo jamaicensis*). The comment asserts that these three bird species are "special status species" and are therefore protected under state law. These three species are not identified as "special status species" by the California Department of Fish and Wildlife (CDFW) because they do not appear on CDFW's Special Animals List (also known as the list of "species at risk" or "special status species" list). Therefore, these species, except for nesting activities, are not protected under state law.

A-9 The comment asserts that ESA's onsite survey failed to identify suitable habitat for burrowing owls *(Athene cunicularia)* based on the commenter's siting of California ground squirrels (*Ostospermophilus beecheyi*), a species often closely associated with burrowing owls. California ground squirrels were not observed during the site surveys; however, ESA obtained full visual coverage of suitable habitat within the survey area and detected small burrows of approximately 2-3 inches in diameter. As discussed in Section 3.4 of the Public Review Draft IS/MND, these small mammal burrows were not the appropriate size or morphology for burrowing owl. In addition, no pellets, white-wash, or feathers were detected at the burrows which are common occurrences with the presence of burrowing owl.

A-10 The commenter asserts that the ESA onsite survey was a desktop survey and states that the biological resources findings in the Public Review Draft IS/MND is incorrect. As stated previously a literature review was conducted to determine the special-status plants and

animal species that have been observed on and in the vicinity of the Project site. Subsequent to the review, an onsite survey was conducted to characterize the conditions of the Project site and surrounding area. In addition, all incidental and visual observations of flora and fauna, including signs (i.e., presence of scat) as well as any audible detections, were noted during the assessment. Based on the survey, all native and non-native natural communities and land cover types were characterized and mapped as provided in Figure 16 of the Public Review Draft IS/MND. Following the onsite survey, an evaluation of the potential for special-status plant and wildlife species to occur within the survey area was conducted and provided in Appendix C-3 of the Public Review Draft IS/MND. The comment asserts that species that have been previously documented to occur within 1.5 miles and 4 miles from the site also have the potential to occur on the Project site. This assertion is incorrect because the potential is based on the condition of the onsite habitat as well as the condition of the immediately surrounding area.

A-11 The comment asserts that the IS/MND is deficient in explaining why habitat for special-status species is not available on the Project site. As discussed in the Public Review Draft IS/MND, there are a total of 8 wildlife species that have a low to moderate potential to occur within the study area. Other species that have been detected within an area larger than the study area and within the Oxnard and surrounding five U.S. Geological Survey 7.5-minute quadrangle maps based on the most recent CNDDB, CNPS and Information for Planning and Consultation databases, do not have a potential to occur within the survey area due to the habitat requirements of the special-status species, the disturbed nature of the study area, and the absence of suitable habitat. There were 8 special-status wildlife species that were determined to have a low to moderate potential to occur within the study area. Each of these 8 special-status species identified above and their potential to occur on the Project site is discussed in Appendix C-3. No additional surveys are required to characterize the potential for special-status species to occur on the Project site.

A-12 The comment asserts that the Project will have significant adverse impacts to wildlife through removal of habitat, impediment to wildlife movement, increased mortality through traffic and window collisions, and impacts from domestic animals. Please see Response to Comment A-25 for a discussion of each of the issues raised in this comment.

A-13 The comment asserts that the cumulative impacts to wildlife will be significant and that Mitigation Measure BIO-1 would not resolve these impacts. The Project site and survey area are isolated from adjacent open space areas and as such, don't function as important wildlife corridors. Additionally, CDFW sensitive communities/riparian vegetation, critical habitat, aquatic resources, and city-protected trees and/or other resources are absent from the survey area. Finally, potential for special-status species has been adequately assessed, and it has been determined that one special-status species (i.e., California horned lark) and nesting migratory birds have the potential to occur onsite. Therefore, implementation of Mitigation Measure BIO-1 of the Public Review Draft IS/MND would ensure that impacts to special-status species and nesting birds would be reduced to less than significant. In

addition, the implementation of Mitigation Measure BIO-1 would reduce the Project's impact to less than cumulatively considerable.

A-14 This comment asserts that the Project cannot proceed with a Public Review Draft IS/MND because there is evidence the Project will expose residents to formaldehyde resulting in a significant cancer risk impact approximately 12 times the SCAQMD's CEQA significance threshold, thus requiring an EIR. Additionally, the comment asserts that no analysis was conducted to determine the cumulative health indoor PM2.5 impacts from the Project's location near the Ventura Freeway.

The comment letter and supporting documents from Mr. Francis Offerman states that the Public Review Draft IS/MND fails to address significant health risks by the Project from indoor air quality, specifically related to formaldehyde. Based on the findings of a 2009 study[1], Mr. Offerman, PE, CIH, determined the cancer and risk of a resident living in a California home with a median indoor formaldehyde concentration was 180 per million. The comment also discusses that CARB adopted the air toxics control measure to reduce formaldehyde emissions from composite wood in 2009. Mr. Offerman determined that the median lifetime cancer risk is still 120 per million for homes built with CARB compliant composite wood products based on a follow up study.[2]

The comment references the findings of studies conducted in new homes built between 2002 to 2004[3] and then again from homes built between 2011 and 2017[4] in which Mr. Offerman participated. Mr. Offerman provided *Indoor Air Quality in California Homes with Code-Required Mechanical Ventilation* (2020)[5] as evidence that the Project would have significant health risks resulting from poor indoor air quality by the Project. This most recent research paper collected data from 70 homes about ventilation practices and indoor air quality and measured indoor air concentrations of formaldehyde emitted from composite wood products that might contain formaldehyde-based glues. According to the research paper, the study characterized 70 homes built between 2011 and 2017. In order to be part of the study, buildings also had to meet several other conditions. According to the research paper, to be included in the study, the building had to be a single-family detached structure, located in California, and built in 2011 or later. According to the research paper, the "built in 2011 or later" requirement was used as a proxy for single-family detached homes built to comply with the 2008 version of the California Title 24 standards.

1 Offermann, Francis J., 2009. Ventilation and Indoor Air Quality in New Homes. https://ww2.arb.ca.gov/sites/default/files/classic/research/apr/past/04-310.pdf. Accessed April 2024.

2 Singer, B.C, Chan, W.R, Kim, Y., Offermann, F.J., and Walker I.S. 2020. Indoor Air Quality in California Homes with Code-Required Mechanical Ventilation. Indoor Air, Vol 30, Issue 5, 885-899. https://pubmed.ncbi.nlm.nih.gov/32304607/. Accessed April 2024.

3 Offermann, Francis J., 2009. Ventilation and Indoor Air Quality in New Homes. https://ww2.arb.ca.gov/sites/default/files/classic/research/apr/past/04-310.pdf. Accessed April 2024.

4 Singer, B.C, Chan, W.R, Kim, Y., Offermann, F.J., and Walker I.S. 2020. Indoor Air Quality in California Homes with Code-Required Mechanical Ventilation. Indoor Air, Vol 30, Issue 5, 885-899. https://pubmed.ncbi.nlm.nih.gov/32304607/. Accessed April 2024.

5 Ibid.

The building conditions in the research paper are highly dissimilar to the Project. The Project is a five-story multi-family residential development that does not include any single-family detached structures. Furthermore, the buildings in the research paper consisted of homes built to comply with the 2008 version of the California Title 24 standards, whereas the Project would be built to the most current California Title 24 standards (2022). The 2019 version of the Title 24 standards included new ventilation requirements that improve indoor air quality protecting residents from air pollution originating from outdoor and indoor sources.[6]

The commenter fails to note that the research paper, *Ventilation and Indoor Air Quality in New California Homes with Gas Appliances and Mechanical Ventilation*, discussed indoor air quality and the effect of fan sizing for ventilation with respect to Title 24. The research paper noted in its findings that the adopted fan sizing method in the 2019 version of the Title 24 includes requirements that ensures there is no structural bias towards higher pollutant exposure in homes using unbalanced ventilation systems, unlike the previous 2008 and 2013 Title 24 standards, which could worsen indoor air quality by 20 percent on average.[7] Furthermore, while the study found many more recently constructed homes (at the time of the field study) had ventilation equipment with more airflow capacity than the minimum requirements of Title 24 for when they were built and would meet the higher air flow requirements of the 2019 version of the Title 24 standards, the 2019 Title 24 requirements ensured the system consistently demonstrated lower indoor air quality exposures across various home types (e.g., homes with more air leakage, homes with more airtightness) than prior standards.[8] Therefore, while it is misleading to directly apply results from the research paper to the Project's multi-family residential uses, the research paper wholly acknowledges that California regulations have been effective in reducing formaldehyde concentrations in homes and states that "[c]omparisons of indoor formaldehyde … levels with those from a prior study of new homes in California (conducted in 2007-08) suggest that contaminant levels are lower in recently built (after 2008) homes. California's regulation to limit formaldehyde emissions from composite wood products appears to have substantially lowered its emission rate and concentration in new homes."[9] The research paper also states that "[indoor air quality] satisfaction was also similar in the newer homes as compared to homes built in years prior. These results indicate the success of standards."[10] Additionally, neither of the studies reported a cancer risk.[11,12]

6 California Energy Commission,2018. 2019 Building Energy Efficiency Standards for Residential and Nonresidential Buildings, December. https://www.energy.ca.gov/sites/default/files/2021-06/CEC-400-2018-020-CMF_0.pdf. Accessed April 2024.

7 Chan, W., Kim, Y., Singer, B., and Walker I. 2019. Ventilation and Indoor Air Quality in New California Homes with Gas Appliances and Mechanical Ventilation. Lawrence Berkeley National Laboratory, Energy Technologies Area, LBNL-2001200, DOI:10.20357/B7QC7X. https://eta-publications.lbl.gov/sites/default/files/walker_i_-_2001200.pdf. Accessed April 2024.

8 Ibid.

9 Ibid.

10 Ibid.

11 Ibid.

12 Offermann, Francis J., 2009. Ventilation and Indoor Air Quality in New Homes. https://ww2.arb.ca.gov/sites/default/files/classic/research/apr/past/04-310.pdf. Accessed April 2024.

In addition, the commenter's analysis is based on a series of inaccurate assumptions, including that the Project's construction materials would not be compliant with the applicable regulations to reduce formaldehyde exposure; formaldehyde daily emissions from construction materials would be constant for over 70 years; residents would inhale 20 cubic meters of air per day; and residents would be at the Project site for 24 hours/day, 7 days/week, 52 weeks/year for 70 years. In fact, construction materials would comply with all such applicable regulations including CARB's highly stringent Phase 2 standards; furthermore, the amount of formaldehyde off-gassing from construction materials decreases over time. The American Lung Association estimates that the average person inhales approximately 2,000 gallons of air per day, or roughly 7.57 cubic meters per day, and not the 20 cubic meters per day assumed by the commenter.[13] Additionally, people do not stay in their residences and never leave for 24 hours per day, 365 days per year, for 70 years. Thus, the commenter significantly overstates impacts from formaldehyde.

Furthermore, the buildings in the cited research paper consisted of homes built to comply with the 2008 version of the California Title 24 standards, whereas the Project would be built to the 2022 Title 24 standards, including current ventilation requirements that improve indoor air quality protecting residents from air pollution originating from outdoor and indoor sources.[14] The 2022 Title 24 standards would require the use of minimum efficiency reporting value (MERV) 13 filters which would substantially reduce outdoor air pollutants drawn into the buildings. Additionally, per Section 16-420J *Special Development Requirements* (C) (3), of the Oxnard Code of Ordinances:

> *"Applicants for new multifamily or mixed-use developments within 500 feet of US 101 or industrially zoned property shall be required to install high efficiency minimum efficiency reporting value (MERV) filters of MERV 14 or better in the intake of residential ventilation systems. Heating, air conditioning and ventilation (HVAC) systems shall be installed with a fan unit power designed to force air through the MERV 14 filter. To ensure long-term maintenance and replacement of the MERV 14 filters in the individual units, the following shall occur:*
>
> > *(1) The developer, sale, and/or rental representative shall provide notification to all affected tenants/residents of the potential health risk from US 101 and industrial zones for all affected units, per Item (3) below of this section.*
> >
> > *(2) For rental units within 500 feet of the US 101 or any industrially zoned property, the owner/property manager shall maintain and replace MERV 14 filters in accordance with the manufacturer's recommendations. The property owner shall inform renters of increased risk of exposure to*

[13] American Lung Association, How Your Lungs Get the Job Done, website: www.lung.org/blog/how-your-lungs-work. Accessed April 2024.

[14] California Energy Commission,2018. 2019 Building Energy Efficiency Standards for Residential and Nonresidential Buildings, December. https://www.energy.ca.gov/sites/default/files/2021-06/CEC-400-2018-020-CMF_0.pdf. Accessed April 2024.

diesel particulates from US 101 and industrially zoned properties when windows are open.

(3) For residential owned units within 500 feet of US 101 or an industrially zoned property, the homeowners' association (HOA) shall incorporate requirements for long-term maintenance in the covenant conditions and restrictions and inform homeowners of their responsibility to maintain the MERV 14 filter in accordance with the manufacturer's recommendations. The HOA shall inform homeowners' of increased risk of exposure to diesel particulates from US 101 when windows are open."

The Project would therefore be legally required to install enhanced filtration of outdoor air using a minimum of MERV 14 filters which would further reduce outdoor air pollutants drawn into the buildings.

The Project would be required to comply with all applicable City of Oxnard, state, and federal requirements pertaining to the use of indoor building materials. As the Project will be built to the 2022 Title 24 standards and include efficient HVAC systems as discussed in the Public Review Draft IS/MND, and as the Project will legally be required to incorporate the use of MERV 14 filters or better, substantial evidence demonstrates that compliance with applicable regulations will be effective in reducing potential indoor formaldehyde concentrations.

Furthermore, the State of California's regulatory agency with authority over this issue, CARB, has stated that the control measures it has approved for reducing emissions, including formaldehyde, from composite wood products provide a level of control that protects health and safety. CARB makes this point by stating directly in its Frequently Asked Questions for Consumers on Reducing Emissions from Composite Wood Products that, from a public health standpoint, the Composite Wood Products Regulation's emission standards are set at low levels intended to protect public health.[15] The first emission standards (Phase 1) went into effect in 2009. The more stringent Phase 2 standards are now in effect for all composite wood panels and finished goods sold in California. Prior to the CWP Regulation, formaldehyde emissions were often ten to twenty-fold higher than the current allowable levels. The regulation also includes provisions for no-added formaldehyde and ultra-low emitting formaldehyde-based resins, to encourage the use of these lower-emitting resins in composite wood products.[16]

The VCAPCD (and the SCAQMD) does not have authority by local, state, or federal laws to regulate indoor air quality and the application of the VCAPCD or SCAQMD CEQA

15 California Air Resources Board, Frequently Asked Questions for Consumers, Reducing Formaldehyde Emissions from Composite Wood Products, https://ww3.arb.ca.gov/toxics/compwood/consumer_faq.pdf?_ga=2.32900281.682464648.1573169874-1026610208.1565143819. Accessed April 2024.

16 Offermann, Francis J., 2009. Ventilation and Indoor Air Quality in New Homes. https://ww2.arb.ca.gov/sites/default/files/classic/research/apr/past/04-310.pdf. Accessed April 2024.

significance thresholds does not apply to indoor air quality. Furthermore, the referenced Exhibit A letter within the comment makes an erroneous claim that OEHHA has established a significance threshold applicable to a CEQA analysis of the Project of a cancer risk of 10 in one million for indoor air quality. OEHHA has not adopted a significance threshold applicable to a CEQA analysis of the Project of a cancer risk of 10 in one million for indoor air quality.

Regarding indoor PM2.5, as stated in Section 3.3, *Air Quality*, pages 31 and 32 of the Public Review Draft IS/MND, the South Central Coast Air Basin is in attainment for PM2.5 under both the federal and state standards. Agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project's future users or residents. (*California Building Industry Ass'n v. Bay Area Air Quality Mgmt. Dist.* (2015) 62 Cal.4th 369, 386.). Nonetheless, the Project would be built to the 2022 Title 24 standards, including current ventilation requirements that improve indoor air quality protecting residents from air pollution originating from outdoor and indoor sources. As discussed above, the Project would utilize MERV 14 or higher filters which would substantially reduce outdoor air pollutants drawn into the buildings and exceed 2022 Title 24 standards.

As required by CEQA, the Project's contribution to PM2.5 emissions and localized air quality impacts from Project construction and operations were evaluated in Section 3.3, *Air Quality*, pages 33 through 38 of the IS/MND. Specifically, in the above referenced pages of the IS/MND, Tables 3 and 4 on page 5-34, show that construction and operational emissions would not exceed the VCAPCD significance thresholds. In addition, an extensive and detailed analysis was provided regarding diesel particulate matter PM2.5 emissions, the City's requirement to utilize MERV 14 air filters to reduce PM2.5 exposures and related air quality health impacts. VCAPCD recommends that a project's potential contribution to cumulative impacts should be assessed using the same significance criteria as those for project-specific impacts. According to VCAPCD, individual development projects that generate construction or operational emissions that exceed VCAPCD recommended daily regional thresholds for project-specific impacts would also cause a cumulatively considerable increase in emissions for those pollutants for which the basin is in nonattainment. With the implementation of regulatory compliance measures such as Rule 55 (Fugitive Dust) and Rule 74.2 (Architectural Coating), which would reduce particulate matter and reactive organic compound emissions, the Project's construction and operational emissions are not expected to significantly contribute to cumulative emissions. As such, the Project's contribution to cumulative air quality emissions in combination with any related projects would not be cumulatively considerable, and impacts would be less than significant. Therefore, since Project construction and operations would not exceed the VCAPCD significance thresholds and would not generate PM2.5 emissions that would result in significant air quality health impacts, PM2.5 air quality impacts would be less than significant.

The comment speculates that the Project could have an effect on the Project's users, which is not considered to be an impact under CEQA and need not be analyzed in the Project's Public Review Draft IS/MND. However, as discussed here, the Project would not result in significant indoor air quality impacts. See, e.g., *Parker Shattuck Neighbors v. Berkeley City Council* (2013) 222 Cal.App.4th 768, 782 (Court concluded that alleged health risks to project residents and construction workers from contaminated soils did not constitute a fair argument of an impact to the environment under CEQA. "In general, CEQA does not regulate environmental changes that do not affect the public at large: "the question is whether a project [would] affect the environment of persons in general, not whether a project [would] affect particular persons." [Citations omitted]). Furthermore, the calculations referenced in the comment (exposed to a cancer risk from formaldehyde of approximately 120 per million) amount to speculation given that the underlying report is based on highly dissimilar uses compared to the Project and do not reflect the actual Project uses or compliance with current regulations and are thus unsupported by substantial evidence. As stated above, the State of California's regulatory agency with authority over formaldehyde, CARB, has stated that the control measures it has approved for reducing emissions, including formaldehyde, from composite wood products provide a level of control that protects health and safety. The more stringent Phase 2 standards are now in effect for all composite wood panels and finished goods sold in California. Prior to the CWP Regulation, formaldehyde emissions were often ten to twenty-fold higher than the current allowable levels. The regulation also includes provisions for no-added formaldehyde and ultra-low emitting formaldehyde-based resins, to encourage the use of these lower-emitting resins in composite wood products.

The commenter also recommends mitigation measures to reduce indoor air quality impacts, but as discussed above, impacts would be less than significant, and no mitigation is required.

Additionally, see Response to Comments A-27 through A-35, for responses to Appendix B, the comment letter regarding indoor air quality impacts from formaldehyde and PM2.5.

Therefore, based on the above discussion and Response to Comments A-27 through A-35, below, the commenter does not present credible evidence that the Project would result in significant indoor air quality impacts, and no further analysis is warranted.

A-15 This comment notes that mitigation measures must be enforceable and effective. As this comment is informative in nature and does not raise a significant environmental issue regarding the adequacy of the information presented in the Public Review Draft IS/MND, no further response is required.

A-16 The comment asserts that Mitigation Measure BIO-1 is insufficient to reduce the Project impacts to less than significant, suggesting that it doesn't address impacts to birds during future breeding seasons, that the preconstruction nesting bird survey relies on an outdated breeding season, and that it provides "unfettered" control to the qualified biologist to adjust nest buffers, among other critiques. These concerns reflect Dr. Smallwood's opinion of

what should be included in the mitigation measure in question. The Public Review Draft IS/MND identifies that the Project could result in significant impacts to nesting birds. This impact could occur during construction activities. The implementation of Mitigation Measure BIO-1 would include a preconstruction nesting bird survey and construction buffers, if warranted, and would reduce potential impacts to less than significant. If birds have future breeding (nesting) activities on the Project site subsequent to development of the Project, the nesting activities are protected under the Migratory Bird Act as well as CDFW regulations. As for the provision of adjusting buffers for nesting activities during construction, the adjustment would be based on the bird species as well as the existing ambient noise levels because not all bird species require the same buffering from noise activities.

A-17 This comment states that the Public Review Draft IS/MND fails to mandate mitigation measures related to air quality and the installation of MERV 14 or better filters. Mitigation measures must be fully enforceable through permit conditions, agreements, or other legally binding instruments and not as a Project Design Feature.

As discussed in Section 3.3, *Air Quality*, on pages 31 through 38, impacts related to air quality were found to be less than significant and no mitigation is required. Additionally, as discussed above in Response to Comment A-14 and below in Response to Comments A-28, A-29, A-32, and A-33. These impacts related to formaldehyde, air ventilation, and PM2.5 are less than significant, and no mitigation measures are required. Furthermore, per Section 16-420J *Special Development Requirements* (C) (3), of the Oxnard Code of Ordinances, MERV-14 filters would be required to be installed due to proximity to the US-101 freeway. The City acknowledges this comment and as it does not raise a significant environmental issue regarding the adequacy of the information presented in the Public Review Draft IS/MND, no further response is required.

A-18 This comment asserts that an EIR is warranted because the Project conflicts with the VCAPCD cancer risk significance threshold of 10 in one million. To reduce risks below the threshold, the Public Review Draft IS/MND implies the installation of MERV filters, but the comment notes this isn't a binding measure, thereby failing to guarantee that cancer risk will fall below the VCAPCD significance threshold. The comment continues to note that because there is no guarantee of filter installation, cancer risk would not be reduced to a level in compliance with VCAPCD's threshold, thereby being in direct conflict with VCAPCD. The commenter also opines that approval of the Public Review Draft IS/MND is improper since the project may have significant adverse environmental impacts and the City must prepare and analyze impacts in an EIR.

CEQA requires an evaluation of the impacts of a project on the environment. "'Environment' means the physical conditions which exist within the area which will be affected by a proposed project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance." (CEQA Guidelines, § 15360.) The Supreme Court has declared that CEQA does not as a general matter, encompass "broader

considerations associated with the health and safety of a project's future residents or users." (*California Building Industry Assn. v. Bay Area Air Quality Management Dist.* (2015) 62 Cal.4th 369, 387 (*CBIA*).) Impacts of the environment on a project's residents or users are only a subject of CEQA analysis when the project "exacerbate[s] hazards that are already present." (*Id*., p. 38.) An argument that a project will be an unhealthy place to live or work does not raise the possibility of an impact on the environment that CEQA is concerned with. (See *East Sacramento Partnerships for a Livable City v. City of Sacramento* (2016) 5 Cal.App.5th 281, 296; see also *Pocket Protectors v. City of Sacramento* (2004) 124 Cal.App.4th 903, 929 ["the mere possibility of adverse impact on a few people, as opposed to the environment in general," is not an environmental impact under CEQA.)

Here, the comment alleges not that there will be an adverse impact on the environment in general, but that there is a possibility of an adverse impact on the Project's residents. The comment does not identify any existing hazard that will be exacerbated by the Project, nor does the comment explain how the environment will be affected. As the Supreme Court has explained, while CEQA does encompass consideration of health and safety, "[r]equiring such an evaluation in all circumstances would impermissibly expand the scope of CEQA." (CBIA, supra, 62 Cal.4th at p. 387.) Thus, no further analysis is required.

Furthermore, the Public Review Draft IS/MND already evaluates potential health risks associated with the class of pollutants generally referred to as toxic air contaminants (TACs) on pages 36 through 38 in the Public Review Draft IS/MND. As mentioned previously (see Response to Comment A-14), pursuant to Oxnard Code of Ordinances, Section 16-420J, *Special Development Requirements*, require that developments within 500 feet of the U.S. 101 Freeway require MERV 14 or better filters to reduce diesel particulates. The Public Review Draft IS/MND finds that the proposed Project HVAC systems would be installed with a fan unit power designed to force air through the MERV 14 filter which would result in a cancer risk at the maximum exposed receptor of 5.18 in one million. This cancer risk is less than the VCAPCD cancer risk threshold of 10 in one million. Therefore, health risk impacts related to TACs would be less than significant, and no mitigation would be required.

The discussion above affirms that the Project will not have significant adverse environmental impacts regarding cancer risk, and it is not in conflict with the VCAPCD. Therefore, an IS/MND is the appropriate CEQA document, and an EIR is not warranted.

A-19 This comment asserts that Public Review Draft IS/MND's Noise Report, Appendix I, is unsubstantiated, and there exists potentially significant noise impacts and an EIR should be prepared. In addition, the comment asserts that the Public Review Draft IS/MND's Noise Study potentially underestimates the Project's noise impacts because it erroneously utilizes a less stringent threshold assessment which underestimates the noise impacts by seven decibels across the board.

The comment erroneously states the Noise Study underestimates the potential impact of construction noise. As described in the Noise Study, the City does not have any adopted

standards, guidelines, or thresholds relative to construction noise. To evaluate whether the Project will generate a substantial periodic increase in short-term noise levels at off-site sensitive receiver locations, a construction-related noise level threshold is used from the FTA Construction Noise Handbook for General Assessment Construction Noise Criteria. The FTA *Transit Noise and Vibration Impact Assessment Manual*[17] provides a general noise assessment guideline to assess potential construction noise impacts of transit projects. A general noise assessment is suitable and appropriate given the current stage of planning and evaluation for this Project.

Additionally, the construction noise levels provided in the Noise Study and Public Review Draft IS/MND do not include any reduction related to standard noise control strategies that the Project would be required to adhere to. These include using muffler systems that can reduce construction noise levels by 10 dBA or more. Additionally, modifications such as dampening of metal surfaces or the redesign of a particular piece of equipment can achieve a noise reduction of up to 5 dBA. Conservatively, these combined noise control strategies would further reduce construction noise levels. As such, in the event the more stringent threshold of 80 dBA was utilized, construction noise levels would fall below this level with implementation of regulatory compliance and best management practices. As such, the preparation of an EIR is not required, and the IS/MND is an appropriate form of environmental document to comply with CEQA. No further response is required.

A-20 This comment asserts that the Public Review Draft IS/MND fails to evaluate the Project's construction-related vibration impacts on off-site sensitive receptors Additionally, the comment asserts that operational noise impacts are incomplete because operational noise impacts from rooftop mechanical equipment would increase ambient levels beyond significance thresholds. Furthermore, the comment states that the Noise study assesses the Project's noise impacts along some streets and roads, it does not evaluate the potential traffic noise increase along Lockwood Avenue and Outlet Center Drive, where current traffic levels are presumable low and the potential of doubling traffic also means the increase of noise levels. The comment asserts that noise levels must be assessed in an EIR and ensure that the Project's noise levels during operation would not exceed significance thresholds and that no mitigation measures must be implemented.

Regarding construction vibration effects on sensitive receptors, they were analyzed in the Public Review Draft IS/MND in Section 3.12, *Noise*, on pages 90 and 91. Page 182 of the Federal Transit Administration (FTA) guidance manual states "[b]uildings founded on the soil near the construction site respond to these vibrations with varying results, ranging from no perceptible effects at the lowest levels, low rumbling sounds and perceptible vibrations at moderate levels, and slight damage at the highest levels."[18] The FTA guidance manual also states that "… ground vibrations from construction activities do not often reach the

[17] Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, September 2018, accessed September 2021, https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf

[18] Federal Transit Administration, 2018. Transit Noise and Vibration Assessment Manual, September. Transit Noise and Vibration Impact Assessment Manual (dot.gov). Accessed April 2024.

levels that can damage structures …"[19] As shown in Table 11, page 91, of the Public Review Draft IS/MND, vibration velocities of construction equipment on the Project site will not exceed vibration significance thresholds and will not result in human annoyance impacts. Page 91 also states "[b]ecause the construction activities would not cause substantial human annoyance; a structural vibration impact analysis was not warranted." Thus, the Public Review Draft IS/MND did analyze structural vibration impacts and determined that since human annoyance vibrational impacts would be less than significant and since human annoyance thresholds are lower than the structural impact thresholds, structural vibrational impacts would also be less than significant based on the FTA guidance manual, and an analysis is not warranted. Therefore, an EIR does not need to be conducted as construction vibration effects were analyzed in the Public Review Draft IS/MND.

Regarding operational noise impacts from rooftop mechanical equipment, the City acknowledges that on-site operational noise from equipment was not included. However, as discussed below, rooftop mechanical equipment associated with the Project would be required to meet the City of Oxnard sound standards for HVAC equipment as identified in the City of Oxnard Municipal Code Section 7-189. As a result, noise impacts from the Project's rooftop mechanical equipment would result in less than significant noise impacts on the nearby sensitive receptors. The following analysis will be added to the Final IS/MND on page 90 after the sixth paragraph and before section b).

> Upon completion and operation of the Proposed Project, on-site operational noise would be generated by heating, ventilation, and air conditioning (HVAC) equipment installed on the new structure. However, the noise levels generated by these equipment types would not be substantially greater than those generated by the current HVAC equipment serving the existing buildings in the Project vicinity. Further, HVAC equipment would be mechanically screened to ensure compliance with the City of Oxnard Municipal Code, Section 16-168. Additionally, the City of Oxnard sound standards for HVAC equipment are discussed in Section 7-189. Thus, because the noise levels generated by the HVAC equipment serving the Proposed Project would be designed to not exceed the ambient noise levels allowable by the City of Oxnard Municipal Code, a substantial permanent increase in noise levels would not occur at the nearby sensitive receptors. The Project's noise impact to nearby receivers from HVAC equipment would be less than significant.

As the Project's noise impact to nearby sensitive receptors from HVAC equipment would be less than significant, it does not change the conclusions in the Public Review Draft IS/MND and an EIR is not required.

[19] Federal Transit Administration, 2018. Transit Noise and Vibration Assessment Manual, September. Transit Noise and Vibration Impact Assessment Manual (dot.gov). Accessed April 2024.

Regarding the Project's noise impacts on Lockwood Avenue and Outlet Center Drive from the Project's proposed traffic increase, as stated on page 93 of the Public Review Draft IS/MND, Section 3.12, *Noise*, existing roadway noise levels were calculated along various roadway segments near to the Project site based on the existing traffic volumes identified in the Traffic Study, Appendix J to the Public Review Draft IS/MND. Table 12 on page 94 of the Public Review Draft IS/MND displays the existing noise levels and existing plus Project noise levels. The analysis includes all major intersections along Rose Avenue, Gonzales Road and Rice Avenue that lead to Lockwood Street, where the Project is located. Lombard Street is also known as Outlet Center Drive once it crosses Gonzales Street. Thus, noise levels at Outlet Center Drive and Gonzales Road were measured. The Project site is currently vacant, but the retail businesses and California Lutheran University Satellite campus next to the Project site contribute traffic on Lockwood Street that would go through the same intersections that are studied in the noise analysis. Although traffic was not measured along Lockwood Drive itself, traffic that uses Lockwood Drive was captured at the intersections analyzed in the Public Review Draft IS/MND. Thus, the Public Review Draft IS/MND thoroughly covered all the roadways that lead to the Project site. As shown in Table 12, the maximum noise level increase along the analyzed roadways is calculated as 0.1 dBA CNEL along Rice Avenue north of U.S. 101 Southbound Ramp and North of Gonzales Road, along Gonzales Road east of Solar Avenue, East of Lombard Street, and East of Rose Avenue. Consequently, Project-related traffic would not cause noise levels along the analyzed roadways to increase by more than the significance threshold of 3.0 dBA. Thus, the Project would not result in a permanent increase in noise levels above ambient levels in the vicinity of the Project site in excess of the city's Noise Element and Noise Ordinance. Vehicular-related noise impacts associated with the Project would be less than significant even on Lockwood Street and Outlet Center Drive.

As the above discussion concludes, the Project's construction vibration impacts, noise levels from rooftop mechanical equipment, and noise levels from project traffic during operation were analyzed and would result in less than significant impacts. As such, the preparation of an EIR is not warranted, and an IS/MND is the appropriate CEQA document.

A-21 This comment is conclusory and reiterates the request for the Project to prepare an EIR because it would have adverse environmental effects that the Public Review Draft IS/MND does not adequately analyze or mitigate. As demonstrated in the above Response to Comments A-1 through A-21, the Project's environmental impacts were properly evaluated and resulted in less than significant impacts or less than significant impacts with mitigation incorporated. As such, the preparation of an EIR is not warranted, and an IS/MND is the appropriate CEQA document.

A-22 This comment provides the credentials of the letter writer and their associated wildlife biologist. The City acknowledges this as an introduction to the opinion that there may be significant impact to biological resources. No further response is required.

A-23 This comment provides the methodology and results of the survey conducted by Ms. Smallwood. However, no specific comments on the contents of the environmental analysis are provided. No further response is required.

A-24 The comment critiques the methodology (e.g., timing and survey duration) to characterize the environmental setting and the results of the survey. Additionally, Dr. Smallwood asks, "How did ESA miss all of these species?" and "How is it that western side-blotched lizards and Great Basin fence lizards both occur in abundance, but the disturbance of the site prevents other special-status species (i.e., coastal whiptail and coast horned lizard)?"

The survey conducted by ESA was intended to characterize the Project site and survey area for the purposes of analyzing potential impacts of the Project under CEQA. Standards regarding survey timing, duration and/or number of species detected have not been established for general reconnaissance surveys. Furthermore, the number of species observed during the survey reflects what the biologist was able to detect at the time they were present onsite.

Protocol-level detection survey for burrowing owls are warranted only if adequate burrows are available, which were not detected during the ESA survey. Also, as stated in the Potential to Occur Table in Appendix C-3 of the Public Review Draft IS/MND, the vegetation was dense and tall which is not preferred by burrowing owl. Ms. Smallwood observed "California ground squirrels just to the south side of Lockwood Street". This is outside of the Project site but within the survey area. There was a seven-month gap between ESA and Ms. Smallwood's survey in which California ground squirrels could move into the survey area. The closest CDFW CNDDB and eBird record for burrowing owl is located 2.5 miles to the east of the Project site at the Camarillo airport.

Western side-blotched lizards and Great Basin fence lizards are species generalists and are expected to occur within the disturbed habitats present within the Project site and survey area; whereas, the coastal whiptail and coast horned lizard require specific habitat types, such as coastal sage scrub and chaparral, both of which do not occur onsite. Additionally, western side-blotched lizards and Great Basin fence lizards are not defined as special-status species (as described in Response to Comment A-8).

The comment also states: "The IS/MND provides one over-arching reason for its decisions to omit all special-status plant species and 45 special-status species of wildlife from its analysis, which was the disturbed nature of the survey area and the absence of suitable habitat." While the disturbed nature of the survey area was a factor in determining species' occurrence, the main reason was the absence of suitable habitat. The majority of the special-status plants and animals including coastal whiptail and coast horned lizard require tree groves, woodland, riparian, scrub, or wetland habitat which are not present in the Project site or survey area.

The commenter mentions that the Crotch's bumble bee high quality habitat was not explained. In the Potential to Occur Table in Appendix C-3, the preferred habitat is

explained as "open grassland and scrub habitats that support potential nectar sources such as plants within the Fabaceae, Apocynaceae, Asteraceae, Lamiaceae, and Boraginaceae families". The preferred habitat is open grassland with potential nectar sources, and the Project site lacks both the open grassland and most of the preferred nectar sources.

The comment asserts that monarch migratory habitat is just as important as overwintering groves as identified by the Western Monarch Butterfly Conservation Plan. However, the Western Monarch Butterfly Conservation Plan also states that "In contrast to the eastern population, information is lacking on established migration routes for both spring and fall western migrants". It continues that "… fall migrants often followed riparian corridors …" The Project site lacks a riparian corridor. Therefore, the Western Monarch Butterfly Conservation Plan does not support the commenter's opinion that the Project site has other resources for the monarch.

The comment also asserts that the Project site has foraging habitat for ferruginous hawk and the inactive nest on the tower could have potential for nesting peregrine falcons. Each of these points are discussed in the Potential to Occur Table in Appendix C-3. As discussed in Appendix C-3, the closest foraging habitat for the peregrine falcon is located over two miles northwest of the Project site.

A-25 The comment asserts that the Project will have significant adverse impacts to wildlife through removal of habitat, impediment to wildlife movement, increased mortality through traffic and window collisions, and impacts from domestic animals. The commenter asserts that the Project site located in the City of Oxnard and adjacent to U.S. 101 would have the same productive capacity or nest density as San Jacinto Wildlife Area which is conserved land surrounded by open space and agriculture. The San Jacinto Wildlife Area is not a representative study for the Project site location. Therefore, given the lack of substantial evidence at a representative study for the Project site location, habitat loss for plants and wildlife would not be significant.

The commenter asserts that the Project site is a wildlife stopover and staging during migration, dispersal, and home range patrol, and therefore, affect wildlife movement. While the commenter provided source citations (Warnock 2010, Taylor et al. 2011, Runge et al. 2014) for his assumptions, these sources were not listed in the comment letter. While reviewing a Runge et al 2014 document, the source indicates that conservation objectives, if known, for mobile species should be applied including the connectivity between breeding and non-breeding sites. Runge et al 2014 also states that information is limited regarding migratory connectivity and requires further research. The Project site is not known to be a breeding or non-breeding site or connectivity between the two. Therefore, the current impacts would be considered less than significant for wildlife movement.

The commenter suggested that the Project site would cause significant unmitigated impacts to birds due to bird-glass collisions associated with the project. The commenter conducted their own analysis from multiple sources at large scales or buildings with known high window collision fatalities. There is no specific source suggesting that a mid-rise building

adding to an existing urban landscape and not immediately adjacent to open space, such as park, bike trail, or riparian area, would increase window collision mortality to a significant level. Therefore, the estimates provided by the commenter are speculative and do not appropriately represent the Project site.

The commenter suggested that the Project site would generate an increase in traffic and therefore, traffic-caused wildlife mortality which would result in potentially significant adverse biological impacts. The commenter references a publicly unavailable wildlife movement study (Mendelsohn et al 2009) but the Vasco Road as described in the Brown et al 2013 is a publicly available wildlife movement study. The commenter identifies that the Project site located in the City of Oxnard and adjacent to U.S. 101 would have the same traffic-caused wildlife mortality as Vasco Road which bisects grassland habitat. The Vasco Road is a 2.5 mile stretch with known medium to large-mammal presence and is not a representative study for the Project site location. The Project site may increase traffic, but the impacts would not be significant compared to the adjacent U.S. 101, an existing site condition. Therefore, given the lack of substantial evidence at a representative study for the Project site location, traffic-caused wildlife mortality would not be significant.

The commenter also suggested that the Project site would introduce more domestic animals to the immediate vicinity which would result in an increase in wildlife depredation and parasites. As discussed in Section 3.4(a) in the IS/MND, construction activities could result in significant impact to nesting birds. As stated in the IS/MND, these potential impacts to nesting birds are reduced to less than significant with the implementation of Mitigation Measure MM BIO-1. During operation of the Project, the Project site would include ornamental landscaping and would not provide suitable habitat for special-status species. Therefore, the introduction of domestic animals such as cats and dogs to the Project site, which is located within an existing urban area, including an area immediately south of the Project site that has been graded for development, would result in less than significant impacts to special-status wildlife species.

The commenter suggested that the development of the Project site would cause significant cumulative impacts on biological resources. However, the disturbed nature of the Project site and survey area, the lack of special-status species or their habitat, and its distant proximity to the nearest available open space (i.e., almost 0.4 mile to the east) suggest that these impacts would be less than significant with the implementation of Mitigation Measure MM-BIO-1 prior to construction.

A-26 The comment asserts that Mitigation Measure BIO-1 is insufficient to reduce the Project impacts to less than significant. Please see Response to Comment A-16 regarding the adequacy of Mitigation Measure BIO-1.

A-27 This comment is from an attachment prepared by Francis Offerman, PE, CIH and provides an introduction to Indoor Air Quality Impacts. The City acknowledges this comment and as it is informative in nature and does not raise a significant environmental issue regarding

the adequacy of the information presented in the Public Review Draft IS/MND, no further response is required.

A-28 This comment is from an attachment prepared by Francis Offerman, PE, CIH and presents an introduction to Indoor Formaldehyde Impacts. Mr. Offerman identifies that the primary source of formaldehyde indoors is composite wood products manufactured with urea-formaldehyde resins such as plywood, medium density fiberboard, and particleboard. Based on the findings of a 2009 study[20], Mr. Offerman, PE, CIH, determined the cancer and risk of a resident living in a California home with a median indoor formaldehyde concentration was 180 per million. The comment also discusses that CARB adopted the air toxics control measure to reduce formaldehyde emissions from composite wood in 2009. Mr. Offerman determined that the median lifetime cancer risk is still 120 per million for homes built with CARB compliant composite wood products based on a follow up study.[21]

The comment references the findings of studies conducted in new homes built between 2002 to 2004[22] and then again from homes built between 2011 and 2017[23] in which Mr. Offerman participated. In, the most recent of which is *Indoor Air Quality in California Homes with Code-Required Mechanical Ventilation* (2020)[24] as evidence that the Project would have significant health risks resulting from poor indoor air quality by the Project. This most recent research paper collected data from 70 homes about ventilation practices and indoor air quality and measured indoor air concentrations of formaldehyde emitted from composite wood products that might contain formaldehyde-based glues. According to the research paper, the study characterized 70 homes built between 2011 and 2017. In order to be part of the study, buildings also had to meet several other conditions. According to the research paper, to be included in the study, the building had to be a single-family detached structure, located in California, and built in 2011 or later. According to the research paper, the "built in 2011 or later" requirement was used as a proxy for single-family detached homes built to comply with the 2008 version of the California Title 24 standards.

The building conditions in the research paper are highly dissimilar to the Project. The Project is a five-story multi-family residential development that does not include any single-family detached structures. Furthermore, the buildings in the research paper consisted of homes built to comply with the 2008 version of the California Title 24

20 Offermann, Francis J., 2009. Ventilation and Indoor Air Quality in New Homes. https://ww2.arb.ca.gov/sites/default/files/classic/research/apr/past/04-310.pdf. Accessed April 2024.

21 Singer, B.C, Chan, W.R, Kim, Y., Offermann, F.J., and Walker I.S. 2020. Indoor Air Quality in California Homes with Code-Required Mechanical Ventilation. Indoor Air, Vol 30, Issue 5, 885-899. https://pubmed.ncbi.nlm.nih.gov/32304607/. Accessed April 2024.

22 Offermann, Francis J., 2009. Ventilation and Indoor Air Quality in New Homes. https://ww2.arb.ca.gov/sites/default/files/classic/research/apr/past/04-310.pdf. Accessed April 2024.

23 Singer, B.C, Chan, W.R, Kim, Y., Offermann, F.J., and Walker I.S. 2020. Indoor Air Quality in California Homes with Code-Required Mechanical Ventilation. Indoor Air, Vol 30, Issue 5, 885-899. https://pubmed.ncbi.nlm.nih.gov/32304607/. Accessed April 2024.

24 Singer, B.C, Chan, W.R, Kim, Y., Offermann, F.J., and Walker I.S. 2020. Indoor Air Quality in California Homes with Code-Required Mechanical Ventilation. Indoor Air, Vol 30, Issue 5, 885-899. https://pubmed.ncbi.nlm.nih.gov/32304607/. Accessed April 2024.

standards, whereas the Project would be built to the most current California Title 24 standards (2022). The 2019 version of the Title 24 standards included new ventilation requirements that improve indoor air quality protecting residents from air pollution originating from outdoor and indoor sources.[25]

The commenter fails to note that the research paper, *Ventilation and Indoor Air Quality in New California Homes with Gas Appliances and Mechanical Ventilation*, discussed indoor air quality and the effect of fan sizing for ventilation with respect to Title 24. The research paper noted in its findings that the adopted fan sizing method in the 2019 version of the Title 24 includes requirements that ensures there is no structural bias towards higher pollutant exposure in homes using unbalanced ventilation systems, unlike the previous 2008 and 2013 Title 24 standards, which could worsen indoor air quality by 20 percent on average.[26] Further, while the study found many more recently constructed homes (at the time of the field study) had ventilation equipment with more airflow capacity than the minimum requirements of Title 24 for when they were built and would meet the higher air flow requirements of the 2019 version of the Title 24 standards, the 2019 Title 24 requirements ensured the system consistently demonstrated lower indoor air quality exposures across various home types (e.g., homes with more air leakage, homes with more airtightness) than prior standards.[27] Therefore, while it is misleading to directly apply results from the research paper to the Project's multi-family residential uses, the research paper wholly acknowledges that California regulations have been effective in reducing formaldehyde concentrations in homes and states that "[c]omparisons of indoor formaldehyde … levels with those from a prior study of new homes in California (conducted in 2007-08) suggest that contaminant levels are lower in recently built (after 2008) homes. California's regulation to limit formaldehyde emissions from composite wood products appears to have substantially lowered its emission rate and concentration in new homes."[28] The research paper also states that "[indoor air quality] satisfaction was also similar in the newer homes as compared to homes built in years prior. These results

25 California Energy Commission,2018. 2019 Building Energy Efficiency Standards for Residential and Nonresidential Buildings, December. https://www.energy.ca.gov/sites/default/files/2021-06/CEC-400-2018-020-CMF_0.pdf. Accessed April 2024.

26 Chan, W., Kim, Y., Singer, B., and Walker I. 2019. Ventilation and Indoor Air Quality in New California Homes with Gas Appliances and Mechanical Ventilation. Lawrence Berkeley National Laboratory, Energy Technologies Area, LBNL-2001200, DOI:10.20357/B7QC7X. https://eta-publications.lbl.gov/sites/default/files/walker_i_-_2001200.pdf. Accessed April 2024.

27 Chan, W., Kim, Y., Singer, B., and Walker I. 2019. Ventilation and Indoor Air Quality in New California Homes with Gas Appliances and Mechanical Ventilation. Lawrence Berkeley National Laboratory, Energy Technologies Area, LBNL-2001200, DOI:10.20357/B7QC7X. https://eta-publications.lbl.gov/sites/default/files/walker_i_-_2001200.pdf. Accessed April 2024.

28 Chan, W., Kim, Y., Singer, B., and Walker I. 2019. Ventilation and Indoor Air Quality in New California Homes with Gas Appliances and Mechanical Ventilation. Lawrence Berkeley National Laboratory, Energy Technologies Area, LBNL-2001200, DOI:10.20357/B7QC7X. https://eta-publications.lbl.gov/sites/default/files/walker_i_-_2001200.pdf. Accessed April 2024.

indicate the success of standards."[29] Additionally, neither of the studies reported a cancer risk.[3031]

The State of California's regulatory agency with authority over this issue, CARB, has stated that the control measures it has approved for reducing emissions, including formaldehyde, from composite wood products provide a level of control that protects health and safety. CARB makes this point by stating directly in its Frequently Asked Questions for Consumers on Reducing Emissions from Composite Wood Products that, from a public health standpoint, the Composite Wood Products Regulation's emission standards are set at low levels intended to protect public health.[32] The first emission standards (Phase 1) went into effect in 2009. The more stringent Phase 2 standards are now in effect for all composite wood panels and finished goods sold in California. Prior to the CWP Regulation, formaldehyde emissions were often ten to twenty-fold higher than the current allowable levels. The regulation also includes provisions for no-added formaldehyde and ultra-low emitting formaldehyde-based resins, to encourage the use of these lower-emitting resins in composite wood products.[33]

The City acknowledges this comment and as it is primarily informative in nature and does not raise a significant environmental issue regarding the adequacy of the information presented in the Public Review Draft IS/MND, no further response is required.

A-29 The comment is from a letter prepared by Francis Offerman, PE, CIH that states that the exposure risk to Project residents would be a cancer risk of 120 in a million based on the 2019 Chan study. The only way to avoid the cancer risk would be to use composite wood products made with no-added formaldehyde resins.

As discussed in Response to Comment A-28, above, the 2020 research paper collected from 70 homes regarding ventilation practices and indoor air quality, including measurements of indoor air concentrations of formaldehyde emitted from composite wood products that might contain formaldehyde-based glues. According to the 2020 paper, the study characterized 70 single-family detached structures, located in California, and built between 2011 and 2017. According to the research paper, the "built in 2011 or later" requirement was used as a proxy for homes built to comply with the 2008 version of the California Title 24 standards. However, the analyzed building conditions in the 2020

29 Chan, W., Kim, Y., Singer, B., and Walker I. 2019. Ventilation and Indoor Air Quality in New California Homes with Gas Appliances and Mechanical Ventilation. Lawrence Berkeley National Laboratory, Energy Technologies Area, LBNL-2001200, DOI:10.20357/B7QC7X. https://eta-publications.lbl.gov/sites/default/files/walker_i_-_2001200.pdf. Accessed April 2024.

30 Chan, W., Kim, Y., Singer, B., and Walker I. 2019. Ventilation and Indoor Air Quality in New California Homes with Gas Appliances and Mechanical Ventilation. Lawrence Berkeley National Laboratory, Energy Technologies Area, LBNL-2001200, DOI:10.20357/B7QC7X. https://eta-publications.lbl.gov/sites/default/files/walker_i_-_2001200.pdf. Accessed April 2024.

31 Offermann, Francis J., 2009. Ventilation and Indoor Air Quality in New Homes. https://ww2.arb.ca.gov/sites/default/files/classic/research/apr/past/04-310.pdf. Accessed April 2024.

32 California Air Resources Board, Frequently Asked Questions for Consumers, Reducing Formaldehyde Emissions from Composite Wood Products, https://ww3.arb.ca.gov/toxics/compwood/consumer_faq.pdf?_ga=2.32900281.682464648.1573169874-1026610208.1565143819. Accessed April 2024.

33 Offermann, Francis J., 2009. Ventilation and Indoor Air Quality in New Homes. https://ww2.arb.ca.gov/sites/default/files/classic/research/apr/past/04-310.pdf. Accessed April 2024.

research paper are highly dissimilar to the Project. The Project is a multifamily multistory residential building that would be constructed with steel and concrete in addition to wood products; in contrast, single-family structures are typically predominantly constructed with wood products. In addition, multifamily developments such as the Project include common open and amenity spaces that provide residential recreation opportunities outside of individual dwelling units; accordingly, Project residents are anticipated to spend less time in their apartments than residents inside of a single-family home and would therefore have lower exposure to potential existing formaldehyde-containing materials. Furthermore, the buildings in the cited research paper consisted of homes built to comply with the 2008 version of the California Title 24 standards, whereas the Project would be built to the 2022 Title 24 standards, including current ventilation requirements that improve indoor air quality protecting residents from air pollution originating from outdoor and indoor sources.[34] The 2022 Title 24 standards would require the use of minimum efficiency reporting value (MERV) 13 filters which would substantially reduce outdoor air pollutants drawn into the buildings. However, as discussed previously (see Response to Comment A-14), the Project would install MERV 14 filters which would further reduce outdoor air pollutants drawn into the buildings.

The Project would be required to comply with all applicable City of Oxnard, state, and federal requirements pertaining to the use of indoor building materials. As the Project will be built to the 2022 Title 24 standards and include efficient HVAC systems as discussed in the Public Review Draft IS/MND, and as the Project will incorporate the use of MERV 14 filters or better, substantial evidence demonstrates that compliance with applicable regulations will be effective in reducing potential indoor formaldehyde concentrations. Therefore, the comment does not represent credible evidence that the Project would pose significant health risks to Project residents from indoor air quality and the City does not need to prepare an EIR.

Additionally, the comment speculates that the Project could have an effect on the Project's users, which is not considered to be an impact under CEQA and need not be analyzed in the Project's Public Review Draft IS/MND. See, e.g., *Parker Shattuck Neighbors v. Berkeley City Council* (2013) 222 Cal.App.4th 768, 782 (Court concluded that alleged health risks to project residents and construction workers from contaminated soils did not constitute a fair argument of an impact to the environment under CEQA. "In general, CEQA does not regulate environmental changes that do not affect the public at large: "the question is whether a project [would] affect the environment of persons in general, not whether a project [would] affect particular persons." [Citations omitted]). Furthermore, the calculations provided in the comment amount to speculation given that the underlying report is based on highly dissimilar uses compared to the Project and do not reflect the actual Project uses or compliance with current regulations and are thus unsupported by substantial evidence. As stated in Response to Comment A-28, the State of California's

[34] California Energy Commission,2018. 2019 Building Energy Efficiency Standards for Residential and Nonresidential Buildings, December. https://www.energy.ca.gov/sites/default/files/2021-06/CEC-400-2018-020-CMF_0.pdf. Accessed April 2024.

regulatory agency with authority over formaldehyde, CARB, has stated that the control measures it has approved for reducing emissions, including formaldehyde, from composite wood products provide a level of control that protects health and safety. The more stringent Phase 2 standards are now in effect for all composite wood panels and finished goods sold in California. Prior to the CWP Regulation, formaldehyde emissions were often ten to twenty-fold higher than the current allowable levels. The regulation also includes provisions for no-added formaldehyde and ultra-low emitting formaldehyde-based resins, to encourage the use of these lower-emitting resins in composite wood products.[35]

In addition, the commenter's analysis is based on a series of inaccurate assumptions, including that the Project's construction materials would not be compliant with the applicable regulations to reduce formaldehyde exposure; formaldehyde daily emissions from construction materials would be constant for over 70 years; residents would inhale 20 cubic meters of air per day; and residents would be at the Project site for 24 hours/day, 7 days/week, 52 weeks/year for 70 years. In fact, construction materials would comply with all such applicable regulations including CARB's highly stringent Phase 2 standards; furthermore, the amount of formaldehyde off-gassing from construction materials decreases over time. The American Lung Association estimates that the average person inhales approximately 2,000 gallons of air per day, or roughly 7.57 cubic meters per day, and not the 20 cubic meters per day assumed by the commenter.[36] Additionally, people do not stay in their residences and never leave for 24 hours per day, 365 days per year, for 70 years. Thus, the commenter significantly overstates impacts from formaldehyde. Therefore, based on the above, the commenter does not present credible evidence that the Project would result in significant indoor air quality impacts and no further analysis is warranted.

A-30 This comment describes a method the commenter says should be used, prior to construction in the environmental review under CEQA, for determining whether the indoor concentrations resulting from the formaldehyde emissions of specific building materials/furnishings selected exceed cancer and non-cancer guidelines.

The comment is primarily informative in nature and does not raise a significant environmental issue regarding the adequacy of the information presented in the Public Review Draft IS/MND. No further response is required.

A-31 The comment discusses the outdoor air ventilation rates in the study and how outdoor air ventilation influences the indoor concentration of contaminants.

35 California Air Resources Board, Frequently Asked Questions for Consumers, Reducing Formaldehyde Emissions from Composite Wood Products, https://ww3.arb.ca.gov/toxics/compwood/consumer_faq.pdf?_ga=2.32900281.682464648.1573169874-1026610208.1565143819. Accessed April 2024.

36 American Lung Association, How Your Lungs Get the Job Done, website: www.lung.org/blog/how-your-lungs-work. Accessed April 2024.

The comment is primarily informative in nature and does not raise a significant environmental issue regarding the adequacy of the information presented in the Public Review Draft IS/MND. No further response is required.

A-32 The comment states that since the Project is located next to roads with high traffic, the ambient noise levels should be measured over a one-week period which would allow for the selection of a building envelope and windows with sufficient STC such that indoor noise levels are acceptable.

Regarding traffic noise, agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project's future users or residents. Nonetheless, the Project would comply with standards for interior noise. The State has established noise insulation standards for new multi-family residential units, which are collectively known as the California Noise Insulation Standards (Title 24 of the California Code of Regulations). The noise insulation standards set forth an interior standard of 45 dBA CNEL in any habitable room. The Title 24 noise insulation standards would be enforced by the City through the building permit application process. However, the IS/MND analyzed U.S. 101 Vehicular Noise Level Impacts on Proposed Residents on pages 92 and 93 of Section 3.12, *Noise*, in the Public Review Draft IS/MND, for the outdoor patios/balconies. As discussed, to reduce noise levels on the Project site, the Project includes an 8-foot-high masonry wall with evergreen vine along the northern property line adjacent to U.S. 101. Additionally, the outdoor living areas (patios and/or balconies) on the 2nd through 5th floors of the multiple family residential structure that are positioned facing towards the U.S. 101 Freeway between 160 feet and 180 feet to the freeway centerline would include a 42-inch solid wall railing. Each of the patios and/or balconies on the 2nd floor would include an 8-inch glazing on top of the solid wall railing and the outdoor living areas positioned facing towards the U.S. 101 Freeway would be attenuated to be below the maximum exterior standard of 65 dBA CNEL. As such, the Project would adhere to the city's exterior standard for outdoor living areas such as the patios and/or balconies. No additional measures beyond the proposed design of the patios/balconies facing the U.S. 101 Freeway are required.

As required by CEQA, the Project's contribution to off-site Project traffic noise was analyzed on pages 93 and 94 of Section 3.12, *Noise*, of the Public Review Draft IS/MND. As discussed therein, Project-related traffic noise level over existing traffic noise level would be 0.1 dBA CNEL which is lower than the applicable threshold. Therefore, Project-related noise increases resulting from traffic conditions would be less than significant. Thus, the Public Review Draft IS/MND adequately reviewed and analyzed the Project's impacts of motor vehicle traffic noise.

A-33 This comment states that an air quality analysis should be conducted to determine the concentrations of PM2.5 in the outdoor and indoor air that people inhale each day. If concentrations are determined to exceed the CAAQS and NAAQS for PM2.5, then the buildings will need to have a mechanical supply of outdoor air that has air filtration with

sufficient removal efficiency, such as high efficiency air filters (MERV 13 or higher), such that indoor air concentrations of PM2.5 are less than CAAQS and NAAQS.

As stated in Section 3.3, *Air Quality*, pages 31 and 32 of the Public Review Draft IS/MND, the South Central Coast Air Basin is in attainment for PM2.5 under both the federal and state standards. Agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project's future users or residents. (*California Building Industry Ass'n v. Bay Area Air Quality Mgmt. Dist.* (2015) 62 Cal.4th 369, 386.) Nonetheless, the Project would be built to the 2022 Title 24 standards, including current ventilation requirements that improve indoor air quality protecting residents from air pollution originating from outdoor and indoor sources. As discussed above in Response to Comment A-29, the Project would utilize MERV 14 or higher filters which would substantially reduce outdoor air pollutants drawn into the buildings and exceed 2022 Title 24 standards.

As required by CEQA, the Project's contribution to PM2.5 emissions and localized air quality impacts from Project construction and operations were evaluated in Section 3.3, *Air Quality*, pages 33 through 38 of the IS/MND. Specifically, in the above referenced pages of the IS/MND, Tables 3 and 4, on page 5-34, show that construction and operational emissions would not exceed the VCAPCD significance thresholds. In addition, an extensive and detailed analysis was provided regarding diesel particulate matter PM2.5 emissions, the City's requirement to utilize MERV 14 air filters to reduce PM2.5 exposures and related air quality health impacts. VCAPCD recommends that a project's potential contribution to cumulative impacts should be assessed using the same significance criteria as those for project-specific impacts. According to VCAPCD, individual development projects that generate construction or operational emissions that exceed VCAPCD recommended daily regional thresholds for project-specific impacts would also cause a cumulatively considerable increase in emissions for those pollutants for which the basin is in nonattainment. With the implementation of regulatory compliance measures such as Rule 55 (Fugitive Dust) and Rule 74.2 (Architectural Coating), which would reduce particulate matter and reactive organic compound emissions, the Project's construction and operational emissions are not expected to significantly contribute to cumulative emissions. As such, the Project's contribution to cumulative air quality emissions in combination with any related projects would not be cumulatively considerable, and impacts would be less than significant. Therefore, since Project construction and operations would not exceed the VCAPCD significance thresholds and would not generate PM2.5 emissions that would result in significant air quality health impacts, PM2.5 air quality impacts would be less than significant.

A-34 This comment provides several indoor air quality impact mitigation measures relating to formaldehyde, air ventilation, and PM2.5. As discussed in Section 3.3, *Air Quality*, on pages 31 through 38, impacts related to air quality were found to be less than significant, and no mitigation is required. Additionally, as discussed above in Response to Comments

A-28, A-29, A-32, and A-33, these impacts related to formaldehyde, air ventilation, and PM2.5 are less than significant, and no mitigation measures are required.

A-35 This comment discusses the CARB Formaldehyde ATCM and how Mr. Offerman came to conclude that the cancer risk would be 112 per million in the Chan 2029 study.

As discussed above in Response to Comments A-28, A-29, A-32, and A-33, the calculations in the Chan study were based upon 70 single-family detached structures with four bedrooms, located in California, built between 2011 and 2017, and using 2019 Title 24 requirements. The building conditions in the research paper are highly dissimilar to the Project. The Project is a five-story multi-family residential development that does not include any single-family detached structures. Furthermore, the residential development would be constructed to 2022 Title 24 Standards and will include at a minimum MERV 14 filters, which were not modeled in the Chan study. No further response is required.

A-36 The comment is an introduction of the commenter and a recap of the project. This comment does not raise significant environmental issues regarding the adequacy of the impact analysis provided in the Public Review Draft IS/MND.

A-37 The comment presents information on the adverse effects of noise; noise-induced hearing loss, speech interference, sleep disturbance, cardiovascular and physiological effects, and impaired cognitive performance. This comment does not raise a significant environmental issue regarding the adequacy of the information presented in the Public Review Draft IS/MND.

A-38 The comment asserts that the noise evaluation conducted for the Project underestimated construction noise levels due to inappropriately accounting for the usage factor for the construction equipment. Please see Response to Comment A-19 regarding construction noise impacts.

A-39 This comment states that the on-site operational noise analysis is incomplete because there is no analysis of noise impacts on nearby sensitive receptors generated by rooftop mechanical equipment. Please see Response to Comment A-20 regarding noise impacts associated with rooftop mechanical equipment.

A-40 This comment asserts that the potential for building damage was not analyzed and as such this analysis should be included in an EIR.

As discussed above in Response to Comment A-20, Page 182 of the FTA guidance manual states "[b]uildings founded on the soil near the construction site respond to these vibrations with varying results, ranging from no perceptible effects at the lowest levels, low rumbling sounds and perceptible vibrations at moderate levels, and slight damage at the highest levels." The FTA guidance manual also states that "… ground vibrations from construction activities do not often reach the levels that can damage structures …". As shown in Table 11, page 91, Section 3.12, *Noise*, of the Public Review Draft IS/MND, vibration

velocities of construction equipment on the Project site will not exceed vibration significance thresholds and will not result in human annoyance impacts. Page 91 also states "[b]ecause the construction activities would not cause substantial human annoyance; a structural vibration impact analysis was not warranted." Thus, the Public Review Draft IS/MND did analyze structural vibration impacts and determined that since human annoyance vibrational impacts were less than significant and since human annoyance thresholds are lower than the structural damage thresholds, structural vibrational impacts would also be less than significant, and an analysis is not warranted. Therefore, an EIR does not need to be conducted.

A-41 This comments states that traffic noise was only considered on Rice Avenue, Gonzales Road, and Rose Avenue and did not consider potential traffic noise increases on Lockwood Avenue and Outlet Center Drive.

As discussed above in Response to Comment A-20 and as stated on page 93 of the Public Review Draft IS/MND, Section 3.12, *Noise*, existing roadway noise levels were calculated along various roadway segments near to the Project site based on the existing traffic volumes identified in the Traffic Study in Appendix J to the IS/MND. Table 12 on page 94 in the IS/MND displays the existing noise levels and existing plus Project noise levels. The analysis includes all major intersections along Rose Avenue, Gonzales Road and Rice Avenue that lead to Lockwood Street, where the Project is located. Lombard Street is also known as Outlet Center Drive once it crosses Gonzales Street. Thus, noise levels at Outlet Center Drive and Gonzales Road were measured. The Project site is currently vacant, but the retail businesses and California Lutheran University Satellite campus next to the Project site contribute traffic on Lockwood Street that would go through the same intersections that are studied in the noise analysis. Although traffic was not measured along Lockwood Drive itself, traffic that uses Lockwood Drive was captured at the intersections analyzed in the Public Review Draft IS/MND. Thus, the Public Review Draft IS/MND thoroughly covered all the roadways that lead to the Project site. As shown in Table 12, the maximum noise level increase along the analyzed roadways is calculated as 0.1 dBA CNEL along Rice Avenue north of U.S. 101 Southbound Ramp and North of Gonzales Road, along Gonzales Road east of Solar Avenue, East of Lombard Street, and East of Rose Avenue. Consequently, Project-related traffic would not cause noise levels along the analyzed roadways to increase by more than the significance threshold of 3.0 dBA. Thus, the Project would not result in a permanent increase in noise levels above ambient levels in the vicinity of the Project site in excess of the city's Noise Element and Noise Ordinance Vehicular related noise impacts associated with the Project would be less than significant.

A-42 The comment is a conclusion to the letter reiterating the noise and vibration issues raised in Comments A-38 through A-41. The comment also requests a revised IS/MND or an EIR be conducted. Please see Response to Comments A-38 through A-41, above, regarding the noise and vibration issues raised. A revised IS/MND or EIR is not required because the IS/MND adequately addressed the potential noise and vibration impacts.

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Making Conservation a California Way of Life

April 17, 2024

Joe Pearson
City of Oxnard
214 South C Street
Oxnard, CA 93030

RE: Lockwood III Apartments: Mitigated Negative Declaration (MND)
Vic. US-101/20.492, 20.042
GTS # 07-VEN-2024-00582
SCH # 2024030528

Dear Joe Pearson:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above-referenced project. The project proposes to construct a five-story, 373,069-square-foot (SF) mixed-income, multi-family residential development located within one building and would contain a total of 234 residential units, including 30 low-income level units and 8 very low-income level units, representing 12.9 percent and 3.4 percent of the total units, respectively. The residential unit types consist of Studio (16 units), 1-bedroom, 1-bath (86 units); 2-bedroom, 2-bath (108 units); and 3-bedroom, 2-bath (24 units) residential spaces. The Project proposes parking on the first floor (351 spaces), and residential units would be split between the upper four stories. The Project would provide various amenities, including a courtyard, park areas, decks, bicycle storage, extra storage, a setback open area (which would include two bocce ball courts, a pet park, and a putting green), a fitness area, a multi-purpose room, a community room, pet care, and a fifth-floor deck and lounge. The total interior yard and amenity space proposed on-site is 67,267 SF, with the total interior yard space totaling 34,304 SF and the additional amenity space encompassing 32,963 SF. The proposed residential building would be 67'-6" at its highest point and would have a Floor Area Ratio (F.A.R) of 1:1.65. The City of Oxnard is the Lead Agency under the California Environmental Quality Act (CEQA). B-1

The closest state facility is US-101. After reviewing the project's documents, Caltrans has the following comments:

Please ensure that the existing signal and traffic operations at US-101 off-ramps to Avenue and Rice Avenue and all major intersections in the vicinity of the project can accommodate the additional project trips. For any traffic signals and curb ramp applicant would be responsible for payment of applicable fees as required by any fair-contribution to the improvement. B-2

There has been an identified discrepancy in the Initial Study/Mitigated Negative Declaration Document, Section 3.15, Environmental Checklist, Transportation and Circulation (PDF page 109), and Appendix J, Revised Traffic Circulation Study (PDF page 2441). Please adjust the VMT Impact Threshold and the Project VMT Estimate numbers accordingly. B-3

Due to the project's proximity along US-101, Caltrans will require an Encroachment Permit for work performed within the State Right-of-way. Caltrans recommends that large-size truck travel be limited to off-peak commute hours. Caltrans requires a permit for any heavy construction equipment and or materials that require the use of oversized transport vehicles on State highways. B-4

Caltrans recommends that the Project limit construction traffic to off-peak periods to minimize the potential impact on State facilities. If construction traffic is expected to cause issues on any State facilities, please submit a construction traffic control plan detailing these issues for Caltrans' review. B-5

Caltrans looks forward to the future documents. If you have any questions, please feel free to contact Jaden Oloresisimo, the project coordinator, at Jaden.Oloresisimo@dot.ca.gov and refer to GTS # 07-VEN-2024-00582. B-6

Sincerely,

Miya Edmonson

MIYA EDMONSON
LDR/CEQA Branch Chief

cc: State Clearinghouse

Letter B Response — California Department of Transportation (Caltrans) April 15, 2024

B-1 This comment is an introduction by the California Department of Transportation (Caltrans) indicating that they received the Public Review Draft IS/MND, and the comment provides a brief summary of the project. The City acknowledges the comment as an introduction to the comments that follow. As this comment provides an overview of the Project and does not raise an issue with the Public Review Draft IS/MND, no further response is required.

B-2 This comment requests that the Project ensures the existing signal and traffic operations at U.S.101 off-ramps to Rose Avenue and Rice Avenue and all major intersections in the vicinity of the project can accommodate the additional project trips. This comment also notes that the applicant would be responsible for payment of applicable fees as required by any fair-share contribution for any traffic signals and curb ramp improvements. The City acknowledges the comment and notes the recommendations. As this comment does not raise a significant environmental issue regarding the adequacy of the information presented in the Public Review Draft IS/MND, no further response is required.

B-3 This comment notes a discrepancy in the Public Review Draft IS/MND, Section 3.15, Environmental Checklist, *Transportation and Circulation* (PDF page 109), and Appendix J, *Revised Traffic Circulation Study* (PDF page 2441) and requests that the VMT Impact Threshold and the Project Vehicle Miles Travelled (VMT) Estimate numbers are adjusted accordingly.

Firstly, with regard to the discrepancy relating to the VMT Impact Threshold, the Public Review Draft IS/MND correctly identifies that the VMT Impact Threshold is 12.58. This VMT Threshold is based on the math set out in the *Revised Traffic and Circulation Study* on page 23, Table 12. Table 12 states the VMT Impact Threshold is a 15 percent reduction from City VMT, noting 14.80 x 0.85 = 10.69, which is an error. The calculation of 14.80 x 0.85 is 12.58, as outlined in the Public Review Draft IS/MND.

Secondly, with regard to the Project VMT estimate numbers, as set out in the Technical Appendix of the *Revised Traffic Circulation Study*, the last two pages are a snapshot of the Ventura County Transportation Commission (VCTC) Travel Demand Model Traffic Analysis Zones (TAZ). The first snapshot shows the parcel that includes the Project site, and the home-based VMT for the TAZ as 0.97 per capita. The second snapshot is the adjacent TAZ to the Project site, located to the south. This parcel has a home-based VMT of 9.7 miles per capita and is more representative of the VMT associated with the Project because there are existing multiple family residences within the TAZ. The TAZ where the Project site is located does not have any residential uses. To ensure a conservative and more representative assessment, the 9.7 miles per capita VMT was selected within the Public Review Draft IS/MND for the Project as the Project would likely have a greater

VMT per capita than the VCTC model that identifies a 0.97 miles per capita for uses within its TAZ.

As such, Table 12 on Page 23 of Appendix J, *Revised Traffic and Circulation Study*, of the Final IS/MND, is hereby revised as follows to clarify the identified discrepancy:

Table 12
Lockwood III Apartments Per Capita VMT Summary

City of Oxnard VMT[(a)]	VMT Impact Threshold[(b)]	Project VMT Estimate[(c)]	Impact?
14.80 per capita	~~10.69~~ 12.58 per capita	~~0.97~~ 9.7 per capita	No

(a) City of Oxnard home-based VMT per capita based on VCTC traffic model.
(b) VMT Threshold is a 15% reduction from City VMT (14.80 x 0.85 = 12.58).
(c) Project home-based VMT per capita estimate based on VCTC model traffic analysis.

Note: per the VCTC model, the parcel that includes the Project site has a home-based VMT of 0.97 per capita. The adjacent parcel to the south has a home-based VMT of 9.7 per capita. To ensure a conservative assessment, the 9.7 per capita VMT was selected within the Public Review Draft IS/MND as the Project VMT because it is more representative of a parcel with residential units than the much lower figure of 0.97 per capita.

These changes are minor and do not alter the conclusions of the Public Review Draft IS/MND. The Project's VMT impact is still below the threshold of 12.58 miles per capita and less than significant.

B-4 This comment notes that due to the Project site's proximity to U.S. 101 that Caltrans will require an Encroachment Permit for work performed within the State right-of-way. Additionally, the comment recommends that large-size truck travel is limited to off-peak periods, and notes that Caltrans requires a permit for any heavy construction equipment and/or materials that require the use of oversized transport vehicles on State highways. The City acknowledges the comment and notes the recommendations. As this comment does not raise a significant environmental issue regarding the adequacy of the information presented in the Public Review Draft IS/MND, no further response is required.

B-5 This comment recommends limiting construction traffic to off-peak periods to minimize the potential impact on State facilities, and notes that if construction traffic is expected to cause issues on any State facilities, to submit a construction traffic control plan to Caltrans detailing these issues. The City acknowledges the comment and notes the recommendations. As this comment does not raise a significant environmental issue regarding the adequacy of the information presented in the Public Review Draft IS/MND, no further response is required.

B-6 This comment provides the commenter's contact information, position, and Caltrans' project reference, which the City acknowledges. No further response is required.

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Air Pollution
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Ali Reza Ghasemi, PE
Air Pollution Control Officer

VENTURA COUNTY
AIR POLLUTION CONTROL DISTRICT
Memorandum

TO: Mr. Joe Pearson, Planning Manager DATE: April 16, 2024

FROM: Nicole Collazo, Air Quality Specialist, VCAPCD Planning Division NC

SUBJECT: Notice of Intent to Adopt Mitigated Negative Declaration for the City of Oxnard Lockwood III Apartments Project (RMA 24-007)

Ventura County Air Pollution Control District (APCD) staff has reviewed the subject Mitigated Negative Declaration (MND) for the project referenced above, which analyzed the environmental impacts of a project to construct a five-story, 234-unit mixed-income, multi-family residential development. The project location is 2151 Lockwood Street. The Lead Agency is the City of Oxnard (City). C-1

APCD has the following comments regarding the project's MND.

Item 1- Page 30-31, Criteria a, Paragraphs 1-2 The VCOG references no longer apply. The most recent Air Quality Management Plans (AQMPs) use population growth forecast data from SCAG's RTP/SCS, Connect SoCal plans. The 2022 AQMP used the 2020 Connect SoCal population growth forecast data. C-2

Item 2- Page 31, Criteria a, Paragraph 3. The methodology for conducting the AQMP Consistency analysis does not conform with the *Ventura County Air Quality Assessment Guidelines*, or AQAG, which contains instructions for how to conduct the project population comparison with the existing and forecasted population growth. Please refer to the AQAG's Section 4 for more information (and use the 2022 AQMP and 2020 Connect SoCal population data). For example, the project's expected population growth should be compared with the City of Oxnard's current population (can be based on US Census 2020- 202,063) and the next 5-yr interval from SCAG's Connect SoCal population forecast 2025 at 218,520 (interpolated from data). If the project's expected population growth, assuming all residents are new residents of the City of Oxnard, is under the 2025 population forecast compared to the City's baseline, then it is consistent with the AQMP. C-3

Item 3- Page 34, Criteria b-c, Table 3- The construction emissions in Table 3 of the draft MND have max ozone precursor emissions estimated at 24.2 lbs./day ROC and 24.1 lbs./day NOx and that "no mitigation would be required"- in other words, no emission reduction measures were proposed. However, the construction emissions presented in Appendix B, Air Quality Impact Analysis, states the construction emissions are at 29.3 lbs./day ROC and 31.6 lbs./day NOx (Appendix B, PDF Page 183). If the actual construction emissions are that of Table 10 from Appendix B, we recommend the project proposed the emission reduction measure of requiring Tier 3 EPA off-road diesel construction equipment to reduce NOx and requiring all paints used C-4

during construction of the building to have no more than a 25 g/L ROC/VOC max. It was not clear what the g/L ROC was used for the paints in the model for unmitigated. As a reminder, APCD does not have adopted construction thresholds. However, we do recommend construction emissions be quantified and compared against the operational threshold for the project location, in this case 25 lbs./day for ROC or NOx (AQAG, Section 5.2). Please also include both the mitigated and unmitigated construction emissions in Table 3 of the MND with the amended section, if warranted.

C-4 (cont)

Item 4- Page 37, Criteria d. The impact determination should be changed to Less than Significant With Mitigation Incorporated, as the Health Risk Assessment (HRA) performed and included in Appendix B determined a significant inhalation cancer risk due to the proximity to the US 101 freeway (Table 12, Appendix B, PDF Page 187) of over 10 in a million. Only with the incorporation of the design features listed in PDF Page 187, mainly using MERV-14 filtration systems, would the cancer risk go down to below the significance threshold at 5.18 out of a million (Table 13, Appendix B). In addition to changing the impact determination for criteria d, we recommend adding Table 12, Table 13, and the design features listed (below for reference) in the impact section of the MND for transparency purposes. The design features should be included in an enforceable manner, such as conditions of approval for the project.

- Locate outdoor areas, such as balconies and courtyards, as far from the US-101 freeway as possible;
- Plant vegetation between residential receptors and the freeway;
- Install, operate, and maintain an HVAC system that uses high-efficiency filters of Minimum Efficiency Reporting Value (MERV) 14 or higher for the residential units (suggested use of MERV 16);
- Locate the air intakes for the residential units as far from the freeway as possible; and
- Provide a disclosure letter to all new residents that discusses the potential risk from living within close proximity of the US-101 freeway, and points out that opening windows reduces the effectiveness

C-5

Item 5- It is not clear whether the proposed EV charging spaces out of the total 351 parking spaces is included in the operational air emissions estimated for project. In addition, it is not clear whether the on-site battery energy storage system was considered in the air emissions modeling for energy emissions nor information contained in the air quality section about how this system would work or what it would power, when, how long, etc.

C-6

Item 6- Appendix B, GHG. The report states that there is no climate action plan adopted for the City of Oxnard (PDF Page 170). However, it also includes information about the adopted Climate Action and Adaptation Plan adopted by the City of Oxnard (PDF Page 169).

C-7

Item 7- Table 8, GHG. It is not clear how proposing to install natural gas appliances (heating, water heaters) is consistent with the City's Action B2 (Electrify Buildings) in its Climate Action and Adaptation Plan (CAAP), listed below. Please expand this section to include how it is consistent. Also note that the current 2022 Title 24 Energy Standards require all residential to be electric-ready and to install electric heat pumps. Please clarify if the proposed project will install electric-ready heating appliances.

C-8

STRATEGY/ACTION	TIMEFRAME	LEAD DEPARTMENT
Green Buildings B2: Electrify Buildings *Performance metric: Adhere to CALGreen (Title 24) requirements for*		
Community		
B2.1 – Partner with existing agencies such as CPA, Tri-County Regional Energy Network (3C-REN), and/or the Ventura County Regional Energy Alliance (VCREA) to promote and take advantage of local programs, including rebates and financing options for building and appliance electrification; meet with these organizations on a quarterly basis	Near term (2022–2026)	• Community Development
B2.2 – Meet with SCE (and/or other providers) on a regular basis to strategize promoting electrification offerings to residents and businesses, while keeping energy resilience needs in mind	Near term (2022–2026)	• Public Works • Community Development
B2.3 – Work with electric utility and/or CPA to create an educational campaign for building owners on the health, climate and cost benefits of electric-powered kitchen equipment and distribute information about available products and installation services	Near term (2022–2026)	• Community Development

C-8 (cont)

Thank you for the opportunity to comment on the project's MND. If you have any questions, you may contact me at nicole@vcapcd.org.

C-9

Letter C Ventura County Air Pollution Control District
Response April 17, 2024

C-1 This comment is an introduction by the Ventura County Air Pollution Control District (VCAPCD) indicating that they reviewed the Public Review Draft IS/MND, and the comment provides a brief summary of the project. The City acknowledges the comment as an introduction to the comments that follow. As this comment provides an overview of the Project and does not raise an issue with the Public Review Draft IS/MND, no further response is required.

C-2 This comment states that the VCOG reference on pages 30-31 of the Public Review Draft IS/MND is no longer valid. The City acknowledges this comment and has amended the text as indicated below.

a) **Less-than-Significant Impact.** The Ventura County portion of the SCCAB is in nonattainment for ozone for the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) and for respirable particulate matter 10 micrometers in diameter and smaller (PM10) for the CAAQS. VCAPCD ~~and the Ventura Council Association of Governments (VCOG) are~~ is responsible for preparing the air quality management plan (AQMP), which addresses federal and state Clean Air Act (CAA) requirements. The VCAPCD has adopted AQMPs to meet the CAAQS and NAAQS. The VCAPCD board approved the 2022 AQMP on December 13, 2022.[37] The California Air Resources Board (CARB) approved the 2022 AQMP on January 26, 2023. The goals of the 2022 AQMP are to ensure that city and county population growth does not interfere with emission reductions and progress in meeting the state and national ambient air quality standards.

These changes are minor and do not alter the conclusions of the Public Review Draft IS/MND. As this comment does not raise a significant environmental issue regarding the adequacy of the information presented in the Public Review Draft IS/MND, no further response is required.

C-3 This comment states that the methodology for conducting the AQMP Consistency analysis does not conform with Chapter 4 of the *Ventura County Air Quality Assessment Guidelines* (AQAG). The City acknowledges this comment and has amended paragraph 3 on page 32 as follows:

> The Project includes the construction of a 5-story, approximately 234-unit, multi-family residential building, which would increase the residential population in the City of Oxnard. Based on the city average of 3.9 persons per household, the

[37] VCAPCD. 2022. *Final 2022 Ventura County Air Quality Management Plan*. December 2022. http://www.vcapcd.org/pubs/Planning/AQMP/2022/Final-2022-AQMP-with-appendices-20221130.pdf. Accessed October 26, 2023.

proposed addition of 234 units would generate an increase of approximately 912 residents. The City of Oxnard has a current population of 202,063 based on the 2020 Census.[38] ~~This residential building would not increase population beyond that projected in the 2030 General Plan.~~[39] The projected population forecast for the City of Oxnard for 2027 in Connect SoCal 2020 is approximately 218,177 (interpolated from data).[40] [41] ~~The Southern California Association of Governments (SCAG) estimates that the population of Oxnard will increase by 32,100 residents and generate 15,000 new jobs between 2016 and 2045~~ Even in the unlikely event that all ~~new jobs~~ residents created by the Project were to result in new residents to Oxnard, the Project would result in ~~less than 1 percent of expected city population and employment growth. A~~ a population growth of 912 people which, when added to the current population of 202,630 people, would result in a population of 203,542 people which is below the forecasted population of 218,177 people for the City of Oxnard in 2027. ~~would bring the less than 1 percent of expected city population and employment growth.~~ Additionally, this residential building would not increase population beyond that projected in the 2030 General Plan.[42] Therefore, since the Project's expected population growth is below the 2027 population forecast compared to the City's baseline, it is consistent with the 2022 AQMP ~~would not result in population growth that would exceed the regional forecast~~ and would not conflict with ~~the~~ VCAPCD's 2022 AQMP, so impacts would be less than significant.

These changes do not alter the conclusions of the Public Review Draft IS/MND. As this comment does not raise a significant environmental issue regarding the adequacy of the information presented in the Public Review Draft IS/MND, no further response is required.

C-4 This comment states that the construction emissions in Table 3 for ROC and NOx do not match those of Table 10 in Appendix B. The commenter requests that if the emissions are actually those of Table 10 in Appendix B that the Public Review Draft IS/MND add a mitigation measure to require Tier 3 EPA off-road diesel construction equipment to reduce NOx emissions and to require all paints used during construction of the building to have no more than a 25 g/L ROC/VOC max. Additionally, the comment recommends that construction emissions be quantified and compared against the operational threshold for the project, in this case 25 lbs/day of ROC and NOx. Furthermore, the comment requests that both the mitigated and unmitigated construction emissions be included in Table 3 of the IS/MND.

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38 U.S. Census Bureau. 2020. Oxnard City, California Population and People. Oxnard city, California - Census Bureau Profile. Accessed April 23, 2024.

39 City of Oxnard 2011. 2030 General Plan – Goals and Policies Goals and Policies. https://www.oxnard.org/wp-content/uploads/2017/06/Oxnard-2030-General-Plan-Amend-12.2022-SMc.pdf. Accessed October 27, 2023.

40 Southern California Association of Governments 2020. Final Connect SoCal Demographics and Growth Forecast Adopted September 3, 2020. Accessed April 23, 2024.

41 Difference in SCAG Connect SoCal 2020 population from 2016 to 2045 is 32,100 people. 32,100 people/29 years = 1,107 people/year. 1,107 people/year x 11 years (2016 – 2027) = 12,177 additional people in 2027. So the interpolated population in 2027 for Oxnard would be 1,107 people + 206,000 people = 218,177 people.

42 City of Oxnard. 2011. 2030 General Plan – Goals and Policies Goals and Policies. https://www.oxnard.org/wp-content/uploads/2017/06/Oxnard-2030-General-Plan-Amend-12.2022-SMc.pdf. Accessed October 27, 2023.

The maximum daily emissions that are included in Table 3 on page 34 of the Public Review Draft IS/MND are correct. Unfortunately, the information in Appendix B of the Public Review Draft IS/MND is incorrect and was part of an outdated version of the technical information. The correct updated version of Appendix B is included in the Final IS/MND.

The comment requests information for the mitigated and unmitigated construction emissions to be included in the Public Review Draft IS/MND. Because the emission estimates in Table 3 includes compliance with a legal regulatory requirement of construction equipment controls (i.e., Tier 3 emissions standards with Level 3 DPF per CARB requirements), the NOx emissions associated with the Project construction activities would not exceed VCAPCD's NOx daily emission threshold of 25 lbs/day. Therefore, the Project is not required to include a mitigation measure to further reduce its less than significant NOx emissions. The inclusion of a regulatory requirement is not typically considered as mitigation under CEQA. As shown in Table 3 of the Public Review Draft IS/MND, Project construction emissions of both NOx (which is 24.1 lbs/day) and VOC (ROG)/ROC (which is 24.2 lbs per day) would not exceed VCAPCD's daily emission threshold of 25 lbs/day with the incorporation of the required construction equipment controls.

Although the Project is required to comply with CARB's construction equipment controls, the comment request that the NOx emissions without compliance with CARB's construction equipment controls. Therefore, for informational purposes only, the Project's maximum daily NOx emissions without compliance with CARB's construction equipment controls would be 31.7 lbs/day of NOx which would exceed the VCAPCD threshold of 25 lbs/day. Given that the above discussion is for informational purposes, the analysis in the Public Review Draft IS/MND is not required to be revised. As identified above, the updated air quality discussion in Appendix B is included in the Final EIR; however, the modeling information within Appendix B of the Public Review Draft MND is correct.

C-5 The comment states that the impact determination for Criteria d, page 37, should be changed from Less than Significant Impact to Less than Significant with Mitigation Incorporated because the cancer risk is above the significance threshold and only with incorporation of a MERV-14 or greater filter does it go below the significance threshold. The commenter wants this stated as a mitigation measure and not a design feature so that it will become an enforceable manner.

The City disagrees with the commenters' request about changing the recommended design feature to a mitigation measure because the recommended design feature is a legal regulatory requirement under Oxnard's Code of Ordinances Section 16-420J, *Special Development Requirements*. A regulatory requirement applicable to a project is not typically considered as mitigation under CEQA. As noted, the recommended design feature reduces the impact to less than significant, so no mitigation is required as installation of MERV-14 filters is mandated per Section 16-420J.

Although the Project would comply with the City's Code of Ordinances Section 16-420J that requires MERV 14 filters for rental units, such as the proposed apartments, to be installed, the maximum exposed residential units (MEIR) (i.e., cancer risk) from predicted freeway emissions without compliance with the City of Oxnard Code of Ordinance Section 16-420J could be at 13.6 in one million which would exceed the VCAPCD cancer risk significance threshold of 10 in one million. In addition, without compliance with Section 16-420J, the chronic health impact would be 0.00135 which would be below the VCAPCD non-cancer hazard index significance threshold of 1.0. However, as stated above, the Project is required to comply with the City of Oxnard Code of Ordinances Section 16-420J that would lower the cancer and non-cancer risks. The cancer risk would be reduced to 5.18 in one million with the use of MERV 14 filters and continue to be less than the non-cancer index significance threshold of 1.0. Given that the above discussion is for informational purposes, the analyses in the Public Review Draft IS/MND and Appendix B are not required to be revised.

C-6 The comment states that it is not clear if the EV charging spaces or the on-site battery energy storage systems are included in the operational emissions of the project. The comment also states that there is no information on the on-site battery energy storage system in the air quality section.

To provide clarification, the emissions reductions from EV charging spaces were not accounted for in Table 4 of the Public Review Draft IS/MND as stated in the CalEEMod report, page 10 of 77 in the revised Final IS/MND Appendix B. The on-site battery energy storage system has not yet been designed and was not accounted for in the operational emissions of the Project. The simplest way to design the battery storage system would be to locate them on the roof under the solar panels. The battery storage system would then probably be used for virtual net metering, which is the most efficient way to set up the solar system. In virtual net metering, the solar/battery power would be fed to one meter and the owner nets 100 percent of the solar power generated to offset operation costs like the pool, garage lights, parking lot lights, elevators, and power in the common areas. Alternatively, the solar/battery power could be routed to the dedicated EV meter which would be located at the northwest corner of the site. All of the EV charges would be fed by one 4,000 amp SCE EV meter. Theoretically, solar/battery power could offset the EV charging use and the owner could net the savings to offset operational costs and maintenance of the charging system. Either way, the battery back-up system wouldn't contribute to or reduce emissions from Project operations which were analyzed in the Public Review Draft IS/MND. As this comment does not raise a significant environmental issue regarding the adequacy of the information presented in the Public Review Draft IS/MND, no further response is required.

C-7 The comment states that Appendix B includes a discussion that there is no climate action plan adopted for the City of Oxnard, under Energy Regulations, but it also includes information about the Climate Action and Adaptation Plan adopted by the City of Oxnard, under GHG Regulations. Unfortunately, the information in Appendix B of the Public Review Draft IS/MND is incorrect and was part of an outdated version of the technical

information. The updated version of Appendix B has corrected this error. The correct updated version of Appendix B is included in the Final IS/MND. However, these changes do not alter the conclusions of the Public Review Draft IS/MND.

C-8 The comment states that proposing to install natural gas appliances is not consistent with the City's Action B2 (Electrify Buildings) in its CAAP and requests that information in Table 8 be provided to demonstrate how the Project is consistent with the City's Action B2. The comment also suggests clarifying if the project will install electric-ready appliances as required by 2022 Title 24 Energy Standards.

The City acknowledges the comment. The Project will be designed and operated to meet the applicable requirements of CALGreen and the City's Green Building Code. Furthermore, the Project will comply with current Title 24 standards, including energy efficient lighting and appliances. Therefore, Project apartments will be electric-ready and will have electric heat pumps in compliance with 2022 Title 24 Energy Standards and will be supportive of the City's Action B2 (Electrify Buildings) in its CAAP.

The updated version of Appendix B is included in the Final IS/MND. To clarify that the Project will not use natural gas for heating and appliances, updated Appendix B, Methodology, Air Quality, Operation, Paragraph two, Page 21, includes the following modification.

> Area-source emissions are based on natural gas usage ~~(building heating and water heaters)~~, landscaping equipment, and consumer product (including paint) usage rates provided in CalEEMod. Natural gas usage factors in CalEEMod are based on the California Energy Commission's California Commercial End Use Survey data set, which provides energy demand by building type and climate zone.

These changes do not alter the conclusions of the Public Review Draft IS/MND.

C-9 The comment is a conclusion to the letter and provides contact information. The City acknowledges this comment. No further response is required.

COUNTY of VENTURA

RESOURCE MANAGEMENT AGENCY
CHARLES R. GENKEL
Environmental Health Director

April 2, 2024

Joe Pearson, Planning Manager, City of Oxnard
Community Development Department
214 South C Street
Oxnard, California 93030

Lockwood III Apartments, Environmental Document Review – Initial Study/ Mitigated Negative Declaration (IS/MND)

Ventura County Environmental Health Division (Division) staff reviewed the Draft Environmental Impact Report.

The Division provides the following comments:

1. The proposed residential development may include the construction of a community recreation area with a swimming pool. The builder/ applicant shall submit plans for the public swimming pool to the Community Service Section of this Division and obtain plan approval prior to beginning any construction of the swimming pool and auxiliary structures.

2. A permit to Operate from this Division would also be required prior to use inauguration of the swimming pool.

D-1

Contact the Division's Community Services Section regarding public swimming pool plan review and permitting requirements. Information on public swimming pool construction and operation requirements may be found here:

https://vcrma.org/en/recreational-health-public-pools-and-spas

D-2

If you have any questions, please contact me at (805) 654-2830 or Roxy.Cabral@ventura.org

Roxy Cabral, R.E.H.S.
Land Use Section
Environmental Health Division

CC G:\Admin\TECH SERVICES\FINALED Letters\Land Use\SR0021848 ODR RMA REF 24-007 Lockwood 3 Apartments 04 02 2024

HALL OF ADMINISTRATION #1730
805-654-2813 • FAX 805-654-2480 • 800 South Victoria Avenue, Ventura, CA 93009 • vcrma.org

Letter D Ventura County Environmental Health Division
Response April 17, 2024

D-1 This comment introduces the commenter and notes the Ventura County Environmental Health Division (VCEHD) reviewed the Public Review Draft IS/MND. The comment notes that the Project may include the construction of a community recreation area with a swimming pool and that the builder/applicant must submit plans for the public swimming pool to the Community Service Section of the VCEHD and obtain plan approval prior to beginning any construction of the swimming pool and auxiliary structures. Additionally, the comment notes that a permit to operate from the VCEHD would also be required prior to inauguration of the swimming pool. The City notes that VCEHD identifies public pool facilities as those including "*swimming pools, spas, wading pools, and interactive water features located in condominiums, home owner associations, hotels, apartment buildings, parks, schools, gyms, community centers, therapy pools or any pool that serves more than three families."*[43]

Although the necessary plan approval and application for a permit to operate for the swimming pool are independent of CEQA, the identified plan approval and application for a permit to operate will be incorporated as Project Conditions of Approval. The Project Applicant will need to file with the City's Community Development Department an acknowledgment that they have read, understand and agree to the Conditions of Approval prior to a building permit being issued. As this comment does not raise a significant environmental issue regarding the adequacy of the information presented in the Public Review Draft IS/MND, no further response is required.

D-2 This comment provides a weblink to VCEHD's Community Services Section for plan review and permitting requirement information and provides the commenter's contact details. The City acknowledges the contact information for future reference during the environmental review process. Since this comment does not raise an environmental issue regarding the adequacy of the Public Review Draft IS/MND, no further response is required.

[43] https://vcrma.org/en/recreational-health-public-pools-and-spas

PUBLIC WORKS
VENTURA COUNTY

WATERSHED PROTECTION

MEMORANDUM

DATE: April 16, 2023

TO: Anthony Ciuffetelli, Planner, Planning Division

FROM: John Gauthier, Groundwater Specialist, PWA-Watershed Protection Groundwater Resources Section

SUBJECT: RMA 24-007 – Lockwood III Apartments

The Ventura County Public Works Agency – Watershed Protection, Water Resources Division, Groundwater Resources Section (GRS) reviewed the Mitigated Negative Declaration (MND) for the proposed Lockwood III Apartments and associated documents submitted by the City of Oxnard.

Watershed Protection provides the following comments:

Additional information regarding potable water supply and treatment and disposal of wasterwater is needed.

The following is a list of information needed to have a full understanding of the impact the project will have on groundwater resources within the County of Ventura.

1. Total anticipated annual landscaping irrigation water usage
2. Total anticipated annual potable water usage
3. Anticipated total occupancy at full build out
a. Assumption of usage per occupant
4. Source of landscaping irrigation water
5. Source of potable water
6. Details on wastewater treatment and disposal

E-1

If you have any questions, please contact me at (805) 654-5164 or John.Gauthier@ventura.org

John Gauthier

John Gauthier
Groundwater Specialist III

E-2

Letter E Response — Ventura County Public Works- Watershed Protection District (Groundwater) April 17, 2024

E-1 This comment notes the Ventura County Public Works Agency – Watershed Protection, Water Resources Division, Groundwater Resources Section (GRS) has reviewed the Public Review Draft IS/MND and notes that additional information regarding potable water supply and treatment and disposal of wastewater is needed. The commenter includes a list of items, numbered 1 through 6, answers to which are provided below:

1. Total anticipated annual landscaping irrigation water usage
2. Total anticipated annual potable water usage
3. Anticipated total occupancy at full build out
a. Assumption of usage per occupant
4. Source of landscaping irrigation water
5. Source of potable water
6. Details on wastewater treatment and disposal

1. As supplied by the Applicant, the total anticipated annual landscaping irrigation water usage would be 175,000 gallons per year, or 0.54 acre-feet per year (AFY). When combined with water use for the proposed project, the total would be 9,875,000 gallons per year, or 30.3 AFY as opposed to the 9.7 million gallons per year or 30 AFY set out in the Public Review Draft IS/MND. As such, the Public Review Draft IS/MND Section 3.16 *Utilities and Energy*, Discussion, a), Paragraph one, Page 105 would be amended as follows:

> Groundwater and imported water supplies are projected to decrease between 2025 and 2045 while the City will increase supplies from recycled water and an aquifer storage recovery project. The City projects the water supplies that they have will be adequate to accommodate the projected water demand within the city. The Project's water demand was projected through the use of the CalEEMod modeling that was performed as part of the *Air Quality/Health Risk Assessment/Greenhouse Gas/Energy Impact Analysis* analyses. The water demand for the Project is expected to have an annual water demand of approximately ~~9.7~~ 9.85 million gallons per year, or 30.3 AFY, at Project buildout. The Project's water demand would represent 0.1 percent of the city's projected demand in 2025 and 0.08 of the city's projected demand in 2045. Because the city's water demand is projected to be met with the city's projected water supplies and the Project would represent a minimal amount of the City's projected demand, the implementation of the Project would have a less-than-significant impact on available water supplies.

The Public Review Draft IS/MND Section 3.16 Utilities and Energy, Discussion, b), Paragraph three on Page 105 would be amended as follows:

> Although the Project would result in increased wastewater production, it is unlikely to generate such a substantial increase in demand that it would exceed the capacity of the existing wastewater treatment system. The Project's water demand is calculated to be approximately 30 AFY (approximately ~~26,500~~27,000 gallons per day), and the maximum percentage of this water that is generated as wastewater is assumed to be approximately 90 percent. Therefore, the maximum wastewater generation of the Project would be approximately ~~24,000~~ 24,300 gallons per day, which is a nominal increase in wastewater compared to the 15.7 MGD capacity of the Oxnard Wastewater Treatment Plant. Therefore, the Project would not require additional wastewater conveyance or treatment capacity to serve Project demands. Impacts would be less than significant.

2. As specified in Section 3.16, *Utilities and Energy*, of the Public Review Draft IS/MND details on potable water usage are provided in Threshold a). The Project's water demand was projected through the use of the CalEEMod modeling that was performed as part of the *Air Quality/Health Risk Assessment/Greenhouse Gas/Energy Impact Analysis* analyses. With the aforementioned changes to the Public Review Draft IS/MND, the water demand for the Project is expected to have an annual water demand of approximately 9.85 million gallons per year, or 30.3 AFY, at Project buildout. The Project's water demand would represent approximately 0.1 percent of the city's projected demand in 2025 and approximately 0.08 of the city's projected demand in 2045.

3. As specified in Section 3.13, *Population and Housing*, of the Public Review Draft IS/MND, based on the city average of 3.9 persons per household, the proposed addition of 234 units would generate an increase of approximately 912 residents. On this basis, using Occupant Load factors from the 2024 International Building Code,[44] the residential occupant load factor is 200 SF floor area per occupant. The assumption of usage per occupant would be developed by dividing the total development (373,069 SF) by the number of people expected to use the site (373,069 SF divided by 912 residents), which equals 409 SF per person. If calculated using only residential floor area (201,115 SF) then dividing that figure by 200 SF per resident would mean that the Lockwood III development would have suitable floor area for 1,006 residents. The Project is therefore within estimated thresholds.

4. As supplied by the Applicant, the source of landscaping irrigation water would be potable water supplied by the City. See Response to Numbered Item 1 above.

5. As specified in Section 3.16, *Utilities and Energy*, of the Public Review Draft IS/MND details on potable water sources are provided in Threshold a) on page 104 and page 105, which references the city's 2020 Urban Water Management Plan, notes the city's water demand is expected to increase from 28,819 acre-feet per year (AFY) in 2025 to 33,349

[44] 2024 International Building Code, Chapter 10 Means of Egress, Section 1004 Occupant Load, Table 1004.5 Maximum Floor Area Allowances per occupant. Available at: https://codes.iccsafe.org/content/IBC2024P1/chapter-10-means-of-egress#IBC2024P1_Ch10_Sec1004. Accessed May 4, 2024.

AFY in 2045 which is an approximate increase of 4,530 AFY. This increase in demand is projected to be accommodated by various supply sources. Groundwater and imported water supplies are projected to decrease between 2025 and 2045 while the City will increase supplies from recycled water and an aquifer storage recovery project. The City projects the water supplies that they have will be adequate to accommodate the projected water demand within the city.

6. As specified in Section 3.13, *Utilities and Energy*, of the Public Review Draft IS/MND, wastewater treatment and disposal are provided in Threshold b) on page 105. The Project site would be served by the City of Oxnard, which directs wastewater to the Oxnard Wastewater Treatment Plant. The Project's water demand including the modifications provided in response to numbered Item 1 above is calculated to be 30.3 AFY (approximately 27,000 gallons per day), and the maximum percentage of this water that is generated as wastewater is assumed to be approximately 90 percent. Therefore, the maximum wastewater generation of the Project would be approximately 24,000 gallons per day, which is a nominal increase in wastewater compared to the 15.7 MGD capacity of the Oxnard Wastewater Treatment Plant.

Since this comment does not raise an environmental issue regarding the adequacy of the Public Review Draft IS/MND, no further response is required.

E-2 This comment provides the commenter's contact details. The City acknowledges the contact information for future reference during the environmental review process. Since this comment does not raise an environmental issue regarding the adequacy of the Public Review Draft IS/MND, no further response is required.

CHAPTER 4
Errata

The following text changes are made to the Public Review Draft Initial Study/Mitigated Negative Declaration (Public Review Draft IS/MND) and incorporated as part of the Final Initial Study/Mitigated Negative Declaration (Final IS/MND). These changes are minor and do not alter the conclusions of the Public Review Draft IS/MND. Changes to the text are noted with underline (for added text) or ~~strikeout~~ (for deleted text).

4.1 Section 3.3, Air Quality, Discussion, a), Paragraph three, Page 35

The second sentence of the first paragraph would be amended as follows per Ventura County Air Pollution Control District's (VCAPCD) comment letter to clarify that VCOG references no longer apply.

> **Less-than-Significant Impact.** The Ventura County portion of the SCCAB is in nonattainment for ozone for the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) and for respirable particulate matter 10 micrometers in diameter and smaller (PM10) for the CAAQS. VCAPCD ~~and the Ventura Council Association of Governments (VCOG) are~~ is responsible for preparing the air quality management plan (AQMP), which addresses federal and state Clean Air Act (CAA) requirements. The VCAPCD has adopted AQMPs to meet the CAAQS and NAAQS. The VCAPCD board approved the 2022 AQMP on December 13, 2022.[10] The California Air Resources Board (CARB) approved the 2022 AQMP on January 26, 2023. The goals of the 2022 AQMP are to ensure that city and county population growth does not interfere with emission reductions and progress in meeting the state and national ambient air quality standards.

[10] VCAPCD. 2022. *Final 2022 Ventura County Air Quality Management Plan*. December 2022. http://www.vcapcd.org/pubs/Planning/AQMP/2022/Final-2022-AQMP-with-appendices-20221130.pdf. Accessed October 26, 2023.

4.2 Section 3.3, Air Quality, Discussion, a), Paragraph three on Page 36 and Paragraph one on Page 37

The third paragraph would be amended as follows per VCAPCD comment letter:

> The Project includes the construction of a 5-story, approximately 234-unit, multi-family residential building, which would increase the residential population in the City of Oxnard. Based on the city average of 3.9 persons per household, the proposed addition of 234 units would generate an increase of approximately 912 residents. The City of Oxnard has a current population of 202,063 based on the 2020 Census.[11] ~~This residential building would not increase population beyond that projected in the 2030 General Plan.[12]~~ The projected population forecast for the City of Oxnard for 2027 in Connect SoCal 2020 is approximately 218,177 (interpolated from data).[13] [14] ~~The Southern California Association of Governments (SCAG) estimates that the population of Oxnard will increase by 32,100 residents and generate 15,000 new jobs between 2016 and 2045.[15]~~ Even in the unlikely event that all ~~new jobs~~ residents created by the Project were to result in new residents to Oxnard, the Project would result in a population growth of 912 people which, when added to the current population of 202,630 people, would result in a population of 203,542 people which is below the forecasted population of 218,177 people for the City of Oxnard in 2027. ~~would bring the less than 1 percent of expected city population and employment growth.~~ Additionally, this residential building would not increase population beyond that projected in the 2030 General Plan.[16] Therefore, since the Project's expected population growth is below the 2027 population forecast compared to the City's baseline, it is consistent with the 2022 AQMP ~~the Project would not result in population growth that would exceed the regional forecast~~ and would not conflict with ~~the~~ VCAPCD's 2022 AQMP, so impacts would be less than significant.

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11 U.S. Census Bureau. 2020. Oxnard City, California Population and People. Oxnard city, California - Census Bureau Profile. Accessed April 23, 2024

~~12 City of Oxnard. 2011. 2030 General Plan – Goals and Policies Goals and Policies. https://www.oxnard.org/wp-content/uploads/2017/06/Oxnard-2030-General-Plan-Amend-12.2022-SMc.pdf. Accessed October 27, 2023.~~

13 Southern California Association of Governments 2020. Final Connect SoCal Demographics and Growth Forecast Adopted September 3, 2020. Accessed April 23, 2024.

14 Difference in SCAG Connect SoCal 2020 population from 2016 to 2045 is 32,100 people. 32,100 people/29 years = 1,107 people/year. 1,107 people/year x 11 years (2016 – 2027) = 12,177 additional people in 2027. So the interpolated population in 2027 for Oxnard would be 1,107 people + 206,000 people = 218,177 people.

~~15 Southern California Association of Governments 2020. https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocal-plansummary_0.pdf?1606000989. Accessed October 27, 2023.~~

16 City of Oxnard. 2011. 2030 General Plan – Goals and Policies Goals and Policies. https://www.oxnard.org/wp-content/uploads/2017/06/Oxnard-2030-General-Plan-Amend-12.2022-SMc.pdf. Accessed October 27, 2023.

4.3 Section 3.12, Noise, Discussion a), Insertion after Paragraph six, Page 96

The following analysis will be added to the Final IS/MND on page 96 after the sixth paragraph and before section b):

> Upon completion and operation of the Proposed Project, on-site operational noise would be generated by heating, ventilation, and air conditioning (HVAC) equipment installed on the new structure. However, the noise levels generated by these equipment types would not be substantially greater than those generated by the current HVAC equipment serving the existing buildings in the Project vicinity. Further, HVAC equipment would be mechanically screened to ensure compliance with the City of Oxnard Municipal Code, Section 16-168. Additionally, the City of Oxnard sound standards for HVAC equipment are discussed in Section 7-189. Thus, because the noise levels generated by the HVAC equipment serving the Proposed Project would be designed to not exceed the ambient noise levels allowable by the City of Oxnard Municipal Code, a substantial permanent increase in noise levels would not occur at the nearby sensitive receptors. The Project's noise impact to nearby receivers from HVAC equipment would be less than significant.

4.4 Section 3.16, Utilities and Energy, Discussion, a), Paragraph one, Page 111

The first paragraph on Page 111 would be amended as follows to include the potable water use associated with annual landscaping irrigation water usage:

> Groundwater and imported water supplies are projected to decrease between 2025 and 2045 while the City will increase supplies from recycled water and an aquifer storage recovery project. The City projects the water supplies that they have will be adequate to accommodate the projected water demand within the city. The Project's water demand was projected through the use of the CalEEMod modeling that was performed as part of the *Air Quality/Health Risk Assessment/Greenhouse Gas/Energy Impact Analysis* analyses. The water demand for the Project is expected to have an annual water demand of approximately ~~9.7~~ 9.85 million gallons per year, or 30.3 AFY, at Project buildout. The Project's water demand would represent 0.1 percent of the city's projected demand in 2025 and 0.08 of the city's projected demand in 2045. Because the city's water demand is projected to be met with the city's projected water supplies and the Project would represent a minimal amount of the City's projected demand, the implementation of the Project would have a less-than-significant impact on available water supplies.

4.5 Section 3.16, Utilities and Energy, Discussion, b), Paragraph three on Page 111 and Paragraph one on page 112

The third paragraph on Page 105 would be amended as follows to include the potable water use associated with annual landscaping irrigation water usage:

> Although the Project would result in increased wastewater production, it is unlikely to generate such a substantial increase in demand that it would exceed the capacity of the existing wastewater treatment system. The Project's water demand is calculated to be approximately 30.3 AFY (approximately ~~26,500~~27,000 gallons per day), and the maximum percentage of this water that is generated as wastewater is assumed to be approximately 90 percent. Therefore, the maximum wastewater generation of the Project would be approximately ~~24,000~~ 24,300 gallons per day, which is a nominal increase in wastewater compared to the 15.7 MGD capacity of the Oxnard Wastewater Treatment Plant. Therefore, the Project would not require additional wastewater conveyance or treatment capacity to serve Project demands. Impacts would be less than significant.

4.6 Appendix B, Methodology, Air Quality, Operation, Paragraph two, Page 23

Page 23 of Appendix B is hereby revised as follows to clarify that the proposed natural gas will not be used for building heating and water heaters.

> Area-source emissions are based on natural gas usage ~~(building heating and water heaters)~~, landscaping equipment, and consumer product (including paint) usage rates provided in CalEEMod. Natural gas usage factors in CalEEMod are based on the California Energy Commission's California Commercial End Use Survey data set, which provides energy demand by building type and climate zone.

4.7 Appendix J, Revised Traffic and Circulation Study, Page 23, Table 12

Table 12 on Page 23 of Appendix J, *Revised Traffic and Circulation Study*, of the Final IS/MND is hereby revised as follows to clarify the discrepancy identified by Caltrans:

Table 12
Lockwood III Apartments Per Capita VMT Summary

City of Oxnard VMT[(a)]	VMT Impact Threshold[(b)]	Project VMT Estimate[(c)]	Impact?
14.80 per capita	~~10.69~~ 12.58 per capita	~~0.97~~ 9.7 per capita	No

(a) City of Oxnard home-based VMT per capita based on VCTC traffic model.
(b) VMT Threshold is a 15% reduction from City VMT (14.80 x 0.85 = 12.58).
(c) Project home-based VMT per capita estimate based on VCTC model traffic analysis.

Note: per the VCTC model, the parcel that includes the Project Site has a home-based VMT of 0.97 per capita. The adjacent parcel to the south has a home-based VMT of 9.7 per capita. To ensure a conservative assessment, the 9.7 per capita VMT was selected within the Public Review Draft IS/MND as the Project VMT as it is more representative of a parcel with residential units.

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CHAPTER 5
Mitigation Monitoring and Reporting Program

Mitigation Measures	Timing	Responsible for Implementation	Responsible for Enforcement	Date of Compliance
MM-BIO-1: Nesting Birds. If construction activities occur within the bird nesting season (generally defined as February 15 through September 15), a qualified biologist shall conduct a nesting bird survey within 7 days prior to the start of construction. If an active nest is observed within 500 feet of the proposed construction, the nest shall be avoided, and a suitable buffer zone shall be delineated in the field such that no impacts shall occur until the nest has been determined to be inactive by a qualified biologist. Construction buffers are generally 300 feet for passerines and up to 500 feet for raptor species; however, avoidance buffers may be reduced at the discretion of the biologist, depending on the location of the nest and species tolerance to human presence and construction-related noise. If activities must take place within an established buffer, steps shall be taken to reduce indirect effects to nesting activity by actively reducing construction noise within proximity to a presumed nest location and/or installing temporary construction noise barriers. If the reduction of noise is not feasible, construction activities shall be postponed until the nest is deemed inactive and/or the breeding season has concluded.	Survey prior to construction and monitoring during construction if construction occurs during nesting season	Applicant, Project Construction Contractor, and Project Biologist	Community Development Department	
MM-CUL-1: Workers Environmental Awareness Program. Prior to the start of construction activities, all construction personnel shall be trained regarding identification and treatment protocol for inadvertent discoveries of resources (archaeological and tribal) and human remains. A basic presentation and handout or pamphlet shall be prepared to ensure proper identification and treatment of inadvertent discoveries of cultural resources and human remains. The	Prior to ground disturbance	Applicant and Project Archaeologist	Community Development Department	

Mitigation Measures	Timing	Responsible for Implementation	Responsible for Enforcement	Date of Compliance
purpose of the training is to provide specific details on the kinds of materials that may be identified during ground disturbing activities and explain the importance of and legal basis for the protection of human remains and significant cultural resources. Each worker shall also be trained in the proper procedures to follow in the event that cultural resources or human remains are uncovered during ground disturbing activities. These procedures include but are not limited to work curtailment or redirection, and the immediate contact of the site supervisor and a Qualified Archeologist per Mitigation Measure CUL 2.				
MM-CUL-2: **Inadvertent Discovery Clause**. In the event that potential archaeological resources are unearthed, ground-disturbing activities shall be halted or diverted away from the vicinity of the find (at least 100 feet) and a Qualified Archaeologist shall be notified immediately to assess the significance of the find and determine whether or not additional study is warranted. An appropriate buffer area shall be established by the Qualified Archaeologist. Reasonable assumptions regarding the potential for additional discoveries in the vicinity, and safety considerations for those making an evaluation and potential recovery of the discovery shall be provided by the Qualified Archaeologist. This buffer area shall be established around the find where construction activities shall not be allowed to continue until the evaluation is completed. Grading activities shall be allowed to continue outside of the buffer area, and an archaeological monitor shall be provided during these grading activities outside the buffer area, if determined necessary by the Qualified Archaeologist. All resources unearthed by Project construction activities shall be evaluated by the Qualified Archaeologist. If a resource is determined by the Qualified Archaeologist to constitute an archeological resource pursuant to the CEQA Guidelines Section 15064.5, the Qualified Archaeologist shall coordinate with the Applicant and the City to develop a formal treatment plan that would serve to reduce impacts to the resource. Preservation in place (i.e., avoidance) is the preferred manner of treatment. If in coordination with the City, it is determined that preservation in place is not feasible, appropriate treatment of the resource shall be developed by the Qualified Archaeologist in coordination with the City and may include implementation of	Retain Archaeologist prior to ground disturbance and halt or divert activities if resources are found until they are evaluated	Applicant Project Construction Contractor, and Project Archaeologist	Community Development Department	

Mitigation Measures	Timing	Responsible for Implementation	Responsible for Enforcement	Date of Compliance
archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis. Any archaeological material collected shall be curated at a public, non-profit institution with a research interest in the materials, if such an institution agrees to accept the material. If no institution accepts the archaeological material, they shall be donated to a local school, Tribe, or historical society in the area for educational purposes.				
MM-CUL-3: **Paleontological Resources**. In the event that potential paleontological resources are unearthed, ground-disturbing activities shall be halted or diverted away from the vicinity of the find (at least 50 feet) and a Qualified Paleontologist shall be notified immediately to assess the significance of the find and determine whether or not additional study is warranted. All paleontological resources shall be identified, handled, and treated in accordance with the applicable provisions of the Society of Vertebrate Paleontology (SVP) standards. An appropriate buffer area shall be established by the Qualified Paleontologist around the find where construction activities shall not be allowed to continue. Work shall be allowed to continue outside of the buffer area. Grading activities shall be allowed to continue outside of the buffer area, and a paleontological monitor shall be provided during these grading activities outside the buffer area, if determined necessary by the Qualified Paleontologist. At the Qualified Paleontologist's discretion, and to reduce any construction delay, the grading and excavation contractor shall assist in removing rock/sediment samples for initial processing and evaluation. If preservation in place is not feasible, the Qualified Paleontologist shall implement a paleontological salvage program to remove the resources from their location. Any fossils encountered and recovered shall be prepared to the point of identification and catalogued before they are submitted to their final repository. Any fossils collected shall be curated at a public, non-profit institution with a research interest in the materials, such as the Museum of Ventura County, if such an institution agrees to accept the fossils. If no institution accepts the fossil collection, they shall be donated to a local school or historical society in the area for educational purposes.	Retain Paleontologist prior to ground disturbance and halt or divert activities if resources are found until they are evaluated	Applicant Project Construction Contractor, and Project Paleontologist	Community Development Department	

Mitigation Measures	Timing	Responsible for Implementation	Responsible for Enforcement	Date of Compliance
MM-CUL-4: Human Remains: If human remains are encountered, the Applicant or its contractor shall halt work in the vicinity (within 100 feet) of the discovery and contact the Ventura County Coroner in accordance with Public Resources Code Section 5097.98 and Health and Safety Code Section 7050.5, which requires that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the NAHC. The NAHC shall then identify the person(s) thought to be the Most Likely Descendent (MLD). The MLD may, with the permission of the landowner, or his or her authorized representative, inspect the site of the discovery of the Native American remains and may recommend to the owner or the person responsible for the excavation work means for treating or disposing of, with appropriate dignity, the human remains and any associated grave goods. The MLD shall complete his or her inspection and make his or her recommendation within 48 hours of being granted access by the landowner to inspect the discovery. The recommendation may include the scientific removal and nondestructive analysis of human remains and items associated with Native American burials. Upon the discovery of the Native American remains, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in this mitigation measure, with the MLD regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. The landowner shall discuss and confer with the MLD on all reasonable options regarding their preferences for treatment.	Retain Archaeologist prior to ground disturbance and halt work until coroner has completed their duties	Applicant and Project Construction Contractor	Community Development Department	