# EXHIBIT 6

**Post EIR 22-01 Review Period (Supplemental Comments & Responses)**

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*Via Email*

May 24, 2022

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Roger Green, Vice Chair
Robert L. Brown, Commissioner
Sally Savage-Lebhart, Commissioner
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c/o Hannah Tamaddon
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**Re: Comment on Final Environmental Impact Report, Laguna Niguel City Center Mixed Use**

Dear Chair Fisk, Vice Chair Green, and Honorable Members of the Planning Commission:

I am writing on behalf of Supporters Alliance for Environmental Responsibility ("SAFER") regarding the Final Environmental Impact Report ("FEIR") prepared for the Laguna Niguel City Center Mixed Use Project (SCH 2019110083), including all actions related or referring to the proposed development of approximately 175,000 square feet of commercial and civic uses and 275 multifamily units, located in the City of Arcadia, APN 656-242-18 ("Project").

After reviewing the FEIR, we conclude that the FEIR fails as an informational document and fails to impose all feasible mitigation measures to reduce the Project's impacts. SAFER requests that the Planning Commission not approve the Project until City of Arcadia ("City") staff address these shortcomings in a revised environmental impact report ("REIR") and recirculate the REIR prior to considering approvals for the Project. A-1

This comment has been prepared with the assistance of environmental consulting firm Soil/Water/Air Protection Enterprise ("SWAPE") (Exhibit A), expert wildlife biologist Shawn Smallwood (Exhibit B), and Certified Industrial Hygienist Francis "Bud" Offermann (Exhibit C). We incorporate the SWAPE, Smallwood, and Offermann comments herein by reference. A-1 cont.

## I. Project Description.

The proposed project would include specialty retail, restaurants, office, a new community library, community-oriented event/programmable space, integrated residential apartment homes, and extensive walkable open spaces, paseos, and plazas. The project includes development of approximately 175,000 sf of commercial and civic uses and 275 multifamily residential units. Commercial uses include restaurants, retail, health/wellness focused retail and medical office, and creative office space. A maintenance facility, justice center, and library currently onsite would be demolished, and a new library would be constructed onsite. There are multifamily residential uses located immediately to the west of the project. A-2

The applicant is seeking the following approvals: (1) a General Plan Amendment to allow residential, (2) a Zoning change to Mixed-Use Town Center, (3) a Zoning Code Amendment, (4) a Vesting Tentative Tract Map, and (5) Site Development Permit. Construction of the Project would take approximately 36 months.

## II. Legal Background.

CEQA requires that an agency analyze the potential environmental impacts of its proposed actions in an environmental impact report ("EIR") (except in certain limited circumstances). *See, e.g.* Pub. Res. Code § 21100. The EIR is the very heart of CEQA. *Dunn-Edwards v. BAAQMD* (1992) 9 Cal.App.4th 644, 652. "The 'foremost principle' in interpreting CEQA is that the Legislature intended the act to be read so as to afford the fullest possible protection to the environment within the reasonable scope of the statutory language." *Communities for a Better Environment v. Calif. Resources Agency* (2002) 103 Cal. App. 4th 98, 109.

CEQA has two primary purposes. First, CEQA is designed to inform decision makers and the public about the potential, significant environmental effects of a project. 14 Cal. Code Regs. ("CEQA Guidelines") § 15002(a)(1). "Its purpose is to inform the public and its responsible officials of the environmental consequences of their decisions before they are made. Thus, the EIR 'protects not only the environment but also informed self-government.'" *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564. The EIR has been described as "an A-3

environmental 'alarm bell' whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return." *Berkeley Keep Jets Over the Bay v. Bd. of Port Comm'rs*. (2001) 91 Cal. App. 4th 1344, 1354 ("*Berkeley Jets*"); *County of Inyo v. Yorty* (1973) 32 Cal.App.3d 795, 810.

Second, CEQA requires public agencies to avoid or reduce environmental damage when "feasible" by requiring "environmentally superior" alternatives and all feasible mitigation measures. CEQA Guidelines § 15002(a)(2) and (3); *see also*, *Berkeley Jets*, 91 Cal.App.4th at pp. 1344, 1354; *Citizens of Goleta Valley*, 52 Cal.3d at 564. The EIR serves to provide agencies and the public with information about the environmental impacts of a proposed project and to "identify ways that environmental damage can be avoided or significantly reduced." CEQA Guidelines §15002(a)(2). If the project will have a significant effect on the environment, the agency may approve the project only if it finds that it has "eliminated or substantially lessened all significant effects on the environment where feasible" and that any unavoidable significant effects on the environment are "acceptable due to overriding concerns." Pub. Res. Code § 21081; 14 Cal.Code Regs. § 15092(b)(2)(A) & (B). The lead agency may deem a particular impact to be insignificant only if it produces rigorous analysis and concrete substantial evidence justifying the finding. *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 732.

While the courts review an EIR using an "abuse of discretion" standard, "the reviewing court is not to 'uncritically rely on every study or analysis presented by a project proponent in support of its position. A 'clearly inadequate or unsupported study is entitled to no judicial deference.'" *Berkeley Jets*, 91 Cal. App. 4th at p. 1355 (emphasis added) (quoting *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal. 3d 376, 391 409, fn. 12). As the court stated in *Berkeley Jets*:

A-3 cont.

> A prejudicial abuse of discretion occurs "if the failure to include relevant information precludes informed decisionmaking and informed public participation, thereby thwarting the statutory goals of the EIR process." (*San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 722; *Galante Vineyards v. Monterey Peninsula Water Management Dist*. (1997) 60 Cal. App. 4th 1109, 1117; *County of Amador v. El Dorado County Water Agency* (1999) 76 Cal. App. 4th 931, 946.)

More recently, the California Supreme Court has emphasized that:

> When reviewing whether a discussion is sufficient to satisfy CEQA, a court must be satisfied that the EIR (1) includes sufficient detail to enable those who did not participate in its preparation to understand

> and to consider meaningfully the issues the proposed project raises [citation omitted], and (2) makes a reasonable effort to substantively connect a project's air quality impacts to likely health consequences.

*Sierra Club v. Cty. of Fresno* (2018) 6 Cal.5th 502, 510 (2018), citing *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 405. "Whether or not the alleged inadequacy is the complete omission of a required discussion or a patently inadequate one-paragraph discussion devoid of analysis, the reviewing court must decide whether the EIR serves its purpose as an informational document." *Sierra Club v. Cty. of Fresno*, 6 Cal.5th at 516.

Although an agency has discretion to decide the manner of discussing potentially significant effects in an EIR, "a reviewing court must determine whether the discussion of a potentially significant effect is sufficient or insufficient, i.e., whether the EIR comports with its intended function of including 'detail sufficient to enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project.'" 6 Cal.5th at 516, citing *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1197. "The determination whether a discussion is sufficient is not solely a matter of discerning whether there is substantial evidence to support the agency's factual conclusions." 6 Cal.5th at 516. Whether a discussion of a potential impact is sufficient "presents a mixed question of law and fact. As such, it is generally subject to independent review. However, underlying factual determinations—including, for example, an agency's decision as to which methodologies to employ for analyzing an environmental effect—may warrant deference." *Sierra Club v. Cty. of Fresno*, 6 Cal.5th at 516. As the Court emphasized: A-3 cont.

> [W]hether a description of an environmental impact is insufficient because it lacks analysis or omits the magnitude of the impact is not a substantial evidence question. A conclusory discussion of an environmental impact that an EIR deems significant can be determined by a court to be inadequate as an informational document without reference to substantial evidence.

*Sierra Club v. Cty. of Fresno*, 6 Cal.5th at 514. We find that the FEIR prepared by the City here is inadequate for the reasons set forth below.

## III. DISCUSSION

### A. There is Substantial Evidence that the Project Will Have Significant Adverse Impacts Regarding Hazards and Hazardous Materials, Health Risks, and Greenhouse Gases. A-4

Matt Hagemann, P.G., C.Hg., and Dr. Paul E. Rosenfeld, Ph.D., of the environmental consulting firm SWAPE reviewed the EIR's analysis of the Project's impacts on hazards and hazardous materials, health risk, and greenhouse gases. SWAPE's comment letter and CVs are attached as Exhibit A and their comments are briefly summarized here.

**1. The EIR Fails to Adequately Evaluate and Mitigate the Project's Potential Hazards and Hazardous Materials Impacts.**

It is well-established that CEQA requires analysis of toxic soil contamination that may be disturbed by a Project, and that the effects of this disturbance on human health and the environment must be analyzed. CEQA requires a finding that a project has a "significant effect on the environment" if "the environmental effects of a project will cause substantial adverse effects on human beings, either directly or indirectly." PRC §21083(b)(3). As the California Supreme Court has held, "when a proposed project risks exacerbating those environmental hazards or conditions that already exist, an agency must analyze the potential impact of such hazards on future residents or users." *Cal. Building Industry Assn. v. Bay Area Air Quality Mgm't Dist*. (2015) 62 Cal.4th 369, 377. The existence of toxic soil contamination at a project site is a significant impact requiring review and mitigation in the EIR. *McQueen v. Bd. of Dirs.* (1988) 202 Cal.App.3d 1136, 1149; *Assoc. For A Cleaner Env't v. Yosemite Comm. College Dist*. ("*ACE v. Yosemite*") (2004) 116 Cal.App.4th 629. This mitigation may not be deferred until a future time after Project approval. *Sundstrom v. County of Mendocino* (1988) 202 Cal. App. 3d 296, 306; *Citizens for Responsible Equitable Envt'l Dev. v. City of Chula Vista* (2011) 197 Cal.App.4th 327, 330-31.

A-4 cont.

Here, the EIR violates CEQA because it defers the disclosure of contamination that is currently on the Project site and fails to disclose impacts of mitigation, such as air and greenhouse gas emissions that could result from excavation, transport, and disposal of contaminated soils. Ex. A, p. 1. The EIR and associated documents show that there are concentrations of perchloroethylene ("PCE") onsite which exceed Department of Toxic Substances Control residential screening levels. *Id.* at 2. PCE is a likely human carcinogen according to the U.S. EPA, and is a California Proposition 65-listed compound. *Id.* Proper notification of potentially exposed individuals is therefore required, including construction workers and future residents. *Id.* The City must revise the EIR to address these shortcomings.

**2. There is Substantial Evidence that the Project May Have a Significant Health Impact as a Result of Diesel Particulate Emissions.**

One of the primary emissions of concern regarding health effects for land development projects is diesel particulate matter ("DPM"), which can be released during Project construction and operation. DPM consists of fine particles with a diameter less than 2.5 micrometers including a subgroup of ultrafine particles (with a diameter less than 0.1 micrometers). Diesel exhaust also contains a variety of harmful gases and cancer-causing substances. Exposure to DPM is a recognized health hazard, particularly to children whose lungs are still developing and the elderly who may have other serious health problems. According to the California Air Resources Board ("CARB"), DPM exposure may lead to the following adverse health effects: aggravated asthma; chronic bronchitis; increased respiratory and cardiovascular hospitalizations; decreased lung function in children; lung cancer; and premature deaths for those with heart or lung disease.[1]

The EIR concludes that the Project would have a less-than-significant health risk impact, but did not prepare a Health Risk Assessment ("HRA"). Ex. A, p. 2; DEIR, p. 5.2-31 – 5.2 – 36. To reach its conclusion that impacts will be less-than-significant, the EIR relies on mitigation measures which it says will reduce particulate matter emissions, and on the lack of land uses such as chemical processing or warehousing, which generate substantial amounts of air pollutants. Ex. A at 2; DEIR at 5.2-36, 5.2-31. SWAPE identifies four main reasons for why the EIR's evaluation of health risk impacts and subsequent less-than-significant conclusion is incorrect. Ex. A at 3-4. A-5

First, the use of a Local Significance Threshold ("LST") analysis to determine health risk impacts as a result of the Project's Toxic Air Contaminant ("TAC") emissions is incorrect because the LST method only evaluates impacts from criteria air pollutants. *Id.* at 3. LST's therefore cannot be used to determine whether TAC's, specifically DPM, would result in a significant health risk impact to nearby sensitive receptors. *Id.* SWAPE states that this constitutes a gap in the EIR's analysis of health risk impacts. *Id.*

Second, because the EIR did not prepare a quantified operational HRA, it failed to quantitatively evaluate TACs. Ex. A at 3. The Project has the potential to produce DPM emissions through the exhaust stacks from construction equipment over the 36 months of construction, as well as from the anticipated 26,214,739 VMT expected to be generated from operation. *Id.* at 3-4; DEIR at 3-24, Appendix C, p. 288, 300, 313. In failing to connect TAC emissions to potential health risks to nearby A-6

[1] *See* CARB Resources - Overview: Diesel Exhaust & Health, available at https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health.).

receptors, the Project fails to meet the CEQA requirement that projects correlate increases in project-generated emissions to adverse impacts on human health cause by those emissions. Ex. A at 4; *See Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, 510. A-6 cont.

Third, the California Department of Justice recommends the preparation of a quantitative HRA pursuant to the Office of Environmental Health Hazard Assessment ("OEHHA"), the organization responsible for providing guidance on conducting HRAs in California, as well as local air district guidelines. OEHHA released its most recent guidance document in 2015 describing which types of projects warrant preparation of an HRA. *See* "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at*: http://oehha.ca.gov/air/hot_spots/hotspots2015.html. The OEHHA document recommends that all short-term projects lasting at least 2 months assess cancer risks. Ex. A at 4. Additionally, if a project is expected to last over 6 months, the exposure should be evaluated throughout the project using a 30-year exposure duration to estimate individual cancer risks. *Id.* Based on its extensive experience, SWAPE reasonably assumes that the Project will last at least 30 years, and therefore recommends that health risk impacts from the project be evaluated. *Id.* A Revised EIR is therefore required to analyze these impacts. A-7

Fourth, in failing to prepare an HRA, the EIR fails to compare excess health risks to SCAQMD's threshold of 10 in one million. *Id.* A Revised EIR should be prepared to assess the health risks posed to nearby, existing sensitive receptors from Project construction and operation. *Id.* A-8

SWAPE prepared a screening-level HRA to evaluate potential impacts from Project construction using AERSCREEN, a screening-level air quality dispersion model. Ex. A at 4-9. SWAPE applied a sensitive receptor distance of 225 meters and analyzed impacts to individuals at different stages of life based on OEHHA and SCAQMD guidance utilizing age sensitivity factors. *Id*.

SWAPE found that the excess cancer risk at a sensitive receptor located approximately 225 meters away over the course of Project construction is approximately 69.1 in one million for infants and 60.2 in one million for children. *Id*. at 8. Moreover, **the excess lifetime cancer risk over the course of Project construction and operation of 30 years is approximately 139 in one million**. *Id*. The risks to infants, children and lifetime residents exceed SCAQMD's threshold of 10 in one million. A-9

SWAPE's analysis constitutes substantial evidence that the Project may have a significant health impact as a result of diesel particulate emissions. A Revised EIR must be prepared to properly assess and mitigate these impacts.

### 3. The EIR Failed to Adequately Analyze the Project's Greenhouse Gas Impacts and Thus the Project May Result in Significant Greenhouse Gas Emissions.

The EIR estimates that the Project would generate net annual GHG emissions of 11,651 metric tons of carbon dioxide equivalent per year ("MT CO2e/year"), thus exceeding SCAQMD's bright-line threshold of 3,000 MT CO2e/year. Ex. A at 9; DEIR at 5.7-23, Table 5.7-5. The EIR states that the Project would be consistent with CARB's 2017 Scoping Plan and SCAG's 2020-2045 RTP/SCS, but that GHG impacts would nevertheless be significant and unavoidable. Ex. A at 9; DEIR at 5.7-23, 5.7-24. However, SWAPE states that the EIR's analysis of GHG impacts and significant-and-unavoidable conclusion are incorrect for three reasons: A-10

(1) The EIR fails to implement all feasible mitigation measures;
(2) The EIR fails to consider the performance-based standards under CARB's *Scoping Plan*; and
(3) The EIR fails to consider the performance-based standards under SCAG's *RTP/SCS*.

SWAPE's analysis demonstrates potentially significant hazard and hazardous materials, health risk, and GHG impacts from the project that necessitate mitigation. A Revised EIR should be prepared which includes updated analyses of these impacts and proposes feasible measures to mitigate any significant impacts.

## B. The Project Will Have Significant Adverse Biological Impacts That the EIR Fails to Adequately Analyze and Mitigate.

Dr. Shawn Smallwood, Ph.D. reviewed the EIR's analysis of the Project's biological impacts, including the Biological Survey and Jurisdictional Delineation completed for the Project by VCS Environmental. Dr. Smallwood's comment letter and CV are attached as Exhibit B and his comments are briefly summarized here.

### 1. The EIR is inadequate in its characterization of the existing environmental setting as it relates to wildlife.

A-11

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. Dr. Smallwood states that methods for establishing a baseline for biological resources typically include "surveys for the site for biological resources and review of literature, databases and local experts for

documented occurrences of special-status species." Ex. B, p. 1. He states that the EIR failed to complete these essential steps. *Id.* at 1-2. First of all, the VCS Environmental survey for wildlife was done by only one biologist, who Dr. Smallwood finds "was assigned too many tasks to perform any one of them very well." *Id.* at 2. The VCS Environmental survey found 15 species of vertebrate wildlife in 2.67 hours. *Id.* Dr. Smallwood detected 36 species in the same amount of time at a nearby site during 2021, leading him to conclude that the VCS Environmental biologist likely would have discovered more species at the Project site had the survey been more focused. *Id.* Additionally, Dr. Smallwood points out that reconnaissance-level surveys, such as the one done by VCS Environmental, are cursory and "barely serve as an opening of a window into the biological resources of a site." *Id.* Based on past research in California and modeling calculations, Dr. Smallwood estimates that the VCS Environmental survey likely "detected about a tenth of the species of vertebrate wildlife that actually use the site." *Id.* at 2-3.

Dr. Smallwood also identified flaws in the EIR's review of databases. Ex. B at 2-3. The VCS Environmental report relied only on the California Natural Diversity Data Base, failing to consult other key databases such as eBird and iNaturalist. *Id.* at 3-4. Dr. Smallwood reviewed these other databases and found that 3 special-status species had been reported on-site, 38 within 1.5 miles of the site, 5 within 1.5 and 3 miles, and 13 within 3 and 30 miles. *Id.* at 4. This is in stark contrast to the 7 species VCS Environmental reported as potentially occurring onsite. *Id.*

A-11 cont.

A skewed baseline such as the one used by the City here ultimately "mislead(s) the public" by engendering inaccurate analyses of environmental impacts, mitigation measures and cumulative impacts for biological resources. *See San Joaquin Raptor Rescue Center,* 149 Cal.App.4th 645, 656; *Woodward Park Homeowners,* 150 Cal.App.4th 683, 708-711. This inaccurate baseline and the species identified by Dr. Smallwood as potentially occurring onsite warrant discussion and analysis in a Revised EIR to ensure species are accurately detected and that any impacts are mitigated to a less than significant level.

**2. The EIR fails to analyze the Project's impact on lost breeding capacity.**

Dr. Smallwood found that the Project would contribute to a decline in birds in North America, a trend that has been happening over the last approximately 50 years largely due to habitat loss and fragmentation and would be further exacerbated by this project. Ex. B at 9. Based on studies on the subject, Dr. Smallwood found that the reproductive capacity of the site would be lost, as the Project would prevent 1,659 fledglings per year, which would in turn contribute to the lost capacity of 1,888 birds per year. *Id.* This impact was not addressed in the EIR and the City must prepare a Revised EIR to analyze the impact.

A-12

### 3. The EIR fails to analyze the project's impact on wildlife movement.

The EIR's assessment of whether the Project would interfere with wildlife movement is inaccurate and incomplete. Ex. B at 9-10. The VCS Environmental report states that the proximity of major roads and residential development make it unlikely that the Project site could provide significant function as a wildlife corridor or wildlife movement area. VCS Environmental report, p. D-12. VCS Environmental's report further states that impacts in this area will not be significant due to the Project area not being located within any contiguous native habitat corridors. *Id.* Dr. Smallwood finds it unclear how proximity to roads and residential development would prevent volant wildlife from reaching the site, and finds that VCS Environmental's characterization of the CEQA standard for assessing wildlife movement is incorrect. Ex. B at 10. He states:

> The primary phrase of the CEQA standard goes to wildlife movement regardless of whether the movement is channeled by a corridor or some linkage. A site such as the proposed project site is critically important for wildlife movement because it composes an increasingly diminishing expanse of open space within a growing expanse of residential, commercial and industrial uses, forcing more species of birds 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 birds and bats off from stopover, staging and roosting opportunities, forcing them to travel even farther between remaining stopover areas along migration routes. The project would interfere with wildlife movement in the region.

A-13

*Id.* A Revised EIR should be prepared to properly analyze this impact.

### 4. The EIR fails to analyze the project's impacts on wildlife from additional traffic generated by the Project.

Although the VCS Environmental survey uses the proximity of major roads as a reason to dismiss the Project site's potential for wildlife movement, it fails to analyze the impacts on wildlife that will be caused by the traffic on the roadways servicing the Project. Vehicle collisions with special-status species is not a minor issue, but rather results in the death of millions of species each year. Dr. Smallwood explains:

A-14

> 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. 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.

A-14 cont.

Ex. B at 10-12. Using the EIR's estimates of VMT as a basis, Dr. Smallwood was able to predict the impacts to wildlife that could be caused by the project. *Id.* at 12. Using Project-specific information as well as data from the Mendelsohn et al. (2009) study, Dr. Smallwood calculates that operation of the Project over 50 years would cause an accumulated 718,212 wildlife fatalities. *Id.* He therefore states that "the project-generated traffic would cause substantial, significant impacts to wildlife." *Id.* at 13. A Revised EIR should be prepared which includes an analysis and mitigation of the result increased traffic from the Project will have on wildlife.

**5. The EIR fails to adequately address the cumulative impacts of the Project on wildlife.**

Lastly, Dr. Smallwood finds that the EIR inaccurately characterizes what qualifies as a cumulative impact. Ex. B at 13. The EIR states that because other nearby projects would be required to comply with existing regulations for biological resources and implement mitigation measures, the proposed Project would not have cumulatively considerable significant impacts on biological resources. *Id.* However, this "implies that cumulative impacts are really just residual impacts of incomplete mitigation of project-level impacts," in which case "cumulative effects analysis would be merely an analysis of mitigation efficacy." *Id.* Instead, CEQA Guidelines Section 15355 defines cumulative impacts as "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." 14 CCR § 15355(b). The City must prepare a Revised EIR which adequately assesses cumulative biological impacts.

A-15

As for the EIR's proposed mitigation measure to minimize impacts to wildlife, Dr. Smallwood states that while preconstruction surveys should be conducted, they represent only a "last-minute, one-time salvage and rescue operation[] targeting readily detectable nests or individual animals before they are crushed under heavy construction machinery." Ex. B at 13. These surveys would therefore fail to detect most species. *Id*. Dr. Smallwood recommends several measures, including detection

A-16

surveys and compensatory mitigation, which should be considered in a revised EIR for the Project. *Id.* at 14.

A-16 cont.

### C. There is a Fair Argument that the Project May Have a Significant Health Risk Impact from Indoor Air Quality Impacts.

Certified Industrial Hygienist, Francis "Bud" Offermann, PE, CIH, has conducted a review of the proposed Project and relevant documents regarding the Project's indoor air emissions. Indoor Environmental Engineering Comments (May 23, 2022). Mr. Offermann concludes that it is likely that the Project will expose residents and commercial employees of the Project to significant impacts related to indoor air quality, and in particular, emissions of the cancer-causing chemical formaldehyde. Mr. Offermann is a leading expert on indoor air quality and has published extensively on the topic. Mr. Offermann's expert comments and curriculum vitae are attached as Exhibit C.

Mr. Offermann explains that many composite wood products used in building materials and furnishings commonly found in offices, warehouses, residences, and hotels contain formaldehyde-based glues which off-gas formaldehyde over a very long time period. He states, "[t]he 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." Ex. C, p. 2-3.

A-17

Formaldehyde is a known human carcinogen. Mr. Offermann states that future residents of the Project would be exposed to a 120 in one million cancer risk, and commercial employees of the Project would be exposed to a 17.7 in one million risk, ***even assuming*** all materials are compliant with the California Air Resources Board's formaldehyde airborne toxics control measure. *Id*. at 4-5. This potential exposure level exceeds the South Coast Air Quality Management District's ("SCAQMD") CEQA significance threshold for airborne cancer risk of 10 per million.

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*. at 12-13. These significant environmental impacts should be analyzed in a Revised EIR and mitigation measures should be imposed to reduce the risk of formaldehyde exposure.

## IV. CONCLUSION

For the foregoing reasons, SAFER believes that the EIR is wholly inadequate. SAFER urges the Planning Commission to refrain from recommending certification of the FEIR or recommending approval of the Project in order to allow staff additional time to address the concerns raised herein. Thank you for considering our comments and please include this letter in the record of proceedings for this project.

A-18

Sincerely,

Amalia Bowley Fuentes

Amalia Bowley Fuentes
Lozeau Drury LLP

# EXHIBIT A

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

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May 23, 2022

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**Subject: Comments on the Laguna Niguel City Center Mixed Use Project (SHC No. 2019110083)**

Dear Ms. Fuentes,

We have reviewed the March 2022 Draft Environmental Impact Report ("DEIR") for the Laguna Niguel City Center Mixed Use Project ("Project") located in the City of Laguna Niguel ("City"). The Project proposes to construct 275 residential units, 175,000-square-feet ("SF") of commercial space, and 563 parking spaces on the 25-acre site.

Our review concludes that the DEIR fails to adequately evaluate the Project's hazards and hazardous materials, health risk, and greenhouse gas impacts. As a result, emissions and health risk impacts associated with construction and operation of the proposed Project are underestimated and inadequately addressed. An Environmental Impact Report ("EIR") should be prepared to adequately assess and mitigate the potential hazards and hazardous materials, health risk, and greenhouse gas impacts that the project may have on the environment. A-19

## Hazards and Hazardous Materials

### Inadequate Disclosure and Analysis of Impacts

The DEIR offers, as mitigation (HAZ-1), to prepare a soil management plan to evaluate and mitigate existing contamination that may be present from a vehicle maintenance facility and the former fire station on the Project site. Additional mitigation (HAZ-2) calls for a post-grading soil vapor survey within the footprint of future structures in the areas of the vehicle maintenance facility and former fire station. The mitigation defers the disclosure of contamination that exists currently and fails to disclose impacts of mitigation, including air and greenhouse gas emissions that may result from excavation of contaminated soils and the transport and disposal of the soils. A-20

Our review entailed the evaluation of the following documents:

> Environmental Site Assessment: Phase I Environmental Site Assessment Update, California Environmental, October 2021 (Appendix H1); and
>
> Screening Subsurface Investigation: Phase II, California Environmental, November 2019 (Appendix H2).

Review of these documents shows soil gas concentrations of perchloroethylene (PCE) in the former vehicle maintenance facility area that exceed Department of Toxic Substances Control residential screening levels. This area of the former vehicle maintenance facility is planned for residential development. PCE is a likely human carcinogen according to the US EPA.[1] PCE is also a California Proposition 65-listed compound.

The DEIR discloses: "the presence of PCE and trimethylbenzene concentrations at the VMF [vehicle maintenance facility] exceed the DTSC's residential screening level and could pose a significant impact due to indoor vapor intrusion" (p. 5.8-16). The DEIR fails to disclose, however, that PCE is a Prop 65-listed compound and that proper notification is required to warning to those who might be exposed, including construction workers and future Project residents. A revised DEIR is necessary to disclose the potential for workers and future residents to be exposed to PCE and to provide for notification that is Prop 65 compliant. A-20 cont.

A revised DEIR is also necessary to disclose impacts of mitigation that may be necessary following the planned soil vapor survey (HAZ-2). Contamination that is found during the survey may require excavation and transport of contaminated soil, which may result in undisclosed air and greenhouse gas emission impacts. These impacts were not contemplated in the Air Quality and Greenhouse Gas Emissions sections and require consideration in a revised DEIR.

## Air Quality

### Diesel Particulate Matter Health Risk Emissions Inadequately Evaluated

The DEIR concludes that the Project would have a less-than-significant health risk impact without conducting a quantified construction or operational health risk analysis ("HRA") (p. 5.2-31 – 5.2-36). Regarding the health risk impacts associated with the Project construction, the DEIR states:

> "As shown in Table 5.2-14, Construction Emissions Compared to the Screening-Level LSTs with Mitigation Incorporated, with the implementation of Mitigation Measures AQ-1, AQ-2, and AQ-3, construction-related PM10 and PM2.5 emissions would be reduced to below the South Coast AQMD screening-level LST. Thus, the project would not generate emissions that exceed any screening-level LST or cause any construction health impacts with mitigation incorporated. Impact 5.2-4 would be reduced to less than significant" (p. 5.2-36). A-21

[1] "Tetrachloroethylene." Agency for Toxic Substances and Disease Registry (ATSDR), June 2019, *available at:* https://wwwn.cdc.gov/TSP/ToxFAQs/ToxFAQsDetails.aspx?faqid=264&toxid=48.

As demonstrated above, the DEIR concludes a less-than-significant health risk impact during Project construction after the implementation of Mitigation Measures ("MMs") AQ-1, AQ-2, and AQ-3 which would reduce particulate matter emissions below applicable thresholds. Furthermore, regarding the health risk impacts associated with the Project operation, the DEIR states:

> "Operation of the proposed project would not generate substantial quantities of emissions from on-site, stationary sources. Land uses that have the potential to generate substantial stationary sources of emissions require a permit from South Coast AQMD, such as chemical processing or warehousing operations where substantial truck idling could occur on-site. The proposed project is not an industrial project that has the potential to emit substantial sources of stationary emissions. While operation of the proposed project would result in the use of standard on-site mechanical equipment such as heating, ventilation, and air conditioning units and occasional use of landscaping equipment for project site maintenance, air pollutant emissions from those uses would not be substantial. Therefore, net localized air quality impacts from project-related operations would be less than significant." (p. 5.2-31).

A-21 cont.

As demonstrated above, the DEIR concludes a less-than-significant health risk impact during Project operation because the Project would not include land uses such as chemical processing or warehousing that generate substantial amounts of air pollutants. However, the DEIR's evaluation of the Project's potential health risk impacts, as well as the subsequent less-than-significant impact conclusion, is incorrect for four reasons.

First, the use of a Localized Significance Threshold ("LST") analysis to determine the health risk impacts posed to nearby, existing sensitive receptors as a result of the Project's construction-related TAC emissions is incorrect. While the LST method assesses the impact of pollutants at a local level, it only evaluates impacts from criteria air pollutants. According to the *Final Localized Significance Threshold Methodology* document prepared by the South Coast Air Quality Management District ("SCAQMD"), LST analyses are only applicable to $NO_x$, CO, $PM_{10}$, and $PM_{2.5}$ emissions, which are collectively referred to as criteria air pollutants.[2] Because LST methods can only be applied to criteria air pollutants, they cannot be used to determine whether emissions from TACs, specifically DPM, a known human carcinogen, would result in a significant health risk impact to nearby sensitive receptors. As a result, health impacts from exposure to TACs, such as DPM, were not analyzed, thus leaving a gap in the DEIR's analysis.

A-22

Second, by failing to prepare a quantified construction and operational HRA, the DEIR is inconsistent with CEQA's requirement to correlate the increase in emissions that the Project would generate to the adverse impacts on human health caused by those emissions.[3] This is incorrect, as construction of the proposed Project will produce DPM emissions through the exhaust stacks of construction equipment over a total construction duration of 36 months (p. 3-24). Furthermore, the proposed land uses are

A-23

[2] "Final Localized Significance Threshold Methodology." South Coast Air Quality Management District (SCAQMD), Revised July 2008, *available at:* http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf.

[3] "Sierra Club v. County of Fresno." Supreme Court of California, December 2018, a*vailable at:* https://ceqaportal.org/decisions/1907/Sierra%20Club%20v.%20County%20of%20Fresno.pdf.

expected to generate 26,214,739 annual vehicle miles traveled ("VMT") during operation, which will generate additional exhaust emissions and continue to expose nearby sensitive receptors to DPM emissions (Appendix C, pp. 288, 300, 313). However, the DEIR fails to evaluate the potential Project-generated TACs or indicate the concentrations at which such pollutants would trigger adverse health effects. Thus, without making a reasonable effort to connect the Project's construction-related and operational TAC emissions to the potential health risks posed to nearby receptors, the DEIR is inconsistent with CEQA's requirement to correlate the increase in emissions generated by the Project with the potential adverse impacts on human health.

A-23 cont.

Third, the Office of Environmental Health Hazard Assessment ("OEHHA"), the organization responsible for providing guidance on conducting HRAs in California, released its most recent *Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments* in February 2015.[4] This guidance document describes the types of projects that warrant the preparation of an HRA. The OEHHA document recommends that all short-term projects lasting at least two months be evaluated for cancer risks to nearby sensitive receptors. As the Project's construction duration exceeds the 2-month requirement set forth by OEHHA, it is clear that the Project meets the threshold warranting a quantified HRA under OEHHA guidance. Furthermore, the OEHHA document recommends that exposure from projects lasting more than 6 months be evaluated for the duration of the project and recommends that an exposure duration of 30 years be used to estimate individual cancer risk for the maximally exposed individual resident ("MEIR"). Even though we were not provided with the expected lifetime of the Project, we can reasonably assume that the Project will operate for at least 30 years, if not more. Therefore, we recommend that health risk impacts from Project operation also be evaluated, as a 30-year exposure duration vastly exceeds the 6-month requirement set forth by OEHHA. These recommendations reflect the most recent state health risk policies, and as such, we recommend that an analysis of health risk impacts posed to nearby sensitive receptors from Project-generated DPM emissions be included in an EIR for the Project.

A-24

Fourth, by claiming a less than significant impact without conducting a quantified construction or operational HRA for nearby, existing sensitive receptors, the DEIR fails to compare the excess health risk impact to the SCAQMD's specific numeric threshold of 10 in one million. [5] Thus, in accordance with the most relevant guidance, an assessment of the health risk posed to nearby, existing receptors from Project construction and operation should have been conducted.

A-25

## Screening-Level Analysis Demonstrates Significant Impacts

In order to conduct our screening-level risk assessment we relied upon AERSCREEN, which is a screening level air quality dispersion model.[6] The model replaced SCREEN3, and AERSCREEN is included in the OEHHA and the California Air Pollution Control Officers Associated ("CAPCOA") guidance as the

A-26

[4] "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* http://oehha.ca.gov/air/hot_spots/hotspots2015.html

[5] "South Coast AQMD Air Quality Significance Thresholds." SCAQMD, April 2019, *available at:* http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf.

[6] "AERSCREEN Released as the EPA Recommended Screening Model," U.S. EPA, April 2011, *available at:* http://www.epa.gov/ttn/scram/guidance/clarification/20110411_AERSCREEN_Release_Memo.pdf

appropriate air dispersion model for Level 2 health risk screening assessments ("HRSAs").[7, 8] A Level 2 HRSA utilizes a limited amount of site-specific information to generate maximum reasonable downwind concentrations of air contaminants to which nearby sensitive receptors may be exposed. If an unacceptable air quality hazard is determined to be possible using AERSCREEN, a more refined modeling approach is required prior to approval of the Project.

We prepared a preliminary HRA of the Project's construction and operational health risk impact to residential sensitive receptors using the annual $PM_{10}$ exhaust estimates from the DEIR's CalEEMod output files. Consistent with recommendations set forth by OEHHA, we assumed residential exposure begins during the third trimester stage of life.[9] The DEIR's CalEEMod model indicates that construction activities will generate approximately 887 pounds of DPM over the 1,096-day construction period.[10] The AERSCREEN model relies on a continuous average emission rate to simulate maximum downward concentrations from point, area, and volume emission sources. To account for the variability in equipment usage and truck trips over Project construction, we calculated an average DPM emission rate by the following equation:

$$Emission\ Rate\ \left(\frac{grams}{second}\right) = \frac{886.8\ lbs}{1096\ days} \times \frac{453.6\ grams}{lbs} \times \frac{1\ day}{24\ hours} \times \frac{1\ hour}{3{,}600\ seconds} = \mathbf{0.00425}\boldsymbol{g/s}$$

Using this equation, we estimated a construction emission rate of 0.00425 grams per second ("g/s"). Subtracting the 1,096-day construction period from the total residential duration of 30 years, we assumed that after Project construction, the sensitive receptor would be exposed to the Project's operational DPM for an additional 27 years. The DEIR's operational CalEEMod emissions indicate that operational activities will generate approximately 230 net pounds of DPM per year throughout operation. Applying the same equation used to estimate the construction DPM rate, we estimated the following emission rate for Project operation:

A-26 cont.

$$Emission\ Rate\ \left(\frac{grams}{second}\right) = \frac{230.0\ lbs}{365\ days} \times \frac{453.6\ grams}{lbs} \times \frac{1\ day}{24\ hours} \times \frac{1\ hour}{3{,}600\ seconds} = \mathbf{0.00331}\ \boldsymbol{g/s}$$

Using this equation, we estimated an operational emission rate of 0.00331 g/s. Construction and operation were simulated as a 25-acre rectangular area source in AERSCREEN, with approximate dimensions of 450- by 225-meters. A release height of three meters was selected to represent the height of stacks of operational equipment and other heavy-duty vehicles, and an initial vertical dimension of one and a half meters was used to simulate instantaneous plume dispersion upon release.

[7] "Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.
[8] "Health Risk Assessments for Proposed Land Use Projects." CAPCOA, July 2009, *available at:* http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA_HRA_LU_Guidelines_8-6-09.pdf.
[9] "Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf, p. 8-18.
[10] See Attachment A for health risk calculations.

An urban meteorological setting was selected with model-default inputs for wind speed and direction distribution. The population of Laguna Niguel was obtained from U.S. 2020 Census data.[11]

The AERSCREEN model generates maximum reasonable estimates of single-hour DPM concentrations from the Project Site. The United States Environmental Protection Agency ("U.S. EPA") suggests that the annualized average concentration of an air pollutant be estimated by multiplying the single-hour concentration by 10% in screening procedures.[12] According to the DEIR the nearest sensitive receptor is a single-family residence located 400 feet, or 121 meters from the Project site (p. 5.11-19). However, review of the AERSCREEN output files demonstrates that the MEIR is located approximately 225 meters from the Project site. Thus, the single-hour concentration estimated by AERSCREEN for Project construction is approximately 2.105 µg/$m^3$ DPM at approximately 225 meters downwind. Multiplying this single-hour concentration by 10%, we get an annualized average concentration of 0.2105 µg/$m^3$ for Project construction at the MEIR. For Project operation, the single-hour concentration estimated by AERSCREEN is 1.639 µg/$m^3$ DPM at approximately 225 meters downwind. Multiplying this single-hour concentration by 10%, we get an annualized average concentration of 0.1639 µg/$m^3$ for Project operation at the MEIR. A-26 cont.

We calculated the excess cancer risk to the MEIR using applicable HRA methodologies prescribed by OEHHA, as recommended by SCAQMD.[13] Specifically, guidance from OEHHA and the California Air Resources Board ("CARB") recommends the use of a standard point estimate approach, including high-point estimate (i.e. 95th percentile) breathing rates and age sensitivity factors ("ASF") in order to account for the increased sensitivity to carcinogens during early-in-life exposure and accurately assess risk for susceptible subpopulations such as children. The residential exposure parameters, such as the daily breathing rates ("BR/BW"), exposure duration ("ED"), age sensitivity factors ("ASF"), fraction of time at home ("FAH"), and exposure frequency ("EF") utilized for the various age groups in our screening-level HRA are as follows:

[11] "Laguna Niguel." U.S. Census Bureau, 2020, *available at:* https://datacommons.org/place/geoId/0639248.
[12] "Screening Procedures for Estimating the Air Quality Impact of Stationary Sources Revised." U.S. EPA, October 1992, *available at:* http://www.epa.gov/ttn/scram/guidance/guide/EPA-454R-92-019_OCR.pdf.
[13] "AB 2588 and Rule 1402 Supplemental Guidelines." SCAQMD, October 2020, *available at:* http://www.aqmd.gov/docs/default-source/planning/risk-assessment/ab-2588-supplemental-guidelines.pdf?sfvrsn=19, p. 2.

| Exposure Assumptions for Residential Individual Cancer Risk | | | | | | |
|---|---|---|---|---|---|---|
| **Age Group** | **Breathing Rate** (L/kg-day)[14] | **Age Sensitivity Factor**[15] | **Exposure Duration** (years) | **Fraction of Time at Home**[16] | **Exposure Frequency** (days/year)[17] | **Exposure Time** (hours/day) |
| 3rd Trimester | 361 | 10 | 0.25 | 1 | 350 | 24 |
| Infant (0 - 2) | 1090 | 10 | 2 | 1 | 350 | 24 |
| Child (2 - 16) | 572 | 3 | 14 | 1 | 350 | 24 |
| Adult (16 - 30) | 261 | 1 | 14 | 0.73 | 350 | 24 |

For the inhalation pathway, the procedure requires the incorporation of several discrete variates to effectively quantify dose for each age group. Once determined, contaminant dose is multiplied by the cancer potency factor ("CPF") in units of inverse dose expressed in milligrams per kilogram per day (mg/kg/day$^{-1}$) to derive the cancer risk estimate. Therefore, to assess exposures, we utilized the following dose algorithm:

A-26 cont.

$$Dose_{AIR,per\ age\ group} = C_{air} \times EF \times \left[\frac{BR}{BW}\right] \times A \times CF$$

where:

$Dose_{AIR}$ = dose by inhalation (mg/kg/day), per age group
$C_{air}$ = concentration of contaminant in air (µg/m3)
EF = exposure frequency (number of days/365 days)
BR/BW = daily breathing rate normalized to body weight (L/kg/day)
A = inhalation absorption factor (default = 1)
CF = conversion factor (1x10-6, µg to mg, L to m3)

To calculate the overall cancer risk, we used the following equation for each appropriate age group:

$$Cancer\ Risk_{AIR} = Dose_{AIR} \times CPF \times ASF \times FAH \times \frac{ED}{AT}$$

[14] "Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics 'Hot Spots' Information and Assessment Act." SCAQMD, October 2020, available at: http://www.aqmd.gov/docs/default-source/planning/risk-assessment/ab-2588-supplemental-guidelines.pdf?sfvrsn=19, p. 19; see also "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, available at: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.

[15] "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, available at: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf, p. 8-5 Table 8.3.

[16] "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, available at: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf, p. 5-24.

[17] "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, available at: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf, p. 5-24.

where:

$Dose_{AIR}$ = dose by inhalation (mg/kg/day), per age group
CPF = cancer potency factor, chemical-specific $(mg/kg/day)^{-1}$
ASF = age sensitivity factor, per age group
FAH = fraction of time at home, per age group (for residential receptors only)
ED = exposure duration (years)
AT = averaging time period over which exposure duration is averaged (always 70 years)

Consistent with the 1,096-day construction schedule, the annualized average concentration for construction was used for the entire third trimester of pregnancy (0.25 years), entire infantile stage of life (0 – 2 years), and the first 0.75 years of the child stage of life (2 – 16 years). The annualized average concentration for operation was used for the remainder of the 30-year exposure period, which makes up the latter 13.25 years of the child stage of life and the entire adult stage of life (16 – 30 years). The results of our calculations are shown in the table below.

**The Maximally Exposed Individual at an Existing Residential Receptor**

| **Age Group** | **Emissions Source** | **Duration** (years) | **Concentration** (ug/m3) | **Cancer Risk** |
|---|---|---|---|---|
| 3rd Trimester | Construction | 0.25 | 0.2105 | 2.86E-06 |
| Infant (0 - 2) | Construction | 2 | 0.2105 | 6.91E-05 |
| | *Construction* | *0.75* | *0.2105* | *4.10E-06* |
| | *Operation* | *13.25* | *0.1639* | *5.61E-05* |
| Child (2 - 16) | Total | 14 | | 6.02E-05 |
| Adult (16 - 30) | Operation | 14 | 0.1639 | 6.59E-06 |
| **Lifetime** | | **30** | | **1.39E-04** |

A-26 cont.

As demonstrated in the table above, the excess cancer risks for the 3rd trimester of pregnancy, infants, children, and adults at the MEIR located approximately 225 meters away, over the course of Project construction and operation, are approximately 2.86, 69.1, 60.2, and 6.59 in one million, respectively. The excess cancer risk over the course of a residential lifetime (30 years) is approximately 139 in one million. The infant, child, and lifetime cancer risks exceed the SCAQMD threshold of 10 in one million, thus resulting in a potentially significant impact not previously addressed or identified by the DEIR.

Our analysis represents a screening-level HRA, which is known to be conservative and tends to err on the side of health protection. The purpose of the screening-level HRA is to demonstrate the potential link between Project-generated emissions and adverse health risk impacts. According to the U.S. EPA:

"EPA's Exposure Assessment Guidelines recommend completing exposure assessments iteratively using a tiered approach to 'strike a balance between the costs of adding detail and refinement to an assessment and the benefits associated with that additional refinement' (U.S. EPA, 1992).

In other words, an assessment using basic tools (e.g., simple exposure calculations, default values, rules of thumb, conservative assumptions) can be conducted as the first phase (or tier) of the overall assessment (i.e., a screening-level assessment).

The exposure assessor or risk manager can then determine whether the results of the screening-level assessment warrant further evaluation through refinements of the input data and exposure assumptions or by using more advanced models."

A-26 cont.

As demonstrated above, screening-level analyses warrant further evaluation in a refined modeling approach. Thus, as our screening-level HRA demonstrates that construction and operation of the Project could result in a potentially significant health risk impact, an updated EIR should be prepared to include a refined health risk analysis which adequately and accurately evaluates health risk impacts associated with both Project construction and operation.

## Greenhouse Gas

### Failure to Adequately Evaluate Greenhouse Gas Impacts

The DEIR estimates that the Project would generate net annual greenhouse gas ("GHG") emissions of 11,651 metric tons of carbon dioxide equivalents per year ("MT $CO_2$e/year"), which would exceed the SCAQMD bright-line threshold of 3,000 MT $CO_2$e/year (see excerpt below) (p. 5.7-23, Table 5.7-5).

**Table 5.7-5 Project GHG Emissions Inventory**

| Source | GHG Emissions[1] | |
|---|---|---|
| | $MTCO_2e$ Per Year | Percent Proportion |
| Area | 5 | <1% |
| Energy[2] | 2,191 | 19% |
| Residential Photovoltaic System[3] | -45 | <1% |
| Mobile[4] | 8,013 | 69% |
| Solid Waste | 1,036 | 9% |
| Water | 261 | 2% |
| Amortized Construction Emissions[5] | 191 | 2% |
| Total All Sectors | 11,651 | 100% |
| South Coast AQMD Working Group Bright-Line Threshold | 3,000 $MTCO_2e$ | NA |
| Exceeds Threshold? | Yes | NA |

Source: CalEEMod, Version 2020.4.
Notes: Totals may not equal 100 percent due to rounding.
[1] Based on the preliminary information provided by the Applicant.
[2] Model accounts for total energy use associated with implementation of the proposed project.
[3] Based on PV system generating 184,315 kWh per year as provided by the Applicant.
[4] Construction emissions are amortized over a 30-year project lifetime per recommended South Coast AQMD methodology.
[5] Construction emissions are amortized over a 30-year project lifetime per recommended South Coast AQMD methodology.

A-27

As a result, the DEIR concludes that the Project would result in a significant-and-unavoidable impact after the implementation of Mitigation Measures ("MM") GHG-1, GHG-2, and GHG-3 (p. 5.7-25, 5.7-26). Furthermore, the DEIR relies on Project consistency with CARB's 2017 *Scoping Plan* and SCAG'S 2020 – 2045 Regional Transportation Plan/Sustainable Communities Strategy ("*RTP/SCS*") in order to conclude a

significant-and-unavoidable impact GHG impact (p. 5.7-23, 5.7-24). However, the DEIR's GHG analysis, as well as the subsequent significant-and-unavoidable impact conclusion, is incorrect for three reasons: A-27 cont.

(1) The DEIR fails to implement all feasible mitigation;
(2) The DEIR fails to consider the performance-based standards under CARB's *Scoping Plan*; and
(3) The DEIR fails to consider the performance-based standards under SCAG's *RTP/SCS.*

### *1) Failure to Implement All Feasible Mitigation to Reduce GHG Emissions*

As discussed above, the DEIR concludes that the proposed Project's GHG emissions would be significant-and-unavoidable (p. 5.7-23). However, while it is correct that the Project would result in a significant GHG impact, the DEIR's conclusion that this impact is "significant and unavoidable" is incorrect. As previously stated, according to CEQA Guidelines § 15096(g)(2):

> "When an EIR has been prepared for a project, the Responsible Agency shall not approve the project as proposed if the agency finds any feasible alternative or feasible mitigation measures within its powers that would substantially lessen or avoid any significant effect the project would have on the environment."

As you can see, an impact can only be labeled as significant-and-unavoidable after all available, feasible mitigation is considered. Here, while the DEIR implements MM GHG-1, GHG-2, and GHG-3, the DEIR fails to implement *all* feasible mitigation (p. 5.7-25, 5.7-26). Therefore, the DEIR's conclusion that Project's GHG emissions would be significant-and-unavoidable is unsubstantiated. To reduce the Project's GHG impacts to the maximum extent possible, additional feasible mitigation measures should be incorporated, such as those suggested in the following section of this letter titled "Feasible Mitigation Measures Available to Reduce Emissions." Thus, the Project should not be approved until an updated EIR is prepared, including updated, accurate emissions calculations, and incorporating all feasible mitigation to reduce emissions to less-than-significant levels. A-28

### *2) Failure to Consider Performance-based Standards Under CARB's 2017 Scoping Plan*

As previously discussed, the DEIR concludes that the Project would be consistent with CARB's 2017 Climate Change Scoping Plan (p. 5.7-23, 5.7-24). However, this is incorrect, as the DEIR fails to consider performance-based measures proposed by CARB.

#### *i. Passenger & Light Duty VMT Per Capita Benchmarks per SB 375*

In reaching the State's long-term GHG emission reduction goals, CARB's 2017 *Scoping Plan* explicitly cites SB 375 and the VMT reductions anticipated under the implementation of Sustainable Community Strategies.[18] CARB has identified the population and daily VMT from passenger autos and light-duty vehicles at the state and county level for each year between 2010 to 2050 under a "baseline scenario" that includes "current projections of VMT included in the existing Regional Transportation Plans/Sustainable Communities Strategies (RTP/SCSs) adopted by the State's 18 Metropolitan Planning A-29

[18] "California's 2017 Climate Change Scoping Plan." California Air Resources Board (CARB), November 2017, *available at*: https://ww3.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf, p. 25, 98, 101-103.

Organizations (MPOs) pursuant to SB 375 as of 2015."[19] By dividing the projected daily VMT by population, we calculated the daily VMT per capita for each year at the state and county level for 2010 (baseline year), 2026 (Project operational year), and 2030 (target year under SB 32) (see table below).

**2017 Scoping Plan Daily VMT Per Capita**

| | Orange County | | | State | | |
|---|---|---|---|---|---|---|
| Year | Population | LDV VMT Baseline | VMT Per Capita | Population | LDV VMT Baseline | VMT Per Capita |
| **2010** | 3,014,677 | 73,439,010.51 | 24.36 | 37,335,085 | 836,463,980.46 | 22.40 |
| **2026** | 3,368,151 | 77,556,376.65 | 23.03 | 42,655,695 | 935,625,476.00 | 21.93 |
| **2030** | 3,433,510 | 76,760,734.64 | 22.36 | 43,939,250 | 957,178,153.19 | 21.78 |

A-29 cont.

As the DEIR fails to evaluate the Project's consistency with the performance-based daily VMT per capita projections from CARB's 2017 *Scoping Plan*, the DEIR's claim that the proposed Project would be consistent with the *Scoping Plan* is unsupported. An updated EIR should be prepared for the proposed Project to provide additional information and analysis to conclude less-than-significant GHG impacts.

### *3) Failure to Consider Performance-based Standards under SCAG's RTP/SCS*

As previously discussed, the DEIR concludes that the Project would be consistent with SCAG's *RTP/SCS* (p. 5.7-24). However, the DEIR fails to consider whether or not the Project meets any of the specific performance-based goals underlying SCAG's *RTP/SCS* and SB 375, such as: i) per capita GHG emission targets, or ii) daily vehicles miles traveled ("VMT") per capita benchmarks.

#### *i. SB 375 Per Capita GHG Emission Goals*

SB 375 was signed into law in September 2008 to enhance the state's ability to reach AB 32 goals by directing CARB to develop regional 2020 and 2035 GHG emission reduction targets for passenger vehicles (autos and light-duty trucks). In March 2018, CARB adopted updated regional targets requiring a 19 percent decrease in VMT for the SCAG region by 2035. This goal is reflected in SCAG's 2020 RTP/SCS Program Environmental Impact Report ("PEIR"), in which the 2020 RTP/SCS PEIR updates the per capita emissions to 18.8 lbs/day in 2035 (see excerpt below). [20]

A-30

[19] "Supporting Calculations for 2017 Scoping Plan-Identified VMT Reductions," California Air Resources Board (CARB), January 2019, *available at*: https://ww2.arb.ca.gov/sites/default/files/2019-01/sp_mss_vmt_calculations_jan19_0.xlsx; *see also:* https://ww2.arb.ca.gov/resources/documents/carb-2017-scoping-plan-identified-vmt-reductions-and-relationship-state-climate.

[20] "Connect SoCal Certified Final Program Environmental Impact Report." SCAG, May 2020, *available at*: https://scag.ca.gov/sites/main/files/file-attachments/fpeir_connectsocal_complete.pdf?1607981618, p. 3.8-74.

**Table 3.8-10**
**SB 375 Analysis**

| | 2005 (Baseline) | 2020 (Plan) | 2035 (Plan) |
|---|---|---|---|
| Resident population (per 1,000) | 17,161 | 19,194 | 21,110 |
| CO2 emissions (per 1,000 tons) | 204.0/a/ | 204.5/b/ | 198.6/b/ |
| Per capita emissions (pounds/day) | 23.8 | 21.3 | 18.8 |
| % difference from Plan (2020) to Baseline (2005) | | | –8% |
| % difference from Plan (2035) to Baseline (2005) | | | –19%/c/ |

*Note:*
*/a/ Based on EMFAC2007*
*/b/Based on EMFAC2014 and SCAG modeling, 2019.*
*/c/ Includes off-model adjustments for 2035 and 2045*
*Source: SCAG modeling, 2019.*
*http://www.scag.ca.gov/committees/CommitteeDocLibrary/jointRCPC110515fullagn.pdf*

A-30 cont.

As the DEIR fails to evaluate the Project's consistency with the SCAG's per capita emissions, the DEIR's claim that the proposed Project would be consistent with SCAG's *RTP/SCS* is unsupported. An updated EIR should be prepared for the proposed Project to provide additional information and analysis to conclude less-than-significant GHG impacts.

***ii. SB 375 RTP/SCS Daily VMT Per Capita Target***

Under the SCAG's 2020 *RTP/SCS*, daily VMT per capita in the SCAG region should decrease from 23.2 VMT in 2016 to 20.7 VMT by 2045.[21] Daily VMT per capita in Orange County should decrease from 24.1 to 22.3 VMT during that same period.[22] Here, however, the DEIR fails to consider any of the above-mentioned performance-based VMT targets. As the DEIR fails to evaluate the Project's consistency with the SCAG's performance-based daily VMT per capita projections, the DEIR's claim that the proposed Project would be consistent with SCAG's *RTP/SCS* is unsupported. An updated EIR should be prepared for the proposed Project to provide additional information and analysis to conclude less-than-significant GHG impacts.

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## Feasible Mitigation Measures Available to Reduce Emissions

The DEIR's analysis demonstrates that the Project would result in potentially significant greenhouse gas impacts that should be mitigated further. As such, in an effort to reduce the Project's emissions, we identified several mitigation measures that are applicable to the proposed Project. Therefore, to reduce the Project's emissions, we recommend consideration of SCAG's 2020 *RTP/SCS* PEIR's Greenhouse Gas Project Level Mitigation Measures ("PMM-GHG-1"), as described below: [23]

A-32

[21] "Connect SoCal." SCAG, September 2020, *available at*: https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocal-plan_0.pdf?1606001176, pp. 138.
[22] "Connect SoCal." SCAG, September 2020, *available at*: https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocal-plan_0.pdf?1606001176, pp. 138.
[23] "4.0 Mitigation Measures." Connect SoCal Program Environmental Impact Report Addendum #1, September 2020, available at: https://scag.ca.gov/sites/main/files/file-attachments/fpeir_connectsocal_addendum_4_mitigationmeasures.pdf?1606004420, p. 4.0-2 – 4.0-10; 4.0-19 –

| SCAG RTP/SCS 2020-2045 |
|---|
| **Greenhouse Gas Project Level Mitigation Measures – PMM-GHG-1**<br><br>In accordance with provisions of sections 15091(a)(2) and 15126.4(a)(1)(B) of the *State CEQA Guidelines*, a Lead Agency for a project can and should consider mitigation measures to reduce substantial adverse effects related to violating air quality standards. Such measures may include the following or other comparable measures identified by the Lead Agency: |
| b) Reduce emissions resulting from projects through implementation of project features, project design, or other measures, such as those described in Appendix F of the State CEQA Guidelines. |
| c) Include off-site measures to mitigate a project's emissions. |
| d) Measures that consider incorporation of Best Available Control Technology (BACT) during design, construction and operation of projects to minimize GHG emissions, including but not limited to:<br>i. Use energy and fuel-efficient vehicles and equipment;<br>ii. Deployment of zero- and/or near zero emission technologies;<br>iii. Use lighting systems that are energy efficient, such as LED technology;<br>iv. Use the minimum feasible amount of GHG-emitting construction materials;<br>v. Use cement blended with the maximum feasible amount of flash or other materials that reduce GHG emissions from cement production;<br>vi. Incorporate design measures to reduce GHG emissions from solid waste management through encouraging solid waste recycling and reuse;<br>vii. Incorporate design measures to reduce energy consumption and increase use of renewable energy;<br>viii. Incorporate design measures to reduce water consumption;<br>ix. Use lighter-colored pavement where feasible;<br>x. Recycle construction debris to maximum extent feasible;<br>xi. Plant shade trees in or near construction projects where feasible; and<br>xii. Solicit bids that include concepts listed above. |
| e) Measures that encourage transit use, carpooling, bike-share and car-share programs, active transportation, and parking strategies, including, but not limited to the following:<br>i. Promote transit-active transportation coordinated strategies;<br>ii. Increase bicycle carrying capacity on transit and rail vehicles;<br>iii. Improve or increase access to transit;<br>iv. Increase access to common goods and services, such as groceries, schools, and day care;<br>v. Incorporate affordable housing into the project;<br>vi. Incorporate the neighborhood electric vehicle network;<br>vii. Orient the project toward transit, bicycle and pedestrian facilities;<br>viii. Improve pedestrian or bicycle networks, or transit service;<br>ix. Provide traffic calming measures;<br>x. Provide bicycle parking;<br>xi. Limit or eliminate park supply;<br>xii. Unbundle parking costs; |

A-32 cont.

4.0-23; See also: "Certified Final Connect SoCal Program Environmental Impact Report." Southern California Association of Governments (SCAG), May 2020, *available at:* https://scag.ca.gov/peir.

xiii. Provide parking cash-out programs;

xiv. Implement or provide access to commute reduction program;

f) Incorporate bicycle and pedestrian facilities into project designs, maintaining these facilities, and providing amenities incentivizing their use; and planning for and building local bicycle projects that connect with the regional network;

g) Improving transit access to rail and bus routes by incentives for construction and transit facilities within developments, and/or providing dedicated shuttle service to transit stations; and

h) Adopting employer trip reduction measures to reduce employee trips such as vanpool and carpool programs, providing end-of-trip facilities, and telecommuting programs including but not limited to measures that:

i. Provide car-sharing, bike sharing, and ride-sharing programs;

ii. Provide transit passes;

iii. Shift single occupancy vehicle trips to carpooling or vanpooling, for example providing ride-matching services;

iv. Provide incentives or subsidies that increase that use of modes other than single-occupancy vehicle;

v. Provide on-site amenities at places of work, such as priority parking for carpools and vanpools, secure bike parking, and showers and locker rooms;

vi. Provide employee transportation coordinators at employment sites;

vii. Provide a guaranteed ride home service to users of non-auto modes.

i) Designate a percentage of parking spaces for ride-sharing vehicles or high-occupancy vehicles, and provide adequate passenger loading and unloading for those vehicles;

j) Land use siting and design measures that reduce GHG emissions, including:

i. Developing on infill and brownfields sites;

ii. Building compact and mixed-use developments near transit;

iii. Retaining on-site mature trees and vegetation, and planting new canopy trees;

iv. Measures that increase vehicle efficiency, encourage use of zero and low emissions vehicles, or reduce the carbon content of fuels, including constructing or encouraging construction of electric vehicle charging stations or neighborhood electric vehicle networks, or charging for electric bicycles; and

v. Measures to reduce GHG emissions from solid waste management through encouraging solid waste recycling and reuse.

A-32 cont.

k) Consult the SCAG Environmental Justice Toolbox for potential measures to address impacts to low-income and/or minority communities. The measures provided above are also intended to be applied in low income and minority communities as applicable and feasible.

l) Require at least five percent of all vehicle parking spaces include electric vehicle charging stations, or at a minimum, require the appropriate infrastructure to facilitate sufficient electric charging for passenger vehicles and trucks to plug-in.

m) Encourage telecommuting and alternative work schedules, such as:

i. Staggered starting times

ii. Flexible schedules

iii. Compressed work weeks

n) Implement commute trip reduction marketing, such as:

i. New employee orientation of trip reduction and alternative mode options

ii. Event promotions

iii. Publications

o) Implement preferential parking permit program

p) Implement school pool and bus programs

q) Price workplace parking, such as:

i. Explicitly charging for parking for its employees;
ii. Implementing above market rate pricing;
iii. Validating parking only for invited guests;
iv. Not providing employee parking and transportation allowances; and
v. Educating employees about available alternatives.

A-32 cont.

These measures offer a cost-effective, feasible way to incorporate lower-emitting design features into the proposed Project, which subsequently, reduce criteria air pollutant emissions released during Project construction and operation.

Furthermore, as it is policy of the State that eligible renewable energy resources and zero-carbon resources supply 100% of retail sales of electricity to California end-use customers by December 31, 2045, we emphasize the applicability of incorporating solar power system into the Project design. Until the feasibility of incorporating on-site renewable energy production is considered to reduce the Project's GHG emissions, the DEIR should not be approved.

An updated EIR should be prepared to include all feasible mitigation measures, as well as include GHG analyses to ensure that the necessary mitigation measures are implemented to reduce emissions to below thresholds. The EIR should also demonstrate a commitment to the implementation of these measures prior to Project approval, to ensure that the Project's significant emissions are reduced to the maximum extent possible.

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## Disclaimer

SWAPE has received limited discovery regarding this project. Additional information may become available in the future; thus, we retain the right to revise or amend this report when additional information becomes available. Our professional services have been performed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable environmental consultants practicing in this or similar localities at the time of service. No other warranty, expressed or implied, is made as to the scope of work, work methodologies and protocols, site conditions, analytical testing results, and findings presented. This report reflects efforts which were limited to information that was reasonably accessible at the time of the work, and may contain informational gaps, inconsistencies, or otherwise be incomplete due to the unavailability or uncertainty of information obtained or provided by third parties.

Sincerely,

Matt Hagemann, P.G., C.Hg.

Paul E. Rosenfeld, Ph.D.

Attachment A: Health Risk Calculations
Attachment B: AERSCREEN Output Files
Attachment C: Matt Hagemann CV
Attachment D: Paul E. Rosenfeld CV

| |
|---|
| 0.462465753 |
| 365 |
| 168.8 |
| 76567.68 |
| 1/1/2025 |
| 1/1/2026 |
| 365 |

| |
|---|
| 0.037 |
| 0.202739726 |
| 243 |
| 49.26575342 |
| 22346.94575 |
| 1/1/2026 |
| 9/1/2026 |
| 243 |

Start date and time  05/23/22 11:24:36

AERSCREEN 21112

Laguna Niguel New City Center Project Construction Run

Laguna Niguel New City Center Project Construction Run

---------- DATA ENTRY VALIDATION ----------

| | METRIC | ENGLISH |
|---|---|---|
| ** AREADATA ** | --- | --- |
| Emission Rate: | 0.425E-02 g/s | 0.337E-01 lb/hr |
| Area Height: | 3.00 meters | 9.84 feet |
| Area Source Length: | 449.83 meters | 1475.82 feet |
| Area Source Width: | 224.91 meters | 737.89 feet |
| Vertical Dimension: | 1.50 meters | 4.92 feet |
| Model Mode: | URBAN | |
| Population: | 65048 | |
| Dist to Ambient Air: | 1.0 meters | 3. feet |

** BUILDING DATA **

No Building Downwash Parameters

** TERRAIN DATA **

No Terrain Elevations

Source Base Elevation:   0.0 meters        0.0  feet

Probe distance:   5000. meters       16404. feet

No flagpole receptors

No discrete receptors used

** FUMIGATION DATA **

No fumigation requested

** METEOROLOGY DATA **

Min/Max Temperature:  250.0 / 310.0 K   -9.7 /  98.3 Deg F

Minimum Wind Speed:     0.5 m/s

```
 Anemometer Height:   10.000 meters

 Dominant Surface Profile: Urban

 Dominant Climate Type:    Average Moisture

 Surface friction velocity (u*): not adjusted

DEBUG OPTION ON




 AERSCREEN output file:

 2022.05.23_LagunaCityCenter_AERSCREEN_Construction.out



 *** AERSCREEN Run is Ready to Begin




 No terrain used, AERMAP will not be run
**************************************************

SURFACE CHARACTERISTICS & MAKEMET

Obtaining surface characteristics...
```

Using AERMET seasonal surface characteristics for Urban with Average Moisture

| Season | Albedo | Bo | zo |
|---|---|---|---|
| Winter | 0.35 | 1.50 | 1.000 |
| Spring | 0.14 | 1.00 | 1.000 |
| Summer | 0.16 | 2.00 | 1.000 |
| Autumn | 0.18 | 2.00 | 1.000 |

Creating met files aerscreen_01_01.sfc & aerscreen_01_01.pfl

Creating met files aerscreen_02_01.sfc & aerscreen_02_01.pfl

Creating met files aerscreen_03_01.sfc & aerscreen_03_01.pfl

Creating met files aerscreen_04_01.sfc & aerscreen_04_01.pfl

Buildings and/or terrain present or rectangular area source, skipping probe

FLOWSECTOR   started 05/23/22 11:28:09

 ****************************************

  Running AERMOD

 Processing Winter

Processing surface roughness sector  1

```
**************************************************
Processing wind flow sector   1

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector   0

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   2

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector   5

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   3

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  10

    ********   WARNING MESSAGES   ********
               ***  NONE  ***
```

```
**************************************************

Processing wind flow sector   4

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  15

    ********   WARNING MESSAGES   ********

               ***  NONE  ***

**************************************************

Processing wind flow sector   5

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  20

    ********   WARNING MESSAGES   ********

               ***  NONE  ***

**************************************************

Processing wind flow sector   6

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  25

    ********   WARNING MESSAGES   ********

               ***  NONE  ***

**************************************************
```

```
Processing wind flow sector   7

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  30

    ********   WARNING MESSAGES   ********
               ***  NONE  ***
 ******************************************

  Running AERMOD
 Processing Spring

Processing surface roughness sector  1

**************************************************
Processing wind flow sector   1

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector   0

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   2

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector   5
```

```
    ********   WARNING MESSAGES   ********

               ***  NONE  ***


**************************************************

Processing wind flow sector   3


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  10


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


**************************************************

Processing wind flow sector   4


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  15


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


**************************************************

Processing wind flow sector   5


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  20
```

```
    ********   WARNING MESSAGES   ********

               ***  NONE  ***


**************************************************

Processing wind flow sector   6


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  25


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


**************************************************

Processing wind flow sector   7


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  30


    ********   WARNING MESSAGES   ********

               ***  NONE  ***

 ****************************************


  Running AERMOD

 Processing Summer


Processing surface roughness sector  1
```

```
**************************************************

Processing wind flow sector   1

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector   0

    ********   WARNING MESSAGES   ********

               ***  NONE  ***

**************************************************

Processing wind flow sector   2

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector   5

    ********   WARNING MESSAGES   ********

               ***  NONE  ***

**************************************************

Processing wind flow sector   3

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  10

    ********   WARNING MESSAGES   ********

               ***  NONE  ***

**************************************************
```

```
Processing wind flow sector   4

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  15

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   5

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  20

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   6

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  25

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   7
```

```
 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  30

    ********   WARNING MESSAGES   ********

               ***  NONE  ***

 ******************************************

  Running AERMOD

 Processing Autumn

Processing surface roughness sector  1

**************************************************

Processing wind flow sector   1

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector   0

    ********   WARNING MESSAGES   ********

               ***  NONE  ***

**************************************************

Processing wind flow sector   2

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector   5
```

```
    ********   WARNING MESSAGES   ********

               ***  NONE  ***


**************************************************

Processing wind flow sector   3


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  10


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


**************************************************

Processing wind flow sector   4


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  15


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


**************************************************

Processing wind flow sector   5


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  20


    ********   WARNING MESSAGES   ********
```

```
               ***  NONE  ***

**************************************************
Processing wind flow sector   6

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  25

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   7

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  30

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

FLOWSECTOR   ended 05/23/22 11:28:29

REFINE       started 05/23/22 11:28:29

 AERMOD Finishes Successfully for REFINE stage 3 Winter sector   0

    ********   WARNING MESSAGES   ********
```

```
                ***  NONE  ***


REFINE       ended 05/23/22 11:28:31


 ********************************************
 AERSCREEN Finished Successfully
 With no errors or warnings
 Check log file for details
 ********************************************


 Ending date and time  05/23/22 11:28:32
```

```
 Concentration     Distance Elevation  Diag  Season/Month   Zo sector       Date
  H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS     HT
REF TA     HT
   0.16106E+01         1.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.16771E+01        25.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.17444E+01        50.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.18071E+01        75.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.18653E+01       100.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.19196E+01       125.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.19702E+01       150.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.20176E+01       175.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.20622E+01       200.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.21049E+01       225.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
*  0.21065E+01       226.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.20696E+01       250.00      0.00  25.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.15635E+01       275.00      0.00  25.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.13220E+01       300.00      0.00  20.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.11764E+01       325.00      0.00  20.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.10705E+01       350.00      0.00  20.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
```

```
 310.0    2.0
   0.98242E+00       375.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.91726E+00       400.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.85974E+00       425.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.80785E+00       450.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.76145E+00       475.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.71917E+00       500.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.68066E+00       525.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.64570E+00       550.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.61379E+00       575.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.58398E+00       600.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.55692E+00       625.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.53178E+00       650.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.50874E+00       675.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.48686E+00       700.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.46681E+00       725.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.44818E+00       750.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.43067E+00       775.00      0.00   0.0        Winter       0-360   10011001
```

```
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.41439E+00       800.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.39910E+00       825.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.38454E+00       850.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.37099E+00       875.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.35833E+00       900.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.34646E+00       925.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.33507E+00       950.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.32430E+00       975.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.31412E+00      1000.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.30454E+00      1025.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.29550E+00      1050.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.28675E+00      1075.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.27847E+00      1100.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.27064E+00      1125.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.26320E+00      1150.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.25615E+00      1175.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
```

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   0.24941E+00      1200.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.24292E+00      1225.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.23663E+00      1250.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.23064E+00      1275.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.22492E+00      1300.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.21946E+00      1325.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.21424E+00      1350.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.20925E+00      1375.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.20447E+00      1400.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.19988E+00      1425.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.19548E+00      1450.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.19118E+00      1475.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.18705E+00      1500.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.18305E+00      1525.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.17919E+00      1550.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.17547E+00      1575.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.17189E+00      1600.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
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 310.0    2.0
   0.16844E+00      1625.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.16511E+00      1650.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.16191E+00      1675.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.15881E+00      1700.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.15582E+00      1725.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.15293E+00      1750.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.15013E+00      1775.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.14738E+00      1800.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.14472E+00      1825.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.14215E+00      1850.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.13966E+00      1875.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.13724E+00      1900.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.13490E+00      1925.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.13263E+00      1950.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.13043E+00      1975.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.12829E+00      2000.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.12620E+00      2025.00      0.00   0.0        Winter       0-360   10011001
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-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.12416E+00      2050.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.12218E+00      2075.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.12026E+00      2100.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.11839E+00      2125.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.11658E+00      2150.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.11481E+00      2175.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.11309E+00      2200.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.11142E+00      2225.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.10979E+00      2250.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.10819E+00      2275.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.10662E+00      2300.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.10509E+00      2325.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.10360E+00      2350.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.10215E+00      2375.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.10073E+00      2400.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.99352E-01      2425.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0

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   0.98003E-01      2450.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.96687E-01      2475.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.95402E-01      2500.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.94147E-01      2525.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.92921E-01      2550.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.91724E-01      2575.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.90553E-01      2600.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.89409E-01      2625.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.88290E-01      2650.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.87196E-01      2675.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.86126E-01      2700.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.85079E-01      2725.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.84055E-01      2750.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.83052E-01      2775.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.82071E-01      2800.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.81101E-01      2825.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.80150E-01      2850.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
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 310.0    2.0
   0.79220E-01      2875.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.78308E-01      2900.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.77414E-01      2925.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.76539E-01      2950.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.75681E-01      2975.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.74840E-01      3000.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.74015E-01      3025.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.73206E-01      3050.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.72407E-01      3075.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.71620E-01      3100.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.70847E-01      3125.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.70089E-01      3150.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.69345E-01      3175.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.68615E-01      3200.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.67898E-01      3225.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.67195E-01      3250.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.66504E-01      3275.00      0.00   0.0        Winter       0-360   10011001
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-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.65825E-01      3300.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.65159E-01      3325.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.64504E-01      3350.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.63861E-01      3375.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.63229E-01      3400.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.62609E-01      3425.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.62002E-01      3450.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.61405E-01      3475.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.60815E-01      3500.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.60234E-01      3525.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.59664E-01      3550.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.59103E-01      3575.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.58551E-01      3600.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.58008E-01      3625.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.57474E-01      3650.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.56947E-01      3675.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
```

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   0.56429E-01      3700.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.55918E-01      3725.01      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.55416E-01      3750.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.54922E-01      3775.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.54437E-01      3800.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.53959E-01      3825.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.53489E-01      3850.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.53025E-01      3875.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.52569E-01      3900.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.52120E-01      3925.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.51677E-01      3950.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.51241E-01      3975.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.50811E-01      4000.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.50388E-01      4025.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.49970E-01      4050.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.49559E-01      4075.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.49154E-01      4100.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
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 310.0    2.0
   0.48754E-01      4125.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.48361E-01      4150.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.48706E-01      4175.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.48310E-01      4200.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.47920E-01      4225.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.47534E-01      4250.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.47155E-01      4275.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.46780E-01      4300.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.46410E-01      4325.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.46046E-01      4350.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.45686E-01      4375.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.45332E-01      4400.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.44982E-01      4425.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.44636E-01      4450.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.44296E-01      4475.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.43959E-01      4500.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.43628E-01      4525.00      0.00   0.0        Winter       0-360   10011001
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-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.43300E-01      4550.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.42977E-01      4575.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.42658E-01      4600.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.42342E-01      4625.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.42031E-01      4650.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.41724E-01      4675.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.41421E-01      4700.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.41122E-01      4725.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.40826E-01      4750.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.40534E-01      4775.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.40245E-01      4800.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.39960E-01      4825.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.39679E-01      4850.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.39401E-01      4875.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.39126E-01      4900.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.38855E-01      4925.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
```

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   0.38587E-01      4950.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.38322E-01      4975.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.38060E-01      5000.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
```

Start date and time  05/23/22 11:38:47

AERSCREEN 21112

Laguna Niguel New City Center Project Operations Run

---------- DATA ENTRY VALIDATION ----------

| | METRIC | ENGLISH |
|---|---|---|
| ** AREADATA ** | --- | --- |
| Emission Rate: | 0.331E-02 g/s | 0.263E-01 lb/hr |
| Area Height: | 3.00 meters | 9.84 feet |
| Area Source Length: | 449.83 meters | 1475.82 feet |
| Area Source Width: | 224.91 meters | 737.89 feet |
| Vertical Dimension: | 1.50 meters | 4.92 feet |
| Model Mode: | URBAN | |
| Population: | 65048 | |
| Dist to Ambient Air: | 1.0 meters | 3. feet |

** BUILDING DATA **

No Building Downwash Parameters

** TERRAIN DATA **

No Terrain Elevations

Source Base Elevation:   0.0 meters        0.0  feet

Probe distance:   5000. meters       16404. feet

No flagpole receptors

No discrete receptors used

** FUMIGATION DATA **

No fumigation requested

** METEOROLOGY DATA **

Min/Max Temperature:  250.0 / 310.0 K   -9.7 /  98.3 Deg F

Minimum Wind Speed:     0.5 m/s

Anemometer Height:   10.000 meters

```
 Dominant Surface Profile: Urban
 Dominant Climate Type:    Average Moisture

 Surface friction velocity (u*): not adjusted

DEBUG OPTION ON



 AERSCREEN output file:
 2022.05.23_LagunaCityCenter_AERSCREEN_Operations.out


 *** AERSCREEN Run is Ready to Begin



 No terrain used, AERMAP will not be run
**************************************************

SURFACE CHARACTERISTICS & MAKEMET
Obtaining surface characteristics...

Using AERMET seasonal surface characteristics for Urban with Average Moisture
```

| Season | Albedo | Bo | zo |
|---|---|---|---|
| Winter | 0.35 | 1.50 | 1.000 |
| Spring | 0.14 | 1.00 | 1.000 |
| Summer | 0.16 | 2.00 | 1.000 |
| Autumn | 0.18 | 2.00 | 1.000 |

Creating met files aerscreen_01_01.sfc & aerscreen_01_01.pfl

Creating met files aerscreen_02_01.sfc & aerscreen_02_01.pfl

Creating met files aerscreen_03_01.sfc & aerscreen_03_01.pfl

Creating met files aerscreen_04_01.sfc & aerscreen_04_01.pfl

Buildings and/or terrain present or rectangular area source, skipping probe

FLOWSECTOR started 05/23/22 11:44:29

**********

Running AERMOD

Processing Winter

Processing surface roughness sector 1

**********

```
Processing wind flow sector   1

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector   0

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   2

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector   5

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   3

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  10

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   4
```

```
 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  15

    ********   WARNING MESSAGES   ********

               ***  NONE  ***

**************************************************
Processing wind flow sector   5

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  20

    ********   WARNING MESSAGES   ********

               ***  NONE  ***

**************************************************
Processing wind flow sector   6

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  25

    ********   WARNING MESSAGES   ********

               ***  NONE  ***

**************************************************
Processing wind flow sector   7
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 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  30

    ********   WARNING MESSAGES   ********

               ***  NONE  ***

 *****************************************

  Running AERMOD

 Processing Spring

Processing surface roughness sector  1

**************************************************

Processing wind flow sector   1

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector   0

    ********   WARNING MESSAGES   ********

               ***  NONE  ***

**************************************************

Processing wind flow sector   2

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector   5

    ********   WARNING MESSAGES   ********
```

```
               ***  NONE  ***

**************************************************
Processing wind flow sector   3

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  10

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   4

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  15

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   5

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  20

    ********   WARNING MESSAGES   ********
               ***  NONE  ***
```

```
**************************************************

Processing wind flow sector   6

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  25

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************

Processing wind flow sector   7

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  30

    ********   WARNING MESSAGES   ********
               ***  NONE  ***
 ****************************************

  Running AERMOD
 Processing Summer

Processing surface roughness sector  1

**************************************************

Processing wind flow sector   1
```

```
 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector   0

    ********   WARNING MESSAGES   ********

               ***  NONE  ***

**************************************************

Processing wind flow sector   2

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector   5

    ********   WARNING MESSAGES   ********

               ***  NONE  ***

**************************************************

Processing wind flow sector   3

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  10

    ********   WARNING MESSAGES   ********

               ***  NONE  ***

**************************************************

Processing wind flow sector   4
```

```
 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  15

    ********   WARNING MESSAGES   ********

               ***  NONE  ***

**************************************************
Processing wind flow sector   5

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  20

    ********   WARNING MESSAGES   ********

               ***  NONE  ***

**************************************************
Processing wind flow sector   6

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  25

    ********   WARNING MESSAGES   ********

               ***  NONE  ***

**************************************************
Processing wind flow sector   7

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  30
```

```
    ********   WARNING MESSAGES   ********

               ***  NONE  ***

 ******************************************


  Running AERMOD

 Processing Autumn


Processing surface roughness sector  1


*************************************************

Processing wind flow sector   1


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector   0


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*************************************************

Processing wind flow sector   2


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector   5


    ********   WARNING MESSAGES   ********

               ***  NONE  ***
```

```
**************************************************
Processing wind flow sector   3

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  10

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   4

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  15

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   5

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  20

    ********   WARNING MESSAGES   ********
               ***  NONE  ***
```

```
**************************************************
Processing wind flow sector   6

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  25

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   7

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  30

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

FLOWSECTOR   ended 05/23/22 11:44:47

REFINE       started 05/23/22 11:44:47

 AERMOD Finishes Successfully for REFINE stage 3 Winter sector   0

    ********   WARNING MESSAGES   ********
               ***  NONE  ***
```

```
REFINE       ended 05/23/22 11:44:48


 *********************************************
 AERSCREEN Finished Successfully
 With no errors or warnings
 Check log file for details
 *********************************************


 Ending date and time  05/23/22 11:44:50
```

```
 Concentration     Distance Elevation  Diag  Season/Month   Zo sector       Date
  H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS     HT
REF TA     HT
   0.12543E+01         1.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.13061E+01        25.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.13585E+01        50.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.14073E+01        75.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.14526E+01       100.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.14949E+01       125.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.15343E+01       150.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.15712E+01       175.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.16059E+01       200.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.16392E+01       225.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
*  0.16405E+01       226.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.16117E+01       250.00      0.00  25.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.12176E+01       275.00      0.00  25.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.10295E+01       300.00      0.00  20.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.91615E+00       325.00      0.00  20.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.83366E+00       350.00      0.00  20.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
```

```
 310.0    2.0
   0.76507E+00       375.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.71432E+00       400.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.66953E+00       425.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.62912E+00       450.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.59299E+00       475.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.56006E+00       500.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.53007E+00       525.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.50285E+00       550.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.47799E+00       575.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.45478E+00       600.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.43371E+00       625.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.41413E+00       650.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.39619E+00       675.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.37914E+00       700.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.36353E+00       725.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.34902E+00       750.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.33538E+00       775.00      0.00   0.0        Winter       0-360   10011001
```

-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.32271E+00       800.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.31080E+00       825.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.29947E+00       850.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.28891E+00       875.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.27905E+00       900.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.26981E+00       925.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.26094E+00       950.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.25255E+00       975.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.24462E+00      1000.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.23716E+00      1025.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.23012E+00      1050.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.22331E+00      1075.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.21686E+00      1100.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.21076E+00      1125.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.20497E+00      1150.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.19948E+00      1175.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0

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   0.19423E+00      1200.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.18917E+00      1225.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.18428E+00      1250.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.17961E+00      1275.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.17516E+00      1300.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.17091E+00      1325.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.16684E+00      1350.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.16295E+00      1375.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.15923E+00      1400.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.15566E+00      1425.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.15223E+00      1450.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.14888E+00      1475.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.14566E+00      1500.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.14255E+00      1525.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.13954E+00      1550.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.13665E+00      1575.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.13386E+00      1600.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
```

```
 310.0    2.0
   0.13117E+00      1625.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.12858E+00      1650.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.12609E+00      1675.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.12368E+00      1700.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.12135E+00      1725.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.11910E+00      1750.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.11692E+00      1775.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.11478E+00      1800.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.11270E+00      1825.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.11070E+00      1850.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.10876E+00      1875.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.10688E+00      1900.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.10505E+00      1925.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.10329E+00      1950.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.10157E+00      1975.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.99907E-01      2000.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.98276E-01      2025.00      0.00   0.0        Winter       0-360   10011001
```

-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.96691E-01      2050.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.95151E-01      2075.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.93655E-01      2100.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.92200E-01      2125.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.90786E-01      2150.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.89410E-01      2175.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.88070E-01      2200.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.86766E-01      2225.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.85497E-01      2250.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.84251E-01      2275.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.83030E-01      2300.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.81841E-01      2325.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.80681E-01      2350.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.79550E-01      2375.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.78447E-01      2400.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.77371E-01      2425.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0

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   0.76321E-01      2450.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.75296E-01      2475.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.74295E-01      2500.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.73318E-01      2525.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.72363E-01      2550.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.71430E-01      2575.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.70519E-01      2600.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.69628E-01      2625.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.68757E-01      2650.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.67905E-01      2675.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.67071E-01      2700.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.66256E-01      2725.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.65458E-01      2750.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.64677E-01      2775.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.63913E-01      2800.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.63158E-01      2825.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.62418E-01      2850.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
```

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 310.0    2.0
   0.61693E-01      2875.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.60983E-01      2900.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.60287E-01      2925.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.59605E-01      2950.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.58937E-01      2975.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.58282E-01      3000.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.57639E-01      3025.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.57009E-01      3050.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.56388E-01      3075.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.55774E-01      3100.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.55173E-01      3125.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.54582E-01      3150.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.54003E-01      3175.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.53434E-01      3200.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.52876E-01      3225.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.52328E-01      3250.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.51790E-01      3275.00      0.00   0.0        Winter       0-360   10011001
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-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.51262E-01      3300.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.50743E-01      3325.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.50233E-01      3350.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.49732E-01      3375.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.49240E-01      3400.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.48757E-01      3425.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.48285E-01      3450.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.47819E-01      3475.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.47360E-01      3500.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.46908E-01      3525.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.46464E-01      3550.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.46027E-01      3575.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.45597E-01      3600.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.45175E-01      3625.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.44758E-01      3650.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.44348E-01      3675.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
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   0.43944E-01      3700.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.43547E-01      3725.01      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.43156E-01      3750.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.42771E-01      3775.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.42393E-01      3800.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.42021E-01      3825.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.41655E-01      3850.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.41294E-01      3875.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.40939E-01      3900.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.40589E-01      3925.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.40244E-01      3950.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.39904E-01      3975.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.39569E-01      4000.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.39240E-01      4025.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.38915E-01      4050.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.38595E-01      4075.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.38279E-01      4100.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
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 310.0    2.0
   0.37968E-01      4125.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.37661E-01      4150.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.37930E-01      4175.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.37622E-01      4200.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.37318E-01      4225.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.37018E-01      4250.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.36722E-01      4275.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.36430E-01      4300.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.36142E-01      4325.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.35859E-01      4350.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.35579E-01      4375.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.35302E-01      4400.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.35030E-01      4425.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.34761E-01      4450.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.34496E-01      4475.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.34234E-01      4500.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.33975E-01      4525.00      0.00   0.0        Winter       0-360   10011001
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-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.33720E-01      4550.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.33468E-01      4575.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.33220E-01      4600.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.32975E-01      4625.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.32732E-01      4650.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.32493E-01      4675.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.32257E-01      4700.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.32024E-01      4725.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.31793E-01      4750.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.31566E-01      4775.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.31341E-01      4800.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.31119E-01      4825.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.30900E-01      4850.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.30684E-01      4875.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.30470E-01      4900.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.30258E-01      4925.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
```

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   0.30050E-01      4950.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.29843E-01      4975.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.29639E-01      5000.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
```

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

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mhagemann@swape.com

## Matthew F. Hagemann, P.G., C.Hg., QSD, QSP

**Geologic and Hydrogeologic Characterization**
**Investigation and Remediation Strategies**
**Litigation Support and Testifying Expert**
**Industrial Stormwater Compliance**
**CEQA Review**

**Education:**

M.S. Degree, Geology, California State University Los Angeles, Los Angeles, CA, 1984.
B.A. Degree, Geology, Humboldt State University, Arcata, CA, 1982.

**Professional Certifications:**

California Professional Geologist
California Certified Hydrogeologist
Qualified SWPPP Developer and Practitioner

**Professional Experience:**

Matt has 30 years of experience in environmental policy, contaminant assessment and remediation, stormwater compliance, and CEQA review. He spent nine years with the U.S. EPA in the RCRA and Superfund programs and served as EPA's Senior Science Policy Advisor in the Western Regional Office where he identified emerging threats to groundwater from perchlorate and MTBE. While with EPA, Matt also served as a Senior Hydrogeologist in the oversight of the assessment of seven major military facilities undergoing base closure. He led numerous enforcement actions under provisions of the Resource Conservation and Recovery Act (RCRA) and directed efforts to improve hydrogeologic characterization and water quality monitoring. For the past 15 years, as a founding partner with SWAPE, Matt has developed extensive client relationships and has managed complex projects that include consultation as an expert witness and a regulatory specialist, and a manager of projects ranging from industrial stormwater compliance to CEQA review of impacts from hazardous waste, air quality and greenhouse gas emissions.

Positions Matt has held include:

- Founding Partner, Soil/Water/Air Protection Enterprise (SWAPE) (2003 – present);
- Geology Instructor, Golden West College, 2010 – 2104, 2017;
- Senior Environmental Analyst, Komex H2O Science, Inc. (2000 -- 2003);

- Executive Director, Orange Coast Watch (2001 – 2004);
- Senior Science Policy Advisor and Hydrogeologist, U.S. Environmental Protection Agency (1989–1998);
- Hydrogeologist, National Park Service, Water Resources Division (1998 – 2000);
- Adjunct Faculty Member, San Francisco State University, Department of Geosciences (1993 – 1998);
- Instructor, College of Marin, Department of Science (1990 – 1995);
- Geologist, U.S. Forest Service (1986 – 1998); and
- Geologist, Dames & Moore (1984 – 1986).

**Senior Regulatory and Litigation Support Analyst:**

With SWAPE, Matt's responsibilities have included:

- Lead analyst and testifying expert in the review of over 300 environmental impact reports and negative declarations since 2003 under CEQA that identify significant issues with regard to hazardous waste, water resources, water quality, air quality, greenhouse gas emissions, and geologic hazards. Make recommendations for additional mitigation measures to lead agencies at the local and county level to include additional characterization of health risks and implementation of protective measures to reduce worker exposure to hazards from toxins and Valley Fever.
- Stormwater analysis, sampling and best management practice evaluation at more than 100 industrial facilities.
- Expert witness on numerous cases including, for example, perfluorooctanoic acid (PFOA) contamination of groundwater, MTBE litigation, air toxins at hazards at a school, CERCLA compliance in assessment and remediation, and industrial stormwater contamination.
- Technical assistance and litigation support for vapor intrusion concerns.
- Lead analyst and testifying expert in the review of environmental issues in license applications for large solar power plants before the California Energy Commission.
- Manager of a project to evaluate numerous formerly used military sites in the western U.S.
- Manager of a comprehensive evaluation of potential sources of perchlorate contamination in Southern California drinking water wells.
- Manager and designated expert for litigation support under provisions of Proposition 65 in the review of releases of gasoline to sources drinking water at major refineries and hundreds of gas stations throughout California.

With Komex H2O Science Inc., Matt's duties included the following:

- Senior author of a report on the extent of perchlorate contamination that was used in testimony by the former U.S. EPA Administrator and General Counsel.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of MTBE use, research, and regulation.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of perchlorate use, research, and regulation.
- Senior researcher in a study that estimates nationwide costs for MTBE remediation and drinking water treatment, results of which were published in newspapers nationwide and in testimony against provisions of an energy bill that would limit liability for oil companies.
- Research to support litigation to restore drinking water supplies that have been contaminated by MTBE in California and New York.

- Expert witness testimony in a case of oil production-related contamination in Mississippi.
- Lead author for a multi-volume remedial investigation report for an operating school in Los Angeles that met strict regulatory requirements and rigorous deadlines.
- Development of strategic approaches for cleanup of contaminated sites in consultation with clients and regulators.

**Executive Director:**

As Executive Director with Orange Coast Watch, Matt led efforts to restore water quality at Orange County beaches from multiple sources of contamination including urban runoff and the discharge of wastewater. In reporting to a Board of Directors that included representatives from leading Orange County universities and businesses, Matt prepared issue papers in the areas of treatment and disinfection of wastewater and control of the discharge of grease to sewer systems. Matt actively participated in the development of countywide water quality permits for the control of urban runoff and permits for the discharge of wastewater. Matt worked with other nonprofits to protect and restore water quality, including Surfrider, Natural Resources Defense Council and Orange County CoastKeeper as well as with business institutions including the Orange County Business Council.

**Hydrogeology:**

As a Senior Hydrogeologist with the U.S. Environmental Protection Agency, Matt led investigations to characterize and cleanup closing military bases, including Mare Island Naval Shipyard, Hunters Point Naval Shipyard, Treasure Island Naval Station, Alameda Naval Station, Moffett Field, Mather Army Airfield, and Sacramento Army Depot. Specific activities were as follows:

- Led efforts to model groundwater flow and contaminant transport, ensured adequacy of monitoring networks, and assessed cleanup alternatives for contaminated sediment, soil, and groundwater.
- Initiated a regional program for evaluation of groundwater sampling practices and laboratory analysis at military bases.
- Identified emerging issues, wrote technical guidance, and assisted in policy and regulation development through work on four national U.S. EPA workgroups, including the Superfund Groundwater Technical Forum and the Federal Facilities Forum.

At the request of the State of Hawaii, Matt developed a methodology to determine the vulnerability of groundwater to contamination on the islands of Maui and Oahu. He used analytical models and a GIS to show zones of vulnerability, and the results were adopted and published by the State of Hawaii and County of Maui.

As a hydrogeologist with the EPA Groundwater Protection Section, Matt worked with provisions of the Safe Drinking Water Act and NEPA to prevent drinking water contamination. Specific activities included the following:

- Received an EPA Bronze Medal for his contribution to the development of national guidance for the protection of drinking water.
- Managed the Sole Source Aquifer Program and protected the drinking water of two communities through designation under the Safe Drinking Water Act. He prepared geologic reports, conducted

public hearings, and responded to public comments from residents who were very concerned about the impact of designation.

- Reviewed a number of Environmental Impact Statements for planned major developments, including large hazardous and solid waste disposal facilities, mine reclamation, and water transfer.

Matt served as a hydrogeologist with the RCRA Hazardous Waste program. Duties were as follows:

- Supervised the hydrogeologic investigation of hazardous waste sites to determine compliance with Subtitle C requirements.
- Reviewed and wrote "part B" permits for the disposal of hazardous waste.
- Conducted RCRA Corrective Action investigations of waste sites and led inspections that formed the basis for significant enforcement actions that were developed in close coordination with U.S. EPA legal counsel.
- Wrote contract specifications and supervised contractor's investigations of waste sites.

With the National Park Service, Matt directed service-wide investigations of contaminant sources to prevent degradation of water quality, including the following tasks:

- Applied pertinent laws and regulations including CERCLA, RCRA, NEPA, NRDA, and the Clean Water Act to control military, mining, and landfill contaminants.
- Conducted watershed-scale investigations of contaminants at parks, including Yellowstone and Olympic National Park.
- Identified high-levels of perchlorate in soil adjacent to a national park in New Mexico and advised park superintendent on appropriate response actions under CERCLA.
- Served as a Park Service representative on the Interagency Perchlorate Steering Committee, a national workgroup.
- Developed a program to conduct environmental compliance audits of all National Parks while serving on a national workgroup.
- Co-authored two papers on the potential for water contamination from the operation of personal watercraft and snowmobiles, these papers serving as the basis for the development of nation-wide policy on the use of these vehicles in National Parks.
- Contributed to the Federal Multi-Agency Source Water Agreement under the Clean Water Action Plan.

**Policy:**

Served senior management as the Senior Science Policy Advisor with the U.S. Environmental Protection Agency, Region 9.

Activities included the following:

- Advised the Regional Administrator and senior management on emerging issues such as the potential for the gasoline additive MTBE and ammonium perchlorate to contaminate drinking water supplies.
- Shaped EPA's national response to these threats by serving on workgroups and by contributing to guidance, including the Office of Research and Development publication, Oxygenates in Water: Critical Information and Research Needs.
- Improved the technical training of EPA's scientific and engineering staff.
- Earned an EPA Bronze Medal for representing the region's 300 scientists and engineers in negotiations with the Administrator and senior management to better integrate scientific

principles into the policy-making process.
- Established national protocol for the peer review of scientific documents.

**Geology:**

With the U.S. Forest Service, Matt led investigations to determine hillslope stability of areas proposed for timber harvest in the central Oregon Coast Range. Specific activities were as follows:

- Mapped geology in the field, and used aerial photographic interpretation and mathematical models to determine slope stability.
- Coordinated his research with community members who were concerned with natural resource protection.
- Characterized the geology of an aquifer that serves as the sole source of drinking water for the city of Medford, Oregon.

As a consultant with Dames and Moore, Matt led geologic investigations of two contaminated sites (later listed on the Superfund NPL) in the Portland, Oregon, area and a large hazardous waste site in eastern Oregon. Duties included the following:

- Supervised year-long effort for soil and groundwater sampling.
- Conducted aquifer tests.
- Investigated active faults beneath sites proposed for hazardous waste disposal.

**Teaching:**

From 1990 to 1998, Matt taught at least one course per semester at the community college and university levels:

- At San Francisco State University, held an adjunct faculty position and taught courses in environmental geology, oceanography (lab and lecture), hydrogeology, and groundwater contamination.
- Served as a committee member for graduate and undergraduate students.
- Taught courses in environmental geology and oceanography at the College of Marin.

Matt is currently a part time geology instructor at Golden West College in Huntington Beach, California where he taught from 2010 to 2014 and in 2017.

**Invited Testimony, Reports, Papers and Presentations:**

**Hagemann, M.F**., 2008. Disclosure of Hazardous Waste Issues under CEQA. Presentation to the Public Environmental Law Conference, Eugene, Oregon.

**Hagemann, M.F**., 2008. Disclosure of Hazardous Waste Issues under CEQA. Invited presentation to U.S. EPA Region 9, San Francisco, California.

**Hagemann, M.F.,** 2005. Use of Electronic Databases in Environmental Regulation, Policy Making and Public Participation. Brownfields 2005, Denver, Coloradao.

**Hagemann, M.F.,** 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Nevada and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Las Vegas, NV (served on conference organizing committee).

**Hagemann, M.F.**, 2004. Invited testimony to a California Senate committee hearing on air toxins at schools in Southern California, Los Angeles.

Brown, A., Farrow, J., Gray, A. and **Hagemann, M.**, 2004. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to the Ground Water and Environmental Law Conference, National Groundwater Association.

**Hagemann, M.F.,** 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Arizona and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Phoenix, AZ (served on conference organizing committee).

**Hagemann, M.F.,** 2003. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in the Southwestern U.S. Invited presentation to a special committee meeting of the National Academy of Sciences, Irvine, CA.

**Hagemann, M.F**., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a tribal EPA meeting, Pechanga, CA.

**Hagemann, M.F**., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a meeting of tribal repesentatives, Parker, AZ.

**Hagemann, M.F**., 2003. Impact of Perchlorate on the Colorado River and Associated Drinking Water Supplies. Invited presentation to the Inter-Tribal Meeting, Torres Martinez Tribe.

**Hagemann, M.F**., 2003. The Emergence of Perchlorate as a Widespread Drinking Water Contaminant. Invited presentation to the U.S. EPA Region 9.

**Hagemann, M.F**., 2003. A Deductive Approach to the Assessment of Perchlorate Contamination. Invited presentation to the California Assembly Natural Resources Committee.

**Hagemann, M.F**., 2003. Perchlorate: A Cold War Legacy in Drinking Water. Presentation to a meeting of the National Groundwater Association.

**Hagemann, M.F**., 2002. From Tank to Tap: A Chronology of MTBE in Groundwater. Presentation to a meeting of the National Groundwater Association.

**Hagemann, M.F**., 2002. A Chronology of MTBE in Groundwater and an Estimate of Costs to Address Impacts to Groundwater. Presentation to the annual meeting of the Society of Environmental Journalists.

**Hagemann, M.F**., 2002. An Estimate of the Cost to Address MTBE Contamination in Groundwater (and Who Will Pay). Presentation to a meeting of the National Groundwater Association.

**Hagemann, M.F**., 2002. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to a meeting of the U.S. EPA and State Underground Storage Tank Program managers.

**Hagemann, M.F**., 2001. From Tank to Tap: A Chronology of MTBE in Groundwater. Unpublished report.

**Hagemann, M.F**., 2001. Estimated Cleanup Cost for MTBE in Groundwater Used as Drinking Water. Unpublished report.

**Hagemann, M.F**., 2001. Estimated Costs to Address MTBE Releases from Leaking Underground Storage Tanks. Unpublished report.

**Hagemann, M.F**., and VanMouwerik, M., 1999. Potential Water Quality Concerns Related to Snowmobile Usage. Water Resources Division, National Park Service, Technical Report.

VanMouwerik, M. and **Hagemann, M.F**. 1999, Water Quality Concerns Related to Personal Watercraft Usage. Water Resources Division, National Park Service, Technical Report.

**Hagemann, M.F**., 1999, Is Dilution the Solution to Pollution in National Parks? The George Wright Society Biannual Meeting, Asheville, North Carolina.

**Hagemann, M.F**., 1997, The Potential for MTBE to Contaminate Groundwater. U.S. EPA Superfund Groundwater Technical Forum Annual Meeting, Las Vegas, Nevada.

**Hagemann, M.F**., and Gill, M., 1996, Impediments to Intrinsic Remediation, Moffett Field Naval Air Station, Conference on Intrinsic Remediation of Chlorinated Hydrocarbons, Salt Lake City.

**Hagemann, M.F**., Fukunaga, G.L., 1996, The Vulnerability of Groundwater to Anthropogenic Contaminants on the Island of Maui, Hawaii. Hawaii Water Works Association Annual Meeting, Maui, October 1996.

**Hagemann, M. F**., Fukanaga, G. L., 1996, Ranking Groundwater Vulnerability in Central Oahu, Hawaii. Proceedings, Geographic Information Systems in Environmental Resources Management, Air and Waste Management Association Publication VIP-61.

**Hagemann, M.F**., 1994. Groundwater Characterization and Cleanup at Closing Military Bases in California. Proceedings, California Groundwater Resources Association Meeting.

**Hagemann, M.**F. and Sabol, M.A., 1993. Role of the U.S. EPA in the High Plains States Groundwater Recharge Demonstration Program. Proceedings, Sixth Biennial Symposium on the Artificial Recharge of Groundwater.

**Hagemann, M.F**., 1993. U.S. EPA Policy on the Technical Impracticability of the Cleanup of DNAPL-contaminated Groundwater. California Groundwater Resources Association Meeting.

**Hagemann, M.F**., 1992. Dense Nonaqueous Phase Liquid Contamination of Groundwater: An Ounce of Prevention... Proceedings, Association of Engineering Geologists Annual Meeting, v. 35.

**Other Experience:**

Selected as subject matter expert for the California Professional Geologist licensing examinations, 2009-2011.

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

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# *Paul Rosenfeld, Ph.D.*

**Chemical Fate and Transport & Air Dispersion Modeling**

*Principal Environmental Chemist*

**Risk Assessment & Remediation Specialist**

## Education

Ph.D. Soil Chemistry, University of Washington, 1999. Dissertation on volatile organic compound filtration.

M.S. Environmental Science, U.C. Berkeley, 1995. Thesis on organic waste economics.

B.A. Environmental Studies, U.C. Santa Barbara, 1991. Thesis on wastewater treatment.

## Professional Experience

Dr. Rosenfeld has over 25 years' experience conducting environmental investigations and risk assessments for evaluating impacts to human health, property, and ecological receptors. His expertise focuses on the fate and transport of environmental contaminants, human health risk, exposure assessment, and ecological restoration. Dr. Rosenfeld has evaluated and modeled emissions from oil spills, landfills, boilers and incinerators, process stacks, storage tanks, confined animal feeding operations, industrial, military and agricultural sources, unconventional oil drilling operations, and locomotive and construction engines. His project experience ranges from monitoring and modeling of pollution sources to evaluating impacts of pollution on workers at industrial facilities and residents in surrounding communities. Dr. Rosenfeld has also successfully modeled exposure to contaminants distributed by water systems and via vapor intrusion.

Dr. Rosenfeld has investigated and designed remediation programs and risk assessments for contaminated sites containing lead, heavy metals, mold, bacteria, particulate matter, petroleum hydrocarbons, chlorinated solvents, pesticides, radioactive waste, dioxins and furans, semi- and volatile organic compounds, PCBs, PAHs, creosote, perchlorate, asbestos, per- and poly-fluoroalkyl substances (PFOA/PFOS), unusual polymers, fuel oxygenates (MTBE), among other pollutants. Dr. Rosenfeld also has experience evaluating greenhouse gas emissions from various projects and is an expert on the assessment of odors from industrial and agricultural sites, as well as the evaluation of odor nuisance impacts and technologies for abatement of odorous emissions. As a principal scientist at SWAPE, Dr. Rosenfeld directs air dispersion modeling and exposure assessments. He has served as an expert witness and testified about pollution sources causing nuisance and/or personal injury at sites and has testified as an expert witness on numerous cases involving exposure to soil, water and air contaminants from industrial, railroad, agricultural, and military sources.

## Professional History:

Soil Water Air Protection Enterprise (SWAPE); 2003 to present; Principal and Founding Partner
UCLA School of Public Health; 2007 to 2011; Lecturer (Assistant Researcher)
UCLA School of Public Health; 2003 to 2006; Adjunct Professor
UCLA Environmental Science and Engineering Program; 2002-2004; Doctoral Intern Coordinator
UCLA Institute of the Environment, 2001-2002; Research Associate
Komex $H_2O$ Science, 2001 to 2003; Senior Remediation Scientist
National Groundwater Association, 2002-2004; Lecturer
San Diego State University, 1999-2001; Adjunct Professor
Anteon Corp., San Diego, 2000-2001; Remediation Project Manager
Ogden (now Amec), San Diego, 2000-2000; Remediation Project Manager
Bechtel, San Diego, California, 1999 – 2000; Risk Assessor
King County, Seattle, 1996 – 1999; Scientist
James River Corp., Washington, 1995-96; Scientist
Big Creek Lumber, Davenport, California, 1995; Scientist
Plumas Corp., California and USFS, Tahoe 1993-1995; Scientist
Peace Corps and World Wildlife Fund, St. Kitts, West Indies, 1991-1993; Scientist

## Publications:

Remy, L.L., Clay T., Byers, V., **Rosenfeld P. E.** (2019) Hospital, Health, and Community Burden After Oil Refinery Fires, Richmond, California 2007 and 2012. *Environmental Health.* 18:48

Simons, R.A., Seo, Y. **Rosenfeld, P**., (2015) Modeling the Effect of Refinery Emission On Residential Property Value. Journal of Real Estate Research. 27(3):321-342

Chen, J. A, Zapata A. R., Sutherland A. J., Molmen, D.R., Chow, B. S., Wu, L. E., **Rosenfeld, P. E.,** Hesse, R. C., (2012) Sulfur Dioxide and Volatile Organic Compound Exposure To A Community In Texas City Texas Evaluated Using Aermod and Empirical Data. *American Journal of Environmental Science*, 8(6), 622-632.

**Rosenfeld, P.E**. & Feng, L. (2011). *The Risks of Hazardous Waste.* Amsterdam: Elsevier Publishing.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2011). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Agrochemical Industry*, Amsterdam: Elsevier Publishing.

Gonzalez, J., Feng, L., Sutherland, A., Waller, C., Sok, H., Hesse, R., **Rosenfeld, P.** (2010). PCBs and Dioxins/Furans in Attic Dust Collected Near Former PCB Production and Secondary Copper Facilities in Sauget, IL. *Procedia Environmental Sciences*. 113–125.

Feng, L., Wu, C., Tam, L., Sutherland, A.J., Clark, J.J., **Rosenfeld, P.E.** (2010). Dioxin and Furan Blood Lipid and Attic Dust Concentrations in Populations Living Near Four Wood Treatment Facilities in the United States. *Journal of Environmental Health*. 73(6), 34-46.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2010). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Wood and Paper Industries.* Amsterdam: Elsevier Publishing.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2009). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Petroleum Industry*. Amsterdam: Elsevier Publishing.

Wu, C., Tam, L., Clark, J., **Rosenfeld, P**. (2009). Dioxin and furan blood lipid concentrations in populations living near four wood treatment facilities in the United States. *WIT Transactions on Ecology and the Environment, Air Pollution,* 123 (17), 319-327.

Tam L. K.., Wu C. D., Clark J. J. and **Rosenfeld, P.E.** (2008). A Statistical Analysis Of Attic Dust And Blood Lipid Concentrations Of Tetrachloro-p-Dibenzodioxin (TCDD) Toxicity Equivalency Quotients (TEQ) In Two Populations Near Wood Treatment Facilities. *Organohalogen Compounds*, 70, 002252-002255.

Tam L. K.., Wu C. D., Clark J. J. and **Rosenfeld, P.E.** (2008). Methods For Collect Samples For Assessing Dioxins And Other Environmental Contaminants In Attic Dust: A Review. *Organohalogen Compounds*, 70, 000527-000530.

Hensley, A.R. A. Scott, J. J. J. Clark, **Rosenfeld, P.E.** (2007). Attic Dust and Human Blood Samples Collected near a Former Wood Treatment Facility. *Environmental Research*. 105, 194-197.

**Rosenfeld, P.E.,** J. J. J. Clark, A. R. Hensley, M. Suffet. (2007). The Use of an Odor Wheel Classification for Evaluation of Human Health Risk Criteria for Compost Facilities. *Water Science & Technology* 55(5), 345-357.

**Rosenfeld, P. E.,** M. Suffet. (2007). The Anatomy Of Odour Wheels For Odours Of Drinking Water, Wastewater, Compost And The Urban Environment. *Water Science & Technology* 55(5), 335-344.

Sullivan, P. J. Clark, J.J.J., Agardy, F. J., **Rosenfeld, P.E.** (2007). *Toxic Legacy, Synthetic Toxins in the Food, Water, and Air in American Cities.* Boston Massachusetts: Elsevier Publishing

**Rosenfeld, P.E.,** and Suffet I.H. (2004). Control of Compost Odor Using High Carbon Wood Ash. *Water Science and Technology*. 49(9),171-178.

**Rosenfeld P. E.,** J.J. Clark, I.H. (Mel) Suffet (2004). The Value of An Odor-Quality-Wheel Classification Scheme For The Urban Environment. *Water Environment Federation's Technical Exhibition and Conference (WEFTEC) 2004.* New Orleans, October 2-6, 2004.

**Rosenfeld, P.E.,** and Suffet, I.H. (2004). Understanding Odorants Associated With Compost, Biomass Facilities, and the Land Application of Biosolids. *Water Science and Technology*. 49(9), 193-199.

**Rosenfeld, P.E.,** and Suffet I.H. (2004). Control of Compost Odor Using High Carbon Wood Ash, *Water Science and Technology*, 49( 9), 171-178.

**Rosenfeld, P. E**., Grey, M. A., Sellew, P. (2004). Measurement of Biosolids Odor and Odorant Emissions from Windrows, Static Pile and Biofilter. *Water Environment Research*. 76(4), 310-315.

**Rosenfeld, P.E.,** Grey, M and Suffet, M. (2002). Compost Demonstration Project, Sacramento California Using High-Carbon Wood Ash to Control Odor at a Green Materials Composting Facility. *Integrated Waste Management Board Public Affairs Office*, Publications Clearinghouse (MS–6), Sacramento, CA Publication #442-02-008.

**Rosenfeld, P.E**., and C.L. Henry. (2001). Characterization of odor emissions from three different biosolids. *Water Soil and Air Pollution*. 127(1-4), 173-191.

**Rosenfeld, P.E.,** and Henry C. L., (2000). Wood ash control of odor emissions from biosolids application. *Journal of Environmental Quality.* 29, 1662-1668.

**Rosenfeld, P.E.,** C.L. Henry and D. Bennett. (2001). Wastewater dewatering polymer affect on biosolids odor emissions and microbial activity. *Water Environment Research*. 73(4), 363-367.

**Rosenfeld, P.E.,** and C.L. Henry. (2001). Activated Carbon and Wood Ash Sorption of Wastewater, Compost, and Biosolids Odorants. *Water Environment Research*, 73, 388-393.

**Rosenfeld, P.E.,** and Henry C. L., (2001). High carbon wood ash effect on biosolids microbial activity and odor. *Water Environment Research*. 131(1-4), 247-262.

Chollack, T. and **P. Rosenfeld. (**1998). Compost Amendment Handbook For Landscaping. Prepared for and distributed by the City of Redmond, Washington State.

**Rosenfeld, P. E.** (1992). The Mount Liamuiga Crater Trail. *Heritage Magazine of St. Kitts*, 3(2).

**Rosenfeld, P. E.** (1993). High School Biogas Project to Prevent Deforestation On St. Kitts. *Biomass Users Network*, 7(1).

**Rosenfeld, P. E. (**1998). Characterization, Quantification, and Control of Odor Emissions From Biosolids Application To Forest Soil. Doctoral Thesis. University of Washington College of Forest Resources.

**Rosenfeld, P. E.** (1994). Potential Utilization of Small Diameter Trees on Sierra County Public Land. Masters thesis reprinted by the Sierra County Economic Council. Sierra County, California.

**Rosenfeld, P. E. (**1991). How to Build a Small Rural Anaerobic Digester & Uses Of Biogas In The First And Third World. Bachelors Thesis. University of California.

## Presentations:

**Rosenfeld, P.E**., "The science for Perfluorinated Chemicals (PFAS): What makes remediation so hard?" Law Seminars International, (May 9-10, 2018) 800 Fifth Avenue, Suite 101 Seattle, WA.

**Rosenfeld, P.E.,** Sutherland, A; Hesse, R.; Zapata, A. (October 3-6, 2013). Air dispersion modeling of volatile organic emissions from multiple natural gas wells in Decatur, TX. *44th Western Regional Meeting, American Chemical Society.* Lecture conducted from Santa Clara, CA.

Sok, H.L.; Waller, C.C.; Feng, L.; Gonzalez, J.; Sutherland, A.J.; Wisdom-Stack, T.; Sahai, R.K.; Hesse, R.C.; **Rosenfeld, P.E.** (June 20-23, 2010). Atrazine: A Persistent Pesticide in Urban Drinking Water. *Urban Environmental Pollution*. Lecture conducted from Boston, MA.

Feng, L.; Gonzalez, J.; Sok, H.L.; Sutherland, A.J.; Waller, C.C.; Wisdom-Stack, T.; Sahai, R.K.; La, M.; Hesse, R.C.; **Rosenfeld, P.E.** (June 20-23, 2010). Bringing Environmental Justice to East St. Louis, Illinois. *Urban Environmental Pollution.* Lecture conducted from Boston, MA.

**Rosenfeld, P.E**. (April 19-23, 2009). Perfluoroctanoic Acid (PFOA) and Perfluoroactane Sulfonate (PFOS) Contamination in Drinking Water From the Use of Aqueous Film Forming Foams (AFFF) at Airports in the United States. *2009 Ground Water Summit and 2009 Ground Water Protection Council Spring Meeting*, Lecture conducted from Tuscon, AZ.

**Rosenfeld, P.E.** (April 19-23, 2009). Cost to Filter Atrazine Contamination from Drinking Water in the United States" Contamination in Drinking Water From the Use of Aqueous Film Forming Foams (AFFF) at Airports in the United States. *2009 Ground Water Summit and 2009 Ground Water Protection Council Spring Meeting*. Lecture conducted from Tuscon, AZ.

Wu, C., Tam, L., Clark, J., **Rosenfeld, P**. (20-22 July, 2009). Dioxin and furan blood lipid concentrations in populations living near four wood treatment facilities in the United States. Brebbia, C.A. and Popov, V., eds., *Air Pollution XVII: Proceedings of the Seventeenth International Conference on Modeling, Monitoring and Management of Air Pollution*. Lecture conducted from Tallinn, Estonia.

**Rosenfeld, P. E.** (October 15-18, 2007). Moss Point Community Exposure To Contaminants From A Releasing Facility. *The 23rd Annual International Conferences on Soils Sediment and Water.* Platform lecture conducted from University of Massachusetts, Amherst MA.

**Rosenfeld, P. E.** (October 15-18, 2007). The Repeated Trespass of Tritium-Contaminated Water Into A Surrounding Community Form Repeated Waste Spills From A Nuclear Power Plant. *The 23rd Annual International*

*Conferences on Soils Sediment and Water*. Platform lecture conducted from University of Massachusetts, Amherst MA.

**Rosenfeld, P. E.** (October 15-18, 2007). Somerville Community Exposure To Contaminants From Wood Treatment Facility Emissions. The *23rd Annual International Conferences on Soils Sediment and Water*. Lecture conducted from University of Massachusetts, Amherst MA.

**Rosenfeld P. E.** (March 2007). Production, Chemical Properties, Toxicology, & Treatment Case Studies of 1,2,3-Trichloropropane (TCP). *The Association for Environmental Health and Sciences (AEHS) Annual Meeting*. Lecture conducted from San Diego, CA.

**Rosenfeld P. E.** (March 2007). Blood and Attic Sampling for Dioxin/Furan, PAH, and Metal Exposure in Florala, Alabama. *The AEHS Annual Meeting.* Lecture conducted from San Diego, CA.

Hensley A.R., Scott, A., **Rosenfeld P.E.,** Clark, J.J.J. (August 21 – 25, 2006). Dioxin Containing Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility. *The 26th International Symposium on Halogenated Persistent Organic Pollutants – DIOXIN2006*. Lecture conducted from Radisson SAS Scandinavia Hotel in Oslo Norway.

Hensley A.R., Scott, A., **Rosenfeld P.E.,** Clark, J.J.J. (November 4-8, 2006). Dioxin Containing Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility. *APHA 134 Annual Meeting & Exposition.* Lecture conducted from Boston Massachusetts.

**Paul Rosenfeld Ph.D**. (October 24-25, 2005). Fate, Transport and Persistence of PFOA and Related Chemicals. Mealey's C8/PFOA. *Science, Risk & Litigation Conference.* Lecture conducted from The Rittenhouse Hotel, Philadelphia, PA.

**Paul Rosenfeld Ph.D**. (September 19, 2005). Brominated Flame Retardants in Groundwater: Pathways to Human Ingestion, *Toxicology and Remediation PEMA Emerging Contaminant Conference*. Lecture conducted from Hilton Hotel, Irvine California.

**Paul Rosenfeld Ph.D**. (September 19, 2005). Fate, Transport, Toxicity, And Persistence of 1,2,3-TCP. *PEMA Emerging Contaminant Conference.* Lecture conducted from Hilton Hotel in Irvine, California.

**Paul Rosenfeld Ph.D**. (September 26-27, 2005). Fate, Transport and Persistence of PDBEs. *Mealey's Groundwater Conference.* Lecture conducted from Ritz Carlton Hotel, Marina Del Ray, California.

**Paul Rosenfeld Ph.D**. (June 7-8, 2005). Fate, Transport and Persistence of PFOA and Related Chemicals. *International Society of Environmental Forensics: Focus On Emerging Contaminants*. Lecture conducted from Sheraton Oceanfront Hotel, Virginia Beach, Virginia.

**Paul Rosenfeld Ph.D**. (July 21-22, 2005). Fate Transport, Persistence and Toxicology of PFOA and Related Perfluorochemicals. *2005 National Groundwater Association Ground Water And Environmental Law Conference*. Lecture conducted from Wyndham Baltimore Inner Harbor, Baltimore Maryland.

**Paul Rosenfeld Ph.D**. (July 21-22, 2005). Brominated Flame Retardants in Groundwater: Pathways to Human Ingestion, Toxicology and Remediation. *2005 National Groundwater Association Ground Water and Environmental Law Conference.* Lecture conducted from Wyndham Baltimore Inner Harbor, Baltimore Maryland.

**Paul Rosenfeld, Ph.D.** and James Clark Ph.D. and Rob Hesse R.G. (May 5-6, 2004). Tert-butyl Alcohol Liability and Toxicology, A National Problem and Unquantified Liability. *National Groundwater Association. Environmental Law Conference*. Lecture conducted from Congress Plaza Hotel, Chicago Illinois.

**Paul Rosenfeld, Ph.D.** (March 2004). Perchlorate Toxicology. *Meeting of the American Groundwater Trust*. Lecture conducted from Phoenix Arizona.

Hagemann, M.F., **Paul Rosenfeld, Ph.D.** and Rob Hesse (2004). Perchlorate Contamination of the Colorado River. *Meeting of tribal representatives*. Lecture conducted from Parker, AZ.

**Paul Rosenfeld, Ph.D.** (April 7, 2004). A National Damage Assessment Model For PCE and Dry Cleaners. *Drycleaner Symposium. California Ground Water Association*. Lecture conducted from Radison Hotel, Sacramento, California.

**Rosenfeld, P. E**., Grey, M., (June 2003) Two stage biofilter for biosolids composting odor control. *Seventh International In Situ And On Site Bioremediation Symposium Battelle Conference* Orlando, FL.

**Paul Rosenfeld, Ph.D.** and James Clark Ph.D. (February 20-21, 2003) Understanding Historical Use, Chemical Properties, Toxicity and Regulatory Guidance of 1,4 Dioxane. *National Groundwater Association. Southwest Focus Conference. Water Supply and Emerging Contaminants*.. Lecture conducted from Hyatt Regency Phoenix Arizona.

**Paul Rosenfeld, Ph.D.** (February 6-7, 2003). Underground Storage Tank Litigation and Remediation. *California CUPA Forum*. Lecture conducted from Marriott Hotel, Anaheim California.

**Paul Rosenfeld, Ph.D**. (October 23, 2002) Underground Storage Tank Litigation and Remediation. *EPA Underground Storage Tank Roundtable*. Lecture conducted from Sacramento California.

**Rosenfeld, P.E**. and Suffet, M. (October 7- 10, 2002). Understanding Odor from Compost, *Wastewater and Industrial Processes. Sixth Annual Symposium On Off Flavors in the Aquatic Environment. International Water Association*. Lecture conducted from Barcelona Spain.

**Rosenfeld, P.E**. and Suffet, M. (October 7- 10, 2002). Using High Carbon Wood Ash to Control Compost Odor. *Sixth Annual Symposium On Off Flavors in the Aquatic Environment. International Water Association*. Lecture conducted from Barcelona Spain.

**Rosenfeld, P.E.** and Grey, M. A. (September 22-24, 2002). Biocycle Composting For Coastal Sage Restoration. *Northwest Biosolids Management Association*. Lecture conducted from Vancouver Washington..

**Rosenfeld, P.E**. and Grey, M. A. (November 11-14, 2002). Using High-Carbon Wood Ash to Control Odor at a Green Materials Composting Facility. *Soil Science Society Annual Conferenc*e. Lecture conducted from Indianapolis, Maryland.

**Rosenfeld. P.E.** (September 16, 2000). Two stage biofilter for biosolids composting odor control. *Water Environment Federation.* Lecture conducted from Anaheim California.

**Rosenfeld. P.E. (**October 16, 2000). Wood ash and biofilter control of compost odor. *Biofest.* Lecture conducted from Ocean Shores, California.

**Rosenfeld, P.E. (**2000). Bioremediation Using Organic Soil Amendments. *California Resource Recovery Association*. Lecture conducted from Sacramento California.

**Rosenfeld, P.E**., C.L. Henry, R. Harrison. (1998). Oat and Grass Seed Germination and Nitrogen and Sulfur Emissions Following Biosolids Incorporation With High-Carbon Wood-Ash. *Water Environment Federation 12th Annual Residuals and Biosolids Management Conference Proceedings*. Lecture conducted from Bellevue Washington.

**Rosenfeld, P.E.**, and C.L. Henry. (1999). An evaluation of ash incorporation with biosolids for odor reduction. *Soil Science Society of America*. Lecture conducted from Salt Lake City Utah.

**Rosenfeld, P.E.**, C.L. Henry, R. Harrison. (1998). Comparison of Microbial Activity and Odor Emissions from Three Different Biosolids Applied to Forest Soil. *Brown and Caldwell.* Lecture conducted from Seattle Washington.

**Rosenfeld, P.E.**, C.L. Henry. (1998). Characterization, Quantification, and Control of Odor Emissions from Biosolids Application To Forest Soil. *Biofest.* Lecture conducted from Lake Chelan, Washington.

**Rosenfeld, P.E,** C.L. Henry, R. Harrison. (1998). Oat and Grass Seed Germination and Nitrogen and Sulfur Emissions Following Biosolids Incorporation With High-Carbon Wood-Ash. Water Environment Federation 12th Annual Residuals and Biosolids Management Conference Proceedings. Lecture conducted from Bellevue Washington.

**Rosenfeld, P.E.**, C.L. Henry, R. B. Harrison, and R. Dills. (1997). Comparison of Odor Emissions From Three Different Biosolids Applied to Forest Soil. *Soil Science Society of America*. Lecture conducted from Anaheim California.

## Teaching Experience:

UCLA Department of Environmental Health (Summer 2003 through 20010) Taught Environmental Health Science 100 to students, including undergrad, medical doctors, public health professionals and nurses. Course focused on the health effects of environmental contaminants.

National Ground Water Association, Successful Remediation Technologies. Custom Course in Sante Fe, New Mexico. May 21, 2002. Focused on fate and transport of fuel contaminants associated with underground storage tanks.

National Ground Water Association; Successful Remediation Technologies Course in Chicago Illinois. April 1, 2002. Focused on fate and transport of contaminants associated with Superfund and RCRA sites.

California Integrated Waste Management Board, April and May, 2001. Alternative Landfill Caps Seminar in San Diego, Ventura, and San Francisco. Focused on both prescriptive and innovative landfill cover design.

UCLA Department of Environmental Engineering, February 5, 2002. Seminar on Successful Remediation Technologies focusing on Groundwater Remediation.

University Of Washington, Soil Science Program, Teaching Assistant for several courses including: Soil Chemistry, Organic Soil Amendments, and Soil Stability.

U.C. Berkeley, Environmental Science Program Teaching Assistant for Environmental Science 10.

## Academic Grants Awarded:

California Integrated Waste Management Board. $41,000 grant awarded to UCLA Institute of the Environment. Goal: To investigate effect of high carbon wood ash on volatile organic emissions from compost. 2001.

Synagro Technologies, Corona California: $10,000 grant awarded to San Diego State University.
Goal: investigate effect of biosolids for restoration and remediation of degraded coastal sage soils. 2000.

King County, Department of Research and Technology, Washington State. $100,000 grant awarded to University of Washington: Goal: To investigate odor emissions from biosolids application and the effect of polymers and ash on VOC emissions. 1998.

Northwest Biosolids Management Association, Washington State. $20,000 grant awarded to investigate effect of polymers and ash on VOC emissions from biosolids. 1997.

James River Corporation, Oregon: $10,000 grant was awarded to investigate the success of genetically engineered Poplar trees with resistance to round-up. 1996.

United State Forest Service, Tahoe National Forest: $15,000 grant was awarded to investigating fire ecology of the Tahoe National Forest. 1995.

Kellogg Foundation, Washington D.C. $500 grant was awarded to construct a large anaerobic digester on St. Kitts in West Indies. 1993

## Deposition and/or Trial Testimony:

In the Circuit Court Of The Twentieth Judicial Circuit, St Clair County, Illinois
Martha Custer et al., Plaintiff vs. Cerro Flow Products, Inc., Defendants
Case No.: No. 0i9-L-2295
Rosenfeld Deposition, 5-14-2021
Trial, October 8-4-2021

In the Circuit Court of Cook County Illinois
Joseph Rafferty, Plaintiff vs. Consolidated Rail Corporation and National Railroad Passenger Corporation d/b/a AMTRAK,
Case No.: No. 18-L-6845
Rosenfeld Deposition, 6-28-2021

In the United States District Court For the Northern District of Illinois
Theresa Romcoe, Plaintiff vs. Northeast Illinois Regional Commuter Railroad Corporation d/b/a METRA Rail, Defendants
Case No.: No. 17-cv-8517
Rosenfeld Deposition, 5-25-2021

In the Superior Court of the State of Arizona In and For the Cunty of Maricopa
Mary Tryon et al., Plaintiff vs. The City of Pheonix v. Cox Cactus Farm, L.L.C., Utah Shelter Systems, Inc.
Case Number CV20127-094749
Rosenfeld Deposition: 5-7-2021

In the United States District Court for the Eastern District of Texas Beaumont Division
Robinson, Jeremy et al *Plaintiffs*, vs. CNA Insurance Company et al.
Case Number 1:17-cv-000508
Rosenfeld Deposition: 3-25-2021

In the Superior Court of the State of California, County of San Bernardino
Gary Garner, Personal Representative for the Estate of Melvin Garner vs. BNSF Railway Company.
Case No. 1720288
Rosenfeld Deposition 2-23-2021

In the Superior Court of the State of California, County of Los Angeles, Spring Street Courthouse
Benny M Rodriguez vs. Union Pacific Railroad, A Corporation, et al.
Case No. 18STCV01162
Rosenfeld Deposition 12-23-2020

In the Circuit Court of Jackson County, Missouri
Karen Cornwell, *Plaintiff,* vs. Marathon Petroleum, LP, *Defendant.*
Case No.: 1716-CV10006
Rosenfeld Deposition. 8-30-2019

In the United States District Court For The District of New Jersey
Duarte et al, *Plaintiffs,* vs. United States Metals Refining Company et. al. *Defendant.*
Case No.: 2:17-cv-01624-ES-SCM
Rosenfeld Deposition. 6-7-2019

In the United States District Court of Southern District of Texas Galveston Division
M/T Carla Maersk, *Plaintiffs,* vs. Conti 168., Schiffahrts-GMBH & Co. Bulker KG MS "Conti Perdido" *Defendant.*
Case No.: 3:15-CV-00106 consolidated with 3:15-CV-00237
Rosenfeld Deposition. 5-9-2019

In The Superior Court of the State of California In And For The County Of Los Angeles – Santa Monica
Carole-Taddeo-Bates et al., vs. Ifran Khan et al., Defendants
Case No.: No. BC615636
Rosenfeld Deposition, 1-26-2019

In The Superior Court of the State of California In And For The County Of Los Angeles – Santa Monica
The San Gabriel Valley Council of Governments et al. vs El Adobe Apts. Inc. et al., Defendants
Case No.: No. BC646857
Rosenfeld Deposition, 10-6-2018; Trial 3-7-19

In United States District Court For The District of Colorado
Bells et al. Plaintiff vs. The 3M Company et al., Defendants
Case No.: 1:16-cv-02531-RBJ
Rosenfeld Deposition, 3-15-2018 and 4-3-2018

In The District Court Of Regan County, Texas, 112th Judicial District
Phillip Bales et al., Plaintiff vs. Dow Agrosciences, LLC, et al., Defendants
Cause No.: 1923
Rosenfeld Deposition, 11-17-2017

In The Superior Court of the State of California In And For The County Of Contra Costa
Simons et al., Plaintiffs vs. Chevron Corporation, et al., Defendants
Cause No C12-01481
Rosenfeld Deposition, 11-20-2017

In The Circuit Court Of The Twentieth Judicial Circuit, St Clair County, Illinois
Martha Custer et al., Plaintiff vs. Cerro Flow Products, Inc., Defendants
Case No.: No. 0i9-L-2295
Rosenfeld Deposition, 8-23-2017

In United States District Court For The Southern District of Mississippi
Guy Manuel vs. The BP Exploration et al., Defendants
Case: No 1:19-cv-00315-RHW
Rosenfeld Deposition, 4-22-2020

In The Superior Court of the State of California, For The County of Los Angeles
Warrn Gilbert and Penny Gilber, Plaintiff vs. BMW of North America LLC
Case No.: LC102019 (c/w BC582154)
Rosenfeld Deposition, 8-16-2017, Trail 8-28-2018

In the Northern District Court of Mississippi, Greenville Division
Brenda J. Cooper, et al., *Plaintiffs,* vs. Meritor Inc., et al., *Defendants*
Case Number: 4:16-cv-52-DMB-JVM
Rosenfeld Deposition: July 2017

In The Superior Court of the State of Washington, County of Snohomish
Michael Davis and Julie Davis et al., Plaintiff vs. Cedar Grove Composting Inc., Defendants
Case No.: No. 13-2-03987-5
Rosenfeld Deposition, February 2017
Trial, March 2017

In The Superior Court of the State of California, County of Alameda
Charles Spain., Plaintiff vs. Thermo Fisher Scientific, et al., Defendants
Case No.: RG14711115
Rosenfeld Deposition, September 2015

In The Iowa District Court In And For Poweshiek County
Russell D. Winburn, et al., Plaintiffs vs. Doug Hoksbergen, et al., Defendants
Case No.: LALA002187
Rosenfeld Deposition, August 2015

In The Circuit Court of Ohio County, West Virginia
Robert Andrews, et al. v. Antero, et al.
Civil Action N0. 14-C-30000
Rosenfeld Deposition, June 2015

In The Iowa District Court For Muscatine County
Laurie Freeman et. al. Plaintiffs vs. Grain Processing Corporation, Defendant
Case No 4980
Rosenfeld Deposition: May 2015

In the Circuit Court of the 17th Judicial Circuit, in and For Broward County, Florida
Walter Hinton, et. al. Plaintiff, vs. City of Fort Lauderdale, Florida, a Municipality, Defendant.
Case Number CACE07030358 (26)
Rosenfeld Deposition: December 2014

In the County Court of Dallas County Texas
Lisa Parr et al, *Plaintiff*, vs. Aruba et al, *Defendant.*
Case Number cc-11-01650-E
Rosenfeld Deposition: March and September 2013
Rosenfeld Trial: April 2014

In the Court of Common Pleas of Tuscarawas County Ohio
John Michael Abicht, et al., *Plaintiffs,* vs. Republic Services, Inc., et al., *Defendants*
Case Number: 2008 CT 10 0741 (Cons. w/ 2009 CV 10 0987)
Rosenfeld Deposition: October 2012

In the United States District Court for the Middle District of Alabama, Northern Division
James K. Benefield, et al., *Plaintiffs*, vs. International Paper Company, *Defendant*.
Civil Action Number 2:09-cv-232-WHA-TFM
Rosenfeld Deposition: July 2010, June 2011

In the Circuit Court of Jefferson County Alabama
Jaeanette Moss Anthony, et al., *Plaintiffs*, vs. Drummond Company Inc., et al., *Defendants*
Civil Action No. CV 2008-2076
Rosenfeld Deposition: September 2010

In the United States District Court, Western District Lafayette Division
Ackle et al., *Plaintiffs*, vs. Citgo Petroleum Corporation, et al., *Defendants*.
Case Number 2:07CV1052
Rosenfeld Deposition: July 2009

# EXHIBIT B

Shawn Smallwood, PhD
3108 Finch Street
Davis, CA 95616

Attn: John Morgan, Development Services Manager
City of Laguna Niguel
30111 Crown Valley Parkway
Laguna Niguel, California 92677

20 May 2022

RE: Laguna Niguel City Center project

Dear Mr. Morgan,

I write to comment on the draft Environmental Impact Report (DEIR), including its founding report on biological resources (VCS 2019), prepared for the proposed Laguna Niguel City Center project (City of Laguna Niguel 2022), which I understand would add 175,000 square feet of commercial and civic uses and 275 multifamily residential units on 25 acres on Assessor's Parcel Number 656-242-18.

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 subsequently worked for four years as a post-graduate researcher in the Department of Agronomy and Range Sciences. My research has been on animal density and distribution, habitat selection, interactions between wildlife and human infrastructure and activities, conservation of rare and endangered species, and on the ecology of invading species. I authored numerous papers on special-status species issues. I served as Chair of the Conservation Affairs Committee for The Wildlife Society – Western Section. I am a member of The Wildlife Society and the Raptor Research Foundation, and I've been a part-time lecturer 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-five years, including at many proposed project sites. My CV is attached.

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## CHARACTERIZATION OF THE 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 provides 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's site's regional setting, is one of CEQA's essential analytical steps (§15125). Methods to achieve this first step typically include surveys of the site for biological resources and reviews of literature, databases and local experts for documented occurrences of special-status species. In the case of

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this project, these essential steps remain incomplete. Herein I contribute additional information to the characterization of the wildlife community as a component of the current environmental setting, including the identification of special-status species likely to use the site at one time or another.

A 2.67-hour reconnaissance-level survey for wildlife was conducted on 13 August 2019. For a 2.67-hour survey, the lone biologist was assigned too many tasks to perform any one of them very well. She was tasked with vegetation/land cover mapping, a jurisdictional delineation, and observations of plants and wildlife species. Had I been assigned so many tasks, most of them requiring my eyes to train downward, I too would have detected fewer species of wildlife than should have been detected. VCS's biologist detected 15 species of vertebrate wildlife. At a nearby site, I detected 36 species of vertebrate wildlife over the same amount of time during a morning survey in summer 2021. The region in which the project site is situated is rich in wildlife species. The detection of only 15 species at the site suggests lack of focus due to having to perform too many tasks simultaneously.

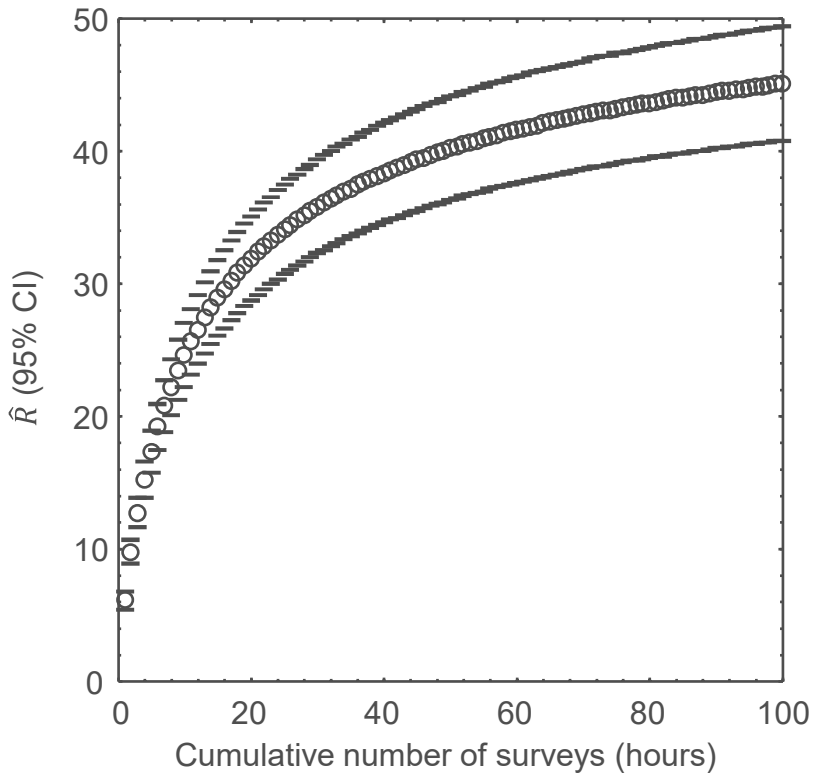
It should also be understood that reconnaissance-level surveys, even when focused solely on wildlife, are cursory, and barely serve as an opening of a window into the biological resources of a site. VCS's detections of 15 species of vertebrate wildlife need to be interpreted within the context of the survey effort. Observers are imperfect at detecting all species that occur within their surveyed space, and not all of the species that would occur in the surveyed space would occur there during the period of the observer's survey. One should not expect that the biologist who just completed a reconnaissance-level survey actually detected more than a fraction of the species that use the site, and neither should a biologist claim to have detected more than a fraction of the species composing the wildlife community. The number of species detected is largely a function of the effort committed to the survey. A longer-duration survey would result in additional species detections, as would additional surveys repeated over the span of a year or longer.

A-35 cont.

As part of my research, I completed a much larger survey effort across 167 km² of annual grasslands of the Altamont Pass Wind 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 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 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. I also averaged model predictions of species richness at each incremental increase of number of surveys, i.e., number of hours (Figure 1). On average I detected 11.7 species over the first 2.67 hours of surveys in the Altamont Pass (2.67 hours to match the number of hours VCS surveyed at the project site), which composed 20.5% of the total predicted species I would detect with a much larger survey effort. Given the example illustrated in Figure 1, the 15 species VCS detected after 2.67 hours of survey at the project site likely represented 20.5% of the species to be detected after many more multi-tasked surveys over another year or longer. With many more repeat surveys through the year, VCS would likely detect $^{15}/_{0.205} = 73$ species of vertebrate wildlife at the site.

***Figure 1.*** *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.*




A-35 cont.

Again, however, my prediction of 73 species of vertebrate wildlife is derived from VCS's multi-tasked survey compared to my visual-scan surveys during the daytime, and would not detect nocturnal mammals. The true number of species composing the wildlife community of the site must be at least twice as large, or more on the order of 150 to 160 species. A reconnaissance-level survey should serve only as a starting point toward characterization of a site's wildlife community, but it certainly cannot alone inform of the inventory of species that use the site. The VCS survey detected about a tenth of the species of vertebrate wildlife that actually use the site.

Just as VCS under-characterizes the wildlife community at the project site based on their reconnaissance-level survey, VCS furthered their under-characterization of the occurrence likelihoods of special-status species based on their data base review. Had

VCS relied on eBird and iNaturalist instead of solely the California Natural Diversity Data Base, VCS's list of potentially occurring special-status species would have been 65 species instead of only 7 species (Table 1). In my revies of these data bases, I found sightings reported for 3 special-status species on site, 38 within 1.5 miles of the site ('Very close'), 5 within 1.5 and 3 miles ('Nearby'), and 13 within 3 and 30 miles ('In region') (Table 1). With 46 special-status species of wildlife known to occur within only 3 miles of the site, there is much higher likelihood of occurrences of special-status species than reported by VCS (2019) and the DEIR.

A-35 cont.

Six of the 7 special-status species assessed by VCS (2019) were determined to have very low occurrence potential, even though all 6 of these species have been documented at one or more locations within 1.5 miles of the project site (Table 1). These determinations of very low occurrence likelihood are inconsistent with the precautionary principle in risk analysis directed toward rare and precious resources. The DEIR should be revised to include an analysis of occurrence likelihoods that are more consistent with the precautionary principle.

As part of the data base review, VCS (2019) and the DEIR misapply CNDDB to screen out special-status species not reported within 2 miles of the site. Whereas CNDDB can be helpful for confirming occurrences of special-status species where they have been reported, it cannot be relied upon for determining absences of species. Absence determinations can only be defended by the outcomes of protocol-level detection surveys. This is because CNDDB relies on volunteer reporting, and it is limited in its spatial coverage by the access of biologists to private properties. The findings reported to CNDDB are not from any sort of randomized or systematic sampling across California, nor does CNDDB collect reports of negative findings. Furthermore, many survey findings are not reported to CNDDB because consulting biologists signed non-disclosure agreements with developers. Additionally, most wildlife species in California are not reported to CNDDB, because CNDDB is uninterested in them and Scientific Collecting Permits do not require their reporting. Therefore, species recently assigned special status will be under-represented in CNDDB. In the absence of scientific sampling, absence determinations based on CNDDB reporting are vulnerable to multiple biases. The limitations of CNDDB are well-known, and summarized by CDFW in a warning presented on its CNDDB web site, https://wildlife.ca.gov/Data/CNDDB/About: "*We work very hard to keep the CNDDB and the Spotted Owl Database as current and up-to-date as possible given our capabilities and resources. However, we cannot and do not portray the CNDDB as an exhaustive and comprehensive inventory of all rare species and natural communities statewide. Field verification for the presence or absence of sensitive species will always be an important obligation of our customers. Likewise, your contribution of data to the CNDDB is equally important to the maintenance of the CNDDB. …*" The EIR should be revised to more appropriately analyze data base records to characterize the current environmental setting.

***Table 1**. Special-status species wildlife of likely to occur at the project according to VCS (2019) and to documented occurrences of the species in the project area (eBird and iNaturalist data base records).*

| **Common name, *Species name*** | **Status[1]** | **Occurrence likelihood** | |
|---|---|---|---|
| | | **VCS** | **Data bases** |
| Quino checkerspot butterfly, *Euphydryas editha quino* | FE | | In region |
| Monarch butterfly, *Danaus plexippus* | FC | | Very close |
| Crotch's bumblebee, *Bombus crotchii* | FC | | Very close |
| Coastal rosy boa, *Lichanura trivirgata* | FSC [1993] | | In region |
| California glossy snake, *Arizona elegans occidentalis* | SSC | | In region |
| South coast garter snake, *Thamnophis sirtalis* | SSC | | In range |
| Red diamond rattlesnake, *Crotalus ruber* | SSC | | Nearby |
| Coast patchnose snake, *Salvadora hexalepis virgultea* | SSC | | In region |
| Southern California legless lizard, *Anniella stebbinsi* | SSC | | In range |
| Orange-throated whiptail, *Aspidoscelis hyperythra* | WL | Very low | Very close |
| San Diegan tiger whiptail, *Aspidoscelis tigris stejnegeri* | SSC | | In region |
| Blainville's horned lizard, *Phrynosoma blainvillii* | SSC | Very low | Nearby |
| Coronado skink, *Plestiodon skiltonianus interparietalis* | WL | | In range |
| San Diego Banded gecko, *Coleonyx variegatus abbotti* | SSC | | In region |
| Western pond turtle, *Actinemys pallida* | SSC | Very low | Very close |
| American white pelican, *Pelacanus erythrorhynchos* | SSC1 | | Very close |
| Double-crested cormorant, *Phalacrocorax auritus* | WL | | Very close |
| Long-billed curlew, *Numenius americanus* | WL, BCC | | Very close |
| Whimbrel, *Numenius phaeopus* | BCC | | Very close |
| Heermann's gull, *Larus heermannii* | BCC | | Nearby |
| California gull, *Larus californicus* | WL | | Very close |
| Western gull, *Larus occidentalis* | BCC | | Very close |
| Turkey vulture, *Cathartes aura* | BOP | | Very close |
| Bald eagle, *Haliaeetus leucocephalus* | BGEPA, BCC, CFP | | Very close |
| Golden eagle, *Aquila chrysaetos* | BGEPA, BCC, CFP | | Very close |
| Ferruginous hawk, *Buteo regalis* | BOP, WL | | Nearby |
| Swainson's hawk, Buteo swainsoni | CT, BOP | | Nearby |
| Zone-tailed hawk, *Buteo albonotatus* | BOP | | Very close |

A-35 cont.

| Common name, *Species name* | Status[1] | Occurrence likelihood | |
|---|---|---|---|
| | | VCS | Data bases |
| Red-tailed hawk, *Buteo jamaicensis* | BOP | | Very close |
| Red-shouldered hawk, *Buteo lineatus* | BOP, | | Very close |
| White-tailed kite, *Elanus leucurus* | CFP, WL, BOP | | Very close |
| Northern harrier, *Circus cyaneus* | SSC3, BOP | | Very close |
| Sharp-shinned hawk, *Accipiter striatus* | BOP | | Very close |
| Cooper's hawk, *Accipiter cooperi* | WL, BOP | | Very close |
| American kestrel, *Falco sparverius* | BOP | | Very close |
| Merlin, *Falco columbarius* | WL, BOP | | Very close |
| Peregrine falcon, *Falco peregrinus* | CFP, BCC, BOP | | Very close |
| Prairie falcon, Falco mexicanus | BCC, WL, BOP | | In region |
| Barn owl, *Tyto alba* | BOP | | Very close |
| Long-eared owl, *Asio otus* | SSC3 | | In region |
| Short-eared owl, *Asio flammeus* | SSC3, BOP | | In region |
| Great-horned owl, *Bubo virginianus* | BOP | | Very close |
| Western screech-owl, *Megascops kennicotti* | BOP | | Very close |
| Vaux's swift, *Chaetura vauxi* | SSC2 | | Very close |
| Costa's hummingbird, *Calypte costae* | BCC | | Very close |
| Allen's hummingbird, *Selasphorus sasin* | BCC | | On site |
| Rufous hummingbird, *Selasphorus rufus* | BCC | | Very close |
| Lewis's woodpecker, *Melanerpes lewis* | BCC | | In region |
| Nuttall's woodpecker, *Picoides nuttallii* | BCC | | On site |
| Willow flycatcher, *Empidonax traillii* | CE, BCC | | Very close |
| Olive-sided flycatcher, *Contopus cooperi* | SSC2 | | Very close |
| Vermilion flycatcher, *Pyrocephalus rubinus* | SSC2 | | Very close |
| Loggerhead shrike, *Lanius ludovicianus* | BCC, SSC2 | | Very close |
| California horned lark, *Eremophila alpestris actia* | WL | | Nearby |
| San Diego cactus wren, *Campylorhynchs brunneicapillus sandiegensis* | BCC, SSC1 | | Very close |
| Clark's marsh wren, *Cistothorus palustris clarkae* | SSC2 | | Very close |
| Least Bell's vireo, *Vireo belli pusillus* | FE, CE | Very low | Very close |
| Purple martin, *Progne subis* | SSC2 | | Very close |

A-35 cont.

| Common name, *Species name* | Status[1] | Occurrence likelihood | |
|---|---|---|---|
| | | VCS | Data bases |
| Oak titmouse, *Baeolophus inornatus* | BCC | | Very close |
| Wrentit, *Chamaea fasciata* | BCC | | On site |
| California gnatcatcher, *Polioptila c. californica* | CT, SSC | Very low | Very close |
| California thrasher, *Toxostoma redivivum* | BCC | | Very close |
| Yellow warbler, *Setophaga petechia* | SSC2 | | Very close |
| Yellow-breasted chat, *Icteria virens* | SSC3 | | Very close |
| Common yellowthroat, *Geothlypis trichas* | BCC | | Very close |
| Summer tanager, *Piranga rubra* | SSC1 | | Very close |
| Black-chinned sparrow, *Spizella atrogularis* | BCC | | In region |
| Belding's savannah sparrow, *Passerculus sandwichensis beldingi* | CE | | Nearby |
| Southern California rufous-crowned sparrow, *Aimophila ruficeps canescens* | BCC, WL | Very low | Very close |
| Grasshopper sparrow, *Ammodramus savannarum* | SSC2 | | Very close |
| Tricolored blackbird, *Agelaius tricolor* | CT, BCC | | Very close |
| Yellow-headed blackbird, *Xanthocephalus xanthocephalus* | SSC3 | | Very close |
| Bullock's oriole, *Icterus bullockii* | BCC | | Very close |
| Lawrence's goldfinch, *Spinus lawrencei* | BCC | | Very close |
| Pallid bat, *Antrozous pallidus* | SSC, WBWG H | | In range |
| Townsend's western big-eared bat, *Plecotus t. townsendii* | SSC, WBWG H | | In region |
| Western red bat, *Lasiurus blossevillii* | SSC, WBWG H | | In region |
| Hoary bat, *Lasiurus cinereus* | WBWG M | | In region |
| Western yellow bat, *Lasiurus xanthinus* | SSC, WBWG H | | In region |
| Small-footed myotis, *Myotis cililabrum* | WBWG M | | In region |
| Miller's myotis, *Myotis evotis* | 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 | SSC, WBWG LM | | In region |
| Western mastiff bat, *Eumops perotis* | SSC, WBWG H | Low | In range |
| Pocketed free-tailed bat, *Nyctinomops femorosaccus* | SSC, WBWG M | | In range |
| American badger, *Taxidea taxus* | SSC | | In region |
| Los Angeles pocket mouse, *Perognathus longimembris brevinasus* | SSC | | In range |

A-35 cont.

| Common name, *Species name* | Status[1] | Occurrence likelihood | |
|---|---|---|---|
| | | VCS | Data bases |
| San Diego desert woodrat, *Neotoma lepida intermedia* | SSC | | In range |
| Southern mule deer, *Odocoileus hemionus fuliginatus* | | | Nearby |

[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, CFP = California Fully Protected (CDFG Code 3511), BOP = Birds of prey (California Fish and Game Code 3503.5), 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), and SSC1, SSC2 and SSC3 = California Bird Species of Special Concern priorities 1, 2 and 3, respectively (Shuford and Gardali 2008), and WL = Taxa to Watch List (Shuford and Gardali 2008), WBWG = Western Bat Working Group listing as low, moderate or high priority.

A-35 cont.

## POTENTIAL BIOLOGICAL IMPACTS

Determinations of occurrence likelihood of special-status species is not, in and of itself, an analysis of potential project impacts. An impacts analysis should consider whether and how a proposed project would affect members of a species, larger demographic units of the species, or the entire species. In the following, I analyze several types of project impact, none of which are analyzed in the DEIR.

### HABITAT LOSS

PLEASE ADD MORE HERE, AS NECESSARY.

The project would contribute to an ongoing trend of declining birds in North America. A recent study documented a 29% decline in overall bird abundance across North America over the last 48 years – a decline driven by multiple factors, but principally attributed to habitat loss and habitat fragmentation (Rosenberg et al. 2019). The ecological and economic impacts of this decline have yet to be quantified, but are likely substantial.

The DEIR does not address loss of wildlife that would result from habitat loss caused by the project. No mention is made of whether the project would further fragment habitat, nor whether it would reduce stopover and staging opportunities for migratory wildlife. No analysis is provided of the reduced numerical capacities of wildlife that would result from habitat loss.

Habitat loss not only results in the immediate numerical decline of wildlife, but also in net loss of productive capacity (Smallwood 2015). This loss of capacity can be predicted (Smallwood 2022), starting with two study sites in grassland/wetland/woodland complexes, which supported 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. These 2 study sites differed from the project site by including more woodland and wetland, so I assumed the nest density at the project site is two-thirds the densities of the 2 study sites. Multiplying 34.3 nests/acre against 0.6667 and 25 acres would predict a loss of 572 bird nests. The average number of fledglings per nest in Young's (1948) study was 2.9. Assuming Young's (1948) study site typifies bird productivity, then the project would prevent the production of 1,659 fledglings per year. After 100 years and assuming an average generation time of 5 years, the lost capacity of both breeders and annual fledgling production can be estimated from the following formula: {(nests/year × chicks/nest × number of years) + ((2 adults/nest × nests/year) × (number of years ÷ years/generation))}. In the case of this project, and given my stated assumptions, this formula predicts **the project would deny California 188,780 birds over the next century due solely to loss of terrestrial habitat**. This predicted loss of 1,888 birds/year would be substantial, and would qualify as a significant impact that has not been addressed in the DEIR. A-36

### Wildlife Movement

The analysis of whether the project would interfere with wildlife movement in the region is flawed. According to VCS (2019), "The study area is not located within any A-37

contiguous native habitat corridors and is unlikely to provide any significant function as a wildlife corridor or wildlife movement area due to the proximity of major roads and residential development." It is unclear how nearby roads and residential development would prevent volant wildlife from traveling to and from the site, but whether the site is contiguous with a habitat corridor has little to do with the CEQA standard on this type of impact. The CEQA standard is whether a project would interfere with wildlife movement in the region. The primary phrase of the CEQA standard goes to wildlife movement regardless of whether the movement is channeled by a corridor or some linkage. A site such as the proposed project site is critically important for wildlife movement because it composes an increasingly diminishing expanse of open space within a growing expanse of residential, commercial and industrial uses, forcing more species of birds 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 birds and bats off from stopover, staging and roosting opportunities, forcing them to travel even farther between remaining stopover areas along migration routes. The project would interfere with wildlife movement in the region. The EIR needs to be revised to address the project's impacts to wildlife movement in the region.

A-37 cont.

**TRAFFIC IMPACTS ON WILDLIFE**

A fundamental shortfall of the DEIR is its failure to analyze the impacts of the project's added road traffic on both special-status and common species of wildlife, including many animals that would be killed far from the project's construction footprint; they would be crossing roads traversed by cars and trucks originating from or headed toward the project site. The project's impacts to wildlife would add to the traffic impacts of recently constructed residential, commercial and industrial projects in the area, and would reach as far from the project as cars and trucks travel to and from the project site. Project-generated traffic would endanger wildlife that must, for various reasons, cross roads used by the project's traffic (Photos 1-4). 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.

A-38

***Photo 1.*** *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 2.*** *Great-tailed grackle (left) walks onto a rural road in Imperial County, 4 February 2022.*

***Photo 3.*** *A mourning dove (right) killed by vehicle traffic on a California road. Photo by Noriko Smallwood, 21 June 2020.*

***Photo 4.*** *Raccoon killed on Road 31 just east of Highway 505 in Solano County. Photo taken on 10 November 2018.*

A-38 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 right next to Vasco Road (Brown et al. 2016). The Brown et al. (2016) adjustment factors were similar to those for carcass persistence of road fatalities (Santos et al. 2011). Applying searcher detection rates estimated from carcass detection trials performed at a wind energy project immediately adjacent to this same stretch of road (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 translates to a rate of 3,900 wild animals per mile per year killed along 2.5 miles of road in 1.25 years. 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.

Predicting project-generated traffic impacts to wildlife

The DEIR predicts annual vehicle miles traveled (VMT) would be 26,214,739. These would be many miles driven at great peril to wildlife that must cross roads to go about their business of foraging, patrolling home ranges, dispersing and migrating. Despite the obvious risk to wildlife, and despite the multiple papers and books written about this type of impact and how to mitigate them, the DEIR does not address impacts to wildlife caused by vehicles traveling to and from the project site. A-38 cont.

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, although it would be helpful to have the availability of more studies like that of Mendelsohn et al. (2009) at additional locations. 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).

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 would predict 14,364 wildlife fatalities per year. **Operations over 50 years would accumulate 718,212 wildlife fatalities**. It remains unknown whether and to what degree vehicle tires contribute to carcass removals from

the roadway, thereby contributing a negative bias to the fatality estimates I made from the Mendelsohn et al. (2009) fatality counts.

Based on my assumptions and simple calculations, the project-generated traffic would cause substantial, significant impacts to wildlife. The EIR should be revised to analyze this impact. Mitigation measures to improve wildlife safety along roads are available and are feasible, and they need exploration for their suitability with the proposed project.

A-38 cont.

## CUMULATIVE IMPACTS

The DEIR argues, "Similar to the proposed project, each cumulative project would be reviewed on a case-by-case basis for its impact on biological resources and would be expected to comply with existing regulations and local and regional plans, ordinances, and policies protecting biological resources, such as those listed in PPP BIO-1 and PPP BIO-2. Additionally, similar to the proposed project, each related project would be expected to implement mitigation measures, which would reduce each project's impact. Thus, the proposed project would not make a cumulatively considerable contribution to a potentially significant cumulative biological resources impact.," In effect, the DEIR implies that cumulative impacts are really just residual impacts of incomplete mitigation of project-level impacts. If that was CEQA's standard, then cumulative effects analysis would be merely an analysis of mitigation efficacy. And if that was the standard, then I must point out that none of the project-level impacts would be offset to any degree by the proposed mitigation measures. But the DEIR's implied standard is not the standard of analysis of cumulative effects. CEQA defines cumulative impacts, and it outlines two general approaches for performing the analysis. The EIR needs to be revised, and it needs to include an appropriate, serious analysis of cumulative impacts.

A-39

## MITIGATION

Only one mitigation measure is proposed to minimize impacts to wildlife.

### BIO-1 Construction timing to avoid nest season or preconstruction take-avoidance surveys

Preconstruction surveys should be performed, but not as substitute for detection surveys. Preconstruction surveys are neither designed nor intended to reduce project impacts, let alone to reduce impacts to less than significant levels; they are not even designed to assess impacts. Preconstruction surveys are only intended as last-minute, one-time salvage and rescue operations targeting readily detectable nests or individual animals before they are crushed under heavy construction machinery. Because most special-status species are rare and cryptic, and because most species are expert at hiding their nests lest they get predated, most of them will not be detected by preconstruction surveys. Furthermore, salvaging animals and nests cannot offset the annual loss of productivity that would be caused by the permanent loss of habitat and nest sites.

A-40

Detection surveys are needed to inform preconstruction take-avoidance surveys by mapping out where biologists performing preconstruction surveys are most likely to find animals before the tractor blade finds them. Detection surveys were designed by species experts, often undergoing considerable deliberation and review before adoption. Detection surveys often require repeated efforts using methods known to maximize likelihoods of detection. Detection surveys are needed to assess impacts and to inform the formulation of appropriate mitigation measures, because preconstruction surveys are not intended for these roles either. What is missing from the DEIR, and what is in greater need than preconstruction surveys, are detection surveys consistent with guidelines and protocols that wildlife ecologists have uniquely developed for use with each special-status species. What is also missing is compensatory mitigation of unavoidable impacts.

A-40 cont.

Following detection surveys, preconstruction surveys should be performed. However, the EIR should be revised, and it should detail how the results of preconstruction surveys will be reported. Without reporting the preconstruction survey outcomes, preconstruction surveys are vulnerable to serving as an empty gesture rather than a mitigation measure. For these reasons, this mitigation measure is insufficient to reduce the project's impacts to nesting birds to less than significant.

## RECOMMENDED MEASURES

### Road Mortality

Compensatory mitigation is needed for the increased wildlife mortality that will be caused by the project's contribution to increased 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. Compensatory mitigation can also be provided in the form of donations to wildlife rehabilitation facilities (see below).

A-41

### Habitat Loss

Compensatory mitigation is needed for the loss of habitat that would result from the project.

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### 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. Most of the wildlife injuries will likely be caused by collisions with the project's cars and trucks driven to and from the site, but house cats introduced to the area by new residents will also injure wildlife. But the project's impacts can also be offset by funding the treatment of injuries to animals caused by other anthropogenic sources.

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Thank you for your attention,

Shawn Smallwood, Ph.D.

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# 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

- 761 professional reports, including:
- 90 peer reviewed publications
- 24 in non-reviewed proceedings
- 645 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.

**Peer Reviewed Publications**

Smallwood, K. S. 2022. Utility-scale solar impacts to volant wildlife. Journal of Wildlife Management: In press.

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Johnson, D. H., S. R. Loss, K. S. Smallwood, W. P. Erickson. 2016. Avian fatalities at wind energy facilities in North America: A comparison of recent approaches. Human–Wildlife Interactions 10(1):7-18.

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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);
- Coachella Valley Arena EIR Addendum, Thousand Palms (2021; 35);
- 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);
- Heber 2 Geothermal Repower Project IS/MND, El Centro (2020; 3);
- 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);

- AMG Industrial Annex IS/MND, Los Banos (2020; 15);
- 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);
- 3721 Mt. Diablo Boulevard Staff Report (2020; 9);
- 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);
- Pinnacle Park & C Design Review, San Diego (2019; 19);
- 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 C

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Date: May 23, 2022

To: Amalia Bowley Fuentes
Lozeau | Drury LLP
1939 Harrison Street, Suite 150
Oakland, California 94612

From: Francis J. Offermann PE CIH

Subject: Indoor Air Quality: Laguna Niguel City Center Project, City of Laguna Niguel, CA (IEE File Reference: P-4586)

Pages: 19

## 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-44 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-44 cont.

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 South Coast Air Quality Management District (SCAQMD, 2015).

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-44 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 Laguna Niguel City Center Project, City of Laguna Niguel, CA, the buildings consist of residential and commercial 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-44 cont.

The employees of the commercial spaces are expected to experience significant indoor exposures (e.g., 40 hours per week, 50 weeks per year). These exposures for employees are anticipated to result in significant cancer risks resulting from exposures to formaldehyde released by the building materials and furnishing commonly found in offices, warehouses, residences and hotels.

Because the commercial spaces will be constructed with CARB Phase 2 Formaldehyde ATCM materials, and be ventilated with the minimum code required amount of outdoor air, the indoor 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 employees of commercial spaces work 8 hours per day and inhale 20

$m^3$ of air per day, the formaldehyde dose per work-day at the offices is 161 µg/day.

Assuming that these employees work 5 days per week and 50 weeks per year for 45 years (start at age 20 and retire at age 65) the average 70-year lifetime formaldehyde daily dose is 70.9 µg/day.

This is 1.77 times the NSRL (OEHHA, 2017a) of 40 µg/day and represents a cancer risk of 17.7 per million, which exceeds the CEQA cancer risk of 10 per million. This impact should be analyzed in an environmental impact report ("EIR"), and the agency should impose all feasible mitigation measures to reduce this impact. Several feasible mitigation measures are discussed below and these and other measures should be analyzed in an EIR.

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-44 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.

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.

A-44 cont.

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).

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.

A-44 cont.

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., µg/$m^2$-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 µg/$m^2$-h, but not the actual measured specific emission rate, which may be 3, 18, or 30 µg/$m^2$-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.

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.

A-44 cont.

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.

$$C_{in} = \frac{E_{total}}{Q_{oa}} \quad \text{(Equation 1)}$$

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 ($m^3/h$)

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.

A-44 cont.

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.

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 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-44 cont.

According to the Draft Environmental Impact Report (Placeworks, 2022), the Project is close to roads with moderate to high traffic (Crown Valley Parkway, Alicia Parkway, Pacific Island Drive e.g., etc.). The DEIR states in Table 5.11-8 that the existing ambient traffic noise levels plus Project ranges from 72.1 to 76.9 dBA CNEL.

As a result of the high outdoor noise levels, the current project will require a mechanical supply of outdoor air ventilation to allow for a habitable interior environment with closed windows and doors. 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.

**$PM_{2.5}$ Outdoor Concentrations Impact**. An additional impact of the nearby motor vehicle traffic associated with this project, are the outdoor concentrations of $PM_{2.5}$. According to the Draft Environmental Impact Report (Placeworks, 2022), 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 to 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-44 cont.

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:

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-44 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.

A-44 cont.

$PM_{2.5}$ 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.

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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".

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 $\mu g/m^3$ (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).

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.

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, 6$^{th}$ 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.

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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.

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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).

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"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.

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"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.

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"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.

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

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"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.

**Response to "Comments on Final EIR Environmental Impact Report, Laguna Niguel City Center Mixed Use," letter from Lozeau Drury, LLP, dated May 24, 2022**
*Letter on behalf of Supporters Alliance for Environmental Responsibility (SAFER)*

A-1 The comment is introductory in nature and generally asserts that the DEIR was not prepared in compliance with CEQA, although the comment incorrectly identifies the project site in the City of Arcadia. The comment will be forwarded to the decision

A-2 The comment provides project background information. It is not a comment on the adequacy of the DEIR and does not require a specific response.

A-3 The comment provides legal background and does not provide any specific allegation of DEIR inadequacy or noncompliance with CEQA. A specific response is not required.

A-4 The commenter asserts that the DEIR's analysis of hazardous materials is inadequate because it defers disclosure of site contamination. The DEIR is appropriate and complies with CEQA. The DEIR includes a significant investigation into existing site conditions, including in the form of a Phase I ESA that identified potential recognized environmental conditions (REC) and a Phase II Screening Subsurface Investigation showed that PCE and trimethylbenzene concentration at the vehicle maintenance facility (VMF) that exceed the DTSC's residential screening level. Soil sample analyses found volatile organic compound impacts at the same location. HAZ-01 and HAZ-02 require implementation of a soils management plan and post-grading soil vapor survey to remove the soil following all safety protocols to meet the legal limits. This process identified an environmental impact, evaluated the impact against thresholds of significance, and required mitigation measures with clear timing and quantifiable standards. The process follows CEQA and does not constitute deferral.

Regarding the commenter's reference to state law noticing requirements, the project will comply with all applicable laws and regulations, including those identified in RR HAZ-3.

A-5 Operationally, the project is not anticipated to generate significant diesel particulate matter (DPM) or toxic air contaminants (TAC). Consistent with CARB and South Coast AQMD guidance, including CARB's Air Quality and Land use Handbook and South Coast AQMD's "Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning," the project—which proposes residential, commercial, office, and civic uses—is not considered a substantial source of DPM. Moreover, typical sources of other hazardous TACs include manufacturing processes, automotive repair, dry cleaning facilities, and other facilities that process toxic materials. The project does not propose these types of uses, and the commenter has not

presented any evidence that TACs or DPM would be generated by operation of the project in any meaningful amount such that significant impacts may result. Therefore, as stated in the DEIR, no operational HRA is needed for the project.

For the component of the project that may generate TACs and DPM in more substantial quantities—project construction phase—the DEIR includes a localized significance threshold (LST) analysis for project construction and concludes no significant impact would result with mitigation. The DEIR's use of the LSTs to assess potential construction emissions risks was appropriate and consistent with the City of Laguna Niguel CEQA Manual. First, as discussed in the DEIR, LSTs are tied to ambient air quality standards and calibrated to assess localized air quality impacts. As stated in the South Coast AQMD Final Localized Significance Threshold Methodology, LSTs represent the maximum emissions from a project in the South Coast Air Basin that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each source receptor area. If the calculated emissions for the proposed construction or operational activities are below the LST emission levels found on the LST mass rate look-up tables and no potentially significant impacts are found to be associated with other environmental issues, then the proposed construction or operation activity would not have a significant impact on air quality.

The commenter asserts that the DEIR's LST analysis fails to account for DPM and TAC emissions from operation. As discussed above, the proposed uses of the project are not anticipated to generate substantial amounts of DPM or TACs because they do not include trucking, manufacturing, industrial processes, or other uses that are linked to TAC and DPM emissions.

For the construction phase, Mitigation Measure AQ-1 requires that diesel-fueled engines for off-road equipment over 50 horsepower meet the USEPA Tier 4 Final emissions standards for equipment used during site preparation and rough grading/earthwork, utilities trenching, and building construction activities that overlap with site preparation and rough grading activities. The use of off-road equipment meeting Tier 4 Final engine standards reduces exhaust $PM_{10}$ and exhaust $PM_{2.5}$ (which are representative of DPM emissions) by over 85 percent (DEIR Appendix C); this is a common mitigation measure used to reduce construction-related DPM and health risks to less than significant levels. Second, the LST analysis does consider whether construction emissions would exceed stringent $PM_{10}$ and $PM_{2.5}$ standards. DPM is a significant component of $PM_{2.5}$. CARB, for instance, recognizes DPM as a subset of

$PM_{2.5}$.[1] "Because it is part of $PM_{2.5}$, DPM also contributes to the same non-cancer health effects as $PM_{2.5}$ exposure."[2] Coupled with the fact that the project is not a meaningful source of operational DPM or TACs, use of the LST methodology was appropriate.

It should also be noted that South Coast AQMD rules impose specific emissions reduction measures that target TACs and DPM, such as those governing architectural coatings (Rule 1113). Finally, the commenter is referred to Response to Comment A-9 for a discussion of the commenter's screening-level HRA.

A-6 The commenter asserts that a quantified operational HRA is required. The commenter is referred to Response to Comments A-5 through A-9. The DEIR's use of the LSTs to assess potential construction emissions risks to nearby sensitive receptors was appropriate, consistent with the City of Laguna Niguel CEQA Manual, and concluded with less than significant construction impacts with mitigation. Additionally, the implementation of Mitigation Measure AQ-1 requiring the use of Tier 4 Final engines for off-road equipment would further reduce pollutant emissions, including DPM.

As discussed in the DEIR, project operations would not result in meaningful quantities of DPM or TAC emissions because the project's uses are not those typically associated with such contaminants, and on-site emissions would be well below the South Coast AQMD operational LST thresholds as a result. The commenter does not identify any substantial sources of TACs associated with project operation. The commenter's reference to operational VMT and DPM emissions mistakenly assumes that typical passenger vehicle emissions would result in significant levels of DPM. That is not accurate, however, because passenger vehicles are generally not diesel powered. The DEIR's analysis was appropriate and compliant with CEQA's mandates. It should also be noted that the DEIR does include a detailed discussion of health risks associated with various pollutants. (See Section 5.2.1.1, Air Pollutants of Concern, and Table 5.2-1, Criteria Air Pollutant Health Effect Summary, on pages 5.2-16 through 5.2-18.)

A-7 The commenter identifies various sources that it believes require preparation of an operational HRA. The DEIR is appropriate as prepared, and commenter is referred to Responses to Comments A-5 through A-9. The OEHHA Guidance Manual for Preparation of Health Risk Assessments, as referenced by commenter, is largely intended to assess health risk from *industrial stationary* sources, which are often characterized by *stationary point* sources, including those within the Air Toxics Hot Spots Program. The title of that publication expressly exists under the Air Toxics Hot Spots Program—*Air Toxics Hot Spot Program Guidance Manual for the Preparation*

[1] See https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health.
[2] See https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health.

*of Risk Assessments*. OEHHA notes that the manual was developed "for use in implementing the Air Toxics Hot Spots Program." Generally, a facility is subject to the Hot Spots Program if it: (1) manufactures, formulates, uses, or releases a substance subject to the Act (substance which reacts to form such a substance) and emits 10 tons or more per year of total organic gases, particulate matter, nitrogen oxides or sulfur oxides; (2) is listed in any district's existing toxics use or toxics air emission survey, inventory or report released or compiled by a district; or (3) manufactures, formulates, uses, or releases a substance subject to the Hot Spots Program (or substance which reacts to form such a substance) and emits less than 10 tons per year of criteria pollutants and is subject to emission inventory requirements. HRAs are often prepared in conjunction with CEQA review for facilities that will emit sources of contaminants in significant quantities, consistent with the concepts and facilities identified in the Air Toxics Hot Spot Program Guidance Manual. However, as discussed in the DEIR, project operations are not expected to generate meaningful amounts of TACs or DPM because the project's proposed uses are not of the nature that are associated with such emissions. As discussed in the DEIR, the project would not generate significant sources of contaminants that could lead to health risks, as further evidenced by the analysis comparing project-level emissions (including operational) to applicable South Coast AQMD thresholds. Furthermore, the City did not receive a comment from South Coast AQMD identifying the need for an operational HRA.

A-8 The commenter asserts that the DEIR is deficient for failure to compare potential health risks against South Coast AQMD's threshold of 10 in 1 million. The commenter is referred to Responses to Comments A-5 through A-9, which discuss the appropriateness of the DEIR's air quality analysis. The South Coast AQMD threshold suggested by commenter is generally applicable to facilities under the Air Toxics "Hot Spots" Program, as is the OEHHA Guidance Manual discussed in Response to Comment A-7. Although the threshold may also be applied to non–Hot Spot facilities or projects, as discussed in the DEIR, the project does not propose uses that would result in significant DPM or TAC emissions and, as such, is not similar to uses that may require an assessment under the South Coast AQMD threshold. For instance, the South Coast AQMD's *Public Notification Procedures for Facilities Under the Air Toxics "Hot Spot" Information and Assessment Act (AB 2588) and Rule 1402*, which refers to the 10 in 1 million threshold, explains that Rule 1402 establishes "facility-wide requirements for existing facilities that emit toxic air contaminants (TACs) and implements AB 2588." The project would not emit significant quantities of TACs or DPM and commenter does not present any evidence to the contrary. Furthermore, the City did not receive a comment from South Coast AQMD identifying the need for an operational HRA.

A-9 The commenter asserts that the screening-level HRA prepared by SWAPE constitutes substantial evidence of a significant health impact. First, the commenter is referred to

Responses to Comments A-5 through A-8. In lieu of preparing a construction HRA, the DEIR used South Coast AQMD's LST methodology to determine the project's effect on health risk to nearby sensitive receptors. This methodology is consistent with the City of Laguna Niguel CEQA Manual. The LST analysis conservatively considered a sensitive receptor 25 meters away from the project site in SRA 21. As seen on Table 5.2-14, the proposed project would result in less than significant impacts following implementation of Mitigation Measures AQ-1, AQ-2, and AQ-3. As previously stated, LSTs represent the maximum emissions from a project within the South Coast AQMD that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard and are developed based on the ambient concentrations of that pollutant for each source receptor area.

Second, the preliminary HRA prepared by the commenter is not substantial evidence and suffers from a number of significant flaws. It did not use the correct DEIR construction output to conduct the assessment. For the construction risk analysis, the HRA prepared by the commenter used 886.8 lbs of DPM emitted during project construction. However, the source of the 886.8 lbs (or 0.443 tons) of DPM is not clear from the analysis, and the health risk calculation worksheet provided in Appendix A of the comment letter is cut off and not fully visible. Therefore, it is unclear how the 886.8 lbs was derived, and it appears that the unmitigated construction emissions were possibly included in the commenter's provided HRA. As provided in DEIR Appendix C, the total exhaust $PM_{10}$ (which would be equated to DPM in a health risk analysis) would be approximately 474 lbs (0.237 tons) incorporating mitigation measure AQ-1 requiring Tier 4 engines for equipment during the site preparation and rough grading/earthwork, utilities trenching, and building construction activities that overlap with site preparation and rough grading activities. Therefore, the screening-level assessment appears to overestimate the construction emissions associated with the project.

The screening-level HRA prepared by the commenter also incorrectly correlates exhaust $PM_{10}$ generated by project operation as DPM emissions. Although such correlation is possible for project construction because diesel-fueled off-road equipment emit DPM, this is not the case for project operation, which consists of commercial and residential land uses that are not major emitters of TACs or DPM. As provided in DEIR Appendix C, operational exhaust $PM_{10}$ emissions are predominantly from gasoline-fueled passenger vehicle miles generated by the project and energy consumption, and not from diesel-fueled vehicles generated by the project. As such, the exhaust $PM_{10}$ emissions in Appendix C should not be equated to diesel exhaust or DPM emissions, as is the case in the commenter's HRA. Therefore, the screening-level health risks in the HRA provided by the commenter are incorrect.

Lastly, the HRA prepared by the commenter used a screening model, which, compared to refined air dispersion modeling typically conducted in health risk analyses, tends to overpredict pollutant concentrations and provide worst-case scenarios. Nevertheless, the results of the screening-level HRA prepared by the commenter are erroneous since the HRA did not include the correct DPM emissions from project construction including Mitigation Measure AQ-1 and incorrectly equated exhaust $PM_{10}$ from project operation to DPM emissions.

Therefore, application of the LST methodology for the proposed project is appropriate and a revised DEIR would not be required.

A-10 The comment generally asserts that the DEIR's GHG analysis is inadequate for specific reasons. The general nature of the comment does not require a specific response. However, the commenter is referred to Responses to Comments A-27 through A-31 for specific responses.

A-11 The commenter states that the DEIR's characterization of the existing wildlife environmental setting is inappropriate, as allegedly supported by the opinions of a consultant. First, CEQA does not require a lead agency to conduct every test or perform all research, study, and experimentation recommended or demanded by commenters. "The fact that additional studies might be helpful does not mean that they are required." (*Association of Irritated Residents v. County of Madera* (2003) 107 Cal.App.4th 1383, 1396.) Second, the DEIR's analysis is appropriate and consistent with accepted review and investigation standards, and was performed by experts with significant experience in conducting biological surveys and assessments. The types of surveys and research performed are well-accepted standards in CEQA documents. The fact that the commenter's consultant identified additional species on a completely separate site—an annual grassland area east of *San Francisco*—does not serve as substantial evidence to undermine the DEIR. The "proxy" site is in Northern California, hundreds of miles from the project site, and is a wind farm characterized by open grassland. The project is a mostly developed site in an urban area, which is significantly different than the site referenced in the comment.

The commenter's reference to use of alternative databases also does not undermine the DEIR's analysis, which adhered to standard methods of investigation. The VCS *Biological Survey and Jurisdictional Delineation* (see DEIR Appendix D) followed the protocol recommended by the California Department of Fish and Wildlife (see CDFW Notice of Preparation response, DEIR, Appendix B). The CDFW is the Trustee Agency with jurisdiction over natural resources affected by the project (pursuant to CEQA Guidelines Section 15386) and is the Responsible Agency for these resources under CEQA Guidelines Section 15381 (for aspects of the proposed project under the purview of the California Endangered Species Act). CDFW's NOP response

recommends use of the CNDDB database. Moreover, the database research identified in the DEIR is only one stage of analysis that was prepared, and on-site studies were also conducted.

The *Biological Survey and Jurisdictional Delineation* was originally conducted in 2019, and then a verification survey was conducted in 2021. The updated report (Appendix D) details both the plant species and wildlife species observed on the project site (see Table 1 and Table 2, respectively). No special status plant or wildlife species were observed. The report also reviews the potential for special status species to occur based on the criteria as described in Exhibit B of the report. Per accepted protocol, the CNDDB database and inventory status were used to identify sensitive plant communities and wildlife that may exist in the study area and surrounding area.

The nature of the project site as a mostly developed location in an urban area is also relevant to the identification of special status species. The fact that species occur within some distance of the project site is not evidence that they are likely to occur on the project site, because types of flora and fauna, habitats, scope of existing development, and existing uses all factor into a species' potential to occur on-site. The comment focuses on studies of alternative areas and database sightings on different sites without consideration of the specifics of the project site. Also, the commenter's reference to substantial numbers of species allegedly occurring within 1.5 miles of the project site is misleading because the project site is within 1.5 miles of the Aliso and Woods Canyons Wilderness Park, an approximately 4,500-acre wilderness and natural open space area. Again, the commenter equates significantly different spaces with the project site. The DEIR's baseline is appropriate and complies with CEQA's mandates.

A-12 The comment asserts that the project would result in a decline in breeding capacity and habitat loss. The DEIR identifies the existing site conditions and classifies the habitats of the project site. The DEIR also explains that the project site contains suitable breeding, nesting, and/or roosting habitat for breeding bird species. (DEIR at 5.3-15.) As such, the DEIR identifies a potential significant impact and requires implementation of mitigation. Second, as noted previously, the commenter derives allegations of expected breeding loss through comparisons to sites that are completely different than the project site. For instance, in the referenced attachment, the commenter notes that the loss of capacity for the project site can be predicted "starting with two study sites in grassland/wetland/woodland complexes…." The referenced areas are much different and are generally considered far more diverse than the project site, which is developed and located in an urban area. The commenter's assumption that the nesting capacity of the project site is 2/3rds of the reference site's is also without merit because it fails to account for the actual, physical characteristics of the project site. The DEIR analyzed the potential for nesting birds to locate on-site and assessed potential impacts

associated with the project. The comment does not present any substantial evidence to undermine the conclusions of the DEIR.

A-13 The commenter asserts that the DEIR fails to properly evaluate the project's impacts on wildlife movement. The DEIR's analysis is based on the opinions of experts, who conducted detailed database and on-site investigations, as well as the circumstances of the project site (location, flora and fauna, developed nature). The commenter's characterization of the project site as "open space" is incorrect. Although there are areas of the project site that are not disturbed with existing uses, a significant portion of the project site is developed or disturbed. The remainder of the site that could be considered "open" consists of nonnative grasslands, which is consistent with the developed nature of the site. The project site is also within a built, urban environment and surrounded by major roadways. Also, as concluded by the DEIR, the project site is not within any contiguous native habitat corridors. The commenter does not present any evidence that the project site serves a significant function for wildlife movement.

A-14 The commenter believes the DEIR should include an analysis of project traffic on wildlife. The commenter is referred to Response to Comment A-13, which notes that the project site does not provide any significant function as a wildlife corridor or wildlife movement area. The commenter's analysis is mistaken, and compares the project site to areas that are much different, including roadways adjacent to significant open space areas in Contra Costa County, California (hundreds of miles away). The commenter does not explain why the project site, which is within a developed, urban area, has any similarities to the sites referenced in the comment. The nature and type of species identified in the commenter's appendix, including badgers, California tiger salamanders, and Sierran tree frogs, demonstrate how the commenter's reference site is significantly different than the project site. It should also be noted that, to the extent the project would generate increased VMT, those miles and vehicles would be allocated to streets in an existing urban environment, as is the character of the surrounding area and roadway network. The commenter does not present any substantial evidence of a potential impact that requires analysis in the DEIR.

A-15 The comment states that the DEIR fails to adequately address cumulative biological impacts. For a cumulative impacts analysis, the question is not whether there is a significant cumulative impact but whether the effects of the individual project are significant (cumulatively considerable). An individual project's impact does not necessarily create a significant cumulative impact. The DEIR's cumulative impact assessment complies with these requirements. It notes that the project site is not within a reserve system nor is the site identified as having conservation value. No sensitive plants, riparian habitat, or other sensitive natural communities occur on-site. The project site also does not function as a wildlife corridor or movement area. Though the project could impact nesting for the Cooper's hawk, the DEIR incorporates mitigation

to ensure the impact would remain less than significant. The DEIR's reference to other cumulative projects and the requirement to comply with law and mitigation is in reference to the concept of a cumulative impact, which the DEIR explains would not be significant. (DEIR at 5.3-16 ["each related project would be expected to implement mitigation measures, which would reduce each project's impact"].) Because the project itself would not result in a significant impact and the cumulative conditions of projects within the area would not result in a significant cumulative impact, the DEIR properly concluded that the project would not make a cumulatively considerable contribution to a significant cumulative impact. The commenter's assertion about methodology does not undermine the conclusions of the DEIR, which analyzes potential cumulative impacts consistent with CEQA's mandates.

A-16 The commenter suggests the DEIR's biological resources mitigation is insufficient because, in the opinion of the commenter's consultant, the required preconstruction surveys are inadequate because such surveys fail to detect most species. The commenter appears to ignore that MM BIO-1 is intended to apply to a specific potential impact and specific species—nesting habitat for raptors and songbirds. MM BIO-1 requires preconstruction surveys, to be performed by a qualified biologist, to identify any nesting sites. As discussed in the DEIR, there are no additional special-status species that could be impacted by the project, and commenter's speculation does not constitute substantial evidence. Aside from generalities, the commenter does not explain how the implementation of MM BIO-1 would not mitigate and lessen any potential impact to nesting birds. Moreover, preconstruction surveys are a common and widely accepted practice to mitigate impacts to nesting birds. The commenter is also referred to Responses to Comments A-11 through A-15 for discussions of why the project would not impact biological resources.

A-17 The commenter asserts that formaldehyde, a substance commonly found in building materials and furnishings, may result in future resident and worker cancer risk. The commenter is referred to Response to Comment A-44. Impacts of the environment on the project are not impacts under CEQA unless the project would exacerbate risks. Based on South Coast AQMD Rule 1113 regarding surface coating, nonresidential paints contain 100 g/L of VOC, and residential paints contain 50 g/L of VOC; they do not generate a level of VOC that would exceed the South Coast AQMD threshold.

A-18 The comment is a summary and general assertion that the DEIR is inadequate. The commenter is referred to the preceding and following responses to comments.

A-19 The comment is introductory and general in nature, asserting that the DEIR fails to comply with CEQA. The substance of the comment letter, which is an appendix to the larger comment letter addressed in Responses to Comments A-1–A-18, is responded to both in the earlier responses and the responses that follow.

A-20 The commenter is referred to Response to Comment A-4, which discussed the DEIR's identification of existing conditions with respect to potential hazardous materials. The commenter also asserts that the DEIR is required to disclose impacts of mitigation that may be necessary following the soil vapor study required by mitigation measure HAZ-2. The comment is speculative. The DEIR analyzed expected construction phasing work, including haul trips, based upon the existing environmental site conditions. Likewise, mitigation measure HAZ-1 requires preparation of a soils management plan to ensure compliance with all applicable regulations, standards and agency requirements, including identification, testing, and handling of contaminated soils that may be encountered during construction. Compliance with these standards, which is mandated by law, and confirmation from the applicable oversight agencies, will ensure that contaminated materials are removed as required by law. DEIR Appendix H-2, the *Screening Subsurface Investigation*, which recommended implementation of a soil management plan as mitigation, explains that with the soil management plan "[s]ource zone removals will ameliorate vapor phase concentrations of VOCs and mitigate the potential future vapor intrusion conditions…." MM HAZ-2 is incorporated to verify the results of removal activities. The commenter has not presented any evidence that compliance with MM HAZ-1 and mandatory law will not ensure that soil vapor intrusion will be mitigated to less than significant levels.

A-21 The commenter generally states that the DEIR's air quality analysis is insufficient and that construction and operational HRAs are required. The commenter is referred to Responses to Comments A-5 to A-9. As previously stated, the analysis is based on the Laguna Niguel CEQA Manual, which utilizes South Coast AQMD's LST methodology to substantiate the need for a construction HRA. LSTs represent the maximum emissions from a project in the South Coast Air Basin that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard. The LST analysis found that the proposed project would result in less than significant impacts following implementation of Mitigation Measures AQ-1, AQ-2, and AQ-3. In addition, an operational HRA was not prepared because operational land uses would not generate significant levels of TACs or DPM, which are associated with uses such as chemical processing or warehousing.

A-22 The commenter asserts that the DEIR's use of the LST thresholds for construction health risk is inappropriate. The commenter is referred to Response to Comment A-5, which explains why the DEIR's analysis is appropriate. CARB categorizes DPM as a subset of $PM_{2.5}$.[3] Therefore, DPMs were analyzed as part of the LST analysis under $PM_{2.5}$ emissions.

[3] See https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health

A-23 The commenter states that the DEIR should have prepared a quantitative construction and operational HRA. As previously stated, the DEIR analysis of localized air quality impacts is consistent with the Laguna Niguel CEQA Manual. As identified in the CEQA Manual, a construction HRA analysis is not required if project-related emissions do not exceed the LSTs. Consistent with this guidance, the analysis used South Coast AQMD's LST methodology, which represent the maximum emissions from a project in the South Coast Air Basin that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard. In addition, CARB categorizes DPMs as a subset of $PM_{2.5}$.[4] Therefore, DPMs were analyzed as part of the LST analysis under $PM_{2.5}$ emissions.

The commenter is referred to Response to Comment A-9, which explains why equating passenger vehicle emissions from project operation to DPM emissions is incorrect. Though the proposed project would generate new trips to the project site, the majority of these trips would be passenger vehicle trips, which are generally not diesel powered and thus would not contribute to DPM emissions. An operational HRA was not prepared because operational land uses would not generate significant levels of TACs or DPM, which are associated with uses such as chemical processing or warehousing.

A-24 The commenter refers to OEHHA documents as justification for why an operational HRA should be prepared. The commenter is referred to Response to Comment A-6, A-7, A-8 and A-9, which explain why an operational HRA was not required.

A-25 The commenter asserts that the DEIR is deficient for failure to compare potential health risks against South Coast AQMD's threshold of 10 in 1 million. The commenter is referred to Responses to Comments A-5 to A-9, which discuss the appropriateness of the DEIR's air quality analysis, particularly Response to Comment A-8, which explains why assessment against the South Coast AQMD thresholds was not required for project operation.

A-26 The commenter asserts that the screening level HRA prepared constitutes substantial evidence of a significant health impact. First, the commenter is referred to Responses to Comments A-5 to A-8. Second, the commenter is referred to Response to Comment A-9, which explains why the commenter's screening level HRA does not constitute substantial evidence and includes many flaws. The screening-level HRA prepared by the commenter did not use the correct DEIR construction output to conduct the assessment. For the construction risk analysis, the HRA prepared by the commenter used 886.8 lbs of DPM emitted during project construction. However, the source of the 886.8 lbs (or 0.443 tons) of DPM is not clear from the analysis, and the health risk calculation worksheet provided in Appendix A of the comment letter is cut off and not

[4] See https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health

fully visible. Therefore, it is unclear how the 886.8 lbs was derived, and it appears the unmitigated construction emissions were possibly included in the commenter's provided HRA. Additionally, the commenter's HRA does not appear to incorporate Mitigation Measure AQ-1, which would reduce DPM emissions during the earthwork and overlapping construction phases by over 85 percent. Therefore, the screening-level assessment appears to overestimate the construction emissions associated with the project.

The screening-level HRA prepared by the commenter also incorrectly correlates exhaust $PM_{10}$ generated by project operation as DPM emissions. Although this is largely the case for project construction as diesel-fueled off-road equipment emit DPM, this is not the case for project operation, which consists of commercial and residential land uses that are not major emitters of TACs or DPM. As provided in DEIR Appendix C, operational exhaust $PM_{10}$ emissions are predominantly from gasoline-fueled passenger vehicle miles generated by the project and energy consumption, and not from diesel-fueled vehicles generated by the project. As such, the exhaust $PM_{10}$ emissions provided in Appendix C should not be equated to diesel exhaust or DPM emissions, as is the case in the commenter's HRA. Therefore, the screening-level health risks in the HRA provided by the commenter are incorrect.

Lastly, the HRA prepared by the commenter used a screening model (AERSCREEN), which—compared to refined air dispersion modeling (i.e., AERMOD) typically conducted in health risk analyses—tends to overpredict pollutant concentrations and provide worst-case scenarios. Nevertheless, the results of the screening-level HRA prepared by the commenter are erroneous since the HRA did not include the correct DPM emissions from project construction including Mitigation Measure AQ-1 and incorrectly equated exhaust $PM_{10}$ from project operation to DPM emissions.

A-27 The comment states that the DEIR's GHG analysis is inadequate for three specified reasons, which are responded to in Responses to Comments A-28 to A-32l

A-28 The commenter asserts that the DEIR's GHG analysis is flawed because it fails to implement all feasible mitigation and the commenter identifies allegedly feasible measures subsequently in Comment A-32. The DEIR complies with CEQA's mandates regarding mitigation. The commenter is referred to Response to Comment A-32.

A-29 The comment asserts that the DEIR was required to use a performance-based VMT per capita threshold pursuant to SB 375 to demonstrate consistency with the Scoping Plan. For the reasons outlined, no such analysis was required. CEQA gives lead agencies the discretion to determine, in the context of a particular project, how to assess potential GHG impacts. (See CEQA Guidelines § 15064.4.) The options specified include analyzing against applicable numerical thresholds, such as South Coast AQMD's.

(*League to Save Lake Tahoe Mountain Area Preservation v. County of Placer* (2022) __ Cal.App.5th __, __ [recognizing that using a numerical threshold from an air pollution control district was a permissible option that complied with CEQA].) Likewise, the CEQA Guidelines identify qualitative analyses as appropriate methods. Here, the DEIR uses two methods to assess whether the project's GHG emissions should be considered significant: (1) comparing against the South Coast AQMD's numerical threshold and (2) a qualitative analysis of the project's consistency with the Scoping Plan. Because the project would exceed the applicable South Coast AQMD standard and have a significant GHG impact, the DEIR concluded that the project would have a significant impact with respect to Scoping Plan consistency. The GHG analysis is consistent with the CEQA Guidelines and adequately evaluates GHG impacts as required by CEQA. There is no requirement to evaluate the scoping plan VMT data.

Also, the DEIR includes a VMT analysis consistent with the City of Laguna Niguel's Transportation Assessment guidelines, which are a local standard for assessment of VMT impacts (as opposed to the statewide or regional nature of the Scoping Plan). Operationally, the project would be substantially less than the baseline VMT thresholds, which is consistent with the goal of reducing VMT through mixed-use, local development and, as a result, reducing GHG emissions. The residential and nonresidential components of the project were estimated to generate a lower rate of VMT than the citywide average. However, notwithstanding this reduction from baseline VMT , because of the size and scope of the project, it was found to exceed applicable GHG thresholds. The commenter's request is unnecessary, as CEQA does not require every test requested by a commenter. The commenter also does not explain how statewide and regional VMT numbers from the Scoping Plan correlate to localized VMT and GHG analyses.

A-30 The commenter asserts that the DEIR must include an analysis of the project's consistency with RTP/SCS "performance-based" VMT and per capita emissions reduction goals. As discussed in Response to Comment A-29, the DEIR evaluates both GHG and VMT impacts consistent with CEQA. SCAG is a Joint Powers Authority under state law, established as an association of local governments and agencies that voluntarily convene as a forum to address regional issues. Generally, SCAG develops long-range regional transportation plans, including sustainable communities strategy and growth forecast components, regional transportation improvement programs, and regional housing needs allocations. The growth assumptions in the RTP/SCS and the associated per capita and VMT "performance" standards identified by commenter are based on continually evolving regional population and growth projections (which are generated from local general plans and other planning documents). The 2020–2045 RTP/SCS—also referred to as Connect SoCal—was adopted in September 2020.

SCAG completes a comprehensive update of the plan every four years to update the growth forecast, integrate new projects and programs funded by the six county transportation commissions, confirm alignment with federal and state performance standards and environmental requirements, and review and refine regional strategies to address gaps in achieving the region's vision for greater mobility, sustainability, and economic prosperity. According to SCAG, for the purpose of determining consistency with Connect SoCal for CEQA, lead agencies such as local jurisdictions have the sole discretion in determining a local project's consistency; consistency should be evaluated utilizing the goals and policies of Connect SoCal and its associated Program EIR. Furthermore, as seen in DEIR Section 5.15, *Transportation*, the proposed project is expected to generate lower VMT than the established VMT significance thresholds under Baseline Year 2016 conditions and Cumulative Year 2045 conditions for both the residential and nonresidential components. The proposed project is also locally serving in that it provides more options for residents to live and work locally and encourages diverse housing and transportation options that reduce VMT. Additionally, the proposed project has multimodal amenities that enhance mobility and regional connectivity with multimodal connections that extend local access to regional networks for alternative modes of travel. Consequently, the project is consistent with the overall objectives of the Connect SoCal Plan and would not interfere with SCAG's ability to implement the regional strategies outlined in the Connect SoCal. The commenter also does not provide any support for how the regional "performance" standards identified can be correlated to local projects. Because of the regional nature of the RTP/SCS and the complexity of multi-jurisdiction regulations and authority of SCAG, comparing the project to regional thresholds would not be useful.

A-31 The comment states that the GHG analysis must include an assessment of consistency with SCAG's "performance-based" VMT standards. The commenter is referred to Response to Comment A-30. Overall, Chapter 5.15, *Transportation*, notes that the proposed project has lower rate of VMT than the citywide average, with residential and nonresidential VMT per capita totaling 15.2 and 20.9 in 2045.

A-32 The commenter states that the DEIR identified a significant and unavoidable GHG impact and identifies "several mitigation measures that are applicable to the project" from a table from SCAG's RTP/SCS. The commenter does not make any attempt to explain whether the listed measures, which were simply copied and pasted, would actually and effectively reduce GHGs from the project, or are even applicable to the project. The measures identified are also extremely general (e.g., "use lighting systems that are energy efficient" and "use the minimum feasible amount of GHG-emitting construction materials" and "consult the SCAG Environmental Justice Toolbox for potential measures" and "included off-site measures to mitigate a project's emissions"), which makes assessment of the measures nearly impossible. Likewise, the commenter does not attempt to explain how the measures would reduce GHG

emissions or to what extent. The commenter's lack of specificity and lack of any attempt to connect the identified measures to the project make responding significantly difficult. An EIR need not explain why suggested mitigation measures that are described in general terms and are not specific to the project are infeasible. (*Santa Clarita Org. for Planning the Env't v. City of Santa Clarita* (2011) 197 Cal.App.4th 1042, 1055.)

It should also be noted that SCAG specifies that the mitigation measures listed by the commenter are "[f]or projects proposing to streamline environmental review pursuant to SB 375, SB 743, or SB 226 [], or for projects otherwise tiering off" SCAG's Connect SoCal Plan EIR. The project is not tiering off in the manner identified by SCAG.

The measures themselves also include qualifiers such as "where feasible," which makes their applicability and efficacy questionable as presented by commenter. Nevertheless, the response that follows attempts to address the measures identified by the commenter. The commenter is referred to the plans, programs, and policies (PPP) identified in DEIR Section 5.7. Those PPPs identify regulatory and plan/policy standards applicable to the project and having the effect of reducing GHG emissions, including compliance with the CBC, construction reduction and recycling, and water efficient landscaping, many of which are identified by the commenter as prospective mitigation.

As discussed in the DEIR, the largest source of GHG emissions is operational mobile sources. To reduce such emissions, the DEIR incorporates GHG mitigation measures GHG-2 and GHG-3. GHG-2 requires building plans to incorporate features related to providing increased electric vehicle charging and bicycle parking. These are measures identified by the commenter as prospective mitigation, but have already been incorporated into the proposed project. Thus, measures recommended by commenter—incorporate bicycle and pedestrian facilities into project design and provide bicycle parking—are already part of the project. Moreover, bikeways surround the project site, which together with increased bicycle parking will promote alternative means of transportation (consistent with the general measures specified by commenter). The project is also making a number of pedestrian and bicycle off-site improvements, including buffered bike lanes, and the number of electric vehicle charging stations would exceed those specific in the commenter's suggested measures (see DEIR MM GHG-2). GHG-3 requires preferential parking for low-emitting, fuel efficient, and carpool and vanpool vehicles (consistent with CALGreen Code voluntary measures). GHG-3, like GHG-2, already implements a number of the measures recommended by commenter (see e.g., "designate a percentage of parking spaces for ride-sharing vehicles or high-occupancy vehicles" and "measures that encourage transit use, carpooling, bike-sharing and car-share programs, active transportation").

A measure identified by the commenter also suggests land use "siting and design measures that reduce GHG emissions" and provides development on infill sites and compact and mixed-use developments as means of achieving that measure. The project is a mixed-use, infill development that would result in VMT reductions from baseline cases. Thus, the project complies with those identified measures. Existing transit lines are also located adjacent to the project site. Coupled with bicycle facilities surrounding and to be located on the project site, this convenient transit access will promote alternative means of transportation, which is consistent with the "improving transit access" measure identified by commenter. From an operational perspective, GHG-1 requires EnergyStar appliances to be installed. EnergyStar appliances are among the most efficient on the market. Thus, the project already incorporates the measures and/or strategies contained within the measures as means to reduce GHG emissions. The commenter has not presented any evidence to the contrary.

A-33 The commenter asserts that the project should incorporate a solar power system into the project design. The project does include a 1.5 kilowatt/unit solar system for the Residential 2 land use. As shown on DEIR Figure 5.11-2, *Carport Photovoltaic Layout,* the system is incorporated into the carports of the surface parking lot. There are various reasons that make additional solar infeasible, including (1) limited space and sizing/fit constraints on proposed rooftops due to the dense nature of proposed buildings (HVAC and other building elements must be located on rooftops) and (2) solar installation on project buildings may have an adverse impact on adjacent uses (because installation on rooftops would be located higher than the carport installation, and rooftop installation could generate glare on adjacent residences and would not be buffered by landscaping to the same extent. The project is intentionally includes a mixture of uses to promote a project that results in lesser VMTs than would be expected under baseline conditions, and to engender a civic, pedestrian oriented space. To achieve this, project buildings are designed as dense multifamily and commercial uses, which requires that HVAC and other building elements be located on rooftops. Second, with respect to glare, as the DEIR notes, project building heights would largely be below the pads of adjacent uses. Solar PV facilities can be sources of glare and installation of solar on rooftops have the potential to result in glare at those residences. The DEIR notes that the project's buildings would not be designed with large expanses of glass or highly finished materials that could contribute to glare. Solar PV panels can contribute to glare on adjacent residences. As discussed in the DEIR, the project's proposed PV installation would not result in glare impacts because it would be located much further down the hillside than roofs and would be more obscured by existing landscaping. Rooftop PV installations would not be buffered to the same extent as the planned PV facility.

A-34 The comment is introductory in nature and describes the commenter's background. It is not a comment on the adequacy or analysis of the DEIR and no specific response is required.

A-35 The commenter is referred to Response to Comment A-11, which addresses the DEIR's existing biological setting characterization. The commenter suggests that the duration of the VCS survey was not sufficient to adequately characterize the project site. Further, providing examples of his own extended surveys, he concludes that "the number of species detected is largely a function of the effort committed to the survey," stating "a longer-duration survey would result in additional species detections, as would additional surveys repeated over the span of a year of so." The commenter further describes his survey on the 167-square-kilometer Altamont Pass Wind Resource Area. As explained in Response A-11, the VCS survey follows the accepted protocol for the analysis to support the DEIR. The survey and report substantiate the findings required for CEQA, and the focus, per the City's CEQA Manual and the California CEQA Guidelines, is on the potential for the project to result in a substantial adverse effect on sensitive species and habitats, or wildlife movement. It is not the intent, nor the requirement, for the biological resources survey to maximize the identification of all vertebrate wildlife at the site. Moreover, as noted in Response A-11, the statistical approach as outlined in this comment to estimate the potential number of species (or nests, etc.) on the project site based on the experience on a completely different type of site is flawed given the different biological resource values between the commenter's reference site and the project site. Finally, as noted in Response A-11, the use of the CNDBB is the database recognized by CDFW, the Trustee and Responsible agency for biological resources pursuant to CEQA. There is no requirement to use the alternate databases referenced in this comment. The commenter has not provided substantial evidence that development of the Laguna Niguel City Center would result in a significant impact to biological resources. A revised EIR is not required.

A-36 The commenter is referred to Response to Comment A-12, which discusses the DEIR's analysis of habitat and breeding impacts.

A-37 The commenter is referred to Response to Comment A-13, which discusses the adequacy of the DEIR's analysis of wildlife movement.

A-38 The commenter is referred to Response to Comment A-14, which discusses the commenter's earlier comments regarding traffic impacts to species. Please also refer to Response A-35. The potential life-time wildlife mortality of common wildlife species that may be attributed to the incremental increase in traffic for an individual development project is not within the realm of CEQA. Furthermore, as supported in previous responses, there is no evidence of the presence of sensitive species on this

project site. The commenter does not present any substantial evidence of a potential impact that requires analysis in the DEIR.

A-39 The commenter is referred to Response to Comment A-15, which explains why the DEIR's analysis of cumulative biological impacts complies with CEQA.

A-40 The commenter is referred to Response to Comment A-16, which explains why the DEIR's mitigation measure is appropriate and satisfies the requirements of CEQA.

A-41 The commenter identifies additional mitigation for road mortality associated with project traffic. The commenter is referred to Response to Comment A-14, which explains that the DEIR is appropriate and no roadway traffic impact would result. Thus, additional mitigation is not required.

A-42 The commenter identifies additional mitigation for habitat loss. The commenter is referred to Response to Comment A-12, which explains why the DEIR's analysis

A-43 The comment identifies funding sources for suggested compensatory mitigation. The commenter is referred to Responses to Comments A-12 to A-16 and A-34 to A-42, which collectively note that additional mitigation is not required.

A-44 The DEIR evaluates the potential of the project to result in physical impacts to the environment. Pursuant to the *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369 (Case No. S213478), impacts of the environment on the proposed project are not CEQA impacts.

The commenter speculates about the types of indoor building materials that would be used during construction. There is no substantial evidence that the project will involve use of materials that contain formaldehyde in levels that pose a risk to human health. As described on DEIR pages 3-11 and 3-12, the proposed project would comply with CALGreen, which requires that all composite wood products used on the interior of a building "shall meet the requirements for formaldehyde as specified in California Air Resources Board Air Toxics Control Measure for Composite Wood (17 California Code of Regulations § 93120 et seq.)." The City of Laguna Niguel includes the CALGreen requirements with local amendments for projects in the city, including measures affecting indoor air quality. CALGreen established planning and design standards for reducing internal air contaminants. As stated in the CEQA Guidelines § 15126.4, compliance with a regulatory permit or other similar process may be identified as mitigation if compliance would result in implementation of measures that would be reasonably expected, based on substantial evidence in the record, to reduce the significant impact to the specified performance standards.

In summary, without substantial evidence that the building materials that will be used in project construction will emit formaldehyde gas in levels that will exceed the State's emission limits, the commenter's assertion that future project employees or guests could be at risk for carcinogens constitutes speculation, not substantial evidence. Additionally, the commentor speculates that the proposed project could have an effect on the future residents, employers, and visitors, which is not considered an impact under CEQA and need not be analyzed in the DEIR.

With regard to outdoor $PM_{2.5}$ concentrations, the California Building Code (Title 24), Part 6 (California Building and Energy Efficiency Standards) and Part 11 (California Green Building Standards Code [CALGreen]) have standards for enhanced filtration for multifamily residential buildings to improve indoor air quality. Under Title 24, Part 6, § 120.1(b)(1)(C) and Part 11 § 5.504.5.3, multifamily residential buildings that are four stories or higher are required to use MERV-13 filters, which filter 80 to 90 percent of particulates between 1.0 and 3.0 microns and over 90 percent of particulates between 3 and 10 microns. As a result, high efficiency air filters are already required. Further, as stated above, impacts of the environment on the project are not impacts under CEQA.

See above regarding formaldehyde; the proposed project would be required to comply with CARB's existing standards, and mitigation to reduce the formaldehyde content of building materials used during construction is not warranted.

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RE: Supplemental Objections to Project Approvals and Certification of the Final Environmental Impact Report for the Laguna Niguel City Center Mixed Use Project (SCH# 2019110083) – PC Agenda Items 1.A-F.

Dear Chair Brian Fisk, Honorable Commissioners, John Morgan and Deborah Harrington

On behalf of the Southwest Regional Council of Carpenters ("**SWRCC**") or "**Southwest Carpenters**"), my Office is submitting these supplemental comments on the Environmental Impact Report ("**EIR**") for the Laguna Niguel City Center Mixed Use Project ("**Project**") and objects to the Project-related approvals by the City of Laguna Niguel ("**City**" or "**Lead Agency**").

B-1

The instant comment supplements SWRCC's comment submitted on April 29, 2022, which SWRCC incorporate by reference herein. In addition, SWRCC incorporate by

reference all comments raising issues regarding the Project and its CEQA compliance. *Citizens for Clean Energy v City of Woodland* (2014) 225 Cal.App.4th 173, 191 (finding that any party who has objected to the Project's environmental documentation may assert any issue timely raised by other parties).

As previously noted, the Southwest Carpenters is a labor union representing more than 50,000 union carpenters in six states, including California, and has a strong interest in well-ordered land use planning, addressing the environmental impacts of development projects and equitable economic development. Individual members of the Southwest Carpenters live, work and recreate in the area and surrounding communities and would be directly affected by the Project's environmental impacts. B-1 cont.

SWRCC appreciate City's responses to its prior April 29, 2022 Comment and responds thereto, apart from noting further omissions and violations of CEQA.

## I. THE EIR VIOLATED CEQA BY FAILING TO ACCURATELY DISCLOSE ALL THE PROJECT'S EARTH-MOVING ACTIVITY, AND BY PIECEMEALING HAUL ROUTE, WITH ATTENDANT MORE SEVERE IMPACTS; IT REQUIRES RECIRCULATION.

The Project approval and its EIR would violate CEQA for failure to accurately disclose, analyze and mitigate the impacts of the earth-moving activity, and for piecemealing and deferring the haul-route and its impacts from the EIR study. (Guidelines §§ 15378(a) & (c) ["whole of an action"], 15126 ["all phases" of the project need to be studied in the EIR]; 15063 ["all phases" need to be studied in the initial study].)

The requirements of CEQA cannot be avoided by piecemeal review which results from 'chopping a large project into many little ones-each with a minimal potential impact on the environment-which cumulatively may have disastrous consequences.' (*Bozung v. Local Agency Formation Com.* (1975) 13 Cal.3d 263, 283–284 [118 Cal.Rptr. 249, 529 P.2d 1017]; *City of Antioch v. City Council* (1986) 187 Cal.App.3d 1325, 1333 [232 Cal.Rptr. 507].)" (*Rio Vista Farm Bureau Center v. County of Solano* (1992) 5 Cal.App.4th 351, 370, 7 Cal.Rptr.2d 307.) For example, "[w]here an individual project is a necessary precedent for action on a larger project, or commits the lead agency to a larger project, with significant environmental effect, an EIR must address itself to the scope of the larger project." (Guidelines, § 15165.) The prohibition against piecemeal review is the flip side of the requirement that the whole of a project be reviewed under B-2

CEQA. (See Guidelines, § 15378, subd. (a).)" *Lighthouse Field Beach Rescue v. City of Santa Cruz* (2005) 131 Cal.App.4th 1170, 1208–1209.

The EIR and the Staff Report make clear that the haul route for the Project is still to be determined and approved. (Staff Report, p. 4 "A construction hauling plan is required to identify the construction haul routes and traffic control measures to ensure the hauling operation is as least disruptive as possible."])

B-2 cont.

Further, the Staff Report mentions significant earth-moving activity:

> The project estimates approximately **127,000 cubic yards of net cut and fill grading**. The earthwork would mostly involve lowering the pad elevations from existing conditions for the majority of the site and excavation for the partially subterranean parking structure for Residential Building No. 1. Grading activities would result in approximately **98,000 cubic yards of export**. Approximately **83,000 cubic yards of export** would occur during the site preparation and rough grading phase, and the remaining **15,000 cubic yards** would occur during the fine grading and street paving phase. Utilities for the project (water, sewer, storm drain, gas, and electrical work) would occur concurrently with grading.

(Staff Report, p. 15.)

B-3

The EIR's and Staff Report's estimated 98,000[1] cubic yard of export apparently does not count hauling of the demolition debris from 104,410 sq. ft. buildings or the crushing of same, along with the asphalt and concrete areas of the Project site. (DEIR, p. 5.2-22--23.) The EIR is not clear on whether debris from the demolition will be reused or crushed, as its noise study mentions crushing for library and other buildings (DEIR, p. 5.11-27--29), and yet its demolition plan mentions crushing for only asphalt and concrete (DEIR, p. 3-24 ["The demolition plan includes crushing concrete and asphalt material"]). As such, the EIR provides no definitive and supported number as to how much export, cut/fill, and earth-work is involved in the Project, and hence what their attendant impacts may be.

[1] DEIR, p. 5.2-26, fn. 12 states: "Soil hauling would involve exporting 98,000 cubic yards of soil off-site to the Brea Olinda Landfill during the site preparation, rough grading, and fine grading phases. Soil hauling during the fine grading phase would also involve import of 10,000 cubic yards of soil into the project site."

In addition, even if the debris from the demolition of 104,410 sq. ft. of buildings is reused at the Project site, that amount must still be counted towards the cut/fill, export/import, since – based on the EIR and Staff Report – that amount, along with asphalt/concrete to be crushed – needs to be *moved* to the "center" of the Project for crushing and then moved again to the areas where it should be reused.[2] (DEIR, p. 3-24 ["The crushing operation and accompanying stockpile of material are anticipated to be located in the center of the site"].) B-4

Further, the "127,000 cubic yards of net cut and fill grading" noted in the Staff Report is *not* in the EIR. The omission is significant for at least two reasons: (1) it confirms that the EIR provides no accurate number for cut/fill and export/import in the Project and the Staff Report does not explain how 127,000 cubic yard estimate was generated; (2) it implicates more severe impacts, including but not limited to energy impacts, GHG emissions, and air quality that were not studied in the EIR. (*See,* Guidelines §§ 15126.2(b) [need to study energy impacts]; 15126.4 [need to minimize energy impacts].) B-5

In sum, the EIR failed to provide an accurate analysis and amount of the export/import, cut/fill associated with the Project and potentially underestimated it and its associated impacts by omitting export/import from the demolition debris, violating CEQA's good-faith disclosure requirements. In addition, the EIR piecemealed haul route and evaded the analysis/mitigation of its associated impacts for the inaccurately identified export/import amounts, in violation of CEQA. B-6

The above-mentioned omissions and violations make the EIR fatally inadequate and require recirculation to provide the omitted analysis and mitigation of additional impacts it failed to identify.

## II. THE EIR IS FATALLY INADEQUATE AS IT UNDERSTATES NOISE IMPACTS.

The EIR significantly understates the Project's construction noise impacts for several reasons. The EIR provides, in relevant parts:

> "Construction noise levels at sensitive receptors are estimated by modeling the simultaneous use of at least one of each type of construction B-7

[2] **Cut:** Earth that is removed from an area is considered "cut" or excavated earth; **Fill:** Earth that is brought into an area is considered "fill" or embankment earth.

> equipment per activity phase from the construction equipment list provided by the applicant (see Appendix C, AQ/GHG). Equipment is modeled using the RCNM. After modeling construction equipment per activity phase, including overlapping phases, the distances to various sensitive receptors are estimated using Google Earth. Estimating distances from various construction phases to various receptors is explained below, followed by Table 5.11-9 showing the results of construction noise modeling. **Distances** to sensitive receptors **may differ** between **noise** analysis and **air** quality analysis due to **differences** in the **methodologies** for analyzing noise emissions versus air quality and GHG emissions. See the descriptions below of the distances for noise for varying construction activity phases (also see Table 5.11-9).
>
> Distances to the nearest sensitive receptors (residences to southwest) to the activity phases were measured from the **approximate acoustical center** of the project site to the nearest surrounding sensitive receptors, because these activities would occur **throughout** the **entire** site all in one phase.[11] The **center** of the site best represents average noise levels as denoted by the noise descriptor: Leq-time-average sound level. In addition, onsite rock crushing operations from demolition debris, would take place at the center of the site. The Roadway Construction Noise Model does not have reference noise levels for rock **crushing equipment**, however, it has been substituted with a **mounted impact hammer** in the modeling which generates noise levels equivalent to known rock crushing operations."

B-7 cont.

(DEIR, p. 5.11-27—28, emph. added.)

The above-noted passage reveals several flaws. First, the DEIR acknowledges that the distances to sensitive receptors in the noise study and air study differ, but attributes that to the *methodology* used in the noise study, apparently the "acoustical center" of the Project. Yet, the DEIR does not define *where* – on the 25 acres of the Project site – that "acoustical center" or "center" is located. Moreover, the EIR shows that the library and other buildings – where the demolition will occur – is far from the "center" of the Project, where the debris from demolition will be moved and where crushing will occur. (Compare DEIR, p. 3-25 [new plan and library allegedly in the "center" of the Project] and DEIR, p. 4-9 [existing baseline showing all buildings to be demolished

located along the streets and away from the "center"].) In addition, paving activity – with its attendant noise – reasonably occurs throughout the Project site, and not just at the "center."

At the same time, the EIR identifies that the noise levels are highest from the demolition activity and paving activity. (DEIR, p. 5.11-29 [73 (library, 74 (modular and justice support buildings], 75 [paving].)

And based on those noise estimates from the "acoustical center," the EIR concludes:

> "As shown in Table 5.11-9, construction noise would occur within 500 feet of a noise-sensitive receptor. Construction noise levels, however, would not exceed the City's construction noise threshold of 80 dBA Leq at noise sensitive receptors."

B-7 cont.

(DEIR, p. 5.11-28.)

As is evident from the above-noted analysis, the EIR understates noise impacts by simply choosing the unidentified "center" of the Project site as the measurement point, whereas most of the noisy activities occur on the sides of the Project and potentially closer to the sensitive receptors. In view of the fact that the noise levels from demolition and paving (73-74 dBA) were close to the thresholds of 80dBA, and the fact that those noise levels were improperly measured from the unidentified "center" of the Project rather than where actually the noise would occur, the noise impact analysis was defective and the Project's no noise impacts finding is clearly erroneous.

Further, the exact site of measurements is also critical in order to identify where the noise buffers, if at all, must be placed to minimize noise impacts.

Second, the DEIR notes that, for noise impacts, the noise study "substituted [rock **crushing equipment**] with a **mounted impact hammer** in the modeling which generates noise levels **equivalent** to **known rock** crushing operations." The DEIR at p. 3-24 provides: "The demolition plan includes crushing concrete and asphalt material (using a Powerscreen Trakpactor 320SR or similar impact crusher) and stockpiling it for use as engineered fill or pavement base." The EIR apparently claims that the noise from the **mounted impact hammer** is equivalent to that from the "**Powerscreen Trakpctor 320SR**" but there is no substantial evidence to support that assertion. In view of the fact that the demolition and crushing noise impacts are close to the 80dBA threshold, the fact that the EIR substituted the noise levels of the heavy-duty crushing equipment with those of a mounted impact hammer, and the fact that the distance to

B-8

the sensitive receptors was improperly calculated from the center show that the noise impacts of crushing involved in the demolition was heavily understated. B-8 cont.

Third, the EIR assumes that – since the Project's center will be away from the residential uses – those noise impacts would be necessarily attenuated. However, the Staff Report acknowledges that the Project is located at *lower* elevations from the residential uses:

> "The hillside residences adjacent to the project site are located substantially above the project site, and are set back a substantial distance from project buildings. The proposed buildings are approximately 110 to 220 feet from the closest nearby residential buildings. These offset distances and the elevated location of residences reduce the perception of height and any limited projections associated with project buildings." B-9

(Staff Report, p. 2-73.)

The fact that the residential buildings and sensitive receptors are located at higher elevations suggests that the Project's noise impacts may be audible and significant and not attenuated by the distance as the EIR assumed. The EIR's noise study does not show that it considered the topography or elevations of the Project site in its noise/distance calculations. Thus, the EIR's noise study is defective as it fails to adequately study the noise impacts to the adjacent residential buildings.

In view of the aforementioned, the EIR's traffic analysis must be revised and the EIR must be recirculated to address the noted omissions and mitigate noise impacts.

## III. THE EIR MUST BE RECIRCULATED IN LIGHT OF NEW BAAQMD'S GUIDELINES ON DECREASING GREENHOUSE GAS ("GHG") EMISSIONS AND AVAILABILITY OF FEASIBLE GHG MITIGATION MEASURES WHICH THE EIR DISREGARDED.

The EIR finds that the Project will have significant and unavoidable GHG emissions and further City prepared a statement of overriding considerations ("SOC") which overrides those impacts, considering those "acceptable." B-10

The EIR and the proposed SOC disregard the State Mandates and goals for reducing greenhouse gas emissions by 40% (SB32 and AB32). As such, the SOC is improper since City may not override applicable regulations. Pub. Res. Code § 21002.1(c). That the GHG issue may not be disregarded is also underscored by the new CEQA

thresholds of significance (hereinafter, "Guidance") from the Bay Area Air Quality Management District ("BAAQMD").

On April 20, 2022, the BAAQMD adopted updated CEQA thresholds of significance that it recommends for public agencies' use in evaluating the environmental impacts of land use projects and general plans.[3] BAAQMD reaffirms the need for all projects to make their "fair share" contribution to GHG reduction and recommends an approach where projects and plans may be deemed to have less than significant GHG impacts under CEQA if they contribute their "fair share" of what will be required to achieve CA's long-term climate goals (i.e. achieving carbon neutrality by 2045).

Per the BAAQMD Guidance, a land use project should qualify as doing its fair share if it either: (a) includes certain minimum design elements; or (b) is consistent with a local GHG reduction strategy which meets the criteria specified in section 15183.5(b) of the CEQA Guidelines.

To qualify as doing its fair share based on its design elements, a land use project must incorporate specified building and transportation design elements. The required building design elements include: (1) not using natural gas appliances or natural gas plumbing in an effort to retrofit natural gas infrastructure and replace it with electrical power; and (2) not resulting in any wasteful, inefficient, or unnecessary energy usage (as determined by CEQA section 15126.2(b) [assessing the project's location, orientation, equipment use, renewable energy features, and GHG emissions]) in an effort to maximize energy efficiency.

B-10 cont.

The required transportation design elements include: (1) achieving a reduction in projected vehicle miles traveled ("VMT") below the 15% regional average or meeting a locally adopted Senate Bill 743 VMT target (i.e. Residential projects: 15% below existing VMT per capita; Office projects: 15% below existing VMT per employee; Retail projects: no net increase in existing VMT); and (2) achieving compliance with off-street electric vehicle charging infrastructure requirements in the most recently adopted version of CALGreen Tier 2.

Alternatively, a land use project may qualify as doing its fair share if is consistent with a local GHG reduction strategy meeting the criteria specified in section 15183.5(b) of the CEQA Guidelines (i.e. quantifying the GHG emissions, establishing a level based

[3] https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-thresholds-2022/justification-report-pdf.pdf?la=en

on substantial evidence below which contribution would not be cumulatively considerable; specifying measures which if implemented would achieve the specified emissions level; establishing a monitoring system; and adopting the strategy in a public process.)

In justifying the fair share approach, BAAQMD relies heavily on the *Center for Biological Diversity v. Department of Fish and Wildlife* (2015) 62 Cal.4th 221 case, where the CA Supreme Court endorsed the approach. Specifically, BAAQMD asserts that the fair share approach is consistent with the principle inherent in CEQA that an individual project would make a less than significant cumulative contribution to GHG emissions if it would do its part to address the cumulative problem.

Additionally, BAAQMD notes that CA's goal to achieve carbon neutrality by 2045 is its articulation of what will be required to achieve long term climate stabilization at a sustainable level and that the CA Supreme Court in *Cleveland National Forest Foundation v. SANDAG* (2017) 3 Cal.5th 497, 513 recognized the necessity and appropriateness of using long-term goals as the touchstone for CEQA analysis, finding that long-term goals express "what scientific research has determined to be the level of emissions reductions necessary to stabilize the climate by midcentury and thereby avoid catastrophic effects of climate change."

B-10 cont.

Based on the EIR, Staff Report, and SOC, City has not analyzed the Project under either alternative proposed by BAAQMD: Design Elements or GHG strategy. Neither is the EIR's assumption of less than significant impacts of GHG upon some unidentified reduction of development proper or supported by substantial evidence. Instead, the EIR simply documents GHG emissions and assumes that there are no feasible mitigation measures to reduce those; City, in turn, offers an SOC for same. BAAQMD Guidance above shows that the State has specific goals to reduce GHG emissions and that each project – including the Project at issue here – must do its fair share to achieve the state's goal rather than seek to override such GHG impacts considering those "acceptable." BAAQMD's Guidance and new CEQA threshold analysis is all the more important where, as here, the Project is proposed on public land and is allegedly for public benefit.

Further, BAAQMD Guidance is significant for this Project and EIR since it offers new ways to minimize GHG impacts, e.g., requirement to eliminate gas appliances and unnecessary energy use, etc.

B-11

BAAQMD's Guidance is also important here, in light of the EIR's and Project's proposed crushing operations: thus, while the EIR suggests that crushing will help minimize hauling amounts (and apparently minimizes costs for the Applicant to haul away debris from demolition of 104,410 sq. ft. of buildings), the EIR does not consider the *impacts* of such crushing, including its additional energy use and GHG emissions from the heavy-duty crushing trucks that will be operating on the site. B-12

The aforementioned BAAQMD Guidance was adopted *after* the EIR circulation and constitutes new significant information showing the Project may have more significant impacts than analyzed in the EIR (including impacts from crushing of demolition debris) and there are feasible mitigation measures to reduce GHG emissions than included or analyzed in the EIR. B-13

The EIR must be recirculated to analyze the Project's GHG impacts and feasible alternatives or mitigation measures in light of BAAQMD's Guidance. And an SOC may not be properly approved for GHG impacts under CEQA and applicable rules.

## IV. SWRCC'S PARTIAL RESPONSES TO THE CITY.

SWRCC appreciates the City's responses (starting at pp. 2-55 (pdf p. 159) in the May 24, 2022 Staff Report) to SWRCC's April 29, 2022 Comment letter and provides its partial responses thereto.

| Comment # | SWRCC Response |
|---|---|
| O3-9 | In response to SWRCC's comment that the EIR's project description is not finite as it does not provide specific square footages for the "commercial" component, City relies on *Citizens for a Sustainable Treasure Island v. City and County of San Francisco* (2014) 227 Cal.App.4th 1036, 1055 and states that it provided a "fair assessment." However, as City acknowledges, there may be different impacts associated with different uses and such impacts cannot be identified and mitigated without providing specific square footages. The issue here is not that the EIR did not provide a "breakdown" of uses, but rather, as SWRCC mentioned (at p. 13 of its April 29, 2022 comment), the EIR provided a |

B-14

| Comment # | SWRCC Response |
|---|---|
| | "a mix of incompletely identified uses, making it impossible to determine their impacts."<br><br>City's response that the hours of operation or square footage of restaurant space was identified in the project description is inaccurate. City relies on Moulton Niguel Water District's estimates and claims those estimates already include the estimate of hours for various uses; the response misses the point that the uses are not *completely* identified and that they allow for flexibility with potential impacts.<br><br>Further, to the extent City suggests that readers must read *other* sections of the EIR (e.g., public services) to "cobbl[e] together" the information about the hours of operation and square footage of restaurants or various commercial uses as part of the *adequate project description*, it is wrong: public is not required to ferret out information in the EIR. (*County of Amador v. El Dorado County Water Agency* (1999) 76 Cal.App.4th 931, 954–956 ["But such an effort should not be necessary. An adequate EIR requires more than raw data"]; *Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70, 85 ("[*San Joaquin Raptor, supra,* 149 Cal.App.4th at p. 659, 57 Cal.Rptr.3d 663 ["decision makers and general public should not be forced to ... ferret out the fundamental baseline assumptions that are being used for purposes of the environmental analysis"].)]") |
| 03-10 | In response to SWRCC's comment that the EIR does not adequately analyze or disclose impacts from various events, City responds: (1) municipal permits would be required and the Project itself does not cause impacts but merely accommodates those uses; (2) GHG is a global problem and City analyzed it based on the City's methodology; (3) the traffic impacts of the Project under VMT methodology are lower than the baseline; and (4) the Project was vetted by certain agencies, included the fire department. City's response fails CEQA's purposes and mandates, including that the agency must provide a reasoned good-faith response rather than sweep the concerns under the |

B-14 cont.

B-15

| Comment # | SWRCC Response | |
|---|---|---|
| | rug. "Rather than sweep disagreements under the rug, the City must fairly present them in its EIR. It is then free to explain why it declined to accept commission staff suggestions." (*Banning Ranch Conservancy v. City of Newport Beach* (2017) 2 Cal.5th 918, 940–941)<br>First, that municipal permits would be required for events does not mean the EIR should not analyze noise or other impacts from such events. The EIR must analyze not only the *direct* but also reasonable foreseeable *indirect* impacts of the Project. | B-15 cont. |
| | Second, the Project's GHG's analysis is inadequate in the EIR, as noted in Section IV, *supra*. It cannot be relied upon. Neither is it a justification that GHG is a global issue; in fact, as noted in Section IV, *supra,* City must be the *solution* of that global issue, not further aggravate it. | B-16 |
| | Third, the EIR's traffic analysis is clearly erroneous as it concludes that the baseline VMT – on the now mostly vacant 25 acres of land – is more than the VMT with the Project of intensive land uses, including residential and commercial. Moreover, the traffic analysis is erroneous as it clearly omits the impacts of events. As such, City's response is also circular: it refers to the traffic impacts, which failed to analyze events. | B-17 |
| | Fourth, that the Project was vetted by fire department and related agencies does not confirm the Project may have no impacts; the EIR *is* the document to disclose the impacts of the Project and to *inform* such agencies, including the fire department, of the potential impacts of the Project and to help them meaningfully assess the Project. Where the EIR fails to fulfil its purpose or raising the alarm bell, the approval of the project by decisionmakers or other departments is a "nullity." "[T]he ultimate decision of whether to approve a project, be that decision right or wrong, is a nullity if based upon an EIR that does not provide the decision-makers, and the public, with the information about the project that is required by CEQA." (*Santiago County Water Dist. v. County of Orange* (1981) 118 Cal.App.3d 818, 829, 173 Cal.Rptr. 602.)" | B-18 |

| Comment # | SWRCC Response | |
|---|---|---|
| | *(RiverWatch v. Olivenhain Municipal Water Dist.* (2009) 170 Cal.App.4th 1186, 1201.) | B-18 cont. |
| 03-12 | City's response about the library and its relocation is unavailing for several reasons. It claims listing benefits of the library are appropriate under CEQA Guidelines, Section 15124; the response misses the point. The issue is not the *expansion* or existence of the library, but rather its *relocation* to a place where it may be inaccessible to people or unsafe for library patrons, including elderly and children.<br><br>Further, City's vague and unspecified response that parking impacts are exempt from CEQA is not accurate: while Pub. Res. Code § 21099, subdivision (d) exempts consideration of aesthetic and parking impacts for certain projects, its subdivision (b)(3) makes clear that *secondary* impacts of parking are still an issue, including but not limited to safety of transportation, air quality, and others. City may not evade consideration of the secondary impacts of failure to provide parking for library patrons, where such impacts and concerns were expressed.<br><br>Further, City's assumption that the Project's "internal project street" is safe is completely unsupported. To the extent the internal project street allows vehicles passing, it presents a safety issue for people that needs to be disclosed, analyzed and mitigated. | B-19<br><br>B-20 |
| 03-15<br>&<br>03-32 | City's analysis of alternatives is legally inadequate. First, in addition to the points noted in the April 29, 2022 SWRCC Comment letter, City's alternatives analysis is also inadequate in view of its overly narrow objectives and the infeasibility determination, as reasoned under *We Advocate Through Environmental Review v. County of Siskiyou* (Cal. Ct. App., Apr. 20, 2022, No. C090840) 2022 WL 1499576, at *8 ("*WATER*").<br><br>Specifically, as in *WATER*, the EIR's objectives for the Project mirror the proposed Project including its residential component. This overly narrow range of project objectives precluded the EIR's consideration of a no-residential alternative. | B-21 |

| Comment # | SWRCC Response |
|---|---|
| | Second, City's vague response that CEQA no longer requires consideration of transportation congestion (apparently, for the residential component) is inaccurate. Pub. Res. Code § 21099(b)(2) does not eliminate the need to analyze and mitigate traffic impacts but only the analysis based on level of service. Traffic impacts caused by residential component remain a concern for CEQA. In addition, as acknowledged or claimed by the EIR, reduction of residential uses may increase GHG emissions. Hence, City's response that commenter failed to provide reasons for considering a no-residential alternative is improper. |
| | Third, City's response as to the "economic feasibility" lacks merit. While feasibility includes economic consideration, that is only *one* factor and is part of the balancing. Moreover, the "profitability" of the Project – which is at issue here – is not part of such "economic feasibility" analysis. "The fact that an alternative may be more expensive or less profitable is not sufficient to show that the alternative is financially infeasible. What is required is evidence that the additional costs or lost profitability are sufficiently severe as to render it impractical to proceed with the project." (*Citizens of Goleta Valley v. Board of Supervisors* (1988) 197 Cal.App.3d 1167, 1181 ("*Goleta I*").) "The mere fact that an alternative might be less profitable does not itself render the alternative infeasible unless there is also evidence that the reduced profitability is 'sufficiently severe as to render it impractical to proceed with the project.'" (*Preservation Action Council v. City of San Jose* (2006) 141 Cal.App.4th 1336, 1353–1358 (*"Preservation"*), citing to *Goleta I, supra.*) As in *Preservation,* the EIR here does not show any evidence that the Project's reduced profitability without the residential component would be so severe as to render the Project impractical to proceed with. |
| | In view of the EIR's flawed assumption of infeasibility and overly narrow objectives, the infeasibility of the no-project alternative is unsupported under *WATER, supra.* (*We Advocate Through Environmental Review v. County of Siskiyou* (Cal. Ct. App., Apr. 20, 2022, No. C090840) |

B-22

B-23

B-24

| Comment # | SWRCC Response |
|---|---|
| | 2022 WL 1499576, at *9 ["Appellants contend that all the County's stated reasons fail to "demonstrate[ ] that the no project alternative is infeasible," reasoning, it appears, that the County's stated reasons are flawed because they are premised on the EIR's unreasonably narrow project objectives. We agree, as mentioned, that the offered project objectives were unreasonably narrow. We also agree that this affected the County's analysis of the no-project alternative and that the County, for this reason, will need to redo its analysis."]) |
| | Fourth, for the above-stated reasons and actual feasibility to mitigate impacts, including GHG emissions (also, under BAAQMD's Guidance), City's response to SWRCC's comment on the feasibility to mitigate GHG emissions is unavailing. |
| | SWRCC respectfully requests City to re-evaluate the EIR's alternatives and mitigation measures based on *WATER, Preservation,* and BAAQMD Guidance, and to ensure that the EIR's project objectives and its infeasibility conclusions, including for the no-project (no residential component) alternative, as well as mitigation measures for GHG impacts, are adequate under CEQA and applicable legal authority. |

B-24 cont.

B-25

B-26

While SWRCC disagrees with the City's responses, it provides only a *partial* response thereto in *this* supplemental comment. SWRCC reserves the right to express its objections to the City's *other* responses through further supplemental comments.

## V. CONCLUSION.

In view of the above-noted concerns, SWRCC respectfully request that the EIR be revised and recirculated to comply with CEQA and applicable legal and legislative authority.

If the City has any questions or concerns, please feel free to contact my Office.

Sincerely,

Naira Soghbatyan
Attorneys for Southwest Regional
Council of Carpenters

**Response to "Supplemental Objections to Project Approvals and Certification of the Final Environmental Impact Report for the Laguna Niguel City Center Mixed Use Project," letter from Mitchell M. Tsai, Attorney at Law, dated May 24, 2022**
*Letter on behalf of the Southwest Regional Council of Carpenters (SWRCC)*

B-1 The comment provides general background regarding the commenter and the entity they represent—a labor union. The comment does not make any specific comment on the DEIR or assert any deficiency in analysis.

B-2 The commenter asserts that the DEIR piecemeals review because it defers analysis of a haul route. Aside from general assertions about piecemealing, the commenter does not identify any specific impacts that could occur as a result of the haul route and which were not analyzed appropriately in the DEIR. The DEIR analyzed, for instance, air quality emissions associated with hauling activities and found that impacts would be less than significant with implementation of Mitigation Measures AQ-1, AQ-2, and AQ-3. In addition, the DEIR analyzed noise from construction traffic/hauling. The haul route is a standard City of Laguna Niguel condition of approval, along with a traffic control plan and other construction conditions. (See DEIR at 5.15-11.) Moreover, as noted in the DEIR, construction activities "would be conducted in accordance with the California Manual on Uniform Traffic Control Devices (MUTCD) to ensure traffic safety on public streets, highways, pedestrian walkways, and bikeways."

B-3 The commenter suggests that the DEIR is not clear as to hauling volumes, particularly with respect to demolition. To commenter's assertion regarding the DEIR's lack of clarity regarding demolition activities and reuse of materials, the commenter is directed to the Project Description (Chapter 3), which explains that demolition includes crushing concrete and asphalt materials and stockpiling for use as engineered fill or pavement base. However, as also noted and discussed by the DEIR, hazardous building materials (e.g., asbestos) may preclude reuse of certain materials on-site. The DEIR further estimates that approximately 2,700 tons would be demolished from the existing buildings, which are assumed to be moved off-site and would require approximately 169 round-trip truck trips (20 daily trips, assuming a duration of approximately 8.5 days). Construction modeling also includes use of one piece of crushing and processing equipment for materials to be reused or recycled on-site. The commenter does not provide any evidence or otherwise suggest that these assumptions are unreasonable. The DEIR is clear as to the assumptions used and the basis for those assumptions.

B-4 The commenter asserts that reuse of demolition debris should be classified as cut/fill because it will be moved to the center of the site. The comment's attempt to characterize reuse debris as cut/fill has no bearing on the analysis of the DEIR, which clearly identified parameters for all phases of construction, including demolition and site preparation and haul/truck trips associated with each phase. The comment does not

identify any analysis inadequacy or evidence that undermines the conclusions of the DEIR.

B-5 the commenter asserts that the staff report is inconsistent with the DEIR and introduces an alternative cut/fill amount. The commenter is incorrect, and the DEIR and staff report are both accurate. The staff report, as a summary report for the decision-makers, explained that of the total grading, approximately 127,000 cubic yards reflect grading quantities associated with landform change (excluding over excavation and remedial grading). The DEIR analysis is consistent with the total grading described in the project description. As described, total grading would be approximately 305,000 cubic yards of cut, approximately 207,600 cubic yards of fill, and approximately 98,000 cubic yards of export. Potential earthwork-related impacts are accurately modeled. Further, air quality and GHG impact modeling does not rely directly on grading cut-and-fill quantities, but is based on construction equipment provided by the applicant and soil import/export volumes, which are used to estimate the number and distance of haul trips. All earth movement that is planned on-site has been captured by the analysis in the DEIR because it accounts for the construction equipment used during the site preparation, rough grading, and fine grading activities.

B-6 The commenter summarizes prior comments regarding export/import and cut/fill. The commenter is referred to Responses to Comment B-2 to B-5, which respond to specific assertions from the commenter.

B-7 The commenter suggests that the DEIR's noise analysis is flawed because it uses the project's center as a reference to analyze noise impacts. The project's center was used to best represent noise for construction activity (such as site preparation and grading) that requires mobile equipment, because mobile construction equipment will be used across the project site, sometimes closer to receptors and sometimes far from receptors. The DEIR's use of the center for mobile equipment was appropriate as a means to identify potential impacts and standardize noise levels from a project activity that is variable (due to shifting distances/locations of construction activity). The center of the site for mobile construction equipment also provides an average noise level emission, which is what the Leq is—an average. Therefore, the analysis is adequate by choosing the center and is consistent with the City's CEQA Manual thresholds, which are in terms of Leq. As stated in the DEIR "The center of the site best represents average noise levels as denoted by the noise descriptor: Leq-time-average sound level" (DEIR at 5.11-37).

Secondly, it is incorrect that the DEIR only used the center of the 25-acre site to analyze construction noise. For paving, the DEIR states "the majority of paving and paving noise would be in parking lots and the parking structure. Therefore, using Google Earth, the distances to the nearest receptors were estimated from the acoustical center of the proposed parking lots and parking structure. For example, paving noise levels at

receptors to the north were estimated by measuring the distance from the acoustical center of the proposed parking area for Residential 2 (the closest proposed paving area to those receptors)" (DEIR at 5.11-28). The commenter states that paving would occur throughout the site, but by focusing on the main parking/paving areas closest to receptors, the analysis provides a more conservative noise level as opposed to analyzing average levels throughout the entire site.

For building construction, the DEIR states "Using Google Earth, the distances to the nearest receptors from each building construction component were estimated from the acoustical center of the proposed buildings" (DEIR at 5.11-28).

For demolition, the DEIR states "The project site has existing buildings spread throughout that are proposed to be demolished. Using Google Earth, the distances to the nearest receptors to each proposed building demolition were estimated from its acoustical center" (DEIR at 5.11-28).

And for architectural coating and landscaping, the DEIR states "Because architectural coating, finishes, and landscaping occur on and around buildings, noise levels from these activity phases were estimated by determining the nearest receptor to a proposed building's façade and not acoustical center" (DEIR at 5.11-28.). Table 5.11-9 also identifies the distances used to nearby receptors for various construction phases.

In addition, Appendix J provides modeled noise levels at 50 feet for each of the construction phases. The DEIR likewise notes that heavy equipment can have maximum short-duration noise levels up to 85 dBA at 50 feet. The DEIR also identifies, in numerous locations, approximate distances to nearby receptors.

Thus, the DEIR provides significant information and analysis regarding noise levels emanating from construction of the project. The commenter's issue with the conclusions of the DEIR do not constitute substantial evidence of a potential impact not analyzed in the DEIR.

B-8 The commenter asserts that the DEIR's use of mounted impact hammer noise as a proxy for rock crushing equipment was improper. First, the commenter presents no evidence that the DEIR's use of mounted impact hammer noise somehow underestimates construction noise or that noise levels from a mounted impact hammer are not equivalent to rock crushing operations. Second, the mounted impact hammer was carefully chosen as a substitute based on reference noise emissions of typical rock crushers. This evidence is in the References. Lastly, modeling shows that the substitute generates Lmax noise levels of approximately 90 dBA (see Appendix J) and was included as a proxy based on expert opinion and the expert recommendation to use mounted impact hammer noise.

B-9 The commenter states that the DEIR's noise analysis is flawed because it did not consider the relative elevations of nearby sensitive receptors. First, aside from speculation regarding technical noise characteristics and elevations, the comment does not provide any evidence that the DEIR's noise analysis is flawed. Secondly, nowhere in the noise analysis does it state that noise would not be audible, and the fact that some of the receptors are elevated and overlooking the project site does not mean that no attenuation would occur. Noise is naturally attenuated at a rate of 6 dBA for each doubling of distance. As stated in the DEIR "[N]oise from construction equipment is intermittent and diminishes at a rate of at least 6 dBA per doubling distance (conservatively ignoring other attenuation effects from air absorption, ground effects, and shielding effects)" (DEIR at 5.11-27). The analysis is in fact conservative because the modeling does not take into account additional environmental attenuation factors such as ground absorption, and a direct line of sight is assumed at all times to the elevated residences. If other environmental noise attenuation factors were considered, noise would attenuate at 7 to 8 dBA per doubling of distance, meaning that the noise levels at the receptors would be lower than modeled. Therefore, noise attenuation assumptions are conservative, and not considering topography and assuming a direct line of sight at all times is also conservative.

B-10 The commenter's assertion that the Statement of Overriding Considerations may not "override" applicable regulation is a mischaracterization. The SOC does not override any regulation, as regulations must be adhered to as required by law. However, the referenced legislation—AB 32 and SB 32—set statewide goals for reductions of GHGs, as explained in the DEIR. The Scoping Plan, as prepared by CARB, is intended to guide the state toward achievement of statewide goals. The DEIR analyzes consistency with the Scoping Plan.

The GHG analysis is consistent with the City of Laguna Niguel CEQA Manual. The commenter's discussion of new Bay Area Air Quality Management District Guidance does not mandate a new analysis in the EIR, which is based on more local and widely accepted GHG analysis guidance from the South Coast AQMD. The bright-line threshold identified by the South Coast AQMD Working Group is based on a market capture approach that captures 90 percent of the emissions for land use projects in the South Coast AQMD region. The GHG Justification Report adopted by BAAQMD provides guidance for projects in the Bay Area and is not applicable to projects in the South Coast AQMD region, nor was the BAAQMD standard adopted by the City in its CEQA Manual as the threshold of significance. The DEIR identified appropriate thresholds, quantified GHG emissions, and analyzed GHG emissions against applicable thresholds and standards. The DEIR's analysis promotes informed decision-making and public participation. Moreover, GHG emissions were identified as a significant unavoidable impact of the project. That the commenter seeks an additional method of analysis does not make the DEIR's existing analysis invalid or

inappropriate. A lead agency has discretion to design the EIR and need not conduct every recommended test or perform all required research. An EIR is not required to address all of the variations of the issues presented. An analysis of every permutation of the data is not required. The commenter is referred to Responses to Comments A-29 to A-30 that, among other things, explain why the DEIR's GHG analysis was appropriate and complies with CEQA. Those responses also note that the project's expected VMT would be a significant reduction from citywide average conditions, as also noted in DEIR Tables 5.15-1 and 5.15-2. In fact, compared to 2016 citywide averages, project components (both residential and nonresidential) achieve a reduction of more than 15 percent. The commenter is also referred to Response to Comment B-11 for a discussion of suggested mitigation measures.

B-11 The commenter suggests that the BAAQMD Guidance supports new ways to mitigate the project's significant and unavoidable GHG impact. The comment specifically notes a requirement to eliminate gas appliances and unnecessary energy use, but does not specify other suggested measures. Section 5.5, *Energy*, of the DEIR analyzed whether the project would result in inefficient, wasteful, or unnecessary energy use and concluded that the project would not result in a significant impact. The commenter presents no evidence to the contrary. To the issue of converting all gas appliances to electric, such conversion is deemed infeasible. The BAAQMD Guidance applies to projects within its jurisdiction, where it is more common (from a market perspective) for uses to eliminate the use of gas appliances. However, in Southern California, particularly Orange County, residential units largely include both gas and electric appliances. Failure to include gas appliances would reduce the market demand for the units, jeopardizing the functionality of the entire project, which is contingent upon occupancy, rents, and use of the multifamily components to help fund and facilitate use of the nonresidential components. The applicant has stated that eliminating gas appliances would be fundamentally inconsistent with the market and would result in less demand for project units, and that eliminating gas from the multifamily components would create significant changes to the economics of the project. That would, in turn, necessitate significant changes to the program and composition of the entire project, for which the proposed residential uses are a significant economic driver. Likewise, use of natural gas is integral to the success of noncommercial uses such as restaurants, which require the use of gas for cooking purposes. Eliminating natural gas would also jeopardize the ability to attract the top-tier restaurant tenants that will facilitate the transition of the Laguna Niguel City Center into a destination pedestrian place.

B-12 The commenter asserts that the DEIR did not consider the impacts of crushing operations but offers no explanation or support for the comment. As discussed in Response to Comment B-3, the DEIR identifies crushing as a component of construction. Moreover, as evidenced in Response to Comment B-8, the DEIR did

analyze impacts associated with crushing, including noise emanating from such activities, emissions from equipment, and hauling of debris. DEIR Table 3-2 expressly identifies "Crushing/Processing Equipment" as part of the construction equipment list.

B-13 The commenter states that the BAAQMD Guidance constitutes significant new information triggering recirculation. The commenter is referred to Responses to Comments B-10 and B-11, which explain why additional analysis under the BAAQMD Guidance is not required for the DEIR. Recirculation is not required.

B-14 The commenter reasserts that the DEIR provides for a mixture of incompletely identified uses. The commenter is referred to Response to Comment O3-9. The reference to the Moulton Niguel Water District's development requirements was a supporting example showing how the use square footages identified in DEIR Table 3-1 were used to analyze the project's potential impacts. Nor does the DEIR, as the comment suggests, require the reader to "cobble together" information from various sections. The commenter ignores the Project Description and information in Table 3-1, which served as a basis for the DEIR's analysis. The DEIR's project description provides information that allows for informed decision-making and consideration of potential impacts. Finally, commenter's apparent assertion that individual uses (perhaps individual operators) must be known for the analyses to comply with CEQA is without merit and inconsistent with case law and CEQA.

B-15 The commenter again suggests that the DEIR omits a required analysis of potential special events. The commenter is referred to Response to Comment O3-10. As explained in that response, the project provides spaces that could accommodate events, but does not itself propose any events. Before any event would occur, the City of Laguna Niguel would be required to approve a permit for that event. The City's permitting process includes considerations and rules depending upon the nature of the event and the size of the event, among other things (see e.g., LNMC §§ 9-1-45.12 [Sidewalk sales and center-wide events] and 9-1-35.16 [special outdoor events]). Creating a public space *capable* of hosting events does not create a reasonably foreseeable indirect impact, especially when an intervening discretionary approval that would set parameters, conditions, and other restrictions would be required. Also, discretionary event permitting would require compliance with CEQA. Notwithstanding the preceding facts, the DEIR was able to make a reasonable standard assumption that future events that used amplified sound could result in impacts and analyzed that potential. However, because other factors that would be relevant to events—including size, scope, type, and location—are speculative, an analysis of such features was not possible. Nor was it required to comply with CEQA.

B-16 The comment asserts that the DEIR's GHG analysis is inappropriate, seemingly for the alleged failure to analyze speculative events. The commenter is referred to Response to Comment B-15. Furthermore, GHG emissions are average annual emissions

generated by the proposed project. Events would not occur daily or even on a weekly basis; the frequency of their occurrence, if at all, is speculative. If events were to occur, because of their sporadic nature their contribution to GHG emissions would be minor and would not substantially affect emissions modeling in the DEIR. As identified in the DEIR, GHG emissions were identified as a Significant and Unavoidable impact of the proposed project. As stated above, event programming data are not available. Therefore, it is speculative to estimate the effect that events would have on annual emissions (CEQA Guidelines § 15145).

B-17 The commenter suggests that the VMT analysis is inappropriate because it doesn't assume a mostly vacant parcel for baseline purposes. The comment does not reflect an understanding of the nature of VMT analyses, which compare a project's future VMT with "baseline" or otherwise average VMT as a means to determine whether a project will reduce or increase VMT. The DEIR conducted the analysis as appropriate. The commenter is also referenced to their own Comment B-11, which suggests, among other things, that a GHG analysis be conducted using a project VMT to regional averages. With respect to events, the commenter is referred to Response to Comment B-15.

B-18 The comment states that project review by the OCFA and other agencies does not confirm the project will not have an impact and suggests that this is what the previous responses to commenter's original comments stated. That is an incorrect characterization of the prior responses and the DEIR. The DEIR analyzed the potential for project impacts, including with respect to safety, public services, wildfire, and others. A *component* of those analyses is that relevant public agencies, with expertise and authority over the project, reviewed project plans and details and provided input regarding potential impacts. The DEIR also identified applicable regulations and standards, compliance with which would be confirmed by relevant agencies, including the OCFA. This is an appropriate and meaningful contribution to the overall analysis in the DEIR.

B-19 The commenter asserts that prior responses regarding the library were inadequate because the real issue was the project's relocation of the library to a location that *may*, in the commenter's opinion, be inaccessible or unsafe. Commenter presents no evidence to support its assertion and fails to acknowledge the DEIR's analysis of access and safety. For instance, the EIR identified sign distances at project driveway intersections, which were based upon relevant Caltrans Highway Design Manual information. Traffic signals create protected movements for vehicles. Regarding pedestrians, the DEIR specifies primary points of access and enhancements to be implemented. (EIR at 5.15-20.) All access ways, sidewalks, and other pedestrian-serving facilities (including bicycle lanes) would be designed and constructed consistent with applicable standards/codes (such as the LNMC as listed in the DEIR).

Both signalized and unsignalized crossing would also be designed consistent with code and would ensure safe passage for all pedestrians. Americans With Disabilities Act compliance would also be required.

B-20 The commenter asserts that parking must be analyzed. The commenter is referred to Response to Comment O3-17. Parking itself is not a CEQA impact, as the commenter acknowledges. CEQA may require analysis of secondary impacts associated with a parking deficiency, if such a deficiency exists. The commenter has not identified any parking deficiency that could result in secondary impacts. All trips associated with the proposed project were analyzed in the DEIR, including with respect to transportation, air quality, and GHGs. The project is parked consistent with applicable standards. The number of parking spaces provided would exceed the City's minimum parking code standard, with a total parking count of approximately 1,066 surface and garage spaces to serve both the commercial uses and the library. On-site parking accommodations for the proposed project would include a combination of surface and structured parking for the commercial/civic uses and a mixture of surface parking; private garage; and on-grade, multilevel garage for the residential component. Moreover, as noted in the DEIR, dedicated and convenient parking would be provided for the library patrons close to the library.

Regarding the safety of the project's internal streets, the commenter is referred to Response B-19. As explained there, design of project circulation elements, including streets, sidewalks, crosswalks, and access points, would be consistent with applicable code. Commenter has not presented any evidence of a potential safety impact.

B-21 The commenter reasserts that the DEIR's alternatives analysis is inadequate, particularly with respect to alleged overly narrow project objectives. First, the commenter is referred to Responses to Comments O3-18 to O3-21. The DEIR's objectives are not improperly narrow, and the case cited by commenter is inapplicable. In *We Advocate Through Environmental Review et al. v. County of Siskiyou*, the court concluded that there were practically *no* alternatives that could meet the project objectives. Here, the DEIR explains that numerous alternatives included in the DEIR's analysis would meet some of the project objectives. The DEIR does not reject these alternatives as infeasible for failure to meet the project objectives, but includes them in the DEIR for meaningful analysis and comparison to the proposed project.

B-22 The commenter reasserts earlier comments about LOS and transportation congestion. The DEIR did include a LOS traffic impact assessment, as required by the City's Transportation Assessment Guidelines and the DEIR concludes that the project "would achieve the City's LOS standards." The DEIR also clearly explains how the LOS assessment relates to CEQA impacts and outlines applicable statutes and CEQA Guidelines sections that govern assessing vehicular impacts. The DEIR's analysis

complies with these requirements, and the analysis included the residential component of the project. The commenter is referred to Response to Comment O3-15.

B-23 The commenter asserts that the City's response regarding infeasibility of a no-residential alternative lacks merit. The commenter is referred to Responses to Comments O3-15 and O3-31. As discussed in O3-15, the DEIR does, in fact, considered a no residential alternative—the No Project: Development Under Existing General Plan Designation Alternative. Next, as discussed in the staff report prepared for the Planning Commission meeting, the residential component is considered integral to the proposed project as a source of revenue generation. Urban Land Institute prepared a study, commissioned by the City in 2011, to assess potential development opportunities for the Laguna Niguel City Center. ULI's findings include a recommendation that residential be incorporated into a mixed-used project at the City Center. That recommendation was based substantially on the fact that residential uses could serve as an income-producing use to support other uses of the site. (ULI Technical Assistance Panel, April 28, 2011.) Thus, it is not simply a question of profitability but of entire project feasibility. The residential uses are recognized as the revenue source necessary to deliver on the vision for the Laguna Niguel City Center mixed-use project. The conclusions of the ULI report remain valid, and commenter has not presented any evidence to the contrary.

B-24 The commenter again asserts that the project objectives are overly narrow. The commenter is referred to Response to Comment B-21.

B-25 The commenter reiterates earlier comments that the DEIR must impose additional mitigation for the project's significant and unavoidable GHG impact. The commenter is referred to Response to Comment B-11. The DEIR included Mitigation Measures GHG-1 through GHG-3 to reduce GHG emissions impacts to the extent feasible. As identified in Response to Comment B-11, no additional feasible mitigation measures are available to reduce the project's Significant Unavoidable GHG emissions impact.

B-26 The comment represents a summary request to reconsider the DEIR in light of earlier comments provided by commenter. The commenter is referred to Responses to Comments B-11 to B-26, which specifically address commenter's earlier comments.

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**VIA E-MAIL**

June 20, 2022

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RE: Supplemental Objections to Project Approvals and Certification of the Final Environmental Impact Report for the Laguna Niguel City Center Mixed Use Project (SCH# 2019110083) – City Council Agenda; Public Hearing Item 1.

Honorable Mayor Elaine Gennawey, Councilmembers, Deborah Harrington, and John Morgan,

On behalf of the Southwest Regional Council of Carpenters ("**SWRCC**" or "**Southwest Carpenters**"), my Office is submitting these supplemental comments on the Environmental Impact Report ("**EIR**") for the Laguna Niguel City Center Mixed Use Project ("**Project**") and objects to the Project-related approvals and actions from the City of Laguna Niguel ("**City**" or "**Lead Agency**"), including the Planning Commission.

The present comments supplement the comments submitted on April 29, 2022 and May 24, 2022, which are incorporated by reference herein.

C-1

In addition, SWRCC incorporate by reference all comments raising issues regarding the Project and its CEQA compliance, submitted prior to the Project approvals. *Citizens for Clean Energy v City of Woodland* (2014) 225 Cal.App.4th 173, 191 (finding that any party who has objected to the Project's environmental documentation may assert any issue timely raised by other parties).

C-1 cont.

The Southwest Carpenters is a labor union representing more than 50,000 union carpenters in six states, including California, and has a strong interest in well-ordered land use planning, addressing the environmental impacts of development projects and equitable economic development. Individual members of the Southwest Carpenters live, work and recreate in the area and surrounding communities and would be directly affected by the Project's environmental impacts.

## I. CERTIFICATION OF THE PROJECT'S EIR WOULD BE IN VIOLATION OF CEQA DUE TO THE CITY'S FAILURE TO CONSULT WITH THE SCHOOLS OR SCHOOL DISTRICT, DESPITE THE PROJECT'S PROXIMITY TO TWO SCHOOLS.

City's staff report for the May 24, 2022 Planning Commission hearing or June 21, 2022 City Council Hearing ("**Staff Reports**") did not mention about any consultation with the School District or School; neither did the EIR or the Staff Reports contain a comment from any school or school district.

Yet, the Project's EIR (and the CC Staff Report, p. 32/pdf p. 74) note that there are **two schools** within 0.2 miles of the Project Site:

C-2

> Schools within **one-quarter** mile of the project site include the **Laguna Niguel Kinder Care**, immediately north of the OCFA fire station across Pacific Island Drive, and **Ocean View School**, approximately **0.2 mile** east of the project site. The proposed project would not include industrial land uses that could routinely emit toxic air contaminants in concentrations that could be hazardous to persons at schools within one-quarter mile of the site. As stated above, the proposed development of residential and commercial uses would use relatively small amounts of hazardous materials and would be required to comply with state and local hazardous materials regulations.

DEIR, p. 5.8-16. (Emph. added).

Laguna Niguel Kinder Care includes children ages 6 weeks (i.e., infants) to 12 years and includes before- and after-school programs; the school is open 6:30am to 6:30pm Monday-Friday.[1]

Beyond listing two schools, the EIR does not disclose the nature of schools near the Project site (e.g., ages of school children, special needs) and the magnitude of impacts the Project may have on the affected children, including infants therein.

C-2 cont.

Yet, the EIR discloses that the Project site has numerous potential RECs and was in fact registered on a site for release of hazardous wastes. (DEIR, p. 5.8-9.) As such, soil disturbance of such a potentially contaminated site, as well as handling and transport of contaminated soil and debris, may have significant impacts on the adjacent school children that have not been adequately addressed or disclosed in the EIR.

Moreover, under Guidelines § 15186, a special consultation with the school district needs to occur **30 days** before the **certification of the EIR**:

> 15186. SCHOOL FACILITIES
>
> (a) CEQA establishes a special requirement for certain school projects, as well as certain projects near schools, to ensure that potential health impacts resulting from exposure to hazardous materials, wastes, and substances will be carefully examined and disclosed in a negative declaration or EIR, and that the lead agency will consult with other agencies in this regard.
>
> (b) Before certifying an EIR or adopting a negative declaration for a **project** located within **one fourth mile** of a **school** that involves the construction or alteration of a facility that **might reasonably be anticipated to emit hazardous air emissions**, or that **would handle an extremely hazardous substance or a mixture containing extremely hazardous substances** in a quantity equal to or greater than the state threshold quantity specified in subdivision (j) of Section 25532 of the Health and Safety code, that may impose a health or safety hazard to

C-3

[1] https://www.kindercare.com/our-centers/laguna-niguel/ca/301180?CID=11317401566&device=c&utm_term=&matchtype=&utm_campaign=11317401566&utm_source=google&utm_medium=cpc&adgroup=116660765731&geo_interest=1013922&geo=9031136&gclid=Cj0KCQjwzLCVBhD3ARIsAPKYTcRp7V-8GCrRnjRmIpvra7r-76lt2RM6zH0cUEYHl8xGGnlEJdczhh4aAovREALw_wcB

> persons who would attend or would be employed at the school, the lead agency must do both of the following:
>
> (1) **Consult** with the **affected school district** or **districts** regarding the potential impact of the project on the school; and
>
> (2) **Notify** the **affected** school district or districts of the project, in writing, **not less than 30 days prior to approval or certificatio**n of the negative declaration or **EIR**. …
>
> ….
>
> (d) When the lead agency has carried out the consultation required by paragraph (2) of subdivision (b), the negative declaration or EIR shall be conclusively presumed to comply with this section, notwithstanding any failure of the consultation to identify an existing facility.

(Emph. added.)

The EIR and the Staff Reports appear to dispose of such consultation requirements, stating:

> Schools within one-quarter mile of the project site include the Laguna Niguel Kinder Care, immediately north of the OCFA fire station across Pacific Island Drive, and Ocean View School, approximately 0.2 mile east of the project site. The proposed project would not include industrial land uses that could routinely emit toxic air contaminants in concentrations that could be hazardous to persons at schools within one-quarter mile of the site. As stated above, the proposed development of residential and commercial uses would **use relatively small amounts** of **hazardous materials** and would be required to **comply** with **state** and **local hazardous materials** regulations.
>
> Impacts related to the **transport**, **use**, and/or **disposal** of hazardous materials **would** be mitigated to **less than significant** with the implementation of mitigation measures **HAZ-1** through **HAZ-3**.

6/21/22 Staff Report, p. 32; *see also*, DEIR, p. 5.8-16, emph. added.

The above-quoted statement is inaccurate: it states that the proposed development would *use relatively small* amounts of hazardous materials, whereas the EIR proposes to demolish, crush, and then reuse the debris, pavement, and soil, which potentially

C-3 cont.

contains contamination and asbestos. The EIR's estimate of "relatively small" amount is unsupported. As an example and to put things into perspective, the EIR provides:

> **Construction**
>
> **Worker and Truck Traffic**
>
> For purposes of analysis, construction activities are assumed five days per week (Monday through Friday) **from 7 am to 4 pm**, but **extended workdays (10 hours)** and **work weeks (Monday through Saturday)** may be necessary for certain construction trades to maintain the schedule and will comply with the City's noise ordinance and time constraints. Phase-specific construction traffic factors are identified for each phase of construction. Site Abatement Site abatement is anticipated to last approximately one- month. A total of 18 workers would be on-site each day, on average.
>
> **Demolition**
>
> **Demolition** is anticipated to last approximately **three months**. A total of 18 workers would be on-site each day, on average. A total of four water trucks would be on-site each day on average. There would be **approximately 2,700 tons demolished**, which would necessitate a total of **approximately 169 round-trip truck trips with 16- ton truck-carrying capacity for noncrushed material**. There would be approximately **20 daily round-trip truck trips, assuming a duration of approximately 8.5 days**.
>
> **Site Preparation, Grading, and Utilities**
>
> Site preparation, rough grading, and utilities work are anticipated to last approximately **seven months**. A total of 30 workers would be on-site each day on average. A total of four water trucks would be on-site each day on average. Site preparation and rough grading would require **approximately 83,000 cubic yards of exported fill.**[1] This phase would result in a total of **5,929 truck round-trips with 14 cubic yards** of carrying capacity. Assuming a maximum of **3,626 miles/day and 35 miles** to the land fill, truck trips would be approximately **51 daily round-trips for 116 days**.

C-3 cont.

> **Fine Grading and Street Paving**
>
> Fine grading and street paving work is anticipated to last approximately **three months** starting the same time as building construction. A total of 23 workers would be on-site each day on average. A total of four water trucks would be on-site each day on average. This phase would require an average of **10 daily round-trip paving truck trips** for an approximately **20-day duration** for asphalt deliveries. Hauling would include **approximately 10,000 cubic yards of imported fill and 15,000 cubic yards of exported fill.** Hauling would require a **total of 1,786 truck round-trips with 14 cubic yards truck-carrying capacity**. Truck trips would be **approximately 27 daily round-trips, assuming 66 days** of hauling. Building Construction, Architectural Coating, and Landscaping Building construction, architectural coating, and landscaping work is anticipated to **last approximately 29 months**. On average, this phase would require **150 worker**s on-site every day and an average of two water trucks every day. An average of **40 daily round-trip truck trips** would be required.

DEIR, p. 3-35—36, emph. added.

The DEIR's *fine print* fn. 1 further provides:

> The project requires a total of approximately **98,000 cubic yards** of **export**. Approximately **83,000 cubic yards** of export would occur during the site preparation and rough grading phase, and the remaining **15,000** cubic yards would occur during the fine grading and street paving phase.

C-3 cont.

DEIR, p. 3-35, fn. 1, emph. added.

Thus, the EIR's statement that it will involve "relatively small amounts" of hazardous materials, and further its limited focus on only the *use* of such hazardous materials rather than the handling, crushing, transport, and/or export of such, underscores the EIR's failure of good-faith disclosures of the critical health impacts, including on the most vulnerable children at the nearby schools.

Further, the EIR's statement (DEIR, p. 5.8-16, quoted above) is *internally* inconsistent. On the one hand, it appeared to dispose of the school consultation requirement by focusing on the *operational emissions* of the Project, as it notes that the Project is not an *industrial* project; yet, Guidelines § 15186 is not limited to operational hazards only, but

rather "**involves**" (1) the **construction/alteration** of a facility that would reasonably be expected to **emit** hazardous air emissions **or** (2) "that **would handle an extremely hazardous substance or a mixture containing extremely hazardous substances"**. Here, because of the Project's site involving hazardous materials and the need to handle and dispose of those as part of the construction or alteration, the Project – and its construction/alteration – involves *both* hazardous air emissions and handling extremely hazardous substances or a mixture thereof.

The EIR appears to tacitly accept this issue since the EIR proposes HAZ-1 through HAZ-3 measures, which focus on the *construction phase* and seek to mitigate the hazards impacts of the construction phase. Yet, ironically HAZ-1, HAZ-2 or HAZ-3 are not related to mitigating impacts on the *surrounding school* children – they are mostly focused on protecting the construction workers themselves. As the Draft EIR states:

> Mitigation measures HAZ-1 through HAZ-3 would require the preparation of a **soil management** plan, which will assist in the **identification** and **safe removal** of **petroleum** and **VOC-impacted soil**, **post-grading soil vapor survey** to **verify hazards** are **fully remediated**, and **asbestos survey** to prevent the unanticipated release of asbestos-containing materials. Impacts related to the **transport**, **use**, and/or **disposal** of hazardous materials would be mitigated to **less than significant** with the implementation of mitigation measures HAZ-1 through HAZ-3.
>
> Level of Significance Before Mitigation: **With the implementation** of PPP HAZ-1 through HAZ-3, Impact 5.8-1 would be **potentially significant**.

DEIR, p. 5.8-16, emph. added; *see also* DEIR, pp. 5.8-19—20 (HAZ-1 to HAZ-3 description, where HAZ-1 includes the preparation of the soils management plan and HAZ-2 and HAZ-3 are only about post-grading phase).

C-3 cont.

Thus, the EIR and its proposed mitigation measures do not adequately address the *health* risks of the Project and its hazards on children. Yet, the EIR confirms those risks were not addressed and further concludes the impact "with the implementation" of mitigation measures would be "potentially significant."

Further evidencing the extent and magnitude of the hazards-related activity proposed by the Project, the EIR and Staff Reports mention about the Project's extensive

C-4

demolition of "104,410 square feet of buildings" of South County Justice Center, the county maintenance yard, and the library." (DEIR, p. 5.22-23 & 3-24.)

In the meantime, the EIR – and the Project's Phase II Environmental Site Assessment ("**ESA**") - identified that the Project site, and specifically the County Justice Center, contain asbestos and the library was not tested for asbestos. The CC Staff Report (p. 2-72/pdf p. 174) does not deny the potential presence of asbestos at the library site, but asserts that regulatory compliance measures would be effective to remove asbestos without any impacts.

Also, the EIR and the Staff Reports mention about "crushing" of the demolition debris from the demolition of the South County Justice Center, existing buildings, and the library and reusing it at the Project site, to minimize the amount of export. (DEIR, p. 5.11-29.) To the extent the existing 104,410 sq. feet of buildings have or may have asbestos that will be disturbed, such crushed or disturbed asbestos, whether reused at the Project site or exported from it, will be particularly harmful to children if they are exposed to it at young age.[2] These impacts and their severity are all the more unknown and unmitigated since the EIR or the Staff Reports provide that the haul route for the Project is *still to be* determined. The lack of a haul route for the Project *adds* to the issue of the identified, reasonably foreseeable and yet unmitigated health hazards on human beings, especially on school children nearby.

C-4 cont.

Hence, the fact that the Project includes handling of asbestos, crushing and then reusing same, or hauling same without yet identified haul routes to ensure their distance from schools shows that the Project meets both prongs under the Guidelines § 15186 – i.e., construction/alteration which involves hazardous emissions and handles hazardous materials. The Project may have a significant impact on school children, which were not properly disclosed and mitigated.

Thus, City and the EIR **improperly disposed** of the school consultation requirement where, as here, the Project as proposed poses unresolved and unmitigated risks to school children and their life, health, and safety. Therefore, the EIR may not be certified.

[2] https://www.webmd.com/connect-to-care/vaping/asbestos-exposure-children-risks#:~:text=%E2%80%9CHowever%2C%20children%20exposed%20at%20a,asbestos%20manufacturing%20is%20largely%20banned.

In addition, the Project may not be approved and its EIR may not be certified *separately* from the *haul route* approval, including because there may be significant impacts – including hazardous materials, air quality, GHG, traffic and others – that may have impacts which need to be identified and mitigated *prior* to Project approval. It is critical for the public to know and weigh in on the proper haul route, on the City's efforts of consultation with schools and the Project's impacts on the schools, and how impacts (including hazards) to school children have been addressed, what mitigation measures or changes were requested by the schools or school district, and whether the mitigations required by the school district or schools will indeed be enforced.

C-4 cont.

The above-noted issues about the handling, reuse, crushing or hauling of asbestos need to be disclosed *in* the EIR and the EIR needs to be recirculated since those issues implicate more severe impacts of the Project, as compared to those that were analyzed in the EIR. Guidelines § 15088.5; *see also*, *We Advocate Through Environmental Review v. County of Siskiyou* (2022) 78 Cal.App.5th 683, 695-696.

## II. THE EIR'S NOISE ANALYSIS IS FATALLY INACCURATE AS IT IS BASED ON LEGALLY ERRONEOUS ASSUMPTIONS.

The EIR should not be certified also because its noise impacts analysis is based on erroneous assumptions, resulting in understatement of impacts and failure to mitigate.

The Project's EIR's noise analysis was reviewed by Derek Watry, a noise expert from Wilson Ihrig, Acoustical Consultants ("Wilson Ihrig"). Whilson Ihrig practiced exclusively in the field of acoustics since 1966. (**Exhibit A** [6/18/2022 Wilson Ihrig Expert Comment and Environmental Bio].) During its 56 years of operation, Wilson Ihrig has prepared hundreds of noise studies for Environmental Impact Reports and Statements. Wilson Ihrig has one of the largest technical laboratories in the acoustical consulting industry. It also utilizes industry-standard acoustical programs such as Environmental Noise Model (ENM), Traffic Noise Model (TNM), Roadway Construction Noise Model (RCNM), SoundPLAN, and CADNA. Wilson Ihrig is well-qualified to provide the expert opinion on the EIR's noise analysis.

C-5

Upon review of the Project's EIR, Wilson Ihrig underscored the adverse *health* impacts of noise, including but not limited to noise-induced hearing loss, speech interference, sleep disturbance, cardiovascular and psychological problems, and impaired cognitive performance.

Further, Wilson Ihrig found that the EIR *understates* or rather *ignores* potentially significant noise impacts, based on an erroneous assumption that if the noise levels at the Project site *already* exceed the noise thresholds, then the Project's noise impacts are necessarily insignificant.

As relevant here, Wilson Ihrig generated Figure 1 graphic illustrating the EIR's assumptions of the *existing* and *allowable* noise levels (Exhibit A, p. 4) and showed, based on the EIR's statements, that the EIR simply disregards the noise increases caused by the Project where the existing noise levels already exceed the City's thresholds. The blue lines on the graphic Figure 1 represent the flaws in the City's noise methodology: thus, under the City's Option B, where the existing noise level is below 55 dBA CNEL and increases by 10 dBA CNEL, the City will consider the increase significant and will try to mitigate it, but where it is 54.9 dBA CNEL, an increase of 10 dBA CNEL would be deemed insignificant (as indicated by the blue line drop/triangle at 55 dBA CNEL). Similarly, under the City's Option C, where the existing noise levels are in the range of 55 to 60 dBA CNEL, and the Project would increase those noise levels by 5 dBA, then the increase would be deemed significant and the City would mitigate it; and yet, if the existing noise level is 54.9 dBA CNEL or even 59.9 dBA CNEL and increase by 5dBA, that would not be deemed significant and no mitigation would be required (as indicated by the blue line drop/triangle at 60-63 dBA CNEL range).

C-5 cont.

Most importantly, Wilson Ihrig notes about the flaws in the City's EIR methodology under Option D, where the existing noise levels *already exceed* the 65 absolute threshold; as Wilson Ihrig points, with the orange line on the graphic (Exhibit A, p. 4), the City appears to *ignore* any increase in noise levels and concludes those increases are less than significant:

> As can be seen in Figure 1, the four thresholds as written attempt to "hold the line" of noise exposure at 65 dBA CNEL up to that level of exposure. However, as interpreted by the DEIR, applying only threshold "D" utterly fails to provide protection once the exposure exceeds that value.
>
> As it happens, the existing traffic noise levels in the vicinity of the project already well exceed 65 dBA CNEL. For the ten roadway segments analyzed for the DEIR, the existing level ranges from 72.0 to 76.6 dBA CNEL. However, because the exposure already exceeds the 65 dBA

> CNEL standard and increases by less than 3 dBA, the DEIR declares the noise impact less-than-significant.
>
> The noise increases along the roadway segments that are attributed to the project range from 0.1 to 0.6 dB. Had the exposure along a segment been 64.8 dBA CNEL and increased 0.4 dBA to 65.2 dBA CNEL, the DEIR would have declared that a significant noise impact by virtue of threshold of significance "A". Similarly, <u>any increase</u> in traffic noise level where the existing exposure is already above the 65 dBA CNEL residential standard constitutes a significant noise impact.

Exhibit A, p. 4, emph. orig.

Based on the significance of noise impacts on the health of the people and the flaws in the City's methodology of ignoring Option A standard (which considers noise levels above the absolute 65 dBA CNEL), Wilson Ihrig finds that the Project will have significant impacts since it exacerbates the existing noise levels and the EIR fails to mitigate those. Wilson Ihrig concludes:

> By effectively relying solely upon a relative threshold to assess traffic noise increases, the DEIR fails to identify that the subject project will exacerbate an already existing significant noise impact. The traffic noise impact threshold that actually controls this situation is the one that recognizes the City's 65 dBA CNEL standard for exterior noise in residential areas. The DEIR incorrectly interprets this to mean that only if a project causes the noise to cross this line – regardless of the magnitude of the increase – is the project's noise impact significant. A more logical interpretation that is consistent with the clear intent of the four thresholds is that if the existing noise exposure is already over that line, any increase in noise cause by the project will be significant. That is the case here. The DEIR estimates of traffic noise levels that are 72.0 to 76.6 dBA CNEL. As such, the noise increases attributable to the project will cause an additional significant noise impact on the public.

C-5 cont.

Wilson Ihrig's expert's observation and finding of error in the City's EIR and noise analysis and methodology is also supported by the courts. Thus, in an analogous setting with air quality impacts, the Court found that the agency's *trivializing* of impacts

due to the existing conditions exceeding the applicable thresholds is inconsistent with CEQA:

> The EIR's analysis uses the **magnitude** of the current ozone problem in the air basin in order to **trivialize** the project's impact. In simple terms, the EIR reasons the air is **already** bad, so even though emissions from the project will make it worse, the impact is **insignificant**.
>
> The point is not that, in terms of ozone levels, the proposed Hanford project will result in the ultimate collapse of the environment into which it is to be placed. The significance of an activity depends upon the setting. (Guidelines, § 15064, subd. (b).) 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.
>
> Furthermore, as with the discussion of $PM_{10}$ emissions, the analysis of the project's emission of precursors to ozone ($NO_x$ and NMHC) is misleading because the calculations do not include secondary emissions related to the project.
>
> The information and analysis regarding the significance of increases in ozone levels attributable to the GWF project is inadequate.

*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 718 (*"Kings County"*), epmh. added.

C-5 cont.

Just as in *Kings County*, here, the EIR concluded that the noise impacts of the Project are *insignificant* and therefore does not even consider any mitigation – all because it relies on the existing noise levels exceeding the significance thresholds. That *Kings County* applied to *air quality* and not *noise* is irrelevant; what is relevant is the Project's EIR completely disregards the obvious increase in noise levels and its associated health and safety impacts on human beings (as also detailed by WilsonIhrig).

Since the unaccounted and unmitigated noise impacts may have health and safety adverse impacts on the sensitive receptors of the nearby residential buildings, those require mandatory findings of significance under Guidelines § 15065(a)(4) and require to be adequately disclosed and mitigated in the EIR.

Second, the EIR's findings (DEIR, p. 5.11-26) are *internally inconsistent*: on the one hand, the EIR admits that the noise impacts to the Residential Building No. 2 will be unacceptable and exceed the levels of significance and accordingly suggests that the Project will implement PPP N-4 to *mitigate* those impacts to less than significant levels, and yet on the other hand, the EIR ultimately concludes that the Project's impacts *without mitigation* will be less than significant. The EIR's own conclusion is inconsistent with its analysis.

Third, the mitigation measure of PPP N-4 – albeit not identified as such – is an improper deferred mitigation that solely relies on the *Applicant's* study *prior* to the issuance of building permits, i.e., *after* the Project approval and outside of public review and comment. In addition, PPP N-4 measure is vague, illusory, and – due to not being identified as a mitigation measure – it is also not binding or enforceable. The EIR presents PPP N-4 as:

> Per the California Building Code Title 24 requirement of 45 dBA CNEL or lower for habitable dwellings, the project **applicant** shall retain a qualified acoustical **specialist** to prepare a detailed **analysis** of interior residential noise levels resulting from all exterior sources during the design phase pursuant to requirements set forth in the State Building Code and City requirements. The **study** will review the **final** site plan, building elevations, and floor plans prior to construction and **recommend** building (residential building 1 and 2) **treatments** to reduce residential interior noise levels to 45 dBA CNEL or lower at the project site. **Treatments** would include, but are **not limited** to, sound-rated windows and doors, sound-rated wall and window constructions, acoustical caulking, protected ventilation openings, etc. The **specific determination** of what noise insulation treatments are necessary **shall be** conducted during **final design** of the project. Results of the analysis, including the description of the necessary noise control treatments, shall be submitted to the City, along with the building plans and design, **prior** to **issuance** of a **building permit**. Upon **approval** by the City, the treatments shall be **incorporated** into final building and design plans prior to issuance of a building permit.

DEIR, p. 5.11-18-19, emph. added.

C-5
cont.

As shown above, PPP N-4 does not suggest any *binding* measure but rather a *recommendation* of some to-be-determined measures from a list of possible measures, which will be required, if at all, *prior* to the issuance of building permits and in the final design review stage, i.e., after the Project approval and EIR certification. Even if it were an enforceable mitigation measure, it would not pass muster under CEQA. (See also, **Exhibit B,** pp. 19-20 [Court ruling in Aids Healthcare Foundation v. City of Los Angeles, et al. (LASC Case Number 19STCP05445, April 5, 2021), finding mitigation measure inadequate since it was unsupported and vague].)

Accordingly, PPP N-4 violates CEQA in that it improperly defers mitigation and offers illusory, vague and unenforceable mitigation.

Separately, PPP N-4 also fails to constitute substantial evidence for the EIR's conclusion that the Project will not have any significant noise impacts before the mitigation is applied.

And lastly, the fact that the EIR proposes PPP N-4, it requires respective and accurate findings under CEQA that the Project will include or incorporate those mitigation measures and further a mitigation and monitoring plan to ensure such mitigation, which would be consistent with the analysis in the EIR. As recently held by the Court:

> But if an EIR explains that a project would have significant effects, but that imposed mitigation measures would reduce each of these effects to an insignificant level, that is not a reason for declining to make written findings. That is instead a reason for finding that "[c]hanges or alterations have been required in, or incorporated into, the project which mitigate or avoid the significant effects." (Pub. Resources Code, § 21081, subd. (a)(1).) Again, however, the City neither made this finding for each significant effect identified in the EIR nor supplied any explanation in support of this finding.

C-5 cont.

*We Advocate Through Environmental Review v. City of Mount Shasta* (2022) 78 Cal.App.5th 629, 640.

In sum, the EIR's noise analysis and its findings must be revised and supplemented and the EIR must be recirculated to disclose and mitigate the additional noise impacts. Separately, the EIR's findings and the Mitigation and Monitoring Program must also be updated to reflect potential noise impacts and their binding mitigation.

## III. THE EIR CANNOT BE CERTIFIED AND ITS STATEMENT OF OVERRIDING CONSIDERATIONS CANNOT BE APPROVED IN VIEW OF THE PROJECT'S UNDERSTATED AND YET CRITICAL HEALTH AND SAFETY IMPACTS, INCLUDING CANCER THREATS, TO CHILDREN.

Upon review of the May 24, 2022 SAFER's comment letter and its attached SWAPE's and other experts' exhibits, SWRCC echo SAFER's concerns and expert findings that the Project requires a Health Risk Assessment, along with an adequate disclosure and mitigation of the Project's air pollution and health risks on human beings, including on children both residing and studying nearby.

SAFER's and its expert's findings are further particularly critical and urgent since: (1) the Project involves an enormous amount and extended periods of demolition, grading, construction, crushing, and export of potentially contaminated and/or hazardous materials; (2) the Project is within close proximity to other residential structures and sensitive receptors; (3) the Project is within 0.2 miles of two schools; and (3) its haul route is not yet known or approved to make sure school children and/or nearby sensitive receptors at residential structures will not be impacted. C-6

In addition, as noted above, the Project may have some undisclosed and unmitigated noise impacts with associated health risks, including on human beings and children.

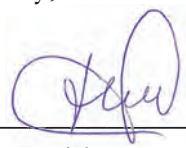
Since the Project's health impacts were not adequately disclosed in the EIR, the statement of overriding considerations is also inadequate and unsupported by substantial evidence. Stated otherwise, the decisionmakers cannot properly weigh if the Project's significant *impacts* would be acceptable as compared to the Project's *benefits*, without knowing what those impacts are or what their severity level is.

## IV. CONCLUSION.

In view of the above-noted concerns, SWRCC respectfully request to deny the Project and its EIR certification and to require that the EIR be revised and recirculated and adequate mitigation measures be enforced, to comply with CEQA.

If the City has any questions or concerns, please feel free to contact my Office.

Sincerely,



Naira Soghbatyan
Attorneys for Southwest Regional
Council of Carpenters

Enclosures:

June 18, 2022 Wilson Ihrig Expert Opinion on the Project's EIR by Derek Watry (**Exhibit A**); and

Court ruling in Aids Healthcare Foundation v. City of Los Angeles, et al. (LASC Case Number 19STCP05445, April 5, 2021 (**Exhibit B**)

**EXHIBIT A**

WILSON IHRIG
ACOUSTICS, NOISE & VIBRATION

CALIFORNIA
WASHINGTON
NEW YORK

WI #22-072

18 June 2022

Naira Soghbatyan, Esq.
Mitchell M. Tsai, Attorney At Law
139 South Hudson Avenue, Suite 200
Pasadena, California 91101

Subject: **Laguna Niguel City Center Mixed-Use Project**
**Laguna Niguel, California**
**Draft Environmental Impact Report**
**Review and Comment on DEIR Noise Analysis**

Dear Ms. Soghbatyan,

As requested, we have reviewed the information and noise impact analysis in the following document:

*Laguna Niguel City Center Mixed-Use Project*
*Draft Environmental Impact Report ("DEIR")*
*State Clearinghouse No. 2019110083*
*City of Laguna Niguel*
*March 2022*

C-7

This letter reports our comments on the noise analysis in the subject document.

Wilson Ihrig, Acoustical Consultants, has practiced exclusively in the field of acoustics since 1966. During our 56 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 Environmental Noise Model (ENM), Traffic Noise Model (TNM), 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.

## 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.

**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 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. The problems and irritation that are associated with speech disturbance became and to some extent remain more pronounced during the COVID-19 pandemic because many people find themselves and the people they live with trying to work and learn simultaneously in spaces that were not designed for speech privacy.

**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.

C-7 cont.

**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. When working and learning from home, many people find their tasks more difficult because their home environment is not as quiet as their office or school was.

[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)

## Comments on Operational Noise Analysis – Traffic Noise

Many CEQA noise analyses only use a relative threshold of significance such as "an increase of 3 dB above the baseline" for traffic noise. The problem with that approach is that over time, as the baseline is perpetually re-defined, there is essentially no cap on noise exposure.

In 1974, pursuant to the Noise Control Act of 1972, the Environmental Protection Agency (EPA) published what remains the most comprehensive study on environmental noise in America, *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety* (U.S. EPA, Office of Noise Abatement and Control, March 1974). This document, which came to be known as the *Levels Document*, identified that the noise exposure outdoors in residential areas that protects public health with an adequate margin of safety is 55 dBA Ldn.[2] Many communities, including Laguna Niguel, hedge this by 10 dB and use 65 dBA CNEL at their exterior noise standard for residential areas. [DEIR, Table 5.11-2, Laguna Niguel Land Use Noise Standards]

The City of Laguna Niguel's thresholds of significance in the DEIR ostensibly recognize the importance of the absolute threshold and include one ("A") along with three ("B", "C", and "D") relative thresholds for situations when the existing noise level is less than the 65 dBA CNEL standard:

*Mobile*

A project would have a significant operational mobile noise impact on sensitive receptors if:

A ▪ The project results in ambient exterior noise levels at nearby noise-sensitive uses to increase above the City standards in Table 5.11-2 (i.e., 65 dB CNEL for residential land uses); or

B ▪ Baseline noise levels at nearest noise-sensitive land uses without the project are below 55 dBA CNEL and the project results in noise level increases of 10 dBA CNEL or more in ambient noise levels; or

C ▪ Baseline noise levels at nearest noise-sensitive land uses without the project are in the range of 55 to 60 dBA CNEL, and the project results in ambient noise level that are 5 dBA CNEL or more above baseline noise levels; or

D ▪ Baseline noise levels at nearest noise-sensitive land uses without the project are above 60 dBA CNEL, and the project results in a noise level increase of 3 dBA CNEL or more above baseline noise levels.

[DEIR at p. 5.11-15; reference letters added]

C-7 cont.

The DEIR document is not clear on what the standard is <u>if the existing noise exposure is already above 65 CNEL</u>, however, it acts as though only the last of the four thresholds ("D") applies in this case: any increase less than 3 dBA CNEL is allowable [DEIR at p. 5.11.25]. This effectively results in the following threshold of significance for traffic noise impacts:

[2] The *day-night equivalent level* (Ldn) denotes the 24-hour equivalent (average) level after adjusting the noise levels between 10 p.m. and 7 a.m upward by 10 dB to account for heightened sensitivity to noise during the nighttime hours. The similar *Community Noise Equivalent Level* (CNEL) uses the same nighttime weighting as the Ldn, but also adjusts the levels between 4 p.m. and 7 p.m. upward by 5 dB to account for the evening hours. In practice, these two metrics rarely differ by more than 0.5 dB and are used interchangeably.

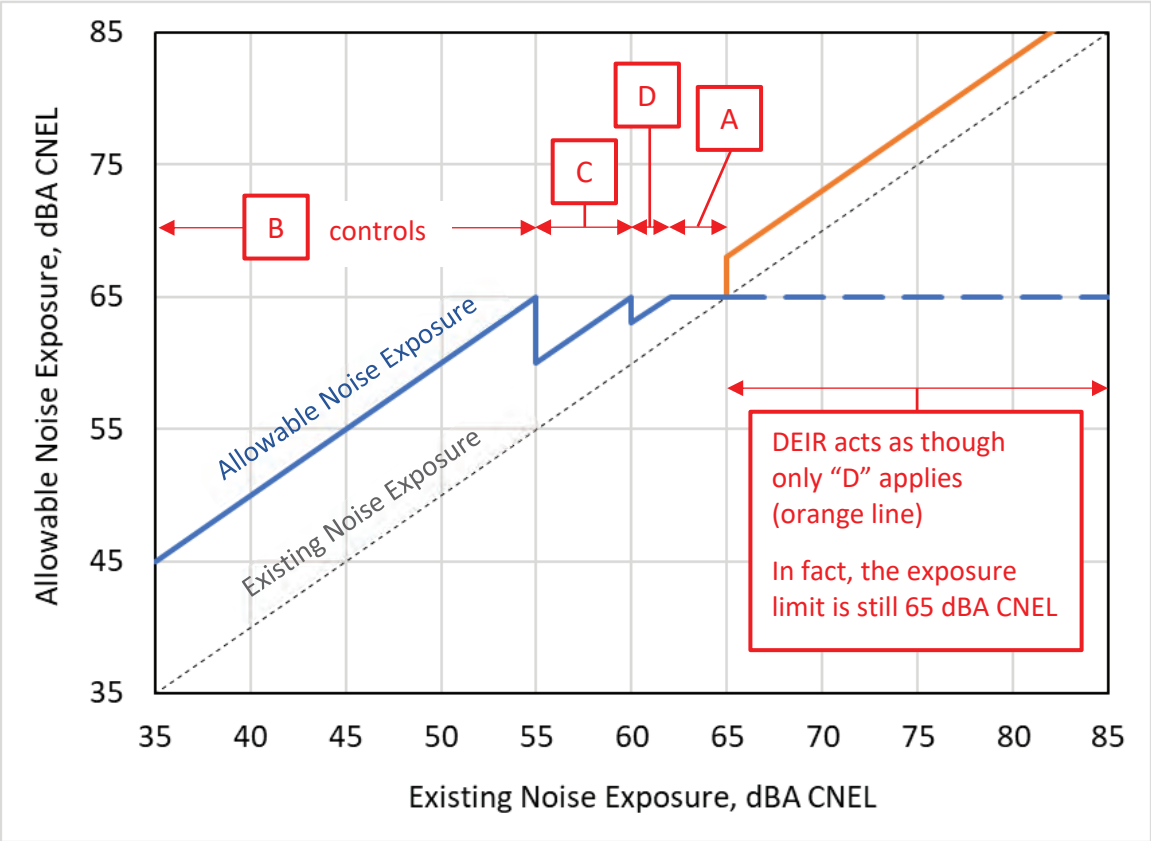



**Figure 1 Effective Allowable Traffic Noise Under DEIR Thresholds of Significance**

C-7 cont.

As can be seen in Figure 1, the four thresholds as written attempt to "hold the line" of noise exposure at 65 dBA CNEL up to that level of exposure. However, as interpreted by the DEIR, applying only threshold "D" utterly fails to provide protection once the exposure exceeds that value.

As it happens, the existing traffic noise levels in the vicinity of the project already well exceed 65 dBA CNEL. For the ten roadway segments analyzed for the DEIR, the existing level ranges from 72.0 to 76.6 dBA CNEL. However, because the exposure already exceeds the 65 dBA CNEL standard and increases by less than 3 dBA, the DEIR declares the noise impact less-than-significant.

The noise increases along the roadway segments that are attributed to the project range from 0.1 to 0.6 dB. Had the exposure along a segment been 64.8 dBA CNEL and increased 0.4 dBA to 65.2 dBA CNEL, the DEIR would have declared that a significant noise impact by virtue of threshold of significance "A". Similarly, any increase in traffic noise level where the existing exposure is already above the 65 dBA CNEL residential standard constitutes a significant noise impact.

Put another way, the DEIR analysis ignores its own threshold of significance "A" which is, once again:

> A project would have a significant operational mobile noise impact on sensitive receptors if the project results in ambient exterior noise levels at nearby noise-sensitive uses to increase above the City standards in Table 5.11-2 (i.e., 65 dB CNEL for residential land uses)

The DEIR analysis clearly indicates that the project will cause ambient exterior noise levels at nearby noise-sensitive uses to increase and the resulting noise levels will be above the City standard of 65 dBA CNEL. Therefore, by threshold of significance "A", the noise should be declared significant.

## Conclusion

By effectively relying solely upon a relative threshold to assess traffic noise increases, the DEIR fails to identify that the subject project will exacerbate an already existing significant noise impact. The traffic noise impact threshold that actually controls this situation is the one that recognizes the City's 65 dBA CNEL standard for exterior noise in residential areas. The DEIR incorrectly interprets this to mean that only if a project causes the noise to cross this line – regardless of the magnitude of the increase – is the project's noise impact significant. A more logical interpretation that is consistent with the clear intent of the four thresholds is that if the existing noise exposure is already over that line, any increase in noise cause by the project will be significant. That is the case here. The DEIR estimates of traffic noise levels that are 72.0 to 76.6 dBA CNEL. As such, the noise increases attributable to the project will cause an additional significant noise impact on the public.

C-7 cont.

♦ ♦ ♦ ♦ ♦

Please contact me if you have any questions about this review of the noise analysis in the *Laguna Niguel City Center Mixed-Use Project* DEIR.

Very truly yours,

WILSON IHRIG

Derek L. Watry
Principal

# DEREK L. WATRY

*Principal*

Since joining Wilson Ihrig in 1992, Derek has gained experienced in many areas of practice including environmental, construction, forensic, architectural, and industrial. For all of these, he has conducted extensive field measurements, established acceptability criteria, and calculated future noise and vibration levels. In the many of these areas, he has prepared CEQA and NEPA noise technical studies and EIR/EIS sections. Derek has a thorough understanding of the technical, public relations, and political aspects of environmental noise and vibration compliance work. He has helped resolve complex community noise issues, and he has also served as an expert witness in numerous legal matters.

## Education

- M.S. Mechanical Engineering, University of California, Berkeley
- B.S. Mechanical Engineering, University of California, San Diego
- M.B.A. Saint Mary's College of California

## Project Experience

***12th Street Reconstruction, Oakland, CA***
Responsible for construction noise control plan from pile driving after City received complaints from nearby neighbors. Attendance required at community meetings.

***525 Golden Gate Avenue Demolition, San Francisco, CA***
Noise and vibration monitoring and consultation during demolition of a multi-story office building next to Federal, State, and Municipal Court buildings for the SFDPW.

***911 Emergency Communications Center, San Francisco, CA***
Technical assistance on issues relating to the demolition and construction work including vibration monitoring, developing specification and reviewing/recommending appropriate methods and equipment for demolition of Old Emergency Center for the SFDPW.

***Central Contra Costa Sanitary District, Grayson Creek Sewer, Pleasant Hill, CA***
Evaluation of vibration levels due to construction of new sewer line in hard soil.

***City of Atascadero, Review of Walmart EIR Noise Analysis, Atascadero, CA***
Review and Critique of EIR Noise Analysis for the Del Rio Road Commercial Area Specific Plan.

***City of Fremont, Ongoing Environmental Services On-Call Contract, Fremont, CA***
Work tasks primarily focus on noise insulation and vibration control design compliance for new residential projects and peer review other consultant's projects.

***City of Fremont, Patterson Ranch EIR, Fremont, CA***
Conducted noise and vibration portion of the EIR.

***City of King City, Silva Ranch Annexation EIR, King City, CA***
Conducted the noise portion of the EIR and assessed the suitability of the project areas for the intended development. Work included a reconnaissance of existing noise sources and receptors in and around the project areas, and long-term noise measurements at key locations.

***Conoco Phillips Community Study and Expert Witness, Rodeo, CA***
Investigated low frequency noise from exhaust stacks and provided expert witness services representing Conoco Phillips. Evaluated effectiveness of noise controls implemented by the refinery.

***Golden Gate Park Concourse Underground Garage, San Francisco, CA***
Noise and vibration testing during underground garage construction to monitor for residences and an old sandstone statue during pile driving for the City of San Francisco.

***Laguna Honda Hospital, Clarendon Hall Demolition, San Francisco, CA***
Project manager for performed vibration monitoring during demolition of an older wing of the Laguna Honda Hospital.

***Loch Lomond Marina EIR, San Rafael, CA***
Examined traffic noise impacts on existing residences for the City of San Rafael. Provided the project with acoustical analyses and reports to satisfy the requirements of Title 24.

***Mare Island Dredge and Material Disposal, Vallejo, CA***
EIR/EIS analysis of noise from planned dredged material off-loading operations for the City of Vallejo.

***Napa Creek Vibration Monitoring Review, CA***
Initially brought in to peer review construction vibration services provided by another firm, but eventually was tapped for its expertise to develop a vibration monitoring plan for construction activities near historic buildings and long-term construction vibration monitoring.

***San Francisco DPW, Environmental Services On-Call, CA***
Noise and vibration monitoring for such tasks as: Northshore Main Improvement project, and design noise mitigation for SOMA West Skate Park.

***San Francisco PUC, Islais Creek Clean Water Program, San Francisco, CA***
Community noise and vibration monitoring during construction, including several stages of pile driving. Coordination of noise and ground vibration measurements during pile driving and other construction activity to determine compliance with noise ordinance. Coordination with Department of Public Works to provide a vibration seminar for inspectors and interaction with Construction Management team and nearby businesses to resolve noise and vibration issues.

***San Francisco PUC, Richmond Transport Tunnel Clean Water Program, San Francisco, CA***
Environmental compliance monitoring of vibration during soft tunnel mining and boring, cut-and-cover trenching for sewer lines, hard rock tunnel blasting and site remediation. Work involved long-term monitoring of general construction activity, special investigations of groundborne vibration from pumps and bus generated ground vibration, and interaction with the public (homeowners).

***Santa Clara VTA, Capitol Expressway Light Rail (CELR) Bus Rapid Transit (BRT) Update EIS, CA***
Reviewed previous BRT analysis and provide memo to support EIS.

***Shell Oil Refinery, Martinez, CA***
Identified source of community noise complaints from tonal noise due to refinery equipment and operations. Developed noise control recommendations. Conducted round-the-clock noise measurements at nearby residence and near to the property line of the refinery and correlated results. Conducted an exhaustive noise survey of the noisier pieces of equipment throughout the refinery to identify and characterize the dominant noise sources that were located anywhere from a quarter to three-quarters of a mile away. Provided a list of actions to mitigate noise from the noisiest pieces of refinery equipment. Assisted the refinery in the selection of long-term noise monitoring equipment to be situated on the refinery grounds so that a record of the current noise environment will be documented, and future noise complaints can be addressed more efficiently.

***Tyco Electronics Corporation, Annual Noise Compliance Study, Menlo Park, CA***
Conducted annual noise compliance monitoring. Provided letter critiquing the regulatory requirements and recommending improvements.

***University of California, San Francisco Mission Bay Campus Vibration Study, CA***
Conducted measurements and analysis of ground vibration across site due to heavy traffic on Third Street. Analysis included assessment of pavement surface condition and propensity of local soil structure.

**EXHIBIT B**

**AIDS HEALTHCARE FOUNDATION v. CITY OF LOS ANGELES**
Case Number: 19STCP05445
Hearing Date: March 3, 2021

**ORDER GRANTING PETITION FOR WRIT OF MANDATE AND COMPLAINT FOR INJUNCTIVE RELIEF**

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Through its Verified Petition for Writ of Mandate and Complaint for Injunctive Relief (the petition) Petitioner, AIDS Healthcare Foundation, challenges the certification of an environmental impact report (EIR) by Respondent, the City of Los Angeles. Petitioner seeks an order requiring the City to "vacate and withdraw the certification of the EIR and all Project Entitlements . . . ." (Pet., Prayer ¶ A.) Petitioner contends it is entitled to relief because the City violated the California Environmental Quality Act (CEQA) (Pub. Resources Code §§ 21000 *et seq.*).

Both the City and Real Party in Interest, Southern California Flower Growers, Inc. (Flower Growers) oppose the petition.

The petition is granted.

**STATEMENT OF THE CASE**[1]

***The Project:***

The project is a mixed-use development located on just under four acres in the downtown area of the City.[2] The site is currently the Southern California Flower Market, a wholesale market owned and occupied by the Flower Growers. (AR 778, 810, 866-67.) The project site contains two buildings; the South Building, which was built in 1962 or 1963, and the North Building, which was built as part of the flower market's expansion in 1981. (AR 778, 866-868.) The buildings are two stories with a parking deck above. (AR 868.)

The project renovates and upgrades the North building, which will continue to operate as a flower market. The project will demolish the South Building and replace it with a new twelve story, mixed-use development comprised of 323 residential units and 167,248 square feet of non-residential uses—retail, office, restaurant, wholesale storage and event space (the Project). (AR 719, 4462-4463.)

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[1] AR refers to the administrative record.

[2] The site is bounded by 7th Street, 8th Street, Maple Avenue, and Wall Street. (AR 748, 791.)

***The City's Approval of the Project:***

On May 22, 2017, the City issue a notice of preparation for the Project. On September 20, 2018, the City released a 600-page Draft EIR (DEIR) for the Project. (AR 4086-4087, 1321.) The City issued the Final EIR[3] on April 12, 2019. (AR 4087.) The City conducted a public hearing on the EIR in May 2019. (AR 5-156, 4410-11.) Thereafter, on June 3, 2019, the City's Advisory Agency, certified the EIR, adopted the CEQA findings and a mitigation, monitoring and reporting program (MMRP), and approved the Project.[4] (AR 5-156, 4410-11.)

Two entities appealed the Advisory Agency's decision on June 13, 2019.[5] (AR 6715, 6869.) The appeals raised concerns about the Project's construction noise and air quality impacts. (AR 3574-77, 6869-80.) The City Planning Commission (CPC) heard and denied the appeals on August 26, 2019. The CPC certified the EIR and affirmed the Advisory Agency's Project approval. (AR 157-312, 4412-4420, 4425-4427, 4429-4531.)

On September 5, 2019, Petitioner appealed the CPC's decision. (AR 8457-8464.) On October 29, 2019, after holding another public hearing, the City's Planning and Land Use Management Committee voted unanimously to recommend that the full City Council deny the appeals and approve the Project. (AR 440-445, 4543-4547, 4548- 4602.) At a public meeting on November 12, 2019, the City Council voted unanimously to deny the appeals and approve the Project. (AR 709-710, 4603-4623.)

The writ petition ensued.

**STANDARD OF REVIEW**

In reviewing an agency's compliance with CEQA during the course of its legislative or quasi-legislative actions, the trial court's inquiry during a mandamus proceeding " 'shall extend only to whether there was a prejudicial abuse of discretion,' " which is established " 'if the agency has not proceeded in a manner required by law or if the determination or decision is not supported by substantial evidence.' " (*Vineyard Area Citizens for Responsible Growth Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 426 [citing Pub. Resources Code § 21168.5].) "In evaluating an EIR for CEQA compliance, . . . a reviewing court must adjust its scrutiny to the nature of the alleged defect, depending on whether the claim is predominantly one of improper procedure or a dispute over the facts." (*Id.* at 435.)

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[3] The court refers to the Final EIR herein as the EIR. The court designates any specific references to the Draft EIR as DEIR herein.

[4] The Advisory Agency also approved the tract map on June 3, 2019. (AR 4299.) The City issued three errata to the EIR during the administrative review process: Erratum No. 1 on July 26, 2019; Erratum No. 2 on August 7, 2019; and Erratum No. 3 on October 18, 2019. (AR 4326.)

[5] American Florists Exchange, Ltd. and the Coalition for Responsible Equitable Economic Development appealed the Advisory Agency's decision.

CEQA requires an EIR to "be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences." (Guidelines[6] § 15151; *Sierra Club v. County of Fresno* (*Friant Ranch*) (2018) 6 Cal.5th 502, 516.) "An EIR's designation of a particular environmental effect as 'significant' does not excuse the EIR's failure to reasonably describe the nature and magnitude of the adverse effect." (*Id.* at 514.) "[T]here must be a disclosure of the 'analytic route the . . . agency traveled from evidence to action.' " (*Laurel Heights Improvement Assn. v. Regents of the University of California* (1988) 47 Cal.3d 376, 404.) "[A] conclusory discussion of an environmental impact that an EIR deems significant can be determined by a court to be inadequate as an informational document without reference to substantial evidence." (*Friant Ranch, supra,* 6 Cal.5th at 514.) If the deficiencies in an EIR preclude "informed decisionmaking and public participation, the goals of CEQA are thwarted and a prejudicial abuse of discretion has occurred." (*Save Our Peninsula Committee v. Monterey County Bd. of Supervisors* (2001) 87 Cal.App.4th 99, 128.)

"Where the alleged defect is that the agency has failed to proceed in the manner required by law, the court determines de novo whether the agency has employed the correct procedures, scrupulously enforcing all legislatively mandated requirements." (*Chico Advocates for a Responsible Economy v. City of Chico* (2019) 40 Cal.App.5th 839, 845.)

With respect to "all substantial evidence challenges, an appellant challenging an EIR for insufficient evidence must lay out the evidence favorable to the other side and show why it is lacking. Failure to do so is fatal. A reviewing court will not independently review the record to make up for appellant's failure to carry his burden." (*Defend the Bay v. City of Irvine* (2004) 119 Cal.App.4th 1261, 1266.) Moreover, "the reviewing court 'may not set aside an agency's approval of an EIR on the ground that an opposite conclusion would have been equally or more reasonable,' for, on factual questions, our task 'is not to weigh conflicting evidence and determine who has the better argument.' " (*Vineyard Area Citizens for Responsible Growth Inc. v. City of Rancho Cordova, supra,* 40 Cal.4th at 435.)

"Regardless of what is alleged, an EIR approved by a governmental agency is presumed legally adequate, and the party challenging the EIR has the burden of showing otherwise." (*Chico Advocates for a Responsible Economy v. City of Chico, supra,* 40 Cal.App.5th at 846.)

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[6] The CEQA Guidelines are found at Title 14 Cal. Code Regs §§ 15000 *et seq.*

**ANALYSIS**

Petitioner contends the EIR analysis of the Project's environmental impacts is flawed as to greenhouse gas (GHG) emissions, air quality and noise. The court addresses the claims in turn.

**GHG Impacts:**

Petitioner claims the City's analysis under the "first significance threshold"[7] does not comply with CEQA. Petitioner's arguments arise in three general categories that are all related in some way to the City's selection of a significance threshold for GHG impacts. First, Petitioner contends the EIR's GHG analysis is inaccurate, confusing and misleading. Second, Petitioner asserts the City selected an inappropriate significance threshold. Third, Petitioner argues the EIR fails as an informal document for decisionmakers and informed public participation because it omits any analysis of Senate Bill (SB) 32 codified at Health and Safety Code section 38566.

Guidelines section 15064.4, subdivision (a) provides: "A lead agency shall have discretion to determine, in the context of a particular project, whether to: (1) Quantify greenhouse gas emissions resulting from a project; and/or (2) Rely on a qualitative analysis or performance based standards." Thus, under the Guidelines, the City had the option of selecting a quantitative or qualitative significance threshold for GHG emissions "based to the extent possible on scientific and factual data." (Guidelines § 15064, subd. (b).)

Further, "California's CEQA Guidelines . . . recognize that an agency's adoption of a threshold of significance requires an exercise of reasoned judgment." (*Mission Bay Alliance v. Office of Community Investment & Infrastructure* (2016) 6 Cal.App.5th 160, 206.) A city's choice of a significance threshold "will be upheld if founded on substantial evidence." (*Ibid.*)

First, Petitioner argues the City's "*discussion* of the GHG *significance thresholds* violates CEQA" because "it is inaccurate and confusing." (Reply 5:33 [emphasis added].) The court disagrees. A reasonable reading of the EIR and the City's selection of a significance threshold does not support Petitioner's claim.

The City explained because the California Air Resources Board (CARB), the South Coast Air Quality Management District (SCAQMD) and the City "have yet to adopt project-level significance thresholds for GHG emissions that would be applicable to the Project," the City obtained its primary direction for GHG emissions analysis from the Guidelines. (AR 917.) The City reported a project could have a significant environmental impact if the project generated GHG emissions that may have a significant impact on the environment, or if the project would conflict with "an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions" of GHG. (AR 14:917.) After a straight-forward plain language discussion in plain in

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[7] Petitioner contends the City has relied upon two significance thresholds for GHG emissions. As discussed herein, the court disagrees. The EIR provides a single threshold of significance for GHG emissions.

the EIR concerning the selection of significance thresholds, the City reported "the Project would not have a significant effect on the environment if it is found to be consistent with the applicable regulatory plans and policies to reduce GHG emissions." (AR 920.)

The City thereafter set forth the applicable plans and policies for which it considered consistency in the context of GHG emissions. (AR 14:920.) The EIR methodically discusses the Project and the applicable plans and policies. Petitioner has not demonstrated the EIR's significance threshold discussion would mislead or confuse decisionmakers or public participants.

Second, without expressly so stating, much of Petitioner's argument related to GHG emissions theorizes the City abused its discretion in deciding not to use a *quantitative* threshold of significance for the Project. Petitioner contends the SCAQMD quantitative thresholds of significance should have been used for the Project as they are "the most appropriate . . . to apply because the Project is a mixed-use project." (Opening Brief 14:17-18.)

Petitioner thus contends the City engaged in "threshold shopping" for the Project. Petitioner speculates the City uses the SCAQMD's recommended thresholds of significance "to analyze projects where emissions are below the threshold." (Opening Brief 14:32-35.) Petitioner cites three such projects in the City's downtown area where the City used SCAQMD's thresholds of significance to find a project's GHG emissions had less than significant impacts. (AR 6495-6496.)

The City explained it elected not to rely on SCAQMD's 2008 draft guidance (as revised in 2010) because neither the City nor SCAQMD "has adopted numeric thresholds for greenhouse gas emissions for land use development projects (e.g., residential/commercial projects) such as the Project." (AR 2820.) The City elaborated:

> As further explained in the Draft EIR, in 2008, the SCAQMD convened a GHG CEQA Significance Threshold Working Group to provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents. In December 2008, the SCAQMD Governing Board adopted interim GHG significance thresholds for projects where the SCAQMD is the lead agency. That threshold uses a tiered approach to determine a project's significance, with 10,000 metric tons of $CO_2$ equivalent ($MTCO_2e$) per year as a screening numerical threshold for stationary sources. In September 2010, the Working Group released additional revisions that recommended a screening threshold of 3,500 $MTCO_2e$ for residential projects, 1,400 $MTCO_2e$ for commercial projects, and 3,000 $MTCO_2e$ for mixed use projects. The SCAQMD has not since adopted those thresholds, nor has the SCAQMD provided a timeline for formal consideration of those thresholds. In the meantime, the thresholds in the SCAQMD's guidance document are used as a non-binding guide. A lead agency is not required under CEQA to rely on draft regulatory standards that have not been adopted as significance thresholds. (AR 2820-2821.)

While the City may have chosen to use the SCAQMD's guidance as thresholds of significance (as it apparently has done with at least three other projects) in the past, the City was not required to do so. (Guidelines § 15064.7, subd. (c). See also Guidelines § 15064.4, subd. (b)(3).) The Guidelines do "not mandate the use of absolute numerical thresholds to measure the significance of greenhouse gas emissions." (*Center for Biological Diversity v. Department of Fish & Wildlife* (2015) 62 Cal.4th 204, 221.) Accordingly, Petitioner has not met its burden of demonstrating the City's selection of the significance threshold is not supported by substantial evidence.

Third, Petitioner contends the EIR's GHG emissions analysis is inconsistent with SB 32. That is, Petitioner attacks the City's finding the Project is "consisten[t] with the policies in SB 32 and Executive Order B-30-15, which includes the GHG reduction goals codified in SB 32." (Opposition Brief 17:2-3.) Petitioner contends "[t]he EIR includes compliance with Executive Order B-30-15 on the list of measures it must comply with for the Project's GHG emissions to be considered insignificant . . . and the Project does not comply with that executive order." (Reply 8:22-25.) Petitioner is correct to the extent there is no substantial evidence to support the City's position on Executive Order (EO) B-30-15.

As an initial matter, the City and Flower Growers argue Petitioner failed to exhaust its administrative remedies on the issue of "CARB's 2017 Scoping Plan, which provides strategies to achieve the 2040 GHG emission goals set in SB 32." (Opposition Brief 17:12-14.) The court disagrees. The broader issue of overall compliance with SB 32—however that might be achieved—was squarely presented to the City during the administrative proceedings.

SWAPE[8] specifically raised the issue of SB 32 in its written comments to the DEIR. (AR 2900, 2922.) SWAPE wrote:

> AB 32 requires California to reduce GHG emissions to 1990 levels by 2020. However, in September 2016, prior to the release of the IS/MND, Governor Brown signed Senate Bill 32, enacting Health and Safety Code § 38566. [] This statue ("SB 32") requires California to achieve a new, more aggressive 40% reduction in GHG emissions over the 1990 levels by 2030. 'This 40 percent reduction is widely acknowledged as a necessary interim target to ensure that California meets its longer-range goal of reducing greenhouse gas emissions to 80 percent below 1990 levels by the year 2050.' Therefore, by failing to demonstrate consistency with the reduction targets set forth by SB 32, the Project may conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. As a result, the Project may have a potentially significant impact that was not previously addressed in the DEIR, and as such, a revised EIR should be prepared. (AR 2922.)

[8] SWAPE is an acronym for Soil Water Air Protection Enterprises. SWAPE provides technical consultation, data analysis, and litigation support for the environment. (AR 2927.)

SWAPE also advised the City—with expert opinion—"to reach the statewide goal of 259 $MTCO_2e$, California would have to reduce its emissions by 49 percent below the 'business-as-usual' levels. This reduction target indicates that compliance with these more aggressive reduction goals, beyond what is mandated by AB 32, will be necessary." (AR 2923.)

As acknowledged by the City and Flower Growers, the legislature codified EO B-30-15 at SB 32. (Opposition Brief 17:3.) Executed by Governor Brown on April 29, 2015, two years before the notice of preparation, EO B-30-15 provides in part:

> "A new interim statewide greenhouse emission reduction target to reduce greenhouse gas emissions to 40 percent below 1990 levels by 2030 is established in order to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050."

SB 32, codified at Health and Safety Code section 38566, effective January 1, 2017 (prior to the City's notice of preparation) provides:

> "In adopting rules and regulations to achieve the maximum technologically feasible and cost-effective greenhouse gas emissions reductions authorized by this division, the state board shall ensure that statewide greenhouse gas emissions are reduced to at least 40 percent below the statewide greenhouse gas emissions limit no later than December 31, 2030."

The EIR reports the Project's GHG emissions are "consistent"[9] with EO B-30-15. (AR 926.) The EIR's discussion of EO B-30-15 in its "Consistency Analysis" reports the order's target of reducing GHG emissions to 40 percent below 1990 levels by 2030. (AR 926-927.) In fact, the EIR suggests the Project is actually consistent and compliant with EO B-30-15: "As such, given the reasonably anticipated decline in Project emissions once fully constructed and operational, the Project is consistent with the Executive Order's horizon-year goal."[10] (AR 926.)

The issue raised by Petitioner is whether there is substantial evidence for the EIR's claim to decisionmakers and public participants the Project does not conflict with EO B-30-15—"an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions" of GHG. (AR 14:917.) The City's position of consistency with EO B-30-15 requires substantial evidence.

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[9] "Consistent" means "marked by harmony, regularity, or steady continuity" and "marked by agreement." (www.merriam-webster.com/dictionary/consistent.)

[10] The EIR's use of a singular possessive form as opposed to a plural possessive form makes the analysis where the EIR discusses two executive orders unclear. In any event, the statement implies quantitative compliance with required GHG emission reductions by 2030. The City's findings, however, make clear the City intended the statement to apply to both executive orders. (AR 235.)

Certainly, the EIR acknowledges a 2030 GHG emissions target exists under the law; in its Consistency Analysis, however, the EIR provides no information about that target or how the Project's GHG emissions are consistent with it. The EIR's claim "the Project's post-2020 emissions trajectory is expected to follow a declining trend, consistent with the 2030 and 2050 targets and Executive Order . . . B-30-15" appears to be unsupported by substantial evidence. (AR 927.)

Moreover, the EIR reports "[m]any of the emission reduction strategies recommended by CARB would serve to *reduce the Project's post-2020 emissions level to the extent applicable by law* . . . ." (AR 927 [emphasis added].) The EIR, however, provides no analysis to support the claim the Project's GHG emissions comply with Health and Safety Code section 38566. That is, "applicable law."[11] In fact, the only evidence on the issue suggests otherwise. (AR 2923 [49 percent reduction required for compliance versus Project's 33 percent reduction].)

During argument the Flower Growers directed the court to evidence the City could have considered to find the Project is consistent with EO B-30-15. The evidence, however, is not substantial evidence supporting the claim the Project's post-2020 emissions will be reduced to the level required by EO B-30-15 as reported in the EIR.

For example, the EIR's discussion of EO B-30-15 explains "a statewide GHG reduction target of 40 percent below 1990 levels by 2030." (AR 902.) Citing a "recent study," the EIR reports "the state's existing and proposed regulatory framework will allow the state to reduce its GHG emissions level to 40 percent below 1990 levels by 2030 (consistent with Executive Order B-30-15), and to 60 percent below 1990 levels by 2050." (AR 903.) While the City cited the study by footnote, the study did not address the Project and its GHG emissions.[12] Thus, the discussion and study are not substantial evidence of the Project's compliance with EO B-30-15.

In addition, the Project's reduction in GHG emissions related to design features (AR 924-925) does not address compliance with EO B-30-15. The order sets forth a quantitative standard. The EIR's general reference to design features and GHG does not inform on consistency with that quantitative standard.

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[11] The City found, "As such, the Project's post-2020 emissions trajectory is expected to follow a declining trend, *consistent with the 2030* and 2050 *targets* and *Executive Order* S-3-05 and *B-30-15.*" (AR 235 [emphasis added].) The statement is misleading because it implies the Project meets EO B-30-15's emissions target when there is no substantial evidence to support the City's position.

[12] The court does not have access to the study cited in the footnote. The EIR's narrative suggests the study concerned "various combinations of policies" to assist emission levels to "remain very low through 2050 . . . ." (AR 903.) In the unlikely event the general study addressed the Project, the court notes "a report 'buried in an appendix,' is not a substitute for 'a good faith reasoned analysis . . . .' " (*Banning Ranch Conservancy v. City of Newport Beach* (2017) 2 Cal.5th 918, 941 [citation omitted].)

The EIR's discussion of the Regional Transportation Plan/Sustainable Communities Strategy of Southern California Association of Governments (SCAG) does address GHG emission reductions. (AR 911, 930-931.) The discussion, however, does not inform on the Project's consistency with EO B-30-15.

Finally, relying on *Cleveland National Forest Foundation v. San Diego Assn. of Governments* (2017) 3 Cal.5th 497, the City argues it had no obligation to consider EO B-30-15. In *Cleveland National Forest Foundation*, the petitioners argued the agency "should have evaluated the plan's impacts against an executive order signed" by the governor. (*Id.* at 503.) The Supreme Court disagreed. The agency in *Cleveland National Forest Foundation,* however, did not adopt a significance threshold of express consistency with an executive order as the City did here. (See *id.* at 507 [three measures of significance].) That is, the agency in *Cleveland National Forest Foundation* did not represent the project was consistent with a particular executive order and establish its significance threshold in part on such consistency.

Based on the foregoing, the court finds the EIR's claim of consistency with EO B-30-15 and the policies therein is not supported by substantial evidence. Thus, the EIR's conclusions that GHG emissions do not exceed the City's chosen significance threshold is unsupported. The City abused its discretion in finding GHG emissions would not have a substantial environmental impact. "[A] conclusory discussion of an environmental impact that an EIR deems significant can be determined by a court to be inadequate as an informational document without reference to substantial evidence." (*Friant Ranch, supra,* 6 Cal.5th at 514.) Petitioner is entitled to relief based on the EIR's incomplete discussion of GHG emission impacts.[13]

**Air Quality Impacts:**

The EIR reports the Project's construction emissions would cause significant regional and local air quality impacts based on nitrogen oxides (NOx) and fine particulate matter (PM2.5). (AR 843.) Thus, the Project required mitigation measures for air quality impacts. (AR 843.)

Petitioner contends the EIR fails to adequately analyze and mitigate construction-related impacts on air quality.

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[13] During argument, the parties argued about the meaning of Table 4.F-5. (AR 922.) The City contended the table calculations demonstrated compliance with EO B-30-15 while Petitioner argued it did not. The narrative accompanying the table indicates the Project is consistent with the 2014 Revised AB 32 Scoping Plan because of a reduction target of 15.3 percent. There is no discussion of EO B-30-15. Whether the table's information is consistent with EO B-3-15—and the court could not determine one way or the other even after the aid of argument—is unclear and does not inform decisionmakers or public participation.

### *1. Mitigation Measure (MM) C-1*

MM C-1 requires "[a]ll off-road construction equipment greater than 50 horsepower" satisfy United States Environmental Protection Agency (EPA) "Tier 4 emissions standards to reduce NOx and PM2.5 emissions at the Project Site." (AR 849.) The EIR states "[a]ny emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations." (AR 849.)

"For projects for which an EIR has been prepared, where substantial evidence supports the approving agency's conclusion that mitigation measures will be effective, courts will uphold such measures against attacks based on their alleged inadequacy." (*Sacramento Old City Assn. v. City Council* (1991) 229 Cal.App.3d 1011, 1027.) A reviewing court, however, will not defer to the agency if there is no substantial evidence in the record showing the mitigation measure is feasible and effective, or if the feasibility or effectiveness of the mitigation measure "def[ies] common sense." (*Gray v. County of Madera* (2008) 167 Cal.App.4th 1099, 1116-1117.)

Petitioner contends MM C-1 is both ineffective and infeasible.

The parties' argument here centers on the meaning of Tier 4 standards for the construction equipment to be used for the Project. Petitioner contends there are two Tier 4 standards—an interim standard and a final standard.[14] Petitioner reports the CalEEMod calculations are based on a Tier 4 final standard—an assumption all construction equipment used for the Project with a horsepower greater than 50 comply Tier 4 final standards. (AR 2908 [citing Appendix E-1]; see also AR 1475-1478, 1507-1510, 1544-1547.) Therefore, to the extent MM C-1 permits the Flower Growers to use equipment with a Tier 4 interim standard, the required mitigation will not be achieved. That is, the CalEEMod calculation on which the effectiveness of MM C-1 is based assumes a Tier 4 final standard for all construction equipment exceeding 50 horsepower. MM C-1, however, does not require all equipment to be Tier 4 final compliant.

The City dismisses Petitioner's claim as nothing more than a "red herring." (Opposition 21:18.) The City reasons Tier 4 "interim" standards were only in effect for a short period of time for certain manufacturers. The interim period ended in 2018 well before the City issued the EIR in 2019. (AR 2803, 4303-4304.) The EIR explains:

> "Tier 4 engines have been phased in nationwide since 2008 for all engine types. While some manufacturers were given limited flexibility to phase in compliant engines under the Transition Program for Equipment Manufacturers (TPEM), this provided up

[14] There seems to be no dispute Tier 4 final standards are more stringent (allow less emissions) than Tier 4 interim standards. (AR 2909, 2803.)

to seven years of additional time to offer such equipment. For engines less than 56 horsepower (hp), this TPEM period ended at the end of 2014. Engines between 56-130 hp had until the end of 2018, while larger engines of 130 hp or more ended at the end of 2017. As a result, Tier 4 equipment is commercially available from all manufacturers, *especially for common types of equipment to be used during the construction phases for this Project*." (AR 2803 [emphasis added].)

The City sidesteps and avoids the issue. (See AR 6621-6622.) MM C-1 relies on Tier 4 equipment. CalEEMod calculations—demonstrating effective mitigation—are based on Tier 4 final standards for construction equipment exceeding 50 horsepower. The City does not require, however, that all equipment exceeding 50 horsepower used for construction have been manufactured in 2019 and later—that is, when Tier 4 final standards were required. Thus, MM C-1 permits, for example, construction equipment with 130 horsepower manufactured in 2018 under the Tier 4 interim standard to be used on the Project. To the extent the City permits such equipment to be used, it would be inconsistent with CalEEMod calculations and undermine the mitigation.

During argument, the City suggested its interpretation of MM C-1 requires equipment for the Project to use Tier 4 final standards. The City contends its CalEEMod calculations support its intent. That is, if the City did not intend for all equipment to meet such standards it would not have used such a setting in its CalEEMod calculations.[15] The City also noted the Flower Growers concede MM C-1 requires Tier 4 final standard engines and so advised the City: "It should be noted that the measure refers to the use of Tier 4-certified engines, not the less effective Tier 4-interim certified engines." (AR 10136.)

The MMRP will require compliance with Tier 4 final standards for MM C-1. Whether the Project is complying with MM C-1 will not turn on the good faith of an "on-the-hood-of-a-truck" analysis of the mitigation measure by a contractor, as suggested by Petitioner during argument. Instead, the MMRP requires:

> "[S]pecifically during the construction phase and prior to the issuance of building permits, the [Flower Growers] shall retain an independent Construction Monitor (either via the City or through a third-party consultant), approved by the City of

[15] Additionally, the City differentiated between Tier 4 standards (which the City considers final standards) and Transition Program for Equipment Manufacturers (TPEM) standards in the EIR. Thus, the City's language in MM C-1 would not support two Tier 4 standards, final and interim. Under the City's view, there is a Tier 4 standard and a TPEM standard. If the City had intended to include an "interim" Tier 4 standard in the MM, it would have used TPEM. In any event, this distinction provides additional support to the City's intent and the enforceable performance standard used for the MM.

> Los Angeles Department of City Planning, who shall be responsible for monitoring implementation of Project design features and mitigation measures during construction activities consistent with the monitoring phase and frequency set forth in this [MMRP]." (AR 143.)

Thus, while MM C-1 could have been more precise, the City's intent is clear, and the MM contains a specific performance standard. Moreover, the Flower Growers have acknowledged MM C-1 requires construction equipment with Tier 4 final standards (or its equivalent) be used for the Project. The MMRP will "ensure compliance during project implementation." (Pub. Resources Code § 21081.6, subd. (a).)

While Petitioner contends the City uses a performance standard addressing only particulate but not NOx emissions (Opening Brief 18:14-19), the court is unpersuaded. MM C-1 requires any construction equipment meet both standards—Tier 4 final and a Level 3 diesel emission control strategy. (AR 849 ["In addition"].)

Based on the foregoing, the court finds the City's determination MM C-1 will be effective at mitigating air quality impacts to a less-than-significant level during construction is supported by substantial evidence.

***a. Feasibility and Enforceability of MM C-1***

According to Petitioner, MM C-1 "does not provide either feasible or enforceable means to ensure significant air quality impacts will be avoided." (Opening Brief 19:5-6.) Petitioner argues MM C-1 is inadequate to ensure avoidance of significant impacts to the air quality "because of practical obstacles in obtaining the required technology." (Opening Brief 19:10-11.)

Petitioner reports while Tier 4 standards have been phased in for construction equipment manufactured since 2008 (Tier 4 interim) and 2014 (Tier 4 Final), "a large portion of the construction equipment currently in use was manufactured to lower standards." (Opening Brief 19:16-17 [citing AR 2910-2911].)[16] Petitioner contends the City's claim Tier 4 standards construction equipment is readily available is unsupported by substantial evidence. Thus, Petitioner claims the EIR's conclusion supporting feasibility—the availability of equipment—fails.

Petitioner's argument alleging a lack of appropriate construction equipment is based on speculation. Petitioner's reliance on a seven-year-old report from 2014—just after Tier 4 final

[16] "In 2014, 25% of all offroad equipment in the state of California were equipped with Tier 2 engines, approximately 12% were equipped with Tier 3 engines, approximately 18% were equipped with Tier 4 Interim engines, and only 4% were equipped with Tier 4 Final engines."

standards phased in—does not meet Petitioner's burden on the issue. The City's position "it is reasonable to conclude that the market has produced many more Tier 4-compliant engines" since 2014 is reasonable and appropriate given Petitioner's speculation. (Opposition 23:2-3.) This is especially true given the passage of time and such equipment being available from all manufacturers. (AR 2806.)

More importantly, if Flower Growers cannot secure specific Tier 4 equipment as required by MM C-1, Flower Growers will be required to "work with the City's Building and Safety Department on equivalent alternatives that minimize tailpipe emissions from off-road equipment." (AR 2803.) The term "equivalent" means the Flower Growers must demonstrate the proffered alternative "meets or exceeds" Tier 4 standards thereby meeting necessary emission reductions in NOx and PM2.5. (AR 4303-4304.)

Based on the speculative nature of Petitioner's claim concerning feasibility, the court finds Petitioner did not meet its burden of demonstrating the City abused its discretion when it found MM C-1 is feasible.[17]

2. ***Air Quality Impacts to Sensitive Receptors***

Petitioner takes issue with the City's selection and identification of sensitive receptors and their proximity to the Project. The flaw, according to Petitioner, undermines the EIR's air quality analysis.

Petitioner notes the EIR identifies the "nearest" sensitive receptors at distances of 220 (school), 240 (apartment building), 440 (apartment building) and 700 (apartment building) feet from the Project. (AR 836.) Petitioner reports there is an apartment building within 55 feet of the Project and another closer than 240 feet. (AR 778, 3173, 6874-6875.) Petitioner argues that these omissions are misleading by creating the impression for decisionmakers and the participating public there are few sensitive uses in close proximity to the Project.[18]

To the extent selection of a group of sensitive receptors is a methodology issue, the City is entitled to deference on its methodology.[19] Thus, the decision is subject to substantial evidence review. (*City of Long Beach v. Los Angeles Unified School Dist.* (2009) 176 Cal.App.4th 889, 898.)

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[17] The court's finding MM C-1 is effective sufficiently responds to Petitioner's claim concerning enforceability.

[18] Additionally, Petitioner argues the EIR's air quality impacts on sensitive receptors is inadequate because it relies on the MM C-1 to render the impact less than significant. Of course, the court's earlier analysis of MM C-1 would be equally applicable here.

[19] That said, the court is not persuaded the issue is, in fact, a methodology issue.

The City's use of SCAQMD guidance on the issue does not actually support selection issues. That is, nothing in the SCAQMD guidance instructs on selection of sensitive receptors over others. (AR 832-848, 845.) Thus, the SCAQMD guidance is not substantial evidence.

In the EIR, the City "disclose[d] the location of a number of representative sensitive receptors near the Project Site" including residential and non-residential uses. (AR 7232.) The City's response to public comment is instructive:

> "Almost all of the other residential uses identified by the commentor are at the same distance from the Project site as the Santee Court Apartments (i.e., the Santee Village Apartments) or even a further distance away from the Project site (i.e., the Garment Lofts are 40 feet further away than the Santee Court Apartments and the Santee Village Lofts are 60 feet further away than the Santee Court Apartments). Moreover, compliance with SCAQMD's thresholds of significance will avoid any significant impact to any of these sensitive receptors and the EIR demonstrates that mitigated construction emissions would be less than all the SCAQMD's thresholds of significance. (Refer to Draft EIR, pages 4.C-19 through 23.) This conclusion would apply regardless of the location of any receptor pursuant to SCAQMD guidance." (AR 7232; see also AR 3570-3571.)

The court finds Petitioner has not met its burden of demonstrating a prejudicial abuse of discretion even assuming the City abused its discretion in its selection of sensitive receptors. Petitioner has not suggested any legal requirement that every sensitive receptor within close proximity of a Project must be identified. "CEQA requires only that the agency 'use its best efforts to find out and disclose all that it reasonably can' (Guidelines, § 15144), and that the EIR display 'adequacy, completeness, and a good faith effort at full disclosure' (Guidelines, § 15151)." (*Planning & Conservation League v. Castaic Lake Water Agency* (2009) 180 Cal.App.4th 210, 253.)

Further, Petitioner fails to demonstrate the City sampling is misleading—other than to the extent the City did not include every single sensitive receptor in close proximity to the Project. The City's expert concluded the Project would avoid significant impacts to all receptors in the vicinity because the Project's mitigated construction emissions will fall below SCAQMD's thresholds measured at the source of the emissions. (AR 3570-3571, 4068, 7232.) Petitioner does not suggest with evidence the EIR's analysis and conclusions would be different with respect to the omitted sensitive receptors as opposed to the receptors the City considered and analyzed. Accordingly, Petitioner shows no prejudicial abuse of discretion.

### 3. *Disclosure of Health Risks Associated with Air Quality Impacts*

Petitioner argues the Project fails to adequately discuss the connections between potential pollutant emissions and resulting human health impacts. Such analysis, Petitioner contends, is required by Guidelines section 15126.2, subdivision (a).

Petitioner asserts the EIR failed to discuss the health risks related to the estimated level of construction and operational emissions. (AR 827-850.) The EIR therefore does not comply with the Supreme Court's direction in *Friant Ranch* that a "[p]roject's health effects must be "clearly identified" and the discussion must include "relevant specifics" about the environmental changes attributable to the Project and their associated health outcomes." (*Friant Ranch, supra,* 6 Cal.5th at 518.)

Further, Petitioner argues the City's 2019 Health Risk Assessment (HRA) does not "fill the gap in the EIR's analysis." (Opening Brief 23:28.) The HRA contains no analysis of operational emissions and merely addresses construction-related emissions of diesel particulate matter. (AR 846.)

Under SCAQMD guidance, an HRA is recommended for "substantial sources of diesel particulate emissions (e.g., truck stops and warehouse distribution facilities) . . . ." (AR 846.) The City determined—and there is no challenge to the City's finding—the "Project would not result in any substantial emissions of toxic air contaminants (TAC) during the construction or operations phase." (AR 846.)

The EIR explains:

> "The Project would not result in any substantial emissions of toxic air contaminants (TACs) during the construction or operations phase. During the construction phase, the primary air quality impacts would be associated with the combustion of diesel fuels, which produce exhaust-related particulate matter that is considered a toxic air contaminant by CARB based on chronic exposure to these emissions. However, construction activities would not produce chronic, long-term exposure to diesel particulate matter. During long-term project operations, the Project does not include typical sources of acutely and chronically hazardous TACs such as industrial manufacturing processes and automotive repair facilities. As a result, the Project would not create substantial concentrations of TACs. In addition, the SCAQMD recommends that health risk assessments be conducted for substantial sources of diesel particulate emissions (e.g., truck stops and warehouse distribution facilities) and has provided guidance for analyzing mobile source diesel emissions. The Project would not generate a substantial number of truck trips. Based on the limited activity of TAC sources, the Project would not

warrant the need for a health risk assessment associated with on-site activities. Therefore, Project impacts related to TACs would be less than significant." (AR 846; see also AR 2964-66.)

Contrary to Petitioner's position, *Friant Ranch*, does not require more from the City. The Project does not exceed any SCAQMD significance threshold for air quality impacts or trigger any criteria requiring an HRA.

Petitioner has not met its burden of demonstrating a prejudicial abuse of discretion based on a failure to adequately discuss the connections between potential pollutant emissions and resulting human health impacts.[20]

**Noise Impacts:**

Petitioner contends the EIR fails to adequately analyze and mitigate construction-related environmental impacts as to noise.

1. ***Disclosure of Impacts to Sensitive Receptors***

Petitioner takes issue with the EIR's purported failure to analyze the construction-noise impacts at the Textile Building Lofts, a location merely 55 feet from the Project. The EIR does not contain any noise analysis to any sensitive receptors at this location. In fact, the first *discussion* by the City about the noise impacts to the Textile Building Lofts is contained in Erratum No. 3. (AR 3173, 3342-3343.)

Petitioner contends the City's analysis is flawed. Petitioner believes the daytime ambient noise level of 64.8 dBA, based on measurements on Maple Avenue, is overstated for the Textile Building Lofts. (AR 3343.) The City's inaccurate 64.8 dBA daytime noise level assumption, according to Petitioner, led to a conclusion of only a 1.3 dBA daytime noise level increase such that the Project's construction-noise impacts did not exceed the 5 dBA level noise increase significance threshold. (AR 3343.)

Based on expert opinion, however, Petitioner reports the City's ambient noise level determination failed to take into account the 12-story height of the Textile Building Lofts. Higher stories have lower ambient noise levels. (AR 10085-10086 [identifying ambient noise is as low as 58.5 for the twelfth floor].) The daytime ambient noise levels are not the same "for all floors of the Textile Building [Lofts] because the higher floors are farther from the road traffic than lower floors." (AR 10085.) Thus, the City's conclusion construction-noise related impacts

[20] Petitioner appears to have abandoned the argument in reply.

to the Textile Building Lofts is flawed—it is based on an "unsupported assumption about existing ambient noise levels." (Opening Brief 25:15-16.)

The City's expert does not address the ambient daytime noise level for the higher floors of the Textile Building Lofts. The City's expert did consider the building, however, using the same methodology used in the DEIR. (AR 4305.) The City's expert determined the Textile Building Lofts would experience an increase in noise based on construction of 1.3 dBA (or less). (AR 3173-74, 7229.)

Further, Project construction-related noise impacts are expected to remain below the City's 5 dBA significance threshold. (AR 3343, 7229.) In a June 19, 2019 memorandum, the City's noise expert explained:

> "[T]his [Maple Street for the Textile Building Lofts] baseline noise level is far greater than the 50.8 dBA $L_{eq}$ noise level used to represent baseline conditions at the Santee Court Apartments receptor. Utilizing the same construction source and mitigation assumptions that were used for the Santee Court Apartments analysis, as Textile Building Lofts would benefit from the same mitigation measures intended to reduce construction noise impacts at Santee Court Apartments, Textile Building Lofts would be projected to experience a construction-related noise increase of just 1.3 dBA $L_{eq}$, similar to but less than the 1.6 dBA $L_{eq}$ impact that would occur at Santee Court Apartments. The noise impact at Textile Building Lofts would not exceed the 5 dBA noise increase threshold; in fact, it would not exceed the 3 dBA $L_{eq}$ threshold of perceptibility that represents when noise conditions may be noticeably louder." (AR 7229.)

While Petitioner relies expert opinion to dispute and contradict the City's expert technical report, Petitioner has not demonstrated the City's expert studies are so "clearly inadequate or unsupported" as to be "entitled to no judicial deference." (See *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 409 fn. 12. ["A clearly inadequate or unsupported study is entitled to no judicial deference."]) "When an agency is faced with conflicting evidence on an issue, it is permitted to give more weight to some of the evidence and to favor the opinions of some experts over others. (*Association of Irritated Residents v. County of Madera* (2003) 107 Cal.App.4th 1383, 1397.)

Accordingly, Petitioner failed to meet its burden of demonstrating a prejudicial abuse of discretion related to the City's analysis of construction-related noise impacts. (See *State Water Resources Control Bd. Cases* (2006) 136 Cal.App.4th 674, 795. ["The party challenging the EIR, however, bears the burden of demonstrating that the studies on which the EIR is based 'are clearly inadequate or unsupported.' "])

### 2. *Feasibility and Effectiveness of MM I-1 and I-2*

Petitioner argues MM I-1 and I-2 are vague, ineffective and unenforceable.

#### *a. MM I-1*

"To ensure that the Project's construction-related noise levels do not exceed 75 dBA and that construction-related noise increases at Santee Court Apartments do not exceed 5 dBA," the City adopted MM I-1. MM I-1 provides "[a]ll capable diesel-powered construction vehicles shall be equipped with exhaust mufflers or other suitable noise reduction devices." (AR 1011.)

Petitioner contends MM I-1 does not establish a performance standard because nothing in the mitigation measure sets a required noise level reduction. Petitioner argues muffler use alone does not ensure MM I-1 will achieve any particular level of mitigation. Petitioner asserts "the fact that exhaust mufflers should or could reduce equipment noise by 3 dBA or more doesn't address the fact that the measure, as written, does not require mitigation at that level and therefore does not ensure that level of mitigation will be achieved, as is necessary to support the finding of no significant impacts from construction noise." (Opening Brief 28:18-22.)

As noted earlier, "For projects for which an EIR has been prepared, where substantial evidence supports the approving agency's conclusion that mitigation measures will be effective, courts will uphold such measures against attacks based on their alleged inadequacy." (*Sacramento Old City Assn. v. City Council, supra*, 229 Cal.App.3d at 1027.)

The City contends MM I-1 as written will be effective. The use of mufflers to abate noise impacts is considered "best practices" and recommended under the City's CEQA threshold guide. (AR 2773, 2786-2787, 7299, 10131-10132 [EPA's Office of Noise Abatement and Control Study], 10139.)[21] In addition, the City's noise expert confirmed the use of mufflers as required by MM I-1 would achieve a 3 dBA noise reduction. (AR 3085-3086, 10139-10140.) The expert explained "aftermarket mufflers reduce noise by over 3 dBA. (AR 10139.) In addition, the Project's MMRP requires the Flower Growers to retain an independent Construction Monitor, approved by the City, responsible for: (a) ensuring that "capable" mufflers are used during construction; and (b) documenting compliance. (AR 2848-2849.)

While the court agrees MM I-1 does not contain a specific performance standard, it does mandate the use of certain equipment that does have performance standards. Substantial evidence supports the City's conclusion the use of mufflers will be effective at reducing noise levels by at least 3 dBA. The City's noise expert reviewed aftermarket muffler manufacturer

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[21] The EPA study, upon which the City's CEQA Threshold Guide relies, shows that "equipment mufflers should reduce excavation and grading phase noise levels by 3 dBA. (AR 10131.)

specification materials to reach his conclusion mufflers result in noise reductions exceeding 3 dBA. An EPA study also supports the City's conclusion.

Accordingly, the City's conclusion MM I-1 will be effective with a sufficiently clear performance standard (by virtue of the equipment used) is supported by substantial evidence. (Guidelines § 15384, subd. (b).)

***b. MM I-2***

"To ensure that the Project's construction-related noise levels do not exceed 75 dBA and that construction-related noise increases at Santee Court Apartments do not exceed 5 dBA," the City adopted MM I-2. MM I-2 requires "[t]emporary sound barriers capable of achieving a sound attenuation of at least 15 dBA shall be erected along the Project's boundaries facing Santee Court Apartments. Temporary sound barriers capable of achieving a sound attenuation of at least 6 dBA shall be erected along all other Project construction boundaries." (AR 1011.) MM 1-2 requires sound barriers at the Project's boundaries.

Again, Petitioner contends the MM is vague, ineffective and unenforceable.

First, Petitioner asserts achieving a sound attenuation of 15 dBA is so vague it is ineffective; the mitigation measure does not specify from where the sound attenuation is to be judged. As written, the mitigation measure would allow sound attenuation to be evaluated at the Project boundaries instead of a sensitive receptor's location. To the extent sound attenuation is to be measured at the sensitive receptor, it may allow measurement from street level ignoring impacts at higher floors. Higher floor sound attenuation is important as the efficacy of sound barriers to shield higher floors in a building is questionable.[22]

Second, Petitioner argues sound barriers erected along the Project boundaries will be ineffective as they would be too far from construction equipment to effectively reduce noise.[23]

The City dismisses Petitioner's arguments as "wordsmithing." (Opposition Brief 35:5.) The City explains the EIR supports the conclusion that noise barriers with a transmission loss value of 25 dBA are capable of achieving the required noise reduction of 15 dBA at the identified sensitive receptors. (AR 2787, 3085-3086.) Moreover, the City's noise expert explains:

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[22] Petitioner reports sound is most audible when it travels by direct line of sight. Sound barriers are largely ineffective if they do not break the line of sight between the source and receiver. (AR 992.) The City does not seem to dispute this notion.

[23] Petitioner explains sound barriers are most effective when they are very close to either the source or the receiver and become less effective with greater distance from the noise-producing equipment. (AR 10082.)

> "The level topography of the South Building site and single proposed sub-grade level would allow for the easy positioning and movement of these barriers to shield construction activities, no matter where they may occur on-site. There are numerous free-standing temporary noise barrier systems used in the industry up to 24 feet in height that may be positioned manually or by vehicles such as construction forklifts and/or loaders." (AR 10140; see also AR 7299.)

The City's response actually concedes the flaw in the efficacy of MM I-2 as it is written. Effective mitigation to sensitive receptors requires the noise barrier systems to be moved. The City argues MM I-2 is effective because "the noise barriers are *moveable*, meaning that they move in concert with any piece of construction equipment to ensure the equipment does not operate with an unobstructed line of sight to a receptor." (Opposition Brief 35:15-17.) The City recognizes the barriers must be moveable "to shield construction activities, no matter where they occur onsite." (Opposition Brief 35:18-19.)

Despite the City's recognition the noise barriers must be moved throughout the Project during construction to effectively mitigate construction-related noise, MM I-2 does not require such movement. It is not about wordsmithing—it is about enforceability and efficacy. The City's attempts to distinguish between "Project boundaries" and "property boundaries" is unpersuasive.[24] Such a distinction—if there is one—does not resolve the ambiguity. Nothing in MM I-2 requires any noise barriers to be moved.[25]

Accordingly, the court finds substantial evidence does not support the City's conclusion MM I-2 is an effective mitigation measure.

**CONCLUSION**

Based on the foregoing, the petition is granted.

During argument, the Flower Growers suggested the court should address remedies if the court granted the petition. "In most cases, when a court finds that any agency has violated CEQA in approving a project, it issues a writ of mandate requiring the agency to set aside its CEQA determination, to set aside the project approvals, and to take specific corrective action before it considers approving the project." (*King & Gardiner Farms, LLC v. County of Kern* (2020) 45 Cal.App.5th 814, 896.)

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[24] In the EIR, the City defines the Project boundaries as approximately 3.87 acres consisting of one block. It would seem the "Project boundaries" are, in fact, the property boundaries. (AR 748.)

[25] Given the comments raised concerning the barriers and the timing of the comments, there are issues of feasibility given barrier mobility issues. (AR 10076.)

The court believes an order consistent with most CEQA writ petition cases is appropriate. Flower Growers, however, may submit an objection to the judgment if it has an objection to the usual order of requiring the City to set aside the project approvals.

Petitioner shall submit a proposed form of judgment with service on all parties.

**IT IS SO ORDERED.**

April 5, 2021

Hon. Mitchell Beckloff
Judge of the Superior Court

**Response to "Supplemental Objections to Project Approvals and Certification of the Final Environmental Impact Report for the Laguna Niguel City Center Mixed Use Project (SCH#2019110083) – City Council Agenda; Public Hearing Item 1, letter from Mitchell M. Tsai, Attorney at Law, dated June 20, 2022**

*Letter on behalf of the Southwest Regional Council of Carpenters (SWRCC)*

C-1 The comment is introductory in nature and does not make any specific allegation against the EIR. No specific response is required. The comment is noted.

C-2 The commenter asserts that the EIR is deficient because it fails to disclose the nature of schools near the project site and the magnitude of impacts of the project. The comment is without merit and presents no evidence of an unanalyzed potential impact. The EIR notes the location of the two schools when describing potential operational impacts associated with the project. However, as discussed in the EIR, the project does not "include industrial land uses that could routinely emit toxic air contaminants in concentrations that could be hazardous to persons at schools within one-quarter mile of the site." Moreover, for other resource areas, the EIR analyzes potential impacts to sensitive receptors much closer than the identified schools, which are located more than 1,000 feet from the project site. (See Draft EIR at 5.2-15 [nearest off-site sensitive receptors are residences at 82 feet].)

The commenter is also referred to Responses to Comments A-20 and Section 5.8.4.2 of the Draft EIR, both of which discuss the regulations, methods, and standards applicable to handling and disposal of contamination. With regulatory compliance, as outlined in the Draft EIR, as well as with implementation of mitigation measures (including a Soils Management Plan), the project would not result in significant impacts to schools. The commenter presents no evidence to the contrary.

C-3 The commenter asserts that the City's Draft EIR process was deficient for failure to consult with nearby school districts. The commenter misrepresents the application of CEQA Guidelines Section 15186. Section 15186 provides that for "certain projects near schools" a lead agency shall consult with school districts. However, the proposed project does not trigger consultation. The section first notes that it requires consultation if project located within ¼ mile of a school "involves the construction or alteration of a facility that might reasonably be anticipated to" emit hazardous air emissions or handle extremely hazardous substances. Thus, the trigger is whether the constructed facility would emit or handle hazardous substances. Commenter's construction requires ignoring the term "facility." The remainder of Section 15186 also specifies that "certain projects near schools" means a facility that "might reasonably be anticipated to emit hazardous air emissions, or that would handle an extremely hazardous substance or a mixture containing extremely hazardous substances in a quantity equal to or greater than the state threshold quantity specified in subdivision (j) of Section 25532 of the Health and Safety Code…." (Emphasis added.) The commenter fails to acknowledge this important reference.

Section 25532 of the Health and Safety Code has been amended numerous times since adoption of Guidelines Section 15186. At the time of adoption of Guidelines Section 15186, subdivision (j) of Section 25532 was titled "State threshold quantity" and noted that it meant "the quantity of regulated substances described in subparagraph (A) of paragraph (2) of subdivision (g), as adopted by the" Office of Environmental Health Hazard Assessment. Section 25532(m) is currently titled "State threshold quantity" and has substantively the same definition as previously noted. However, regardless of the section referenced, the proposed project is not one that would use, emit, generate, or handle hazardous emissions or extremely hazardous substances such that it is subject to regulation under Section 25532. Commenter's attempts to describe the scope of project construction as being substantial do not qualify the project as one subject to Section 25532 or one mandating consultation pursuant to Section 15186. The City was not required to consult with school districts pursuant to Guidelines Section 15186. However, it should be noted that the City did send the Capistrano Unified School District both a public services information request and CEQA notices regarding preparation and distribution of the DEIR. The District provided information as included in Draft EIR, Appendix K, Service Provider Responses.

Potential impacts of the proposed project from all construction phases of the project, including demolition and grading, were analyzed in the Draft EIR. For air emissions and potential health risks, for instance, the Draft EIR utilizes South Coast AQMD's LST methodology. LSTs represent the maximum emissions from a project in the South Coast Air Basin that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard. The LST analysis found that the proposed project would result in less than significant impacts, following implementation of Mitigation Measures AQ-1, AQ-2, and AQ-3. Thus, potential health risks from project construction were appropriately evaluated in the Draft EIR. An operational Health Risk Assessment (HRA) was not prepared because operational land uses would not generate significant levels of Toxic Air Contaminants (TAC) or Diesel Particulate Matter (DPM), which are associated with uses such as chemical processing or warehousing. Aside from speculating and repeating the analysis of the Draft EIR, the commenter presents no evidence that the Draft EIR's analysis is inadequate.

C-4 The comment asserts that the project's demolition activities would impact children at nearby schools. The commenter presents no evidence to support the assertion. The amount of demolition and the fact that asbestos containing materials are present are acknowledged in the Draft EIR. Furthermore, Mitigation Measure HAZ-3 requires complete abatement of asbestos prior to the issuance of a demolition permit. The Draft EIR also explains that compliance with applicable regulations, which are described in the Draft EIR, would ensure that impacts associated with such materials would not result in a significant impact. The commenter is referred to Response B-3 (. The commenter also asserts that the EIR cannot be certified without the haul route approval. The commenter is referred to Response to Comment B-2 (prepared in response to commenter's earlier late submitted letter dated May 24, 2022). That response explains that the Draft EIR appropriately analyzed potential impacts associated with project

hauling, including emissions and handling of hazardous materials, including asbestos. The commenter is also referred to the response above regarding consultation with schools, which is not required in this instance.

C-5 The commenter asserts that the Draft EIR's noise analysis is inadequate to account for adverse health impacts. The commenter suggests that an alternative methodology be used to assess noise impacts. A lead agency has discretion in preparing an EIR and need not conduct every recommended test or perform all possible research. An EIR is not required to address all the potential variations of the issues presented. An analysis of every permutation of the data is not required. The commenter is referred to Draft EIR Appendix J, *Noise Information and Calculations*, which outlines the standards used to assess noise impacts, particularly pp. 29-30 and footnotes 10-13, which provide support for the methodology used to assess operational noise impacts. The methodology for the noise analysis included in the Draft EIR is consistent with the methodology established in the City's adopted CEQA Manual. The Draft EIR does not, as the commenter asserts, ignore noise increases. Instead, the thresholds are based upon well-accepted methodologies that assess noise impacts using existing noise, increases, and reference to applicable noise standards. A lead agency has discretion to formulate standards of significance for use in an EIR, which requires the agency to make a policy judgment about how to distinguish adverse impacts deemed significant from those deemed less than significant. (North Coast Rivers Alliance v. Marin Mun. Water Dist. (2013) 216 Cal.App.4th 614, 625.) Substantial evidence supports the Draft EIR's thresholds. Increases in noise are not significant simply because there are increases, and the Draft EIR's standards reflect an appropriate methodology for assessing potential impacts on sensitive receptors. The commenter appears to ignore the component regarding sensitive receptors.

PPP N-4 is not a mitigation measure, as noted in the Draft EIR. It is a requirement of the California Building Code, and thus a regulatory mandate. Commenter's attempt to characterize PPP N-4 as a mitigation measure that is improperly deferred is mistaken. It also includes a clear standard – 45 dBA CNEL.

C-6 The commenter echoes the previous comments made by SAFER on the Draft EIR (see Lozeau Drury letter dated May 24, 2022, on behalf of Supporters Alliance for Environmental Responsibility (SAFER). The comment is noted. The commenter is referred to Responses A-5 through A-9, which explain why the Draft EIR's air quality analysis is appropriate and complies with CEQA. The commenter presents no evidence to the contrary.

C-7 The comment is a noise-specific comment on the Draft EIR's analysis. The commenter is referred to Response C-5, above.

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# CARLSON STRATEGIC LAND SOLUTIONS, INC.

# Memorandum

Date: June 21, 2022

To: John Morgan

From: Peter Carlson, Carlson Strategic Land Solutions

Subject: Laguna Niguel City Center Response to SAFER Comments

At just after 2pm today, the day of the City Council hearing, the City received an additional comment letter on the Laguna Niguel City Center project from Lozeau Drury LLP representing Supporters Alliance for Environmental Responsibility ("SAFER"). The comment letter includes four comments pertaining to air quality modeling, which relies on the California Emissions Estimator Version ("CalEEMod") consistent with the City's CEQA Manual. I spoke with the technical team at PlaceWorks and below are brief responses to the four comments.

Comment 1: Unsubstantiated Reductions to Architectural and Area Coating Areas. Ex. A, p. 2-3.

Response 1: Adjustments were made to the CalEEMod model defaults for architectural coatings based on the information provided by the Applicant. The Applicant indicates that only 95% of the interior walls will receive architectural coatings and only 80% of exterior walls will receive architectural coatings. The reason for the reduction is the project's use of architectural materials that do not require coatings.

Comment 2: Unsubstantiated Reduction to the Default Gas Fireplace Values. Ex. A, p. 4-5.

Response 2: Adjustments were made to the CalEEMod model defaults because the project does not include gas fireplaces. This emission source was removed based on the project plans.

Comment 3: Failure to Model Hauling Trips Associated with Building Construction. Ex. A, p. 5-7.

Response 3: Adjustments were made to the CalEEMod model defaults because CalEEMod does not have hauling emissions under the construction category, therefore, hauling emissions were accounted for in the site preparation, grading, and demolition categories within the model.

Comment 4: Unsubstantiated Changes to Wastewater Treatment System Percentages. Ex. A, p. 7-8.

Response 4: Adjustments were made to the CalEEMod model defaults because 1) no septic systems are included in the project, and 2) the wastewater treatment serving the project site does not use open lagoons. CalEEMod was adjusted to conservatively assume aerobic treatment.

Please contact me at pcarlson@carlsonsls.com or 949.289.3625, should you have any questions or comments.