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Public Comments Not Uploaded Appeal Correspondence - 3431–3455 West 8th Street Project (CPC-2019-2567-GPAJ-VZCJ-HD-CUB-SPR-1A)

1 message

Madeline Dawson <madeline@lozeaudrury.com> Mon, Nov 13, 2023 at 1:05 PM
Reply-To: clerk.plumcommittee@lacity.org
To: PLUM <clerk.plumcommittee@lacity.org>, chi.dang@lacity.org
Cc: Victoria Yundt <victoria@lozeaudrury.com>, Layne Fajeau <layne@lozeaudrury.com>

Dear Honorable Councilmembers Harris-Dawson, Rodriguez, Yaroslavsky, Lee, and Hutt, and Ms. Dang,

Please find attached the comment letter submitted on behalf of Supporters Alliance For Environmental Responsibility (SAFER) on March 21, 2023, regarding the 3431–3455 West 8th Street Project (CPC-2019-2567-GPAJ-VZCJ-HD-CUB-SPR-1A). This letter was attached to SAFER's appeal submitted on September 18, 2023, but did not include the expert exhibits. Attached is the original comment letter that includes expert exhibits.

Acknowledgement of receipt of this email and attachment would be greatly appreciated. Please let me know if there is any further I need to do to ensure it is forwarded to the Council members.

Thank you,
Madeline Dawson

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March 21, 2023

Via Email

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Re: Comment on Sustainable Communities Environmental Assessment, The Parks in L.A. Project (ENV-2019-2568-SCEA) (PLUM Committee Agenda Item No. 6)

Dear Honorable Councilmembers Harris-Dawson, Rodriguez, Yaroslavsky, Lee, and Hutt, and Ms. Dang:

I am writing on behalf of Supporters Alliance for Environmental Responsibility ("SAFER") regarding the Sustainable Communities Environmental Assessment ("SCEA") prepared for The Parks in L.A. Project (ENV-2019-2568-SCEA), including all actions related or referring to the proposed construction of a mixed-use development consisting of 251 apartment units and 40,500 square feet of commercial uses, located at 3431-3455 West 8th Street and 749, 765 & 767 South Harvard Boulevard, in the City of Los Angeles ("Project"), which is being heard on March 21, 2023 by the Planning and Land Use Management ("PLUM") Committee as Agenda Item No. 6.

After reviewing the SCEA with the assistance of Certified Industrial Hygienist, Francis "Bud" Offermann, PE, CIH, air quality experts Matt Hagemann, P.G., C.Hg., and Paul E. Rosenfeld, Ph.D., of the Soil/Water/Air Protection Enterprise ("SWAPE"), and noise expert Ani S. Toncheva of Wilson Ihrig, SAFER concludes that the SCEA fails as an informational document and fails to impose all feasible mitigation measures to reduce the Project's impacts. Therefore, we request that the City of Los Angeles ("City") City Planning Department prepare a revised SCEA or, in the alternative, prepare an Environmental Impact Report ("EIR") for the Project pursuant to the California Environmental Quality Act ("CEQA"), Public Resources Code section 21000, et seq.

Mr. Offerman's comment and curriculum vitae are attached as Exhibit A hereto and is incorporated herein by reference in its entirety. SWAPE's comment and the consultants' curriculum vitae are attached as Exhibit B hereto and are incorporated herein by reference in their entirety. Ms. Ju's comment and curriculum vitae are attached as Exhibit C hereto and is incorporated herein by reference in its entirety.

I. PROJECT DESCRIPTION

The proposed Project will construct an eight-story mixed-use building with 251 residential units above two levels of subterranean parking on 1.45 acres located on 8th Street West between Hobart and Harvard Boulevards in the Wilshire Community Plan area. The proposed building will have 18,000 square-feet of commercial retail space on the ground floor and 22,500 square-feet of office space on the second floor. Residential units include 18 live/work units and 29 income-restricted units, and a total of 284 automobile parking spaces and 204 bicycle parking spaces are also included. Construction will require demolition of five existing commercial buildings and one single family house comprising a total of approximately 22,000 square-feet.

A SCEA has been prepared for the proposed Project pursuant to Section 21155.2 of the California Public Resources Code ("PRC").

II. LEGAL STANDARD

<u>Sustainable Communities Environmental Assessment under SB 375</u>

The California Legislature passed SB 375, also known as the Sustainable Communities and Climate Protection Act, in an effort to integrate transportation and land use planning to reduce greenhouse gas ("GHG") emissions. (*See* California Senate Bill 375, Chapter 728, section 1(a).) SB 375 required the state Air Resources Board to develop regional emission reduction targets for cars and light trucks. (Gov. Code § 65080(b)(2)(A).) In addition, federally-designated metropolitan planning organizations that prepare regional transportation plans were required to include in those plans a "sustainable communities strategy" to achieve the emission targets. (Gov. Code § 65080(b)(2)(B).)

CEQA allows for the streamlining of environmental review for "transit priority projects" meeting certain criteria. (Pub. Res. Code §§ 21155, 21155.1, 21155.2.) To qualify as a transit priority project, a project must:

(1) contain at least 50 percent residential use, based on total building square footage and, if the project contains between 26 percent and 50 percent nonresidential uses, a floor area ratio of not less than 0.75;
(2) provide a minimum net density of at least 20 dwelling units per acre; and
(3) be within one-half mile of a major transit stop or high-quality transit corridor

> included in a regional transportation plan.

(Pub. Res. Code § 21155(b).) A transit priority project is eligible for CEQA's streamlining provisions where:

> [The transit priority project] is consistent with the general use designation, density, building intensity, and applicable policies specified for the project area in either a sustainable communities strategy or an alternative planning strategy, for which the State Air Resources Board . . . has accepted a metropolitan planning organization's determination that the sustainable communities strategy or the alternative planning strategy would, if implemented, achieve the greenhouse gas emission reduction targets.

(Pub. Res. Code § 21155(a).) In 2020, the Southern California Association of Governments' ("SCAG") Regional Council formally adopted the Connect SoCal 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy ("2020–2045 RTP/SCS"), which was accepted by the California Air Resources Board ("CARB") on October 30, 2020, and was certified on May 7, 2020.

If "all feasible mitigation measures, performance standards, or criteria set forth in the prior applicable environmental impact reports and adopted in findings made pursuant to Section 21081" are applied to a transit priority project, the project is eligible to conduct environmental review using a Sustainable Communities Environmental Assessment ("SCEA"). (Pub. Res. Code § 21155.2.) A SCEA must contain an initial study which "identif[ies] all significant or potentially significant impacts of the transit priority project . . . based on substantial evidence in light of the whole record." (Pub. Res. Code § 21155.2(b)(1).) The initial study must also "identify any cumulative effects that have been adequately addressed and mitigated pursuant to the requirements of this division in prior applicable certified environmental impact reports." (*Id*.) The SCEA must then "contain measures that either avoid or mitigate to a level of insignificance all potentially significant or significant effects of the project required to be identified in the initial study." (Pub. Res. Code §21155(b)(2).) The SCEA is not required to discuss growth inducing impacts or any project specific or cumulative impacts from cars and light-duty truck trips generated by the project on global warming or the regional transportation network. (Pub. Res. Code § 21159.28(a).)

After circulating the SCEA for public review and considering all comments, a lead agency may approve the SCEA with findings that all potentially significant impacts have been identified and mitigated to a less-than-significant level. (Pub. Res. Code § 21155(b)(3), (b)(4), (b)(5).) A lead agency's approval of a SCEA must be supported by substantial evidence. (Pub. Res. Code §21155(b)(7).)

III. ANALYSIS

A. The SCEA failed to implement all required mitigation measures.

A SCEA must incorporate all mitigation measures from the Sustainable Communities Strategy. (Pub. Res. Code section 21155(a) and (b).) However, the SCEA declines to implement numerous mitigation measures set forth in the SCEA. Therefore, the City may not rely on the SCEA and must prepare an EIR. Among the many 2020–2045 RTP/SCS mitigation measures that the SCEA fails to implement are:

- PMM AES-1: requiring graffiti resistant materials. (SCEA p. 28.)
- PMM AES-2: Measures to reduce aesthetic impacts. (SCEA p. 28.)
- PMM AES-3: Shielding for lighting fixtures. (SCEA p. 30.)
- PMM AQ-1: Tier 4 construction equipment and other measures. (SCEA p. 34.)
- PMM GHG-1: MM to reduce GHGs. (SCEA p. 52.)
- PMM HYD-1: SWPPP for construction. (SCEA p. 61.)
- PMM NOISE-1: Install noise barriers for construction. (SCEA p. 65.)
- PMM PSP-1: Ensure adequate public services. (SCEA p. 69.)
- PMM TRA-1: Transportation Demand Management strategies, such as bike lanes, universal transit passes, parking cash-out, vanpools, carpooling, etc. (SCEA p. 71.)

The SCEA contends that all of the above measures are "not necessary." But the measures are absolutely necessary if the City intends to dispense with the requirement to prepare an environmental impact report ("EIR") and instead prepare the short-form SCEA. The whole point of the SCEA is that streamlined environmental review is allowed because the Project will implement all mitigation measures set forth in the 2020–2045 RTP/SCS. The above measures would clearly reduce the Project's impacts and they are required to be implemented pursuant to CEQA Section 21155. Since the City has refused to implement these measures, the City may not rely on the SCEA and must prepare an EIR. Alternatively, the City must prepare an updated SCEA that incorporates all feasible mitigation measures included in the 2020–2045 RTP/SCS.

B. The SCEA's conclusions regarding the Project's air quality impacts are not supported by substantial evidence.

Indoor air quality expert Francis "Bud" Offermann, PE, CIH, and air quality experts Matt Hagemann, P.G., C.Hg., and Paul E. Rosenfeld, Ph.D. of SWAPE reviewed the SCEA and found that the SCEA's conclusions as to the Project's air quality impacts were not supported by substantial evidence. Mr. Offermann found that the SCEA failed to address and mitigate the human health impacts from indoor emissions of formaldehyde. Mr. Offermann's comment and CV are attached as Exhibit A. SWAPE found that the SCEA failed to properly model the Project's emissions and failed to properly evaluate the Project's heath risk impacts from emissions of diesel particulate matter. SWAPE's comment and CVs are attached as Exhibit B.

1. The SCEA fails to discuss or mitigate the Project's significant indoor air quality impacts.

The SCEA fails to discuss, disclose, analyze, and mitigate the significant health risks posed by the Project from formaldehyde, a toxic air contaminant ("TAC"). Certified Industrial Hygienist, Francis ("Bud") Offermann, PE, CIH, conducted a review of the Project, the SCEA, and relevant documents regarding the Project's indoor air emissions. Mr. Offermann is one of the world's leading experts on indoor air quality, in particular emissions of formaldehyde, and has published extensively on the topic. As discussed below and set forth in Mr. Offermann's comments, the Project's emissions of formaldehyde will result in very significant cancer risks to future residents of the Project's residential component and employees in the Project's commercial components. Mr. Offermann's expert opinion demonstrates the Project's significant health risk impacts, which the City has a duty to investigate, disclose, and mitigate in the SCEA prior to approval. Furthermore, Mr. Offermann's expert opinion and calculation is substantial evidence that the Project may have a significant health risk impact as a result of indoor air pollution that was not analyzed or mitigated in the SCEA.

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. A, pp. 2-3.)

Formaldehyde is a known human carcinogen. Mr. Offermann states that future residents of the Project would be exposed to a 120 in one million risk, and future commercial employees 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.*, pp. 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 concludes that mitigation measures should be imposed to reduce the risk of formaldehyde exposure. (*Id.*, pp. 5-7.) Mr. Offermann identifies mitigation measures that are available to reduce these significant health risks, including the installation of air filters and a requirement that the applicant use only composite wood materials (e.g. hardwood plywood, medium density fiberboard, particleboard) for all interior finish systems that are made with CARB approved no-added formaldehyde (NAF) resins or ultra-low emitting formaldehyde (ULEF) resins in the buildings' interiors. (*Id.*, pp. 9-13.) Since the SCEA does not analyze this impact at all, none of these or other mitigation measures have been considered.

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

The proposed building will have significant impacts on air quality and health risks by emitting cancer-causing levels of formaldehyde into the air that will expose future residents and employees to cancer risks potentially in excess of SCAQMD's threshold of significance for cancer health risks of 10 in a million. Currently, outside of Mr. Offermann's comments, the City does not have any idea what risks will be posed by formaldehyde emissions from the Project or the residences. As a result, the City must include an analysis and discussion in an updated SCEA or prepare an EIR which discloses and analyzes the health risks that the Project's formaldehyde emissions may have on future residents and employees and identifies appropriate mitigation measures.

2. <u>The SCEA cannot be relied upon to determine the significance of the Project's air quality impacts because the SCEA's air model underestimated the Project's emissions</u>.

SWAPE found that the SCEA incorrectly estimated the Project's construction and operational emissions and therefore cannot be relied upon to determine the significance of the Project's impacts on local and regional air quality. (Ex. B, pp. 1-2.) The SCEA relies on emissions calculated from the California Emissions Estimator Model Version CalEEMod.2016.3.2 ("CalEEMod"). This model, which is used to generate a project's construction and operational emissions, relies on recommended default values based on site specific information related to a number of factors. (*Id.*) CEQA requires that any changes to the default values must be justified by substantial evidence.

SWAPE reviewed the Project's CalEEMod output files and found that the values input into the model were inconsistent with information provided in the SCEA. (*Id.*, p. 2.) This results in an underestimation of the Project's emissions. As a result, the SCEA's air quality analysis cannot be relied upon to determine the Project's emissions.

Specifically, SWAPE found that the following values used in the SCEA's air quality analysis were either inconsistent with information provided in the SCEA or otherwise unjustified:

1. Unsubstantiated Reductions to Acres of Grading Values. (Ex. B, pp. 2-3.)
2. Underestimated Number of Saturday and Sunday Vehicle Trips. (Ex. B, pp. 3-4.)
3. Incorrect Trip Purpose Percentages. (Ex. B, pp. 4-5.)

Based on the issues listed above, the SCEA's analysis of air quality cannot be relied upon to determine the significance of these impacts.

C. The SCEA inadequately analyzed the Project's impact on human health from emissions of diesel particulate matter.

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 SCEA incorrectly concludes that the Project would have a less-than-significant health risk impact without conducting a quantified construction or operational health risk analysis ("HRA"). SWAPE concluded that the SCEA's HRA is incorrect for four reasons.

First, by failing to prepare a quantified construction and operational HRA, the SCEA fails to quantitatively evaluate construction and operational-related TACs, or make a reasonable effort to connect emissions to health impacts posed to nearby existing sensitive receptors from the Project. (Ex. B, p. 6.) SWAPE identifies potential emissions from both the daily vehicle trips and exhaust stacks of construction equipment. (*Id.* (citing SCEA, pp. 16, 27 (Table 5)).) As such, the SCEA fails to meet the CEQA requirement that projects correlate increases in project-generated emissions to adverse impacts on human health caused by those emissions. In failing to connect TAC emissions from construction and operation of the Project to potential health risks to nearby sensitive receptors, the Project fails to meet CEQA requirements. (*See Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, 510.)

Second, the SCEA's conclusion is also inconsistent with the most recent guidance published by the Office of Health Hazard Assessment ("OEHHA"), the organization responsible for providing guidance on conducting HRAs in California, as well as local air district guidelines. (Ex. B, pp. 6-7.) OEHHA recommends that projects lasting at least 2 months be evaluated for cancer risks to nearby sensitive receptors, a time period which this Project easily exceeds. (*Id.*) The OEHHA document also recommends that 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.*, p. 7.) 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.*) SWAPE states that an updated SCEA should therefore be prepared to analyze these impacts. (*Id.*)

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

Third, by failing to prepare a quantified construction and operational HRA for nearby, existing sensitive receptors, the SCEA fails to compare the excess health risk impact of the Project to the SCAQMD's specific numeric threshold of 10 in one million. (Ex. B, p. 7.) Without conducting a quantified construction and operational HRA, the SCEA also fails to evaluate the cumulative lifetime cancer risk to nearby, existing receptors from the Project's construction and operation together. This is incorrect, and as a result, the SCEA's evaluation cannot be relied upon to determine Project significance. OEHHA guidance requires that the excess cancer risk be calculated separately for all sensitive receptor age bins, then summed to evaluate the total cancer risk posed by all Project activities. Therefore, in accordance with the most relevant guidance, an assessment of the health risk posed to nearby, existing receptors from Project construction and operation should be conducted and compared to the SCAQMD threshold of 10 in one million. (*Id.*)

SWAPE prepared a screening-level HRA to evaluate potential impacts from Project construction and operation using AERSCREEN, a screening-level air quality dispersion model. (Ex. B, p. 7-12.) SWAPE applied a sensitive receptor distance of 50 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 risks at a sensitive receptor located approximately 50 meters away over the course of Project construction and operation are approximately 187 in one million for infants, 132 in one million for children, and 14.7 in one million for adults. (*Id.*, p. 11.) SWAPE also found that the ***excess cancer risk associated with Project construction and operation over the course of a residential lifetime (30 years) is approximately 342 in one million***. (*Id.*) The risks to infants, children, adults, and lifetime residents exceed SCAQMD's threshold of 10 in one million. Because a SCEA is only appropriate where all impacts have been mitigated to a level of insignificance, the City must prepare a revised SCEA to mitigate this impact or otherwise prepare an EIR.

D. The SCEA inadequately analyzed the Project's greenhouse gas impacts.

SWAPE's review of the SCEA found that the City failed to adequately evaluate the Project's greenhouse gas ("GHG") impacts. (Ex. B, pp. 12-14.) The SCEA estimates that the Project would generate net annual GHG emissions of 2,696.1 metric tons of carbon dioxide equivalents per year ("MT CO_2e/year"), which would not exceed the SCAQMD threshold of 3,000 MT CO_2e/year. (SCEA, pp. 118, Table V-10.) Furthermore, the SCEA's analysis relies upon the Project's consistency with the SCAQMD's 2008 *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules, and Plans* report to conclude that the Project would result in a less-than-significant GHG impact. (*Id.*, p. 118.) However, after reviewing the proposed Project, SCEA, and related appendices, SWAPE concludes that the SCEA's analysis, as well as the subsequent less-than-significant impact conclusion, are incorrect for two reasons:

1. The SCEA's quantitative GHG analysis relies upon an outdated threshold; and

2. The SCEA's unsubstantiated air model indicates a potentially significant impact. (Ex. B, pp. 13-14.)

First, the SCEA utilizes an outdated GHG threshold. (*Id.*, p. 13.) When compared to the correct quantitative threshold, SWAPE found the Project's GHG emissions are demonstrably significant. (*Id.*)

Second, the SCEA's unsubstantiated air model indicates a potentially significant impact. (Ex. B, pp. 13-14.) Specifically, SWAPE found that the Project's service population efficiency value, as estimated by the SCEA's asserted net annual GHG emissions (SCEA, p. 118, Table V-10), and service population, which is the number of residents and employees supported by the Project, i.e. 827 people (SCEA, Appendix A, p. 35 (estimating that the Project will support 718 residents); SCEA, p. 146, Table V-15 (indicating the Project will employ approximately 109 people during operation)), exceed the SCAQMD 2035 efficiency target of 3.0 MT CO_2e/SP/year, indicating a potentially significant impact not previously addressed by the SCEA. (Ex. B, p. 14.) Consequently, the SCEA's less-than-significant GHG impact conclusion is incorrect and should not be relied upon.

Because a SCEA is only appropriate where all impacts have been mitigated to a level of insignificance, the City must prepare a revised SCEA to mitigate this impact or otherwise prepare an EIR.

E. The SCEA inadequately analyzed the Project's noise impacts.

The comment of noise expert Ani S. Toncheva is attached as Exhibit C. Ms. Toncheva has identified several issues with the SCEA. Ms. Toncheva's concerns are summarized below. (*See* Exhibit C.)

After reviewing the proposed Project, SCEA, and related appendices, Ms. Toncheva found that the SCEA failed to adequately evaluate the Project's potentially significant construction and operational noise impacts for the following reasons and therefore concludes that a revised SCEA or EIR should be prepared to mitigate those impacts.

1. <u>The SCEA uses incorrect measurements to establish baseline noise for Project construction and operation.</u>

Ms. Toncheva explains that the Project's noise baseline is based on four short-term measurements of a 15-minute duration that were only taken during the day. (Ex. C, p. 3.) As she points out, however, the SCEA includes no discussion of how these 15-minute measurements are applicable to the construction day or Project operations. (*Id.*) Ms. Toncheva found the short-term noise measurements taken at the southwest, northwest, eastern, and southeast corners of the Project site were incorrectly averaged and applied for all adjacent sensitive receptor properties in the area. (*Id.*) According to Ms. Toncheva, this is not an appropriate approach. (*Id.*) For example, she explains that there is a big difference between the levels measured on W. 8th Street and those further set back from that traffic. (*Id.*) As a result, the SCEA's approach effects the ambient-based thresholds of significance for both Project construction and operational noise. (*Id.*) Thus, the SCEA's analysis of the Project's noise impacts cannot be relied upon to determine the significance of these impacts.

2. <u>The SCEA fails to adequately analyze the Project's significant construction noise impacts that exceed criteria thresholds and therefore the mitigation measures included in the SCEA to reduce these impacts may be insufficient.</u>

The SCEA's construction noise impact analysis is inadequate for several reasons, all of which are identified in Ms. Toncheva's expert comments.

First, according to Ms. Toncheva's expert comments and the SCEA's construction noise impact analysis, the LAMC section 112.05 "prohibits the use of any powered equipment or powered hand tool for construction within a residential zone or within 500 ft thereof that produces a maximum noise level exceeding 75 dBA at a distance of 50 feet from the source." (Ex. C, p. 1 (citing SCEA, p. 137).) Ms. Toncheva explains that "this is an Lmax limit, representing the highest sound level that occurs during a stated time period." (*Id.*, p. 1.) Based on Ms. Toncheva's review of the calculations of the Project's estimated unmitigated construction equipment max noise levels included at Table V-11 of the SCEA, she found that the SCEA's noise analysis "incorrectly applies a usage factor to the 50-foot Lmax levels for each equipment and compares these hourly average (Leq) levels to the Lmax criteria.[2] (*Id.* (citing SCEA, p. 138 & Table V-11).) Instead, the LAMC limit of 75 dBA should have been compared to Lmax levels, not the Leq or average levels. (*Id.*) If the SCEA had properly analyzed the max noise level of each potential type of construction equipment that may be used to build the Project, the SCEA would have concluded that "[m]ost of the equipment in Table V-11 exceeds 75 dBA Lmax at 50 feet (12 of 14 types of equipment range from 77 to 90 dBA)." (*Id.*)

Second, Ms. Toncheva found that the SCEA's analysis of the Project's construction equipment noise reductions at Table V-12 of the SCEA was inadequate because it failed to include a discussion to support the 15 dBA reduction assumed for industrial mufflers with diesel engines. (*Id.*, pp. 1-2.) As Ms. Toncheva notes, most construction equipment already includes a muffler, so listing this as a mitigation measure to reduce the Project's max construction equipment noise levels is likely insufficient. (*Id.*, p 1.) According to Ms. Toncheva, while "[t]he values provided in Table V-11 are representative of the maximum noise levels that nearby residents will be exposed to during construction (74 to 90 dBA at 50 feet), she found that "[a]t the residences 10 feet north of the project site, these maximum noise levels will range from 88 to 104 dBA based on the source levels in Table V-11 and adjustment for distance." (*Id.*, pp. 1-2.)

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[2] The SCEA states, "The sound level prediction equation is expressed as follows for the hourly average sound level (Leq) at distance (D) between the source and receiver. *Leq = Lmax @ 50' – 20 • log (D/50') + 10 • log (U.F./100) – I.L.* Where*: Lmax @ 50' is the published reference noise level at 50 feet U.F. is the acoustical usage factor for full power operation per hour I.L. is the insertion loss for intervening barriers*[.]" (SCEA, p. 138 & Table V-11 (emphasis in original).)

Therefore, Ms. Toncheva states that "the 15dB reduction for mufflers is unsubstantiated and unrealistic." (*Id.*, p. 1.)

More specifically, Ms. Toncheva notes "that mufflers are only effective for machinery powered by internal combustion engines, not operational noise produced during work such as sawing." For example, based on the Federal Highway Administration ("FHWA") Construction Noise Handbook's Lmax level of 90 dBA at 50 feet for concrete saws, "15 dB of reduction are needed for that operation to meet the LAMC criteria." (Ex. C, p. 2.) Ms. Toncheva explains that while "[n]oise barriers could provide 10 to 15 dB of reduction, depending on site geometry and barrier construction, … contractors are often reluctant to employ barriers because they slow production." (*Id.*) Thus, "[t]he SCEA should provide substantial evidence that the proposed mitigation measure[s] will both reduce noise levels below the applicable threshold and be feasible to deploy," and "[d]etails of deployment should be included in the MMRP." (*Id.*)

Third, per the SCEA's CEQA Guidelines checklist, "thresholds of significance of noise include assessment of a temporary or permanent increase in ambient levels in the vicinity of the project." (Ex. C, p. 2 (citing SCEA, p. 136).) Based on Ms. Toncheva's review of Table 6-1 of the SCEA's noise study included at Appendix J of the SCEA, multiple pieces of equipment will be used during each phase of construction. (*Id.* (citing SCEA, Appendix J, p. 13).) According to Ms. Toncheva, the SCEA's noise analysis should have used a Leq calculation "to compare construction noise levels for each phase with existing ambient measurements." (*Id.*, p. 2.) Using the proper Leq calculation, Ms. Toncheva calculated Leq for each phase shown in Table 6-1 at the nearest residential property north of the Project, using FHWA usage factors. (*Id.*, pp. 2-3 & Table 1.) Compared to the SCEA's 60 dBA measurement of ambient noise near the residences at M2, which is located at the northwest corner of the Project site, Table 1 of Ms. Toncheva's comment letter shows "construction phase Leq levels ranging from 28 to 41 dBA over the ambient dBA calculated in Table 6-1 of the SCEA's noise study, which she concludes "is, by any reasonable assessment, a significant increase." (*Id.*) Thus, the SCEA's analysis of the Project's construction noise impacts cannot be relied upon to determine the significance of these impacts and as a result the mitigation measures intended to reduce this impact to less than significant may be insufficient.

3. <u>The SCEA's evaluation of noise impacts from Project operations is incorrect.</u>

The SCEA's HVAC operational noise calculations include a 5 dB reduction from the parapet of the roof. However, no documentation is shown for this value or the geometry of the roof in relation to equipment. After reviewing the SCEA and related noise study, we found several errors in the HVAC unit calculations. For example, the online specification for the HVAC unit listed shows 59 dB as the sound pressure level for the model, not 57 dB as listed in Table 6-5 of the noise study included as Appendix J to the SCEA. (SCEA, Appendix J, p. 16, Table 6-5.) There is also an error in the decibel addition for the 255 HVAC units.

In addition, the ambient noise level for HVAC noise is not properly established for the Project. Specifically, the SCEA includes no nighttime measurement for HVAC operational noise and the presumed ambient HVAC noise level in Table V-13 of the SCEA for nighttime operation is incorrectly based on the land use of the Project site, not the land use for nearby, sensitive receptor properties. (SCEA, p. 141, Table V-13.)

Lastly, the SCEA's analysis of noise impacts from Project operations failed to include a quantitative analysis of landscape maintenance noise, which should be compared to the criteria in LAMC section 112.05(c) (i.e., 65 dBA limit). In addition, the parking ramp noise associated with Project operations is not addressed in the SCEA or the related noise study. Thus, the SCEA's analysis of the Project's operational noise impacts cannot be relied upon to determine the significance of these impacts.

Because the SCEA inadequately analyzed the Project's potentially significant noise impacts and as a result the mitigation measures included to reduce the Project's noise impacts to less than significant may be insufficient, the City must prepare a revised SCEA to properly mitigate this impact or otherwise prepare an EIR.

IV. CONCLUSION

For the foregoing reasons, the City must prepare either a revised SCEA or an EIR and recirculate the document for public comment prior to any project approvals. We reserve the right to supplement these comments, including but not limited to at public hearings concerning the Project. (*Galante Vineyards v. Monterey Peninsula Water Management Dist*., 60 Cal.App.4th 1109, 1121 (1997).)

Sincerely,

Victoria Yundt
LOZEAU DRURY LLP

EXHIBIT A

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Date: February 14, 2023

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From: Francis J. Offermann PE CIH

Subject: Indoor Air Quality: The Parks in LA Project, Los Angeles, CA
(IEE File Reference: P-4683)

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.

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 $\mu g/m^3$, 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 $\mu g/m^3$. The median indoor formaldehyde concentration was 36 $\mu g/m^3$, and ranged from 4.8 to 136 $\mu g/m^3$, which corresponds to a median exceedance of the 2 $\mu g/m^3$ NSRL concentration of 18 and a range of 2.3 to 68.

Therefore, the cancer risk of a resident living in a California home with the median indoor formaldehyde concentration of 36 $\mu g/m^3$, 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 $\mu g/m^3$ to 28% for the Acute REL of 55 $\mu g/m^3$.

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.

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 Parks in LA Project, Los Angeles, 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).

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.

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

Additionally, the SCAQMD's Multiple Air Toxics Exposure Study ("MATES V") identifies an existing cancer risk at the Project site of 1,554 per million due to the site's elevated ambient air contaminant concentrations, which are due to the area's high levels of vehicle traffic. These impacts would further exacerbate the pre-existing cancer risk to the building occupants, which result from exposure to formaldehyde in both indoor and outdoor air.

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.

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.

<u>Pre-Construction Building Material/Furnishing Formaldehyde Emissions Assessment</u>

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

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

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

NOTE: As a result of the high-performance building rating systems and building codes (California Building Standards Commission, 2014; USGBC, 2014), most manufacturers of building materials furnishings sold in the United States conduct chemical emission rate tests using the California Department of Health "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions for Indoor Sources Using Environmental Chambers," (CDPH, 2017), or other equivalent chemical emission rate testing methods. Most manufacturers of building furnishings sold in the United States conduct chemical emission rate tests using ANSI/BIFMA M7.1 Standard Test Method for Determining VOC Emissions (BIFMA, 2018), or other equivalent chemical emission rate testing methods.

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

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. $\mu g/h$) from the individual formaldehyde emission rates from each of the building material/furnishings as determined in Step 3.

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

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

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.

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.

According to the Sustainable Communities Environmental Assessment – The Parks LA (Envicom, 2022) the Project is close to roads with moderate to high traffic (e.g., 7th Street, 8th Street, South Hobart Boulevard, South Harvard Boulevard, James Wood Boulevard, South Serrano Boulevard, Wilshire Boulevard, etc.).

The Sustainable Communities Environmental Assessment – The Parks LA (Envicom, 2022), contains a total of only four 15-minute short-term noise level measurements conducted on July 1, 2019 in Table 4-1 of Appendix J, which ranged from 56.7 – 67.1 dBA Leq.

In order to design the building for this Project such that interior noise levels are acceptable, an acoustic study of the existing and future ambient noise levels needs to be conducted. The acoustic study of the existing ambient noise levels should be conducted over a one-week period. and report the dBA CNEL or Ldn. This study will allow for the selection of a building envelope and windows with a sufficient STC such that the indoor noise levels are acceptable. A mechanical supply of outdoor air ventilation to allow for a habitable interior environment with closed windows and doors will also be requires. Such a ventilation system would allow windows and doors to be kept closed at the occupant's discretion to control exterior noise within building interiors.

$PM_{2.5}$ 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 Sustainable Communities Environmental Assessment – The Parks LA (Envicom, 2022), the Project is located in the South Coast Air Basin, which is a State and Federal non-attainment area for $PM_{2.5}$.

Additionally, the SCAQMD's MATES V study cites an existing cancer risk of 1,554 per million at the Project site due to the site's high concentration of ambient air contaminants resulting from the area's high levels of motor vehicle traffic.

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

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.

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

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

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

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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.

EXHIBIT B

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

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February 17, 2023

Victoria Yundt
Lozeau | Drury LLP
1939 Harrison Street, Suite 150
Oakland, CA 94612

Subject: Comments on The Parks in LA Project

Dear Ms. Yundt,

We have reviewed the November 2022 Sustainable Communities Environmental Assessment ("SCEA") for The Parks in LA Project ("Project") located in the City of Los Angeles ("City"). The Project proposes to demolish the existing structures and construct 40,500-SF of commercial space, 251 residential units, and 284 parking spaces on the 1.45-acre lot.

Our review concludes that the SCEA fails to adequately evaluate the Project's air quality, 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. A revised SCEA should be prepared to adequately assess and mitigate the potential air quality, health risk, and greenhouse gas impacts that the project may have on the environment.

Air Quality

Unsubstantiated Input Parameters Used to Estimate Project Emissions

The SCEA relies on emissions calculated with California Emissions Estimator Model ("CalEEMod") Version 2016.3.2 (Appendix A, pp. 35). [1] CalEEMod provides recommended default values based on site-specific information, such as land use type, meteorological data, total lot acreage, project type and typical equipment associated with project type. If more specific project information is known, the user can change the default values and input project-specific values, but the California Environmental Quality Act ("CEQA") requires that such changes be justified by substantial evidence. Once all of the values are

[1] "CalEEMod Version 2016.3.2." California Air Pollution Control Officers Association (CAPCOA), November 2017, *available at:* http://www.aqmd.gov/caleemod/archive/user's-guide-version-2016-3-2.

inputted into the model, the Project's construction and operational emissions are calculated, and "output files" are generated. These output files disclose to the reader what parameters are utilized in calculating the Project's air pollutant emissions and make known which default values are changed as well as provide justification for the values selected.

When reviewing the Project's CalEEMod output files, provided in the Air Quality and Greenhous Gas Impact Analysis ("AQ & GHG Analysis"), included as Appendix A to the SCEA, we found that several model inputs are not consistent with information disclosed in the SCEA. As a result, the Project's construction and operational emissions may be underestimated. A revised SCEA should be prepared to include an updated air quality analysis that adequately evaluates the impacts that operation of the Project will have on local and regional air quality.

Unsubstantiated Reductions to Acres of Grading Values

Review of the CalEEMod output files demonstrates that "The Parks in LA Mixed Use" model includes reductions to the default acres of grading values (see excerpt below) (Appendix A, pp. 37, 69).

Table Name	Column Name	Default Value	New Value
tblGrading	AcresOfGrading	13.50	1.50
tblGrading	AcresOfGrading	3.50	1.45

As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.[2] According to the "User Entered Comments & Non-Default Data" table, the justification provided for this change is:

> "58,300 cys soil export. 1.45 ac. prep" (Appendix A, pp. 36, 68).

However, these changes remain unsupported, as the SCEA and associated documents fail to mention or justify the revised acres of grading values whatsoever. As previously mentioned, according to the CalEEMod User's Guide:

> "CalEEMod was also designed to allow the user to change the defaults to reflect site- or project-specific information, when available, provided that the information is supported by substantial evidence as required by CEQA." [3]

Here, as the SCEA fails to provide substantial evidence to support the revised acres of grading value, we cannot verify the changes. Furthermore, according to the CalEEMod User's Guide:

> "[T]he dimensions (e.g., length and width) of the grading site have no impact on the calculation, only the total area to be graded. In order to properly grade a piece of land multiple passes with equipment may be required. The acres is based on the equipment list and days in grading or site

[2] "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 1, 14.

[3] "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 13, 14.

preparation phase according to the anticipated maximum number of acres a given piece of equipment can pass over in an 8-hour workday."[4]

As stated above, the default acres of grading values are calculated based on construction equipment and the length of the grading and site preparation phases. Thus, the dimensions of the Project site have no impact on the acres of grading value, and the reductions remain unsupported.

These unsubstantiated reductions present an issue, as CalEEMod uses the acres of grading values to estimate the dust emissions associated with grading.[5] By including incorrect reductions to the default acres of grading values, the model may underestimate the Project's construction-related emissions and should not be relied upon to determine Project significance.

Underestimated Number of Saturday and Sunday Vehicle Trips

According to the Transportation Impact Report ("TIR"), provided as Appendix K to the SCEA, the proposed Project is expected to generate 1,627 daily operational vehicle trips (see excerpt below) (p. 27, Table 5).

Table 5
Project Trip Generation

LU	Use/Description	Size	Units	Daily	AM Peak Hour I/B	AM Peak Hour O/B	AM Peak Hour Total	PM Peak Hour I/B	PM Peak Hour O/B	PM Peak Hour Total
	PROPOSED USES									
221	Apartment	223	du	1,213	21	59	80	60	38	98
	Affordable Housing	28	du	114	6	8	14	6	4	10
710	Creative Offices	15.500	ksf	151	15	3	18	3	15	18
820	Shopping Center	25.000	ksf	944	15	9	24	46	49	95
	Subtotal [A]			**2,422**	**57**	**79**	**136**	**115**	**106**	**221**
	Internal Linkages									
	Apartment	Based on Shopping Center		(77)	0	(1)	(1)	(4)	(4)	(8)
	Affordable Housing	Based on Shopping Center		(7)	0	0	0	0	(1)	(1)
	Creative Offices	Based on Shopping Center		(10)	0	(1)	(1)	(1)	0	(1)
	Shopping Center	10%		(94)	(2)	0	(2)	(5)	(5)	(10)
	Subtotal [B]			**(188)**	**(2)**	**(2)**	**(4)**	**(10)**	**(10)**	**(20)**
	Transit/Bicycle/Walk-in Trips									
	Apartment	10%		(114)	(2)	(6)	(8)	(6)	(3)	(9)
	Affordable Housing	10%		(11)	(1)	0	(1)	(1)	0	(1)
	Creative Offices	10%		(14)	(2)	0	(2)	0	(2)	(2)
	Shopping Center	10%		(85)	(1)	(1)	(2)	(4)	(5)	(9)
	Subtotal [C]			**(224)**	**(6)**	**(7)**	**(13)**	**(11)**	**(10)**	**(21)**
	[D] Driveway/Adj. Int. Trips = [A] + [B] + [C]			**2,010**	**49**	**70**	**119**	**94**	**86**	**180**
	Pass-by Trips									
	Apartment	0%		0	0	0	0	0	0	0
	Creative Offices	0%		0	0	0	0	0	0	0
	Shopping Center	50%		(383)	(6)	(4)	(10)	(19)	(19)	(38)
	Subtotal [E]			**(383)**	**(6)**	**(4)**	**(10)**	**(19)**	**(19)**	**(38)**
	[F] Area Intersection Trips (Proposed Uses) = [D]+[E]			**1,627**	**43**	**66**	**109**	**75**	**67**	**142**

[4] "Appendix A – Calculation Details for CalEEMod." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* http://www.aqmd.gov/caleemod/user's-guide, p. 9.
[5] "Appendix A – Calculation Details for CalEEMod." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 9.

As such, the Project's model should have included trip rates that reflect the estimated number of average daily vehicle trips. However, review of the CalEEMod output files demonstrates that "The Parks in LA Mixed Use" model fails to include the correct number of Saturday or Sunday operational vehicle trips (see excerpt below) (Appendix A, pp. 60, 93).

Land Use	Average Daily Trip Rate		
	Weekday	Saturday	Sunday
Apartments High Rise	1,116.95	1,116.95	1116.95
Enclosed Parking with Elevator	0.00	0.00	0.00
General Office Building	126.95	38.13	16.28
Regional Shopping Center	382.00	382.00	382.00
Total	1,625.90	1,537.08	1,515.23

As demonstrated above, the Saturday and Sunday vehicle trips are underestimated by 89.92 and 111.77 trips, respectively.[6, 7] As such, the trip rates inputted into the model are underestimated and inconsistent with the information provided by the TIR.

These inconsistencies present an issue, as CalEEMod uses the operational vehicle trip rates to calculate the emissions associated with the operational on-road vehicles.[8] By including underestimated operational daily vehicle trips, the model underestimates the Project's mobile-source operational emissions and should not be relied upon to determine Project significance.

Incorrect Trip Purpose Percentages

Review of the CalEEMod output files demonstrates that the trip purpose percentages in "The Parks in LA Mixed Use" model are divided amongst the primary, diverted, and pass-by trip types for the Project's proposed land uses (see excerpt below) (Appendix A, pp. 60, 93).

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments High Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11

However, review of the TIR demonstrates that pass-by trips for the proposed land uses are already accounted for in the Project's trip generation calculations (see excerpt below) (p. 27, Table 5):

[6] Calculated: 1,627 proposed daily trips – 1,537.08 modeled Saturday trips = 89.92 underestimated Saturday trips.
[7] Calculated: 1,627 proposed daily trips – 1,515.23 modeled Sunday trips = 111.77 underestimated Sunday trips.
[8] "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 36.

Table 5
Project Trip Generation

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	Affordable Housing	Based on Shopping Center		(7)	0	0	0	0	(1)	(1)
	Creative Offices	Based on Shopping Center		(10)	0	(1)	(1)	(1)	0	(1)
	Shopping Center	10%		(94)	(2)	0	(2)	(5)	(5)	(10)
	Subtotal [B]			**(188)**	**(2)**	**(2)**	**(4)**	**(10)**	**(10)**	**(20)**
	Transit/Bicycle/Walk-in Trips									
	Apartment	10%		(114)	(2)	(6)	(8)	(6)	(3)	(9)
	Affordable Housing	10%		(11)	(1)	0	(1)	(1)	0	(1)
	Creative Offices	10%		(14)	(2)	0	(2)	0	(2)	(2)
	Shopping Center	10%		(85)	(1)	(1)	(2)	(4)	(5)	(9)
	Subtotal [C]			**(224)**	**(6)**	**(7)**	**(13)**	**(11)**	**(10)**	**(21)**
[D] Driveway/Adj. Int. Trips = [A] + [B] + [C]				**2,010**	**49**	**70**	**119**	**94**	**86**	**180**
	Pass-by Trips									
	Apartment	0%		0	0	0	0	0	0	0
	Creative Offices	0%		0	0	0	0	0	0	0
	Shopping Center	50%		(383)	(6)	(4)	(10)	(19)	(19)	(38)
	Subtotal [E]			**(383)**	**(6)**	**(4)**	**(10)**	**(19)**	**(19)**	**(38)**
[F] Area Intersection Trips (Proposed Uses) = [D]+[E]				**1,627**	**43**	**66**	**109**	**75**	**67**	**142**

Thus, the model should have included 100% of trips as primary and diverted, as pass-by trip reductions are already included in the Project's projected trip generation total.

According to Appendix A of the CalEEMod User's Guide, primary trips utilize the complete trip lengths associated with each trip type category. Pass-by trips are a result of no diversion from the primary route and are assumed to be 0.1 miles in length.[9] By including trip purpose reductions that were already accounted for in the TIR, the model underestimates the trip lengths associated with the Project's daily vehicle trips and, consequently, the Project total vehicle miles travelled ("VMT"). As a result, by incorrectly accounting for pass-by trip reductions twice, the model underestimates the Project's mobile-source operational emissions and should not be relied upon to determine Project significance.

Diesel Particulate Matter Emissions Inadequately Evaluated

The SCEA concludes that the Project would have a less-than-significant health risk impact without conducting a quantified construction or operational health risk analysis ("HRA"). Regarding the health risk impacts associated with Project construction and operation, the SCEA states:

> "Exhaust particulates emitted from diesel powered equipment contains carcinogenic compounds, or toxic air contaminants (TACs). As residential projects do not generate a

[9] "Appendix A – Calculation Details for CalEEMod." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 20

> substantial quantity of diesel truck trips during operations, any measurable diesel TAC emissions from the project would occur for only a brief period during construction activities that would require onsite use of heavy-duty equipment. The toxicity of diesel exhaust is evaluated relative to a 24 hour per day, 365 days per year, 70 year lifetime exposure. The SCAQMD does not generally require the analysis of construction-related diesel emissions relative to health risk due to the short period for which the majority of diesel exhaust would occur. Health risk analyses are typically assessed over a 9-, 30-, or 70-year timeframe rather than a relatively brief construction period, due to the lack of health risk associated with such a brief exposure. As such, potential impacts of the project due to emissions of TACs would be less than significant" (p. 93).

As discussed above, the SCEA claims that due to the short construction duration, and lack of a substantial quantity of diesel truck trips generated during operation, the Project would result in a less-than-significant health risk impact. However, the SCEA's evaluation of the Project's potential health risk impacts, as well as the subsequent less-than-significant impact conclusion, is incorrect for three reasons.

First, by failing to prepare a quantified construction and operational HRA, the Project is inconsistent with CEQA's requirement to make "a reasonable effort to substantively connect a project's air quality impacts to likely health consequences." [10] This poses a problem, as according to the SCEA, construction of the Project would produce DPM emissions through the exhaust stacks of construction equipment over a duration of over 14 months (p. 16). Furthermore, according to the TIR, operation of the Project is anticipated to generate a net increase of 1,627 daily vehicle trips, which would produce additional exhaust emissions and continue to expose nearby, existing sensitive receptors to DPM emissions (p. 27, Table 5). However, the SCEA fails to evaluate the TAC emissions associated with Project construction and operation or indicate the concentrations at which such pollutants would trigger adverse health effects. Without making a reasonable effort to connect the Project's TAC emissions to the potential health risks posed to nearby receptors, the SCEA is inconsistent with CEQA's requirement to correlate Project-generated emissions with potential adverse impacts on human health.

Second, 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. This guidance document describes the types of projects that warrant the preparation of an HRA. Specifically, OEHHA recommends that all short-term projects lasting at least 2 months assess cancer risks.[11] Furthermore, according to OEHHA:

[10] "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.
[11] "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.

> "Exposure from projects lasting more than 6 months should be evaluated for the duration of the project. In all cases, for assessing risk to residential receptors, the exposure should be assumed to start in the third trimester to allow for the use of the ASFs (OEHHA, 2009)."[12]

As the Project's anticipated construction duration exceeds the 2-month and 6-month requirements set forth by OEHHA, construction of the Project meets the threshold warranting a quantified HRA under OEHHA guidance and should be evaluated for the entire 14-month construction period. Furthermore, OEHHA recommends that an exposure duration of 30 years should be used to estimate the individual cancer risk at the maximally exposed individual resident ("MEIR").[13] While the SCEA fails to provide the expected lifetime of the proposed Project, we can reasonably assume that the Project would operate for at least 30 years, if not more. Therefore, operation of the Project also exceeds the 2-month and 6-month requirements set forth by OEHHA and should be evaluated for the entire 30-year residential exposure duration, as indicated by OEHHA guidance. These recommendations reflect the most recent state health risk policies, and as such, a revised SCEA should be prepared to include an analysis of health risk impacts posed to nearby sensitive receptors from Project-generated DPM emissions.

Third, by claiming a less-than-significant impact without conducting a quantified construction or operational HRA for nearby, existing sensitive receptors, the SCEA fails to compare the Project's excess cancer risk to the SCAQMD's specific numeric threshold of 10 in one million.[14] In accordance with the most relevant guidance, an assessment of the health risk posed to nearby, existing receptors as a result of Project construction and operation should be conducted.

Screening-Level Analysis Demonstrates Potentially Significant Health Risk Impact

In order to conduct our screening-level risk assessment we relied upon AERSCREEN, which is a screening level air quality dispersion model.[15] As discussed above, the model replaced SCREEN3, and AERSCREEN is included in the OEHHA and the California Air Pollution Control Officers Associated ("CAPCOA") guidance as the appropriate air dispersion model for Level 2 health risk screening assessments ("HRSAs").[16, 17] 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.

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[12] "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.
[13] "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. 2-4.
[14] "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.
[15] "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
[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.
[17] "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.

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 SCEA's CalEEMod output files. Consistent with recommendations set forth by OEHHA, we assumed residential exposure begins during the third trimester stage of life.[18] The SCEA's CalEEMod model indicates that construction activities will generate approximately 232 pounds of DPM over the 702-day construction period.[19] 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:

$$Emission\ Rate\ \left(\frac{grams}{second}\right) = \frac{231.5\ lbs}{702\ days} \times \frac{453.6\ grams}{lbs} \times \frac{1\ day}{24\ hours} \times \frac{1\ hour}{3{,}600\ seconds} = \mathbf{0.00173\ g/s}$$

Using this equation, we estimated a construction emission rate of 0.00173 grams per second ("g/s"). Subtracting the 702-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 28.08 years. The SCEA's operational CalEEMod emissions indicate that operational activities will generate approximately 72 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:

$$Emission\ Rate\ \left(\frac{grams}{second}\right) = \frac{72.0\ lbs}{365\ days} \times \frac{453.6\ grams}{lbs} \times \frac{1\ day}{24\ hours} \times \frac{1\ hour}{3{,}600\ seconds} = \mathbf{0.00104\ g/s}$$

Using this equation, we estimated an operational emission rate of 0.00104 g/s. Construction and operation were simulated as a 1.45-acre rectangular area source in AERSCREEN, with approximate dimensions of 108- by 54-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. An urban meteorological setting was selected with model-default inputs for wind speed and direction distribution. The population of Los Angeles was obtained from U.S. 2020 Census data.[20]

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.[21] According to the SCEA, the nearest sensitive receptors are residences located immediately adjacent to the Project site (p. 92). However, review of the AERSCREEN output files demonstrates that the MEIR is located approximately 50 meters from the

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[18] "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.
[19] See Attachment A for health risk calculations.
[20] "Los Angeles." U.S. Census Bureau, 2020, *available at:* https://datacommons.org/place/geoId/0617568.
[21] "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.

Project site. Thus, the single-hour concentration estimated by AERSCREEN for Project construction is approximately 6.098 $\mu g/m^3$ DPM at approximately 50 meters downwind. Multiplying this single-hour concentration by 10%, we get an annualized average concentration of 0.6098 $\mu g/m^3$ for Project construction at the MEIR. For Project operation, the single-hour concentration estimated by AERSCREEN is 3.648 $\mu g/m^3$ DPM at approximately 50 meters downwind. Multiplying this single-hour concentration by 10%, we get an annualized average concentration of 0.3648 $\mu g/m^3$ for Project operation at the MEIR.[22]

We calculated the excess cancer risk to the MEIR using applicable HRA methodologies prescribed by OEHHA, as recommended by SCAQMD.[23] Specifically, guidance from OEHHA and the 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:

[22] See Attachment B for AERSCREEN output files.
[23] "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)[24]	**Age Sensitivity Factor**[25]	**Exposure Duration** (years)	**Fraction of Time at Home**[26]	**Exposure Frequency** (days/year)[27]	**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:

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

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:

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

[24] "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.
[25] "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.
[26] "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.
[27] "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 702-day construction schedule, the annualized average concentration for construction was used for the entire third trimester of pregnancy (0.25 years) and the first 1.67 years of the infantile stage of life (0 – 2 years). The annualized average concentration for operation was used for the remainder of the 30-year exposure period, which makes up the latter 0.33 years of the infantile stage of life, as well as the entire child stage (2 – 16 years) and adult stage (16 – 30 years) of life. 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	0.6098	8.29E-06
	Construction	*1.67*	*0.6098*	*1.68E-04*
	Operation	*0.33*	*0.3648*	*1.96E-05*
Infant (0 - 2)	Total	2		1.87E-04
Child (2 - 16)	Operation	14	0.3648	1.32E-04
Adult (16 - 30)	Operation	14	0.3648	1.47E-05
Lifetime		**30**		**3.42E-04**

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 50 meters away, over the course of Project construction and operation, are approximately 8.29, 187, 132, and 14.7 in one million, respectively. The excess cancer risk over the course of a residential lifetime (30 years) is approximately 342 in one million. The infant, child, adult, 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 SCEA.

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."

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, a revised SCEA 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. If the refined analysis similarly concludes that the Project would result in a significant health risk impact, then mitigation measures should be incorporated, as described below in the "Feasible Mitigation Measures Available to Reduce Emissions" section.

Greenhouse Gas

Failure to Adequately Evaluate Greenhouse Gas Impacts

The SCEA estimates that the Project would generate net annual greenhouse gas ("GHG") emissions of 2,696.1 metric tons of carbon dioxide equivalents per year ("MT CO_2e/year") (p. 118, Table V-10).

Table V-10
Annual Greenhouse Gas Emissions

Consumption Source	MTCO$_2$e/year
Area Sources	4.3
Energy Utilization	828.8
Mobile Source	1,573.0
Solid Waste Generation	78.1
Water Consumption	165.9
Annualized Construction	46.0
Total	**2,696.1**
Source: CalEEMod Version 2020.4.0 output provided in Appendix A.	

As such, the SCEA concludes:

> "Based on this analysis, the Project's quantified construction and operational period GHG emissions would be less than the SCAQMD-suggested screening level of 3,000 MTCO$_2$e. However, as discussed above, this analysis will use a qualitative discussion of plan consistency to determine the potential significance of the Project's contribution to global GHG emissions and resulting environmental effects" (p. 118).

As demonstrated above, the SCEA concludes that the Project would not exceed the SCAQMD screening-level threshold of 3,000 MT CO_2e/year and would rely on a qualitative discussion to determine the Project's significance. However, the SCEA's analysis, as well as the subsequent less-than-significant impact conclusion, is incorrect for the following reasons.

(1) The SCEA's quantitative GHG analysis relies upon an outdated threshold; and
(2) The SCEA's unsubstantiated air model indicates a potentially significant impact.

1) Incorrect Reliance on an Outdated Quantitative GHG Threshold

As previously stated, the SCEA estimates that the Project would generate net annual GHG emissions of 2,696.1 MT CO_2e/year, which would not exceed the SCAQMD threshold of 3,000 MT CO_2e/year (p. 118, Table V-10). However, the guidance that provided the 3,000 MT CO_2e/year threshold, the SCAQMD's 2008 *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules, and Plans* report, was developed when the Global Warming Solutions Act of 2006, commonly known as "AB 32", was the governing statute for GHG reductions in California. AB 32 requires California to reduce GHG emissions to 1990 levels by 2020.[28] Furthermore, AEP guidance states:

> "[F]or evaluating projects with a post 2020 horizon, the threshold will need to be revised based on a new gap analysis that would examine 17 development and reduction potentials out to the next GHG reduction milestone."[29]

As it is currently February 2023, thresholds for 2020 are not applicable to the proposed Project and should be revised to reflect the current GHG reduction target. As such, the SCAQMD bright-line threshold of 3,000 MT CO_2e/year is outdated and inapplicable to the proposed Project, and the SCEA's less-than-significant GHG impact conclusion should not be relied upon. Instead, we recommend that the Project apply the SCAQMD 2035 service population efficiency target of 3.0 metric tons of carbon dioxide equivalents per service population per year ("MT CO_2e/SP/year"), which was calculated by applying a 40% reduction to the 2020 targets.[30]

2) Failure to Identify a Potentially Significant GHG Impact

In an effort to quantitatively evaluate the Project's GHG emissions, we compared the Project's GHG emissions, as estimated by the SCEA, to the SCAQMD 2035 service population efficiency target of 3.0 MT CO_2e/SP/year, which was calculated by applying a 40% reduction to the 2020 targets.[31] When applying this threshold, the Project's air model indicates a potentially significant GHG impact. As previously

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[28] "Health & Safety Code 38550." California State Legislature, January 2007, *available at:* https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=HSC&sectionNum=38550.

[29] "Beyond Newhall and 2020: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California." Association of Environmental Professionals (AEP), October 2016, *available at:* https://califaep.org/docs/AEP-2016_Final_White_Paper.pdf, p. 39.

[30] "Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group #15." SCAQMD, September 2010, *available at:* http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-minutes.pdf, p. 2.

[31] "Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group #15." SCAQMD, September 2010, *available at:* http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-minutes.pdf, p. 2.

stated, the SCEA estimates that the Project would generate net annual GHG emissions of 2,696.1 MT CO_2e/year (p. 118, Table V-10). According to CAPCOA's *CEQA & Climate Change* report, a service population ("SP") is defined as "the sum of the number of residents and the number of jobs supported by the project."[32] According to the CalEEMod output files provided by the AQ & GHG Analysis, the Project is estimated to support 718 residents (Appendix A, pp. 35). Furthermore, the SCEA indicates the Project will employ approximately 109 people during operation (p. 146, Table V-15). As such, we estimate a SP of 827 people. [33] When dividing the Project's net annual GHG emissions, as estimated by the SCEA, by a SP of 827 people, we find that the Project would emit approximately 3.26 MT CO_2e/SP/year (see table below).[34]

SCEA Greenhouse Gas Emissions	
Annual Emissions (MT CO_2e/year)	2,696.1
Service Population	827
Service Population Efficiency (MT CO_2e/SP/year)	3.26
SCAQMD 2035 Threshold	**3.0**
Exceeds?	***Yes***

As demonstrated above, the Project's service population efficiency value, as estimated by the SCEA's provided net annual GHG emission estimates and SP, exceeds the SCAQMD 2035 efficiency target of 3.0 MT CO_2e/SP/year, indicating a potentially significant impact not previously identified or addressed by the SCEA. As a result, the SCEA's less-than-significant GHG impact conclusion should not be relied upon. A revised SCEA should be prepared, including an updated GHG analysis and incorporating additional mitigation measures to reduce the Project's GHG emissions to less-than-significant levels.

Mitigation

Feasible Mitigation Measures Available to Reduce Emissions

Our analysis demonstrates that the Project would result in potentially significant air quality, health risk, and GHG 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 Air Quality Project Level Mitigation Measures ("PMM-AQ-1") and Greenhouse Gas Project Level Mitigation Measures ("PMM-GHG-1"), as described below: [35]

[32] CAPCOA *(*Jan. 2008) CEQA & Climate Change, p. 71-72, http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA-White-Paper.pdf.
[33] Calculated: 718 residents + 109 employees = 827 service population.
[34] Calculated: (2,696.1 MT CO_2e/year) / (827 service population) = (3.26 MT CO_2e/SP/year).
[35] "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
Air Quality Project Level Mitigation Measures – PMM-AQ-1: 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:
a) Minimize land disturbance.
c) Cover trucks when hauling dirt.
d) Stabilize the surface of dirt piles if not removed immediately.
e) Limit vehicular paths on unpaved surfaces and stabilize any temporary roads.
f) Minimize unnecessary vehicular and machinery activities.
g) Sweep paved streets at least once per day where there is evidence of dirt that has been carried on to the roadway.
h) Revegetate disturbed land, including vehicular paths created during construction to avoid future off-road vehicular activities.
j) Require contractors to assemble a comprehensive inventory list (i.e., make, model, engine year, horsepower, emission rates) of all heavy-duty off-road (portable and mobile) equipment (50 horsepower and greater) that could be used an aggregate of 40 or more hours for the construction project. Prepare a plan for approval by the applicable air district demonstrating achievement of the applicable percent reduction for a CARB-approved fleet.
k) Ensure that all construction equipment is properly tuned and maintained.
l) Minimize idling time to 5 minutes—saves fuel and reduces emissions.
n) Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators.
o) Develop a traffic plan to minimize traffic flow interference from construction activities. The plan may include advance public notice of routing, use of public transportation, and satellite parking areas with a shuttle service. Schedule operations affecting traffic for off-peak hours. Minimize obstruction of through-traffic lanes. Provide a flag person to guide traffic properly and ensure safety at construction sites.
p) As appropriate require that portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, obtain CARB Portable Equipment Registration with the state or a local district permit. Arrange appropriate consultations with the CARB or the District to determine registration and permitting requirements prior to equipment operation at the site.
q) Require projects within 500 feet of residences, hospitals, or schools to use Tier 4 equipment for all engines above 50 horsepower (hp) unless the individual project can demonstrate that Tier 4 engines would not be required to mitigate emissions below significance thresholds.
r) Projects located within the South Coast Air Basin should consider applying for South Coast AQMD "SOON" funds which provides funds to applicable fleets for the purchase of commercially available low-emission heavy-duty engines to achieve near-term reduction of NOx emissions from in-use off-road diesel vehicles.
s) Projects located within AB 617 communities should review the applicable Community Emissions Reduction Plan (CERP) for additional mitigation that can be applied to individual projects.

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.

t) Where applicable, projects should provide information about air quality related programs to schools, including the Environmental Justice Community Partnerships (EJCP), Clean Air Ranger Education (CARE), and Why Air Quality Matters programs.
y) Projects that will introduce sensitive receptors within 500 feet of freeways and other sources should consider installing high efficiency of enhanced filtration units, such as Minimum Efficiency Reporting Value (MERV) 13 or better. Installation of enhanced filtration units can be verified during occupancy inspection prior to the issuance of an occupancy permit.
z) Develop an ongoing monitoring, inspection, and maintenance program for the MERV filters.
aa) Consult the SCAG Environmental Justice Toolbox for potential measures to address impacts to low-income and/or minority communities.
bb) The following criteria related to diesel emissions shall be implemented on by individual project sponsors as appropriate and feasible: - Diesel nonroad vehicles on site for more than 10 total days shall have either (1) engines that meet EPA on road emissions standards or (2) emission control technology verified by EPA or CARB to reduce PM emissions by a minimum of 85% - Diesel generators on site for more than 10 total days shall be equipped with emission control technology verified by EPA or CARB to reduce PM emissions by a minimum of 85%. - Nonroad diesel engines on site shall be Tier 2 or higher. - Diesel nonroad construction equipment on site for more than 10 total days shall have either (1) engines meeting EPA Tier 4 nonroad emissions standards or (2) emission control technology verified by EPA or CARB for use with nonroad engines to reduce PM emissions by a minimum of 85% for engines for 50 hp and greater and by a minimum of 20% for engines less than 50 hp. - Emission control technology shall be operated, maintained, and serviced as recommended by the emission control technology manufacturer. - Diesel vehicles, construction equipment, and generators on site shall be fueled with ultra-low sulfur diesel fuel (ULSD) or a biodiesel blend approved by the original engine manufacturer with sulfur content of 15 ppm or less. - The construction contractor shall maintain a list of all diesel vehicles, construction equipment, and generators to be used on site. The list shall include the following: i. Contractor and subcontractor name and address, plus contact person responsible for the vehicles or equipment. ii. Equipment type, equipment manufacturer, equipment serial number, engine manufacturer, engine model year, engine certification (Tier rating), horsepower, engine serial number, and expected fuel usage and hours of operation. iii. For the emission control technology installed: technology type, serial number, make, model, manufacturer, EPA/CARB verification number/level, and installation date and hour-meter reading on installation date. - The contractor shall establish generator sites and truck-staging zones for vehicles waiting to load or unload material on site. Such zones shall be located where diesel emissions have the least impact on abutters, the general public, and especially sensitive receptors such as hospitals, schools, daycare facilities, elderly housing, and convalescent facilities. - The contractor shall maintain a monthly report that, for each on road diesel vehicle, nonroad construction equipment, or generator onsite, includes: i. Hour-meter readings on arrival on-site, the first and last day of every month, and on off-site date. ii. Any problems with the equipment or emission controls. iii. Certified copies of fuel deliveries for the time period that identify: 1. Source of supply 2. Quantity of fuel 3. Quantity of fuel, including sulfur content (percent by weight)
cc) Project should exceed Title-24 Building Envelope Energy Efficiency Standards (California Building Standards Code). The following measures can be used to increase energy efficiency:

- Provide pedestrian network improvements, such as interconnected street network, narrower roadways and shorter block lengths, sidewalks, accessibility to transit and transit shelters, traffic calming measures, parks and public spaces, minimize pedestrian barriers.
- Provide traffic calming measures, such as:
    i. Marked crosswalks
    ii. Count-down signal timers
    iii. Curb extensions iv. Speed tables
    iv. Raised crosswalks
    v. Raised intersections
    vi. Median islands
    vii. Tight corner radii
    viii. Roundabouts or mini-circles
    ix. On-street parking
    x. Chicanes/chokers
- Create urban non-motorized zones
- Provide bike parking in non-residential and multi-unit residential projects
- Dedicate land for bike trails
- Limit parking supply through:
    i. Elimination (or reduction) of minimum parking requirements
    ii. Creation of maximum parking requirements
    iii. Provision of shared parking
- Require residential area parking permit.
- Provide ride-sharing programs
    i. Designate a certain percentage of parking spacing for ride sharing vehicles
    ii. Designating adequate passenger loading and unloading and waiting areas for ride-sharing vehicles
    iii. Providing a web site or messaging board for coordinating rides
    iv. Permanent transportation management association membership and finding requirement.

Greenhouse Gas Project Level Mitigation Measures – PMM-GHG-1

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:

    i. Use energy and fuel-efficient vehicles and equipment;
    ii. Deployment of zero- and/or near zero emission technologies;
    iii. Use lighting systems that are energy efficient, such as LED technology;
    iv. Use the minimum feasible amount of GHG-emitting construction materials;
    v. Use cement blended with the maximum feasible amount of flash or other materials that reduce GHG emissions from cement production;
    vi. Incorporate design measures to reduce GHG emissions from solid waste management through encouraging solid waste recycling and reuse;
    vii. Incorporate design measures to reduce energy consumption and increase use of renewable energy;

viii. Incorporate design measures to reduce water consumption; ix. Use lighter-colored pavement where feasible; x. Recycle construction debris to maximum extent feasible; xi. Plant shade trees in or near construction projects where feasible; and 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: i. Promote transit-active transportation coordinated strategies; ii. Increase bicycle carrying capacity on transit and rail vehicles; iii. Improve or increase access to transit; iv. Increase access to common goods and services, such as groceries, schools, and day care; v. Incorporate affordable housing into the project; vi. Incorporate the neighborhood electric vehicle network; vii. Orient the project toward transit, bicycle and pedestrian facilities; viii. Improve pedestrian or bicycle networks, or transit service; ix. Provide traffic calming measures; x. Provide bicycle parking; xi. Limit or eliminate park supply; xii. Unbundle parking costs; 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.
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.

These measures offer a cost-effective, feasible way to incorporate lower-emitting design features into the proposed Project, which subsequently, reduce 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, the Project should not be approved.

A revised SCEA should be prepared to include all feasible mitigation measures, as well as include updated air quality, health risk, and GHG analyses to ensure that the necessary mitigation measures are implemented to reduce emissions to below thresholds. The revised SCEA 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.

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 Rosenfeld CV

Attachment A

Construction

2021	
Annual Emissions (tons/year)	0.0323
Daily Emissions (lbs/day)	0.176986301
Construction Duration (days)	89
Total DPM (lbs)	15.75178082
Total DPM (g)	7145.007781
Start Date	10/4/2021
End Date	1/1/2022
Construction Days	89

2022	
Annual Emissions (tons/year)	0.0807
Daily Emissions (lbs/day)	0.442191781
Construction Duration (days)	365
Total DPM (lbs)	161.4
Total DPM (g)	73211.04
Start Date	1/1/2022
End Date	1/1/2023
Construction Days	365

2023	
Annual Emissions (tons/year)	0.04
Daily Emissions (lbs/day)	0.219178082
Construction Duration (days)	248
Total DPM (lbs)	54.35616438
Total DPM (g)	24655.95616
Start Date	1/1/2023
End Date	9/6/2023
Construction Days	248

Total	
Total DPM (lbs)	231.5079452
Total DPM (g)	105012.0039
Emission Rate (g/s)	0.001731363
Release Height (meters)	3
Total Acreage	1.45
Max Horizontal (meters)	108.33
Min Horizontal (meters)	54.17
Initial Vertical Dimension (meters)	1.5
Setting	Urban
Population	3,849,297
Start Date	10/4/2021
End Date	9/6/2023
Total Construction Days	702
Total Years of Construction	1.92
Total Years of Operation	28.08

Operation

Emission Rate	
Annual Emissions (tons/year)	0.036
Daily Emissions (lbs/day)	0.197260274
Total DPM (lbs)	72
Emission Rate (g/s)	0.001035616
Release Height (meters)	3
Total Acreage	1.45
Max Horizontal (meters)	108.33
Min Horizontal (meters)	54.17
Initial Vertical Dimension (meters)	1.5
Setting	Urban
Population	3,849,297

```
AERSCREEN 21112 / AERMOD 21112                                          02/13/23
                                                                        10:54:38

TITLE: The Parks in LA, Construction


----------------------------------------------------------------------------
******************************  AREA PARAMETERS  ****************************
----------------------------------------------------------------------------

SOURCE EMISSION RATE:         0.173E-02 g/s            0.137E-01 lb/hr

AREA EMISSION RATE:           0.295E-06 g/(s-m2)       0.234E-05 lb/(hr-m2)
AREA HEIGHT:                       3.00 meters              9.84 feet
AREA SOURCE LONG SIDE:           108.33 meters            355.41 feet
AREA SOURCE SHORT SIDE:           54.17 meters            177.72 feet
INITIAL VERTICAL DIMENSION:        1.50 meters              4.92 feet
RURAL OR URBAN:                   URBAN
POPULATION:                     3849297

INITIAL PROBE DISTANCE =          5000. meters            16404. feet



----------------------------------------------------------------------------
***********************  BUILDING DOWNWASH PARAMETERS  *********************
----------------------------------------------------------------------------

              BUILDING DOWNWASH NOT USED FOR NON-POINT SOURCES



----------------------------------------------------------------------------
**************************  FLOW SECTOR ANALYSIS  **************************
                25 meter receptor spacing: 1. meters - 5000. meters
----------------------------------------------------------------------------


   MAXIMUM  IMPACT  RECEPTOR

   Zo        SURFACE   1-HR CONC  RADIAL  DIST   TEMPORAL
   SECTOR    ROUGHNESS  (ug/m3)    (deg)   (m)    PERIOD
  -----------------------------------------------------
      1*       1.000     6.098       0    50.0     WIN
* = worst case diagonal



----------------------------------------------------------------------------
```

```
**********************  MAKEMET METEOROLOGY PARAMETERS  *********************
-----------------------------------------------------------------------------

MIN/MAX TEMPERATURE:    250.0 / 310.0 (K)

MINIMUM WIND SPEED:       0.5 m/s

ANEMOMETER HEIGHT:     10.000 meters

SURFACE CHARACTERISTICS INPUT: AERMET SEASONAL TABLES

DOMINANT SURFACE PROFILE: Urban
DOMINANT CLIMATE TYPE:    Average Moisture
DOMINANT SEASON:          Winter

ALBEDO:                  0.35
BOWEN RATIO:             1.50
ROUGHNESS LENGTH:       1.000 (meters)

SURFACE FRICTION VELOCITY (U*) NOT ADUSTED


       METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT
       -------------------------------------------------------------

 YR MO DY JDY HR
 -- -- -- --- --
 10 01 10  10 01

    H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 -1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50

    HT  REF TA     HT
- - - - - - - - - - -
  10.0   310.0    2.0



-----------------------------------------------------------------------------
*********************** AERSCREEN AUTOMATED DISTANCES ***********************
                  OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE
-----------------------------------------------------------------------------


                     MAXIMUM                              MAXIMUM
           DIST     1-HR CONC                   DIST     1-HR CONC
            (m)      (ug/m3)                     (m)      (ug/m3)
         ---------------------               ---------------------
           1.00     4.835                    2525.00    0.2478E-01
```

25.00	5.582	2550.00	0.2445E-01
50.00	6.098	2575.00	0.2412E-01
75.00	3.775	2600.00	0.2380E-01
100.00	2.293	2625.00	0.2349E-01
125.00	1.630	2650.00	0.2319E-01
150.00	1.244	2675.00	0.2290E-01
175.00	0.9942	2700.00	0.2261E-01
200.00	0.8213	2725.00	0.2232E-01
225.00	0.6946	2750.00	0.2204E-01
250.00	0.5985	2775.00	0.2177E-01
275.00	0.5238	2800.00	0.2151E-01
300.00	0.4636	2825.00	0.2125E-01
325.00	0.4146	2850.00	0.2099E-01
350.00	0.3740	2875.00	0.2074E-01
375.00	0.3399	2900.00	0.2050E-01
400.00	0.3108	2925.00	0.2026E-01
425.00	0.2857	2950.00	0.2002E-01
450.00	0.2640	2975.00	0.1979E-01
475.00	0.2450	3000.00	0.1957E-01
500.00	0.2282	3025.00	0.1935E-01
525.00	0.2134	3050.00	0.1913E-01
550.00	0.2002	3075.00	0.1892E-01
575.00	0.1883	3100.00	0.1871E-01
600.00	0.1776	3125.00	0.1851E-01
625.00	0.1680	3150.00	0.1830E-01
650.00	0.1592	3175.00	0.1811E-01
675.00	0.1511	3200.00	0.1791E-01
700.00	0.1437	3225.00	0.1772E-01
725.00	0.1369	3250.00	0.1754E-01
750.00	0.1307	3275.00	0.1736E-01
775.00	0.1249	3300.00	0.1718E-01
800.00	0.1196	3325.00	0.1700E-01
825.00	0.1146	3350.00	0.1683E-01
850.00	0.1100	3375.00	0.1666E-01
875.00	0.1057	3400.00	0.1649E-01
900.00	0.1017	3425.00	0.1632E-01
925.00	0.9790E-01	3450.00	0.1616E-01
950.00	0.9438E-01	3475.00	0.1600E-01
975.00	0.9107E-01	3500.00	0.1585E-01
1000.00	0.8796E-01	3525.00	0.1569E-01
1025.00	0.8529E-01	3550.00	0.1554E-01
1050.00	0.8252E-01	3575.00	0.1539E-01
1075.00	0.7989E-01	3600.00	0.1525E-01
1100.00	0.7741E-01	3625.00	0.1510E-01
1125.00	0.7506E-01	3650.00	0.1496E-01
1150.00	0.7283E-01	3675.00	0.1482E-01
1175.00	0.7071E-01	3700.00	0.1469E-01
1200.00	0.6869E-01	3725.00	0.1455E-01
1225.00	0.6678E-01	3750.00	0.1442E-01
1250.00	0.6495E-01	3775.00	0.1429E-01

1275.00	0.6321E-01	3800.00	0.1416E-01
1300.00	0.6155E-01	3825.00	0.1403E-01
1325.00	0.5996E-01	3849.99	0.1391E-01
1350.00	0.5844E-01	3875.00	0.1379E-01
1375.00	0.5699E-01	3900.00	0.1367E-01
1400.00	0.5560E-01	3925.00	0.1355E-01
1425.00	0.5426E-01	3950.00	0.1343E-01
1450.00	0.5298E-01	3975.00	0.1331E-01
1475.00	0.5176E-01	4000.00	0.1320E-01
1500.00	0.5058E-01	4025.00	0.1309E-01
1525.00	0.4944E-01	4050.00	0.1298E-01
1550.00	0.4835E-01	4075.00	0.1287E-01
1575.00	0.4730E-01	4100.00	0.1276E-01
1600.00	0.4629E-01	4125.00	0.1266E-01
1625.00	0.4532E-01	4150.00	0.1255E-01
1650.00	0.4438E-01	4175.00	0.1245E-01
1675.00	0.4347E-01	4200.00	0.1235E-01
1700.00	0.4260E-01	4225.00	0.1225E-01
1725.00	0.4176E-01	4250.00	0.1215E-01
1750.00	0.4094E-01	4275.00	0.1205E-01
1775.00	0.4015E-01	4300.00	0.1196E-01
1800.00	0.3939E-01	4325.00	0.1186E-01
1825.00	0.3865E-01	4350.00	0.1177E-01
1850.00	0.3794E-01	4375.00	0.1168E-01
1875.00	0.3725E-01	4400.00	0.1159E-01
1900.00	0.3658E-01	4425.00	0.1150E-01
1924.99	0.3593E-01	4450.00	0.1141E-01
1950.00	0.3530E-01	4475.00	0.1132E-01
1975.00	0.3469E-01	4500.00	0.1124E-01
2000.00	0.3409E-01	4525.00	0.1115E-01
2025.00	0.3352E-01	4550.00	0.1107E-01
2050.00	0.3296E-01	4575.00	0.1098E-01
2075.00	0.3242E-01	4600.00	0.1090E-01
2100.00	0.3189E-01	4625.00	0.1082E-01
2125.00	0.3138E-01	4650.00	0.1074E-01
2150.00	0.3088E-01	4675.00	0.1066E-01
2175.00	0.3039E-01	4700.00	0.1059E-01
2200.00	0.2992E-01	4725.00	0.1051E-01
2225.00	0.2946E-01	4750.00	0.1043E-01
2250.00	0.2901E-01	4775.00	0.1036E-01
2275.00	0.2858E-01	4800.00	0.1029E-01
2300.00	0.2816E-01	4825.00	0.1021E-01
2325.00	0.2774E-01	4850.00	0.1014E-01
2350.00	0.2734E-01	4875.00	0.1007E-01
2375.00	0.2695E-01	4900.00	0.1000E-01
2400.00	0.2656E-01	4924.99	0.9930E-02
2425.00	0.2619E-01	4950.00	0.9862E-02
2450.00	0.2582E-01	4975.00	0.9794E-02
2475.00	0.2547E-01	5000.00	0.9727E-02
2500.00	0.2512E-01		

********************* AERSCREEN MAXIMUM IMPACT SUMMARY ********************

3-hour, 8-hour, and 24-hour scaled
concentrations are equal to the 1-hour concentration as referenced in
SCREENING PROCEDURES FOR ESTIMATING THE AIR QUALITY
IMPACT OF STATIONARY SOURCES, REVISED (Section 4.5.4)
Report number EPA-454/R-92-019
http://www.epa.gov/scram001/guidance_permit.htm
under Screening Guidance

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
FLAT TERRAIN	6.180	6.180	6.180	6.180	N/A

DISTANCE FROM SOURCE 55.00 meters

IMPACT AT THE AMBIENT BOUNDARY	4.835	4.835	4.835	4.835	N/A

DISTANCE FROM SOURCE 1.00 meters

AERSCREEN 21112 / AERMOD 21112 02/13/23
10:56:14

TITLE: The Parks in LA, Operations

****************************** AREA PARAMETERS ****************************

SOURCE EMISSION RATE: 0.104E-02 g/s 0.822E-02 lb/hr

AREA EMISSION RATE:	0.176E-06	g/(s-m2)	0.140E-05	lb/(hr-m2)
AREA HEIGHT:	3.00	meters	9.84	feet
AREA SOURCE LONG SIDE:	108.33	meters	355.41	feet
AREA SOURCE SHORT SIDE:	54.17	meters	177.72	feet
INITIAL VERTICAL DIMENSION:	1.50	meters	4.92	feet
RURAL OR URBAN:	URBAN			
POPULATION:	3849297			

INITIAL PROBE DISTANCE = 5000. meters 16404. feet

*********************** BUILDING DOWNWASH PARAMETERS **********************

BUILDING DOWNWASH NOT USED FOR NON-POINT SOURCES

************************** FLOW SECTOR ANALYSIS **************************
25 meter receptor spacing: 1. meters - 5000. meters

MAXIMUM IMPACT RECEPTOR

Zo SECTOR	SURFACE ROUGHNESS	1-HR CONC (ug/m3)	RADIAL (deg)	DIST (m)	TEMPORAL PERIOD
1*	1.000	3.648	0	50.0	WIN

* = worst case diagonal

```
*********************  MAKEMET METEOROLOGY PARAMETERS  ********************
-----------------------------------------------------------------------------

MIN/MAX TEMPERATURE:    250.0 / 310.0 (K)

MINIMUM WIND SPEED:       0.5 m/s

ANEMOMETER HEIGHT:     10.000 meters

SURFACE CHARACTERISTICS INPUT: AERMET SEASONAL TABLES

DOMINANT SURFACE PROFILE: Urban
DOMINANT CLIMATE TYPE:    Average Moisture
DOMINANT SEASON:          Winter

ALBEDO:                   0.35
BOWEN RATIO:              1.50
ROUGHNESS LENGTH:        1.000 (meters)

SURFACE FRICTION VELOCITY (U*) NOT ADUSTED


       METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT
       -------------------------------------------------------------

 YR MO DY JDY HR
 -- -- -- --- --
 10 01 10  10 01

    H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 -1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50

    HT  REF TA     HT
- - - - - - - - - - -
  10.0   310.0    2.0


-----------------------------------------------------------------------------
*********************** AERSCREEN AUTOMATED DISTANCES ********************
                  OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE
-----------------------------------------------------------------------------


                      MAXIMUM                              MAXIMUM
            DIST     1-HR CONC                  DIST     1-HR CONC
             (m)      (ug/m3)                    (m)      (ug/m3)
         ---------------------               ---------------------
            1.00     2.893                   2525.00    0.1483E-01
```

25.00	3.340	2550.00	0.1463E-01
50.00	3.648	2575.00	0.1443E-01
75.00	2.258	2600.00	0.1424E-01
100.00	1.372	2625.00	0.1406E-01
125.00	0.9751	2650.00	0.1388E-01
150.00	0.7442	2675.00	0.1370E-01
175.00	0.5949	2700.00	0.1353E-01
200.00	0.4914	2725.00	0.1336E-01
225.00	0.4156	2750.00	0.1319E-01
250.00	0.3581	2775.00	0.1303E-01
275.00	0.3134	2800.00	0.1287E-01
300.00	0.2774	2825.00	0.1271E-01
325.00	0.2481	2850.00	0.1256E-01
350.00	0.2238	2875.00	0.1241E-01
375.00	0.2033	2900.00	0.1226E-01
400.00	0.1860	2925.00	0.1212E-01
425.00	0.1709	2950.00	0.1198E-01
450.00	0.1579	2975.00	0.1184E-01
475.00	0.1466	3000.00	0.1171E-01
500.00	0.1365	3025.00	0.1158E-01
525.00	0.1277	3050.00	0.1145E-01
550.00	0.1198	3075.00	0.1132E-01
575.00	0.1127	3100.00	0.1119E-01
600.00	0.1063	3125.00	0.1107E-01
625.00	0.1005	3150.00	0.1095E-01
650.00	0.9522E-01	3175.00	0.1083E-01
675.00	0.9041E-01	3200.00	0.1072E-01
700.00	0.8599E-01	3225.00	0.1060E-01
725.00	0.8193E-01	3250.00	0.1049E-01
750.00	0.7818E-01	3275.00	0.1038E-01
775.00	0.7473E-01	3300.00	0.1028E-01
800.00	0.7153E-01	3325.00	0.1017E-01
825.00	0.6856E-01	3350.00	0.1007E-01
850.00	0.6580E-01	3375.00	0.9965E-02
875.00	0.6323E-01	3400.00	0.9865E-02
900.00	0.6082E-01	3425.00	0.9766E-02
925.00	0.5858E-01	3450.00	0.9670E-02
950.00	0.5647E-01	3475.00	0.9575E-02
975.00	0.5449E-01	3500.00	0.9481E-02
1000.00	0.5263E-01	3525.00	0.9389E-02
1025.00	0.5103E-01	3550.00	0.9299E-02
1050.00	0.4937E-01	3575.00	0.9210E-02
1075.00	0.4780E-01	3600.00	0.9122E-02
1100.00	0.4631E-01	3625.00	0.9036E-02
1125.00	0.4491E-01	3650.00	0.8952E-02
1150.00	0.4357E-01	3675.00	0.8869E-02
1175.00	0.4230E-01	3700.00	0.8787E-02
1200.00	0.4110E-01	3724.99	0.8706E-02
1225.00	0.3995E-01	3750.00	0.8627E-02
1250.00	0.3886E-01	3775.00	0.8549E-02

1275.00	0.3782E-01	3800.00	0.8472E-02
1300.00	0.3682E-01	3825.00	0.8396E-02
1325.00	0.3587E-01	3849.99	0.8322E-02
1350.00	0.3497E-01	3875.00	0.8248E-02
1375.00	0.3410E-01	3900.00	0.8176E-02
1400.00	0.3326E-01	3925.00	0.8105E-02
1425.00	0.3247E-01	3950.00	0.8035E-02
1450.00	0.3170E-01	3975.00	0.7966E-02
1475.00	0.3097E-01	4000.00	0.7898E-02
1500.00	0.3026E-01	4025.00	0.7831E-02
1525.00	0.2958E-01	4050.00	0.7764E-02
1550.00	0.2893E-01	4075.00	0.7699E-02
1575.00	0.2830E-01	4100.00	0.7635E-02
1600.00	0.2770E-01	4125.00	0.7572E-02
1625.00	0.2711E-01	4150.00	0.7510E-02
1650.00	0.2655E-01	4175.00	0.7448E-02
1675.00	0.2601E-01	4200.00	0.7388E-02
1700.00	0.2549E-01	4225.00	0.7328E-02
1725.00	0.2498E-01	4250.00	0.7269E-02
1750.00	0.2450E-01	4275.00	0.7211E-02
1775.00	0.2402E-01	4300.00	0.7153E-02
1800.00	0.2357E-01	4325.00	0.7097E-02
1825.00	0.2313E-01	4350.00	0.7041E-02
1850.00	0.2270E-01	4375.00	0.6986E-02
1875.00	0.2228E-01	4400.00	0.6932E-02
1900.00	0.2188E-01	4425.00	0.6878E-02
1924.99	0.2150E-01	4450.00	0.6826E-02
1950.00	0.2112E-01	4475.00	0.6773E-02
1975.00	0.2075E-01	4500.00	0.6722E-02
2000.00	0.2040E-01	4525.00	0.6671E-02
2025.00	0.2005E-01	4550.00	0.6621E-02
2050.00	0.1972E-01	4575.00	0.6572E-02
2075.00	0.1940E-01	4600.00	0.6523E-02
2100.00	0.1908E-01	4625.00	0.6475E-02
2125.00	0.1877E-01	4650.00	0.6427E-02
2150.00	0.1847E-01	4675.00	0.6380E-02
2175.00	0.1818E-01	4700.00	0.6334E-02
2200.00	0.1790E-01	4725.00	0.6288E-02
2225.00	0.1763E-01	4750.00	0.6243E-02
2250.00	0.1736E-01	4775.00	0.6198E-02
2275.00	0.1710E-01	4800.00	0.6154E-02
2300.00	0.1685E-01	4825.00	0.6110E-02
2325.00	0.1660E-01	4850.00	0.6067E-02
2350.00	0.1636E-01	4875.00	0.6025E-02
2375.00	0.1612E-01	4900.00	0.5983E-02
2400.00	0.1589E-01	4925.00	0.5941E-02
2425.00	0.1567E-01	4950.00	0.5900E-02
2450.00	0.1545E-01	4975.00	0.5860E-02
2475.00	0.1524E-01	5000.00	0.5820E-02
2500.00	0.1503E-01		

********************** AERSCREEN MAXIMUM IMPACT SUMMARY *********************

3-hour, 8-hour, and 24-hour scaled
concentrations are equal to the 1-hour concentration as referenced in
SCREENING PROCEDURES FOR ESTIMATING THE AIR QUALITY
IMPACT OF STATIONARY SOURCES, REVISED (Section 4.5.4)
Report number EPA-454/R-92-019
http://www.epa.gov/scram001/guidance_permit.htm
under Screening Guidance

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
FLAT TERRAIN	3.698	3.698	3.698	3.698	N/A

DISTANCE FROM SOURCE 55.00 meters

IMPACT AT THE AMBIENT BOUNDARY	2.893	2.893	2.893	2.893	N/A

DISTANCE FROM SOURCE 1.00 meters

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

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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. Focus on wastewater treatment.

Professional Experience

Dr. Rosenfeld has over 25 years of 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:

Rosenfeld P. E., Spaeth K., Hallman R., Bressler R., Smith, G., (2022) Cancer Risk and Diesel Exhaust Exposure Among Railroad Workers. *Water Air Soil Pollution.* **233,** 171.

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 Superior Court of the State of California, County of San Bernardino
Billy Wildrick, Plaintiff vs. BNSF Railway Company
Case No. CIVDS1711810
Rosenfeld Deposition 10-17-2022

In the State Court of Bibb County, State of Georgia
Richard Hutcherson, Plaintiff vs Norfolk Southern Railway Company
Case No. 10-SCCV-092007
Rosenfeld Deposition 10-6-2022

In the Civil District Court of the Parish of Orleans, State of Louisiana
Millard Clark, Plaintiff vs. Dixie Carriers, Inc. et al.
Case No. 2020-03891
Rosenfeld Deposition 9-15-2022

In The Circuit Court of Livingston County, State of Missouri, Circuit Civil Division
Shirley Ralls, Plaintiff vs. Canadian Pacific Railway and Soo Line Railroad
Case No. 18-LV-CC0020
Rosenfeld Deposition 9-7-2022

In The Circuit Court of the 13th Judicial Circuit Court, Hillsborough County, Florida Civil Division
Jonny C. Daniels, Plaintiff vs. CSX Transportation Inc.
Case No. 20-CA-5502
Rosenfeld Deposition 9-1-2022

In The Circuit Court of St. Louis County, State of Missouri
Kieth Luke et. al. Plaintiff vs. Monsanto Company et. al.
Case No. 19SL-CC03191
Rosenfeld Deposition 8-25-2022

In The Circuit Court of the 13th Judicial Circuit Court, Hillsborough County, Florida Civil Division
Jeffery S. Lamotte, Plaintiff vs. CSX Transportation Inc.
Case No. NO. 20-CA-0049
Rosenfeld Deposition 8-22-2022

In State of Minnesota District Court, County of St. Louis Sixth Judicial District
Greg Bean, Plaintiff vs. Soo Line Railroad Company
Case No. 69-DU-CV-21-760
Rosenfeld Deposition 8-17-2022

In United States District Court Western District of Washington at Tacoma, Washington
John D. Fitzgerald Plaintiff vs. BNSF
Case No. 3:21-cv-05288-RJB
Rosenfeld Deposition 8-11-2022

In Circuit Court of the Sixth Judicial Circuit, Macon Illinois
Rocky Bennyhoff Plaintiff vs. Norfolk Southern
Case No. 20-L-56
Rosenfeld Deposition 8-3-2022

In Court of Common Pleas, Hamilton County Ohio
Joe Briggins Plaintiff vs. CSX
Case No. A2004464
Rosenfeld Deposition 6-17-2022

In the Superior Court of the State of California, County of Kern
George LaFazia vs. BNSF Railway Company.
Case No. BCV-19-103087
Rosenfeld Deposition 5-17-2022

In the Circuit Court of Cook County Illinois
Bobby Earles vs. Penn Central et. al.
Case No. 2020-L-000550
Rosenfeld Deposition 4-16-2022

In United States District Court Easter District of Florida
Albert Hartman Plaintiff vs. Illinois Central
Case No. 2:20-cv-1633
Rosenfeld Deposition 4-4-2022

In the Circuit Court of the 4th Judicial Circuit, in and For Duval County, Florida
Barbara Steele vs. CSX Transportation
Case No.16-219-Ca-008796
Rosenfeld Deposition 3-15-2022

In United States District Court Easter District of New York
Romano et al. vs. Northrup Grumman Corporation
Case No. 16-cv-5760
Rosenfeld Deposition 3-10-2022

In the Circuit Court of Cook County Illinois
Linda Benjamin vs. Illinois Central
Case No. No. 2019 L 007599
Rosenfeld Deposition 1-26-2022

In the Circuit Court of Cook County Illinois
Donald Smith vs. Illinois Central
Case No. No. 2019 L 003426
Rosenfeld Deposition 1-24-2022

In the Circuit Court of Cook County Illinois
Jan Holeman vs. BNSF
Case No. 2019 L 000675
Rosenfeld Deposition 1-18-2022

In the State Court of Bibb County State of Georgia
Dwayne B. Garrett vs. Norfolk Southern
Case No. 20-SCCV-091232
Rosenfeld Deposition 11-10-2021

In the Circuit Court of Cook County Illinois
Joseph Ruepke vs. BNSF
Case No. 2019 L 007730
Rosenfeld Deposition 11-5-2021

In the United States District Court For the District of Nebraska
Steven Gillett vs. BNSF
Case No. 4:20-cv-03120
Rosenfeld Deposition 10-28-2021

In the Montana Thirteenth District Court of Yellowstone County
James Eadus vs. Soo Line Railroad and BNSF
Case No. DV 19-1056
Rosenfeld Deposition 10-21-2021

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

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

In the United States District Court For the Northern District of Illinois
Theresa Romcoe vs. Northeast Illinois Regional Commuter Railroad Corporation d/b/a METRA Rail
Case 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. vs. The City of Pheonix v. Cox Cactus Farm, L.L.C., Utah Shelter Systems, Inc.
Case No. 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 vs. CNA Insurance Company et al.
Case No. 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 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. 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. BC646857
Rosenfeld Deposition 10-6-2018; Trial 3-7-19

In United States District Court For The District of Colorado
Bells et al. Plaintiffs 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., Plaintifs 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 No. 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. 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 No. 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 No. 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 No. 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 No. 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 No. 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 No. 2:07CV1052
Rosenfeld Deposition July 2009

EXHIBIT C

March 20, 2023

Victoria Yundt
Lozeau | Drury LLP
1939 Harrison Street, Suite 150
Oakland, CA 94612

SUBJECT: Comments on The Parks in LA Mixed Use Project Noise Study

Dear Ms. Yundt,

Per your request, I have reviewed the Noise Study for The Parks in LA Sustainable Communities Environmental Assessment (SCEA) in the City of Los Angeles, California. The proposed project involves the demolition of existing structures and hardscape and the construction of an eight-story, mixed-use building with commercial space and residential units. The project includes a two level sub-terranean parking garage. The Noise and Vibration Impact Analysis is contained in Section XIII of the SCEA, with supplemental calculations in Appendix J Noise Study (Noise Study).

The Project is surrounded by noise sensitive uses – residences directly adjacent to the site, 10 feet north of the boundary, 100 feet west of the site across Hobart Blvd., 75 feet east of the site across Harvard Blvd., and south on W. 8th Street 100 feet south.

There are several errors and omissions in the SCEA construction noise analysis. Correcting these would potentially identify several significant impacts. The SCEA should include an updated baseline analysis that incorporates noise measurements taken at key locations over a full day, and to provide supporting information to validate the results.

Construction Noise Exceeds Threshold Criteria

As established in Construction Noise Impacts section, the LAMC prohibits the use of any powered equipment or powered hand tool for construction within a residential zone or within 500 ft thereof that produces a maximum noise level exceeding 75 dBA at a distance of 50 feet from the source [SCEA page 137]. This is an Lmax limit, representing the highest sound level that occurs during a stated time period. Table V-11 in the SCEA incorrectly applies a usage factor to the 50-foot Lmax levels for each equipment and compares these hourly average (Leq) levels to the Lmax criteria [SCEA page 138]. **Most of the equipment in Table V-11 exceeds 75 dBA Lmax at 50 feet (12 of 14 types of equipment range from 77 to 90 dBA).**

Table V-12 in the SCEA presents Leq levels with various noise attenuation devises, including a 15dB reduction from industrial mufflers for equipment with diesel engines [SCEA page 140]. The source noise levels used by the SCEA come from the FHWA Construction Noise Handbook, and those data represent contemporary equipment that are already equipped with mufflers. Therefore, the 15dB reduction for mufflers is unsubstantiated and unrealistic. The values provided in Table V-11 are representative of the maximum noise levels that nearby residents will be exposed to during construction (74 to 90 dBA at 50 feet). At the residences 10 feet north of the project site, these maximum noise levels will range from 88 to 104 dBA based on the source levels in Table V-11 and adjustment for distance.

The FHWA Construction Noise Special Report on Measurement, Prediction, and Mitigation indicates that mufflers are only effective for machinery powered by internal combustion engines, not operational noise produced during work such as sawing. Based on FHWA Lmax level of 90 dBA at 50 feet for concrete saws, 15 dB of reduction are needed for that operation to meet the LAMC criteria. Noise barriers could provide 10 to 15 dB of reduction, depending on site geometry and barrier construction, however, contractors are often reluctant to employ barriers because they slow production**. The SCEA should provide substantial evidence that the proposed mitigation measured will both reduce noise levels below the applicable threshold and be feasible to deploy. Details of deployment should be included in the MMRP.**

Per the California CEQA Guidelines checklist, thresholds of significance of noise include assessment of a temporary or permanent increase in ambient levels in the vicinity of the project [SCEA page 136]. As shown in Table 6-1 of Appendix J, multiple pieces of equipment will be used during each phase of construction work [App. J page 13]. Here is where an Leq calculation would be appropriate to compare construction noise levels for each phase with existing ambient measurements. Table 1 in this letter presents the calculated Leq for each phase shown in Table 6-1 of the Appendix at the nearest residential property north of the project. The calculations use the FHWA usage factors. The measured ambient near the residences at M2 was 60 dB [CITATION]. **As shown, construction phase Leq levels range from 28 to 41 dB over the ambient which is, by any reasonable assessment, a significant increase.**

Phase	Equipment (Quantity)	Leq at Residence, dBA	Phase Total, dBA	Ambient, dBA	Difference
Demolition	Concrete Saw (1)	97	101	60	41
	Tractor/Loader/Backhoe (3)	94			
	Rubber Tired Dozer (1)	92			
Site Prep	Rubber Tired Dozer (1)	92	99	60	39
	Grader (1)	95			
	Tractor/Loader/Backhoe (1)	94			
Grading	Rubber Tired Dozer (1)	92	99	60	39
	Grader (1)	95			
	Tractor/Loader/Backhoe (1)	94			
Building Construction	Crane (1)	87	97	60	37
	Forklift (man lift) (1)	82			
	Generator Set (1)	92			
	Tractor/Loader/Backhoe (1)	94			
	Welder (3)	84			
Paving	Cement Mixer (1)	89	97	60	37
	Paver (1)	88			

	Paving Equipment (1)	88			
	Roller (1)	87			
	Tractor/Loader/Backhoe (1)	94			
Architectural Coating	Air Compressor (1)	88	88	60	28

Baseline Noise is Not Properly Established

The manner in which the SCEA has determined the existing noise environment is poorly supported. The noise analysis relies on four short-term measurements of 15-minute duration, on Monday, July 1, 2019, between 1:41 p.m. and 2:49 p.m. (App. J pages 8-10). These levels, which range between 67.1 dB and 56.7 dB, are averaged to use as the existing daytime ambient noise level for the study [SCEA page 137].

The noise environment is affected by transportation sources that can change from hour to hour and day to day, and best practices call for documentation of the existing condition with measurements at different times. If a long-term measurement is not available, the report should address how representative the short-term data are of major noise sources.

Further, it is not appropriate to average the four measurement locations. The residential properties to the east and west of the project site have a much lower (up to 10 dB) ambient than the residences across W 8th Street, represented by M1 and M4 [App. J page 10]. Measured ambient levels should be applied to nearby receptors based on distance from major noise sources.

Conclusions

There are several errors and omissions in the SCEA construction noise analysis. Correcting these would potentially identify several significant impacts.

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

Very truly yours,

WILSON IHRIG

Ani S. Toncheva
Senior Consultant