MEMORANDUM

To:	David Woon, Planning Assistant Los Angeles City Planning	**Job No.**	1345.001
From:	Lynn Kaufman, CLA, Associate Principal Impact Sciences, Inc.		
Subject:	Responses to Comments on the SCEA for the 5001 Wilshire Project		
Date:	August 8, 2022		

This memorandum was prepared by Impact Sciences, Inc., and KOA Corporation in response to comments received on the Sustainable Communities Environmental Assessment (SCEA) for the 5001 Wilshire Project (Project). In reviewing the comments received on the SCEA during the 30-day public comment period (Comments), none of the Comments offer any new significant information or evidence, or any information or evidence that any fact, analysis, or determination in the SCEA is incorrect or not supported with substantial evidence pursuant to CEQA (Public Resources Code [PRC] § 21000 et. seq.) and the CEQA Guidelines (California Code of Regulations [CCR] § 15000 et. seq.).

1. INTRODUCTION

The City of Los Angeles (City), as lead agency, prepared and circulated the SCEA on April 14, 2022, for a public review period of 30 days ending on May 14, 2022. According to CEQA, PRC § 21155.2 (b) (4), the lead agency must consider the comments received during consultation and review periods on the SCEA Environmental Checklist. However, comments received on a SCEA Environmental Checklist are not required to be attached to the SCEA Environmental Checklist, nor is the lead agency required to make specific written responses to public agencies or individual commenters. Further, neither CEQA nor the CEQA Guidelines require the lead agency to send responses individually or directly to commenters.

According to PRC § 21155.2 (b) (4):

> Prior to acting on the Sustainable Communities Environmental Assessment, the lead agency shall consider all comments received.

Nonetheless, responses to the Comments received on the SCEA are provided herein. As a number of similar issues related to the analysis in the SCEA were raised by multiple commenters, responses to the Comments are provided in the form of several **Master Responses to Comments,** which are provided in Sections 2.1 through 2.17, along with some additional, clarifying information, below.

A total of one state agency, four organizations, and six individuals provided comments and/or letters during the circulation period for the SCEA. **Table 1, Matrix of Comments Received in Response to the SCEA**, below, provides a list of the commenters as well as a matrix showing the commenters' primary topics of concern. See **Appendix A, Letters Received on the SCEA during the Public Comment Period** for copies of the comment letters.

Table 1
Matrix of Comments Received in Response to the SCEA

Letter No	Commenter	Use of a SCEA	Need for Additional Mitigation Measures under CEQA	Project Description (Closure of Citrus)	List of Preparers	Construction Noise	Operational Noise (Balconies, Roof, Garage)	Construction Air Quality	Operational Air Quality	Construction Traffic	Operational Traffic	Hazardous Conditions and Methane	Parking	Open Space and Balconies	Greenbelt	HPOZ	Visual Privacy	Document Inconsistencies
Agencies																		
A-1	Caltrans									X	X							
Organizations																		
O-1	Hancock Park HOA			X	X							X					X	
O-2	La Brea Hancock HOA			X		X				X		X		X				
O-2	Lozeau Drury	X	X					X	X			X						
O-3	NTEC					X	X			X								
Individuals																		
I-1	Mark & Debbie Alpers			X	X								X	X	X			X
I-2	Debbie Alpers																	X
I-3	Jill Brown			X		X				X								
I-4	Tom Flesch & Amy Kafton						X				X							
I-5	Renli Qiao & Weihong Yan										X		X			X		
I-6	Anne Schneider					X	X	X					X				X	
I-7	Sean & Susan Silk						X				X						X	

2.1 USE OF A SUSTAINABLE COMMUNITIES ENVIRONMENTAL ASSESSMENT

Comments question the use of a Sustainable Communities Environmental Assessment (SCEA) as the appropriate CEQA environmental review document for the Project.

However, as provided in Section III, Sustainable Communities Environmental Assessment Eligibility, of the SCEA, the Project qualifies for streamlined CEQA environmental review since it is a transit priority project that clearly meets the intent of both Senate Bill (SB) 375 and the Southern California Association of Government's (SCAG) Regional Transportation Plan / Sustainable Communities Strategy (RTP/SCS). The purpose of SB 375 was to revise CEQA to encourage projects "that will help the state achieve its climate goals under Assembly Bill (AB) 32, assist in the achievement of state and federal air quality standards, and increase petroleum conservation" (see SB 375, § 1(f)). To meet the state's AB 32 climate goals, SB 375 requires all metropolitan transportation organizations, including SCAG, to prepare a RTP/SCS that integrates transportation and land use planning in a manner that results in reduced vehicle miles traveled (VMT) and, as a result, reduces greenhouse gas (GHG) emissions.

SB 375, as partially codified in PRC § 21155 (a), allows for streamlined CEQA environmental review for a transit priority project that 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 (i.e., RTP/SCS). A transit priority 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 (PRC § 21155 (b)).

Section III.A, Sustainable Communities Strategy Consistency Analysis, of the SCEA, provides a detailed analysis of the Project's consistency with the RTP/SCS, including consistency with land use designation, density, building intensity and applicable policies, as required by SB 375, and the Project's overall consistency with the RTP/SCS and the Project's fulfillment of the overarching goals of integrating land use and transportation.

Moreover, Section III.B, Transit Priority Project Criteria Analysis, of the SCEA, demonstrates the Project's eligibility as a transit priority project pursuant to the eligibility criteria in PRC § 21155 (b). The Project contains a mix of residential and commercial uses with approximately 96.3 percent of the proposed uses as residential, would have a residential density of approximately 144 units per acre, and is located within a one-half mile of a major transit stop or high-quality transit corridor included in a regional transportation plan.

The Project Site is located 0.29 mile of a planned Metro stop at Wilshire Boulevard and La Brea Avenue (Metro Line 20 has a stop located at the intersection of Wilshire Boulevard and South Highland Avenue, adjacent to the Project Site). Furthermore, the Project is served by Metro Bus Lines 720, 212, and 312, all of which have frequency of service intervals of 15 minutes or less during the morning and afternoon peak commute periods.

Due to the transit facilities in the vicinity, the Project Site qualifies as a "High Quality Transit Area" (HQTA). A continually reoccurring theme in the RTP/SCS is to focus new growth around transit, particularly within HQTAs. The RTP/SCS further demonstrates that HQTAs may include high-density development, support pedestrian and bike infrastructure, reduce parking requirements, and retain affordable housing near transit. The Project promotes these goals by developing affordable and workforce housing immediately adjacent to multiple transit options and encouraging pedestrian activity and bicycling activity by providing access to the existing bike path to the north, as well as integrated bicycle facilities on the Project Site. Therefore, the Project qualifies as a transit priority project.

PRC § 21155.2 states that a transit priority project that has incorporated all feasible mitigation measures, performance standards, or criteria set forth in the prior applicable environmental impact reports (EIRs) and adopted in findings made pursuant to PRC § 21081 may be reviewed through a SCEA. In preparing the SCEA, cumulative effects that have been addressed and mitigated in a prior environmental document need not be treated as cumulatively considerable, and growth-inducing impacts need not be addressed. Also, project-specific or cumulative impacts from car and light-duty truck trips, as well as aesthetic and parking impacts, need not be addressed (PRC § 21159.28 (a)). As demonstrated in Section III, Sustainable Communities Environmental Assessment Eligibility, of the SCEA, the Project is consistent with and has incorporated all feasible mitigation measures, performance standards, or criteria set forth in the two applicable plans: The Wilshire Community Plan and the SCAG RTP/SCS. Relevant feasible mitigation measures from both plans were reviewed and where applicable, were applied to the Project.

As such, a SCEA provides an appropriate and adequate level of environmental review under CEQA.

2.2 Need for Additional Mitigation Measures Under CEQA

Comments have asserted that the SCEA does not incorporate certain air quality and hazards and hazardous materials mitigation measures from the RTP/SCS Program EIR (RTP/SCS EIR) mitigation monitoring and reporting program (MMRP). Specifically, the comments assert that the SCEA's determination that air quality and hazards and hazardous materials mitigation measures are not required or applicable because the Project's air quality and hazards and hazardous materials impacts would be less-than-significant area incorrect.

The RTP/SCS EIR MMRP does not include project level mitigation measures that are required to be incorporated into the Project. However, the RTP/SCS EIR MMRP does provide a list of mitigation measures that SCAG determined a lead agency can and should consider, as applicable and feasible, where the lead agency has concluded that a project has the potential to result in significant effects. The City has complied with PRC §§ 21155.2 and 21159.28. The City has reviewed all mitigation measures contained in the RTP/SCS EIR and determined their applicability to the Project and whether the Project would be in substantial compliance with the mitigation measure as proposed. For each such mitigation measure, the City considered whether to use the RTP/SCS EIR mitigation measure, or an equally effective City mitigation measure or federal, State, regional, or City regulation (see page 1 of the RTP/SCS EIR MMRP: "Lead agencies may use, amend, or not use measures identified in this Program EIR as appropriate to address project-specific conditions. The determination of significance and identification of appropriate mitigation is solely the responsibility of the lead agency.")

Contrary to these comments, the RTP/SCS EIR MMRP itself states that the Lead Agency should consider imposing the listed mitigation measures when needed "to reduce substantial adverse effects" (emphasis added) (see e.g., PMM AQ-1, PMM HAZ-1, PMM HAZ-5). The Initial Study and SCEA concluded that the Project would not cause significant air quality or hazards and hazardous materials impacts, and therefore, no mitigation was required.

In addition, mitigation can only be incorporated when it is relevant and applicable to a project. As explained in Appendix A, Incorporation Of Feasible Mitigation Measures, Performance Standards, And Criteria From Prior Applicable EIRs, of the SCEA, mitigation measures in the RTP/SCS EIR that are within the purview of SCAG (see, e.g., PMM HAZ-2, PMM HAZ-3, PMM HAZ-4, SMM AES-1, SMM AG-3) are neither relevant, nor applicable to the Project. Other measures simply do not apply to this urban, infill location because the subject conditions do not exist on the Project Site (see, e.g., PMM AG-1, PMM BIO-1(c)).

The RTP/SCS EIR MMRP also states that a lead agency has the sole discretion to use, amend, or not use measures identified in therein, and may instead consider whether to use an equally effective City mitigation measure or federal, State, regional, or local regulation. As required by state and local code and regulatory requirements, the Project would comply with the 2019 California Green Building Standards (CALGreen) Code; implement all applicable Southern California Air Quality Management District (SCAQMD) rules; adopt transportation demand management (TDM) measures; include bicycle/pedestrian amenities; and a net increase of up to 26 trees, all of which are being applied to this transit-oriented, infill development Project.

The SCEA fully and adequately analyzed the Project's potentially significant impacts, and it included and addressed all feasible mitigation measures from prior certified EIRs. The comments, therefore, do not raise any issues that alter the analysis or conclusions of the SCEA and do not involve any new significant impacts or add "significant new information" that would require recirculation of the SCEA.

2.3 PROVISION OF INFORMATION RELATED TO THE PROJECT DESCRIPTION

Comments were received regarding an omission in the Project Description regarding the proposed closure of South Citrus Avenue to northbound traffic.

Please refer to the Errata Section II. Minor Clarifications and Revisions, II.1, Project Description provided to the decision-making body as part of the 5001 Wilshire Project file. As a further point of clarification, the closure of South Citrus Avenue was analyzed as one of four scenarios in the Project's Transportation Assessment, which is included as Appendix H of the SCEA, and is identified in Figure II-4, Project Plot Plan, of the SCEA, and Figure II-34, South Citrus Street Closure Exhibit included in the Errata Section II. Minor Clarifications and Revisions, II.1, Project Description, along with additional clarifying information related to review and permitting responsibilities of the various City Departments.

2.4 LIST OF PREPARERS

Comments were received regarding the lack of a full listing of Los Angeles City Planning personnel involved in the preparation of the SCEA.

While *CEQA Guidelines* § 15129 requires that an **EIR** identify the agencies involved in preparing a draft EIR, there is no requirement that the document provide an exhaustive list of each individual from the lead agency involved in the preparation and/or review of the CEQA document.

PRC § 21155.2, and *CEQA Guidelines* § 15072 - 15075, which list the requirements of the SCEA preparation and review process do not include the same requirement imposed upon the preparation of an EIR. However, Section V, List of Preparers, of the SCEA, identifies the Los Angeles City Planning, as the lead agency, and identifies the CEQA, Cultural Resources, and Transportation Consultants, including individuals from said consultant firms, involved in the preparation of the SCEA.

2.5 PROVISION OF INFORMATION RELATED TO CONSTRUCTION NOISE

In response to comments received on the construction noise analysis contained in the SCEA (see Comment Letter No. O-3 NTEC), pages IV-113 through IV-116 of the SCEA have been revised. Please refer to the Errata Section II. Minor Clarifications and Revisions, II.2 SCEA Environmental Analysis, C. Construction Noise, which has been provided to the decision-making body as part of the 5001 Wilshire Project file for further information. The revisions are related to estimated unmitigated and mitigated construction noise levels and clarification of mitigation measures necessary to ensure impacts would remain less than significant.

2.6 PROVISION OF INFORMATION RELATED TO OPERATIONAL NOISE

Several comments were submitted regarding the construction of the Project with open balconies and rooftop pool and recreation areas, along with traffic entering and exiting Project's parking garage via the South Citrus Avenue driveway, and the potential for this to create significant noise impacts.

As discussed on page IV-112 of the SCEA, regulatory compliance with LAMC § 112.02, which would be required as a condition of approval by the Los Angeles Department of Building and Safety (LADBS), would ultimately ensure that noises from sources such as heating, air conditioning, and ventilation systems not increase ambient noise levels at neighboring occupied properties by more than 5 dBA. Given this regulation, ambient noise levels, and the relatively quiet operation of modern HVAC systems which typically generate noise levels of approximately 60 dBA Leq at 50 feet[1], on-site noise sources emanating from the building HVAC system would not be capable of causing the ambient noise levels of nearby uses to increase by 3 dBA CNEL to or within their respective L.A. CEQA Thresholds Guide's "normally unacceptable" or "clearly unacceptable" noise categories, or by 5 dBA or greater overall.

As discussed on page IV-117 of the SCEA, the Project includes open balconies where socializing could occur. These outdoor spaces represent gathering places for outdoor activities that are private. There would be intermittent outdoor activities that would produce negligible impacts from human speech, based in large part on the Lombard effect. This phenomenon recognizes that voice noise levels in face-to-face conversations generally increase proportionally to background ambient noise levels, but only up to approximately 67 dBA at a reference distance of one meter. Specifically, vocal intensity increases about 0.38 dB for every 2.0 dB increase in noise levels above 55 dB, meaning people talk slightly above ambient noise levels in order to communicate.[2] Even assuming a worst-case scenario, where up to 67 dBA of human noise is generated over an ambient noise level as low as 59.6 dBA Leq at an open balcony (existing ambient noise levels at Noise Monitoring Location #3 – Residence at 716 South Citrus Avenue), human conversations from balcony activities could generate about a 0.3 dBA Leq increase at the nearest sensitive receptors at 716 South Citrus Avenue. Because the threshold of audibility for humans is 3 dBA, this impact would be inaudible and far below the City's thresholds of significance for operational noise impacts. Any attenuation from solid railing, roof edges, and safety barriers around these

1 City of Los Angeles. West Adams New Community Plan Draft EIR. Available at: https://planning.lacity.org/eir/WestAdams/DEIR/4.12%20Noise.pdf

2 Acoustical Society of America, Volume 134; Evidence that the Lombard effect is frequency-specific in humans, Stowe and Golob, July 2013.

open balconies would further mitigate any noise transmission. If activities were to occur during the evening from 7:00 P.M. to 10:00 P.M., any CNEL adjustment of 5 dBA to account for human sensitivities would result in a 1.0 dBA Leq increase in ambient noise levels at the nearest receptor. If any outdoor activities were to occur after 10:00 P.M., a CNEL adjustment of 10 dBA would to 10:00 P.M., any CNEL adjustment of 5 dBA to account for human sensitivities would result in a 2.5 dBA Leq increase in ambient noise levels at the nearest receptor, an impact that is inaudible and below the City's thresholds of significance. Further, the commenter's assertions regarding the potential for noise from the balconies to cause significant noise impacts do not provide any specific facts, or substantial evidence to support these assertions and claims.

The Project's recreation areas, including the podium level pool area and the rooftop deck, will limit hours of operation to those that are comparable to established industry standards.

Furthermore, there is a strong equity argument related to the need for all City residents to have access to private, outdoor space at home to support physical and mental health and wellbeing. In a multifamily residential setting, balconies can provide this outdoor space. All residents in the City should have access to private outdoor open space regardless of whether one can afford to live in a single-family home.

As it relates to Project traffic and parking operational noise impacts, parking noise typically generates noise levels of approximately 60 dBA at 50 feet. Currently, LADOT estimates 1,318 daily vehicle trips to the Project Site, the Project would increase this by 229 daily trips to 1,547 daily trips, spread across the course of the day. This volume is not nearly the doubling of traffic volume required for a 3 dBA increase in noise[3], a sound level increase which is barely detectable by the human ear.[4] Further, parking from the Project would occur in a two level underground, one at-grade, and one above-grade level structure. Noises from the Project's underground parking, above-grade, and at-grade levels would be considerably attenuated[5] by the surrounding structures and effectively inaudible at nearby receptors as the potential noise from vehicles within the parking structure would not generate an exterior sound level increase above 3 dBA. Therefore, operational noise impacts related to traffic would be less than significant. Further, the commenter's assertions regarding the potential for noise from operational parking to cause

3 California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Protocol.* September 2013

4 Federal Highway Administration. Noise Fundamentals. Available at: https://www.fhwa.dot.gov/environMent/noise/regulations_and_guidance/polguide/polguide02.cfm

5 California Department of Transportation. 2013. Technical Noise Supplement, Table 7-1. Available at: https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tens-sep2013-a11y.pdf

significant noise impacts do not provide any specific facts, or substantial evidence to support these assertions and claims.

2.7 PROVISION OF INFORMATION RELATED TO THE AIR QUALITY ANALYSIS

Comments were received asserting that the SCEA underestimated the Project's construction and operation air quality emissions due to purported inaccuracies associated with Project land uses, Project characteristics, construction assumptions and schedule, and construction-related mitigation measures. The SCEA's estimated construction and operation air quality calculations were appropriately presented and utilized in substantiating the Project's less-than-significant air quality impacts (see SCEA Appendix B, Air Quality and Greenhouse Gas Technical Study). The SCEA's calculations reflect the Project's construction and operation characteristics, including 242 residential units, 10,900 square feet of ground floor commercial space, and 323 parking spaces in two subterranean, one ground level, and one above-grade parking levels. While the comment does note a minor inconsistency related to the Project's residential square footage in the SCEA's air quality calculations, this inconsistency does not have the potential to alter the SCEA's less-than-significant impact determinations. If the air quality model was revised with an increase of 28,150 sf as requested by the comment, this would result in a maximum increase of approximately 0.73 pounds per day of ROG. SCEA Table IV.3-7 illustrates that the Project would not come close to approaching the SCAQMD thresholds of significance. SCEA Table IV.3-7 shows the most impacted pollutant (ROG) only accounts for 10.5% of the threshold of significance, or 5.78 pounds per day compared to the threshold of 55.0 pounds per day. Thus, the minor inconsistency identified by the commentor does not constitute substantial evidence that the Project may have a significant effect on the environment.

With respect to construction assumptions and Project schedule, the SCEA utilized project-specific information provided by the Project Applicant, including but not limited to: construction phases, construction phase lengths, construction equipment, and estimated amount of surfaces that will require the use of architectural coatings on-site during construction. These assumptions were noted in Appendix B (Air Quality & GHG) to the SCEA. The commentor chose their own assumptions related to construction phases, construction phase lengths, equipment and architectural coatings and presented air quality calculations that do not accurately reflect the most basic Project characteristics. Thus, their calculations do not constitute substantial evidence that the Project may have a significant effect on the environment.

With respect to the comments related to air quality mitigation measures, the SCEA did not identify any mitigation measures that would be required for the Project. The SCEA correctly assumed the Project would be required to comply with all SCAQMD Rules, including Rule 403 (Fugitive Dust). This requirement was reflected in the SCEA's air quality calculations in Appendix B. It should be noted that while this is effectively a regulatory compliance measure and not a CEQA mitigation

measure, CalEEMod includes the fugitive dust reductions under the "project mitigation" screen in the model interface by default and cannot be changed. Thus, this comment does not constitute substantial evidence that the project may have a significant effect on the environment.

In response to the comment received on the SCAQMD localized significance threshold applied for the construction analysis contained in the SCEA, pages IV-37 through IV-38 of the SCEA have been revised. The revisions are related to minor corrections of the localized significance thresholds that were applied for on-site construction emissions. These revisions do not alter the conclusions of the SCEA and construction air quality impacts would remain less than significant without mitigation. Please refer to the Errata Section II. Minor Clarifications and Revisions, II.2 SCEA Environmental Analysis, A. Air Quality, which has been provided to the decision-making body as part of the Project file for further information.

Health Risk Analysis

Comment Letter O-2 incorrectly asserts that the SCEA failed to substantiate the less-than-significant impacts associated with health risks. Pages IV-13 through IV-41 of the SCEA evaluated all relevant air quality impacts associated with the Project's construction and operation in accordance with all California Air Resources Board (CARB), SCAQMD, and City protocols for the implementation of CEQA for land use development projects. Consistent with the guidance of these agencies, Pages IV-34 through IV-36 of the SCEA provides a thorough evaluation the Project's air quality health risks associated with criteria pollutants and toxic air contaminants (TACs), including diesel particulate matter (DPM).

Specifically, the comment claims that a health risk analysis (HRA) should have been conducted for the Project based on the California Office of Environmental Health Hazard Assessment (OEHHA) 2015 guidance. The intent of the OEHHA 2015 guidance is to provide HRA procedures for use in the Air Toxics Hot Spots Program or for the permitting of existing, new, or modified stationary sources. As the Project is not part of the Air Toxics Hot Spots Program because it is an urban infill mixed-use development consisting primarily of mobile and area sources (i.e., non-stationary sources), the OEHHA 2015 guidance is not directly applicable. OEHHA 2015 offers limited information on conducting a short-term HRA, but the guidance acknowledges the many inherent uncertainties that may occur, and it does not identify the types of short-term projects or non-stationary projects subject thereto. Moreover, OEHHA 2015 does not impose requirements for the Project to conduct a HRA, nor does OEHHA 2015 indicate a HRA should be conducted for the Project. Further, the SCAQMD has not opined on the application of OEHHA 2015 guidance to development projects such as the Project, and it would be speculative to conduct an analysis

without SCAQMD's necessary oversight. Further, the SCEA discusses CO hotspots on pages IV-39 through IV-40 and concludes that "the Proposed Project's CO hotspot impacts would not expose sensitive receptors to substantial air pollutant concentrations. Impacts would be less than significant."

The comment incorrectly claims that the SCEA does not disclose or discuss the concentrations at which Project pollutants would trigger adverse health effects. Operation of the Project would result in 1,547 daily vehicle trips. Pages IV-34 through IV-36 of the SCEA and Appendix B to the SCEA provide a thorough disclosure and discussion of air pollutants and associated potential adverse health effects from criteria pollutants and TACs, including DPM. Additionally, because the Project is considered an urban in-fill mixed-use development, almost all of the Project's vehicle trips would be comprised of light and medium duty vehicles (i.e., not heavy-duty diesel trucks), and any Project-related increases to DPM would therefore be nominal. Therefore, no further analysis is required to support the SCEA's determination of less-than-significant impacts upon air quality.

The HRA attached to Comment Letter O-2 is inaccurate and inapplicable to the Project for several reasons. First, the analysis significantly overestimates the amount of DPM emissions during construction and operation of the Project. The comment classifies all PM10 (particulate matter 10 microns in diameter) exhaust emissions from the Project's CalEEMod output sheets as the amount of DPM emissions. However, according to the California Air Resources Board (CARB), DPM is considered an ultrafine particulate, as more than 90% of DPM is less than one micron in diameter. CARB considers DPM a subset of PM2.5, and thus, to characterize all of the Project's construction and operational PM10 exhaust emissions as DPM emissions is an overestimation. Second, the comment inaccurately assumed construction would occur for 365 days per year, and it appears to assume that the Project would have construction occurring for all 24 hours per day. Third, the comment inaccurately modeled all Project-related construction and operation DPM emission sources as on-site, and as area sources. This assumption is not representative of the Project's sources, as many construction-related emissions would occur off-site (and as mobile sources) and the majority of operational emissions would occur off-site over large areas during motor-vehicle travel. To assume that all Project DPM emissions would occur from on-site area sources with near ground-level release heights significantly overestimates nearby pollutant concentrations and is therefore not representative of the Project's characteristics. Lastly, the comment's modeling did not utilize local meteorological or terrain data specific to the Project's location. As a result, the comment's claims that the maximum exposed individual resident is located approximately 50 meters downwind cannot be substantiated without including local wind,

weather, and topographical factors associated with the Project Site's location. By utilizing inappropriate modeling assumptions that are not specific to the Project and its location, the comment's assertion is unfounded and does not constitute substantial evidence that the Project may have a substantial adverse effect on the environment.

Indoor Air Quality

A comment asserts that the SCEA should have specifically addressed indoor air quality impacts associated with the release of formaldehyde from building materials.

There is no requirement from the CARB, OEHHA, or SCAQMD to evaluate indoor formaldehyde emissions from commonly used, and heavily regulated, common building materials and practices, nor have those agencies provided guidance on how to evaluate such emissions or thresholds of significance.

The commenter assumes—without presenting any facts to confirm—that the Project's building materials would include composite wood products manufactured with urea-formaldehyde resins that would cause a significant impact on indoor air quality by emissions that would exceed the SCAQMD CEQA significance threshold for airborne cancer risk. The City requires, and the developer is legally obligated to ensure, that all new construction complies with all applicable building code and other legal requirements. Therefore, the developer will be required to ensure that all building materials utilized will comply with all California requirements applicable to formaldehyde in newly constructed buildings including the applicable 2019 CALGreen Code (California Code of Regulations, Title 24, Part 11) for formaldehyde in composite wood products (as specified in the CARB Air Toxic Control Measure for Composite Wood – 17 CCR 93120 et seq.). CARB, the state's leading authoritative agency on air quality, has stated that the control measures it has approved for reducing emissions, including formaldehyde from composite wood products, provide a level of control that protects health and safety. CARB makes this point by stating directly in its Frequently Asked Questions for Consumers on Reducing Emissions from Composite Wood Products that, from a public health standpoint, the Composite Wood Products Regulation's emission standards are set at low levels intended to protect public health.[6]

Moreover, the study that the commenter relied upon to purport that indoor carcinogenic risks to future residents would exceed the SCAQMD threshold of 10 excess cancers per million does not provide substantial evidence to support the claim for several reasons. First, the comment cites

6 CARB, https://ww3.arb.ca.gov/toxics/compwood/consumer_faq.pdf?_ga=2.32900281.682464648.1573169874-1026610208.1565143819, accessed May 27, 2022.

the Healthy Efficient New Gas Home (HENGH) study, which was performed with the intent of evaluating the effects of the 2008 Title 24 Building Standards requirements for ventilation on indoor air quality within single family homes containing natural gas appliances and outfitted with mechanical ventilation systems. The purpose of the study was not to analyze formaldehyde emission rates or resulting concentrations from composite wood products. The single-family homes evaluated in the HENGH study were built between 2011–2017 and only required to meet 2008 Title 24 building standards for mechanical ventilation and building envelope leakage/air infiltration. The Title 24 standards and methodology for residential ventilation requirements were updated in 2016 and refined in 2019, and therefore homes included in the HENGH sample that would not have met the 2019 ventilation standards are not reliable for comparative purposes. Homes evaluated in the original 2007 California New Home Study (CNHS)—which the HENGH study used as a benchmark for pre-2008 ventilation conditions—are also not comparable to the proposed multi-family units that comprise the Project with regards to ventilation and infiltration standards, which greatly influence indoor air quality.

Second, the commenter used inappropriate exposure parameters and methodology to calculate the estimated risk to future residents based on the results of the HENGH study and the 2007 CNHS. The 2015 OEHHA risk assessment guidelines recommend a 30-year exposure for residential health risk assessments. The commenter used the obsolete 70-year residential exposure period assuming continuous (100 percent of time spent at home) exposure to arrive at the estimated cancer risk of 120 per million based on the HENGH study and 180 per million based on the CNHS analysis. The 2015 OEHHA guidelines recommend the use of a fraction of time at home value of 0.73 for adults and 0.72 for children. When the exposure duration is reduced from 70 years to 30 years and a time-at-home fraction of 0.75 is applied, the assumed risk based on the median HENGH study formaldehyde concentration of 24.1 µg/m3 would be 38.6 per million. This estimated risk is less than one-third of the risk claimed by the commenter (120 per million), reflecting just one item in the substantially flawed methodology employed to estimate possible carcinogenic risks from formaldehyde exposure. Given the various flaws in the commentor's methodology, this reduced carcinogenic risk is still a substantial overestimation of potential formaldehyde concentrations and exposures in Project dwelling units.

All comments stating that the SCEA must evaluate formaldehyde contributions to existing and future cumulative air quality conditions are unfounded based on the lack of credibility, inaccuracy, applicability of the reports cited by the commentor, flawed methodology used by the commentor in estimating risks, and the lack of any regulatory guidance or precedence to conduct such an analysis for a development project's CEQA analysis. Any such analysis would be highly

speculative and beyond the scope of CEQA documentation for an infill development project that will be constructed in accordance with all applicable and current building and safety codes.

2.8 PROVISION OF INFORMATION RELATED TO CONSTRUCTION AIR QUALITY RELATED TO FUGITIVE DUST

Comments were received related to 'dust pollution' and other air quality impacts during Project construction.

The Project would be required to comply with all SCAQMD Rules to reduce potential construction air quality impacts to less than significant as listed below.

SCAQMD Rules and Regulations

As stated on pages IV-23 and IV-24 of the SCEA, the following is a list of noteworthy SCAQMD rules that are required of construction activities associated with the Project:

- **Rule 402 (Nuisance)** – This rule prohibits the discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. This rule does not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.[7]

- **Rule 403 (Fugitive Dust)** – This rule requires fugitive dust sources to implement best available control measures for all sources, and all forms of visible particulate matter are prohibited from crossing any property line. This rule is intended to reduce PM10 emissions from any transportation, handling, construction, or storage activity that has the potential to generate fugitive dust. PM10 suppression techniques are summarized below.[8]

  - Portions of a construction site to remain inactive longer than a period of three months will be seeded and watered until grass cover is grown or otherwise stabilized.

  - All on-site roads will be paved as soon as feasible or watered periodically or chemically stabilized.

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7 South Coast Air Quality Management District. 1976. *Rule 402. Nuisance*. Available online at: http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-402.pdf.

8 South Coast Air Quality Management District. Amended 2005. *Rule 403. Fugitive Dust*. Available online at: http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-403.pdf.

- All material transported off-site will be either sufficiently watered or securely covered to prevent excessive amounts of dust.

- The area disturbed by clearing, grading, earthmoving, or excavation operations will be minimized at all times.

- Where vehicles leave a construction site and enter adjacent public streets, the streets will be swept daily or washed down at the end of the work day to remove soil tracked onto the paved surface.

- **Rule 1113 (Architectural Coatings)** – This rule requires manufacturers, distributors, and end-uses of architectural and industrial maintenance coatings to reduce ROG emissions from the use of these coatings, primarily by placing limits on the ROG content of various coating categories.[9]

- **Rule 445 (Wood-Burning Devices)** – The purpose of this rule is to reduce the emission of particulate matter from wood-burning devices and establish contingency measures for applicable ozone standards for the reduction of volatile organic compounds. The rule requires that any new residential or commercial development that begins construction on or after March 9, 2009 only install gaseous-fueled fireplaces and stoves.[10]

9 South Coast Air Quality Management District. Amended 2016. *Rule 1113. Architectural Coatings*. Available online at: http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/r1113.pdf?sfvrsn=24.

10 South Coast Air Quality Management District. 2019. Rule 445 – Wood Burning Devices Local Government, Builder, Contractor, Architect Answers to Frequently Asked Questions (FAQs). Available online at: http://www.aqmd.gov/docs/default-source/rule-book/support-documents/rule-445/detailed-rule-445-information.pdf.

2.9 PROVISION OF INFORMATION RELATED TO CONSTRUCTION TRAFFIC

Comments were received related to traffic during Project construction causing delays on the surrounding street network.

The Transportation Assessment prepared for the Project and included as Appendix H of the SCEA defined the Project construction truck haul route as along Wilshire Boulevard, with right-in/right-out access at the Project Site. Haul trucks will be routed to avoid residential roadways and non-arterial roadways, and to also avoid left-turn movements into and out of the Project Site. The proposed haul truck route is provided in Attachment A, with arriving trucks exiting the I-10 freeway and heading north on Crenshaw Boulevard and west on Wilshire to the Project Site. Exiting trucks would head west on Wilshire and south on La Brea to the I-10 freeway. As disclosed in the SCEA, and required by LADBS and LADOT, the haul route will require a permit that will be reviewed and approved by LADBS and LADOT.

Construction traffic on South Citrus Avenue or on southbound or northbound Highland Avenue could cause delays related to construction vehicles entering and existing the Project Site, particularly related to materials delivery. However, as discussed in the Supplemental Traffic Analysis - Construction Traffic – 5001 Wilshire Blvd., included in Appendix H – Traffic to the SCEA, at the three signalized study intersections the increase in average vehicle delay would be minimal, ranging from no increase to 1.9 seconds. The LOS value worsens for the intersection of Highland Avenue/6th Street in the PM peak hour, from E to F, but the intersection under existing conditions is operating near the upper limits of LOS E conditions.

At the unsignalized study intersection of South Citrus Avenue/Wilshire Boulevard, delay is based on the worst-case delay at the side-street (stop-sign controlled) approaches with the Wilshire Boulevard approaches as uncontrolled. Existing delay at the minor approaches at this location is high, but the project construction only causes minor delay increases of 3.4 seconds in the AM peak hour and 17.5 seconds in the PM peak hour (both less than a 10 percent increase), due to increases in traffic on Wilshire Boulevard. Based on this analysis, the construction effects at the study intersections are less than significant.

In addition, as part of the construction permitting process, the Project Applicant would be required as a condition of approval to prepare and submit formal construction staging and traffic control plans for review and approval by the Los Angeles Department of Building and Safety (LADBS) and LADOT prior to the issuance of any construction permits. A Work Area Traffic Control Plan will be developed for use during the entire construction period. This plan will also incorporate

safety measures around the construction site to reduce the risk to pedestrian traffic near the work area. The Work Area Traffic Control Plan will identify all traffic control measures, signs, delineators, and work instructions to be implemented by the construction contractor through the duration of demolition and construction activity. Construction equipment and worker cars will generally be contained on-site. At times when on-site staging and parking is not available, a secondary staging area will be required. The Work Area Traffic Control Plan would minimize the potential conflicts between construction activities, street traffic, transit stops, and pedestrians. The Work Area Traffic Control Plan would include access restrictions, and designate alternative pedestrian routes. With the implementation of the code-required Work Area Traffic Control Plan, the traffic impacts associated with the construction activities would be less than significant.

2.10 PROVISION OF INFORMATION RELATED TO OPERATIONAL TRAFFIC

Comments were received related to an increase in traffic following Project construction primarily related to roadway delays and safety.

The existing traffic operations at the Highland Avenue/Wilshire Boulevard intersections, which was a Project study intersection analyzed in the Project's Transportation Assessment included as Appendix H in the SCEA, is described by the commenter in terms of high congestion levels. This is verified by the Project's Transportation Assessment of November 2021, in that the existing conditions at that location were determined to be in the level of service (LOS) range of "F" in both the AM and PM peak hours. At this level of service, a roadway facility is operating at or above its designed capacity for vehicle movements.

Project traffic was analyzed using a reasonable distribution of traffic from the Project driveway access location at the west side of the site to the area roadway network. The Project assignment (trips added based on the distribution pattern) was analyzed at the study intersections, including the Highland Avenue/Wilshire Boulevard intersection. The Project's contribution to overall average intersection vehicle approach delay (the average waiting time per vehicle) was estimated to be 0.1 to 0.7 seconds, based on the applied Highway Capacity Manual analysis. The City of Los Angeles Department of Transportation (LADOT) mandates that substantial local traffic circulation effects of a project, as defined by the Transportation Assessment Guidelines, dated July 2020, be determined by an analysis of vehicle queuing effects at poor levels of service (E or F). The Project is not estimated to increase queuing at the intersection by substantial amounts based on the operational analysis, and therefore improvements at this intersection as mitigation by the Project are not required nor recommended in the Transportation Assessment. Further, the commenter's assertions regarding the potential for operational traffic to substantially increase local traffic delays or increase safety hazards do not provide any specific facts, or substantial evidence to support these assertions and claims.

2.11 PROVISION OF INFORMATION RELATED TO HAZARDOUS CONDITIONS AND METHANE

Comments were received regarding the SCEA's discussion and disclosure of hazards and hazardous materials, specifically potentially contaminated soils on the Project Site, and the need for a discussion related to methane hazards.

An Errata Section II. Minor Clarifications and Revisions, II.2 SCEA Environmental Analysis, B. Hazards and Hazardous Materials, has been provided to the decision-making body as part of the 5001 Wilshire Project file which provides further information regarding potential impacts related to potentially contaminated soils and methane hazards.

Potentially Contaminated Soils

On page IV-85, the SCEA acknowledges that the Limited Phase I Environmental Site Assessment (ESA) discloses that there was both a historic gasoline station and a dry cleaner that operated at the Project Site, but are no longer present (provided in Appendix F to the SCEA). Additional study of the site was conducted under a limited Phase II ESA (provided in Appendix F to the SCEA) to identify any potentially contaminated soils on the Project Site. Further information is provided in Errata Section II. Minor Clarifications and Revisions, II.2 SCEA Environmental Analysis, B. Hazards and Hazardous Materials as related to the findings and conclusions of the Phase II ESA.

Methane

On page IV-84, the SCEA discloses that the Project Site is an area identified as a methane zone by LADBS. Further information is provided in Errata Section II. Minor Clarifications and Revisions, II.2 SCEA Environmental Analysis, B. Hazards and Hazardous Materials as related to the findings and conclusions as related to the Project's location within a methane zone.

As discussed in the Errata, with the implementation of the required SCAQMD Rules, OSHA regulations and Los Angeles Building Code requirements (Section 91.7102 of the LAMC), Project impacts associated with hazards and hazardous materials would be less than significant. Further, the commenter's assertions regarding the potential for the Project to substantially increase local hazards do not provide any specific facts, or substantial evidence to support these assertions and claims.

2.12 PROVISION OF INFORMATION RELATED TO THE PARKING

Comments were received related to the number of parking spaces to be provided by the Project, specifically that the Project does not provide enough parking. These comments do not address the content or adequacy of the SCEA, but rather, assert that the Project does not provide sufficient parking.

The Project is required to provide at least 151 parking spaces per the LAMC and the City's Transit Oriented Communities Incentive Program, including 121 spaces required for the residential uses and 30 spaces required for the commercial uses. The Project will provide 323 parking spaces, of which 293 would be residential spaces and 30 would be commercial spaces, which is more than double the number of parking spaces the Project is required to provide pursuant to the LAMC and the City's Transit Oriented Communities Incentive Program.

Please also refer to the Errata which provides additional clarifying information in Section II.1 Project Description, due to revisions in the building design related to Project parking requirements for both vehicles and bicycles.

2.13 PROVISION OF INFORMATION RELATED TO THE OPEN SPACE AND BALCONIES

Comments were received related to the amount of open space, including balconies, to be provided by the Project.

The following exhibit provides a tally of the Project balconies:

5001 Wilshire - Private Open Space Tally

TYPE	SIZE	AREA	NORTH	SOUTH	EAST	WEST	COURTYARD	TOTAL #	TOTAL SF
A	3'-6" X 6'-0"	21 SF	0	6	12	24	25	67	1,407
B	4'-0" X 10'-0"	40 SF	5	0	0	0	0	5	200
C	6'-0" X 9'-0"	54 SF	0	6	9	5	13	33	1,782
D	6'-0" X 11'-0"	66 SF	45	4	12	6	15	82	5,412
E	6'-0" X 12'-0"	72 SF	0	0	8	8	5	21	1,512
F	6'-0" X 14'-0"	84 SF	0	0	0	0	10	10	840
Patios (3rd floor)	8'-0" X 11'-0"	88 SF	0	0	0	0	12	12	1,056
Patios (1st floor)	16'-0" X 16'-0"	256 SF	7	0	0	0	0	7	1,792
TOTAL			57	16	41	43	80	237	14,001

The Project will provide 26,350 square feet (sf) of open space, of which 5,250 sf are private balconies. Note that the total area of the provided balconies (private open space) is approximately 14,001 sf, however only 5,250 sf of that area is applied toward the Open Space requirement, per LAMC 12.21.G.2(b)(2)(i), which only allows 50 sf per qualified balcony to count toward private open space.

Please also refer to the Errata Section II. Minor Clarifications and Revisions, II.1, Project Description provided to the decision-making body as part of the Project file for further information regarding the Open Space calculations for the Project. These clarifications are provided due to revisions in the building design.

As previously discussed, there exists a strong equity argument related to the need for all City residents to have access to private, outdoor space at home to support physical and mental health and wellbeing. In a multifamily residential setting, balconies can provide this outdoor space. All residents in the City should have access to private outdoor open space regardless of whether one can afford to live in a single-family home.

2.14 PROVISION OF INFORMATION RELATED TO THE GREENBELT

Comments were received related to the greenbelt to be provided by the Project Applicant regarding ownership, maintenance, and security.

The Applicant proposes to preserve ownership of the greenbelt and be responsible for the maintenance and security. However, consultations are on-going with the City of Los Angeles Department of Parks and Recreation to determine the future ownership and maintenance of the greenbelt.

The greenbelt will be designed as a secure space that maintains hours of operation similar to those employed on the greenbelt to the west, sometimes known as Mansfield Avenue Park. Security of the greenbelt area will be maintained through natural surveillance due to the design of residential units facing out onto the greenbelt, with the installation of closed-circuit cameras and other related security measures.

2.15 PROVISION OF INFORMATION RELATED TO THE HPOZ

Comments were received related to impacts the Project could cause to the Hancock Park Historic Preservation Overlay Zone (HPOZ).

As discussed on page IV-46 of the SCEA, the *CEQA Guidelines* indicate that a project would have a significant impact on a historical resource if it would result in a substantial adverse change in the significance of a historical resource as defined in *CEQA Guidelines* § 15064.5.

As defined in *CEQA Guidelines* § 15064.5(b)(1), a substantial adverse change in the significance of a historic resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired.[11]

CEQA Guidelines § 15064.5(b)(2) further states that "[t]he significance of an historic resource is materially impaired when a project… [d]emolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources… or that account for its inclusion in a local register of historic resources… or its identification in a historic resources survey."[12]

In addition, while not a threshold of significance, the Secretary of the Interior's Standards for the Treatment of Historic Properties (the "Standards") provide guidance for reviewing proposed projects that may affect historic resources.

The intent of the Standards is to assist the long-term preservation of a property's significance through the preservation, rehabilitation, and maintenance of historic materials and features. The Standards pertain to historic buildings of all materials, construction types, sizes, and occupancy and encompass the exterior and interior of the buildings. The Standards also encompass related landscape features and the building's site and environment, as well as attached, adjacent, or related new construction.

11 *CEQA Guidelines*, § 15064.5(b)(1). https://govt.westlaw.com/calregs/Document/IA0E0C760D48811DEBC02831C6D6C108E?transitionType=Default&contextData=(sc.Default).

12 *CEQA Guidelines*, § 15064.5(b)(2). https://govt.westlaw.com/calregs/Document/IA0E0C760D48811DEBC02831C6D6C108E?transitionType=Default&contextData=(sc.Default).

From a practical perspective, the Standards have guided agencies in carrying out their historic preservation responsibilities. The Standards have also been adopted by State and local jurisdictions across the country.

In addition, the Standards are a useful analytic tool for aiding in the evaluation of potential impacts to historic resources. However, these Guidelines and Regulations are not part of the CEQA process. CEQA requires analysis of physical impacts to the environment and the only relationship of the Secretary of the Interior Standards to the CEQA process are discussed under *CEQA Guidelines* § 15064.5(b)(3):

> *"Generally, a project that follows the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings or the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings" (1995), Weeks and Grimmer, shall be considered as mitigated to a level of less than a significant impact on the historical resource."*

As discussed on page IV-48 of the SCEA, this Project consists of the demolition of existing commercial structures and construction of a mixed-used development to accommodate retail and housing space. The buildings proposed for demolition were constructed in 1987[13]; therefore, they are less than 50 years old and would not trigger environmental review according to state and national guidelines. per the CEQA Guidelines because they are less than 50 years old.

As discussed in a memorandum dated December 3, 2020, prepared by Shannon Davis of ASM Affiliates in regards to Preliminary Historic Resources Review for Parking Lot near 5001 Wilshire Boulevard, 671 South Highland Avenue, 688 South Citrus Avenue in Hancock Park HPOZ, prepared in anticipation of the Project included as **Appendix D** to the SCEA, a portion of the Project Site north of Carling Way is situated within the boundary of the Hancock Park Historic Preservation Overlay Zone (HPOZ), which captures most of the Hancock residential neighborhood and Wilshire Country Club.[14] HPOZ is a zoning tool that protects and preserves neighborhoods composed of architecturally and historically significant structures. A type of historic district, HPOZs primarily protect single-family residential neighborhoods. However, the main portion of the Project Site lies just south of the boundary of the overlay zone, the portion of the Project Site that is within the HPOZ is currently in use as a surface parking lot. Moreover, the

13 ZIMAS. LA City. Available online at: http://zimas.lacity.org/, accessed March 17, 2021.

14 Hancock Park Historic Preservation Overlay Zone Map. Available online at: https://planning.lacity.org/odocument/a64141c3-eb96-4a96-8bbd-0b73f27bd40d/Hancock_Park_SRVY.pdf.

existing buildings on the Project Site which are not within the HPOZ, were constructed in the late 1980s, whereas the majority of residences in Hancock Park that are protected were built in 1920s. The Los Angeles Historic Resources Inventory includes properties directly north of the Project Site, but nothing within the Project Site's boundaries of South Highland Avenue, Wilshire Boulevard, Carling Way, and South Citrus Avenue.[15]

In a memorandum dated December 3, 2020, prepared by Shannon Davis of ASM Affiliates in regards to Preliminary Historic Resources Review for Parking Lot near 5001 Wilshire Boulevard, 671 South Highland Avenue, 688 South Citrus Avenue in Hancock Park HPOZ, prepared in anticipation of the Project (refer to **Appendix D** of the SCEA), the Project includes a green belt to be utilized as publicly accessible Common Open Space that would extend behind the development, through Carling Way, and to a vacant parcel immediately north of the Project Site. The memo indicated that the parcel at 671 South Highland Avenue would be exempt from planning review and is considered neither a Contributor nor a Non-Contributor to the HPOZ because the original property was demolished in 1987 and no resources, including landscaping, remain on the parcel. Such parcels are not removed from the HPOZ or re-designated as Contributors or Non-Contributors, and action beyond HPOZ review is not needed for the proposed development of a green belt.

Therefore, the Project involving demolition of these buildings and inclusion of green space would create a less than significant impact to historical resources. As such, the comment does not provide any substantial evidence on the content or adequacy of the SCEA.

15 Los Angeles Historic Resources Inventory, interactive map. Available online at: http://historicplacesla.org/map, accessed March 17, 2021.

2.16 PROVISION OF INFORMATION RELATED TO VISUAL PRIVACY

Comments were received regarding the loss of privacy due to the presence of balconies overlooking the adjacent single-family residential properties.

While the potential for the loss of privacy is a legitimate concern, CEQA does not have a threshold relating to this issue because the Courts have found that CEQA only requires an evaluation of impacts from a project on "the environment of persons in general", meaning that the salient issue is not whether a project will affect particular people or residents, but rather the general public.[16]

Further, as previously discussed, there exists a strong equity argument related to the need for all City residents to have access to private, outdoor space at home to support physical and mental health and wellbeing. In a multifamily residential setting, balconies can provide this outdoor space. All residents in the City should have access to private outdoor open space regardless of whether one can afford to live in a single-family home.

16 Topanga Beach v. Department of General Services, supra, 58 Cal. App. 3d 195.

2.17 PROVISION OF INFORMATION RELATED DOCUMENT INCONSISTENCIES

Comments were provided noting various stylistic inconsistencies in the Project name (i.e., Wilshire/Highland vs. 5001 Wilshire), figures 'missing' information (i.e., lacking a scale, north arrow, or a full legend), lack of a full list of preparers (refer to section 2.4, List of Preparers for further response), a listing that had no content (i.e., a discussion in the Project Description regarding Access and Circulation), various figures that have not been updated to match the current project narrative (which has been revised since the publication of the SCEA), listing errors in the table of contents (i.e., Agricultural Resources vs. Agricultural and Forestry Resources), inconsistencies in style regarding capitalization (i.e., 'Project' vs. 'project' or 'proposed project, or section headers sometimes simply capitalizing the Name vs. using ALL CAPS in the name), and various other (unidentified) typographical errors found in the SCEA document.

The SCEA is an informational document to be used by the decision-makers when making a decision about the Project. Per *CEQA Guidelines* § 15003 (i), CEQA does not require technical perfection in an environmental document, but rather adequacy, completeness, and a good faith effort at full disclosure.

The aforementioned stylistic inconsistencies and typographical errors (where identified) in the SCEA have been addressed in the Errata, particularly as they relate to the Project name (now clarified as '5001 Wilshire' throughout), additional information has been provided related to Project Assess and Circulation, and the revised figures; however, as explained in the Errata, these stylistic inconsistencies and typographical errors do not in any way impact any of the analysis in, or conclusions of the SCEA.

APPENDIX A

Letters Received on the SCEA during the Public Comment Period

DEPARTMENT OF TRANSPORTATION
District 7 – Office of Regional Planning
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Making Conservation a California Way of Life.

May 12, 2022

David Woon
City of Los Angeles
Department of City Planning
200 N. Spring Street, Room 763
Los Angeles, CA 90012-4801

RE: 5001 Wilshire Project – Notice of Intent to Adopt a Sustainable Communities Environmental Assessment (SCEA)
SCH # 2022040267
GTS # 07-LA-2022-03915
Vic. LA-10/PM: R11.18

Dear David Woon:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above referenced SCEA. The Project proposes the demolition of the existing two-story commercial building and surface parking lots to develop an eight-story mixed-use building with 242 dwelling units and 10,900 square feet of commercial space. The Project will encompass a total floor area of 282,050 square feet (sf) resulting in a Floor Area Ratio (FAR) of 3.84:1 and will have a maximum building height of 105 feet. In addition, the northern lots and Carling Way will be redeveloped into a 5,600-sf common open space area. The Project will include 324 residential parking spaces located within three subterranean parking levels and 30 commercial parking spaces located on the ground level. It will also provide 164 bicycle spaces (143 long-term and 21 short-term). The City of Los Angeles is the Lead Agency under the California Environmental Quality Act (CEQA).

The Project Site is in a highly urbanized location surrounded by a mix of land uses including commercial, residential, institutional, and office space. The Project Site is bounded by Wilshire Boulevard to the south, South Highland Avenue to the east, and South Citrus Avenue to the west. It is located nearly equidistant between Interstate Highway 101 (US-101) and Interstate 10 (I-10), located approximately two miles to the northeast and south respectively. The SCEA finds transportation impacts from the Project to be less than significant for the following reasons: The SCEA states that the proposed project is not projected to have Vehicle Miles Traveled (VMT) exceeding the thresholds set by the Central Area Planning Commission (APC) (6.0 per household and 7.6 for work). Given the projections of net daily trips, it was found this Project would not exceed thresholds and therefore not necessitate further Vehicle Miles Traveled (VMT) analysis. The Project meets the goals and policies of the Wilshire Community Plan and its Transportation Improvement and Mitigation Plan (TIMP). The purpose of this Project is to provide housing near a transit stop. Moreover, the Project would not include

unusual or hazardous design features that are atypical to large scale commercial and residential developments nor any that could impede emergency access.

We encourage the City of Los Angeles to evaluate the potential of Transportation Demand Management (TDM) strategies and Intelligent Transportation System (ITS) applications to better manage the transportation network, as well as transit service and bicycle or pedestrian connectivity improvements. For TDM strategies, please refer to the Federal Highway Administration's Integrating Demand Management into the Transportation Planning Process: A Desk Reference (Chapter 8). This reference is available online at: http://www.ops.fhwa.dot.gov/publications/fhwahop12035/fhwahop12035.pdf

Caltrans also encourages Lead Agencies to promote alternative transportation. This will increase accessibility and decrease Greenhouse Gas Emissions, which supports Caltrans' mission to provide a safe and reliable transportation network that serves all people and respects the environment. For additional strategies that will promote equity and environmental preservation, please refer to the 2010 Quantifying Greenhouse Gas Mitigation Measures report by the California Air Pollution Control Officers Association (CAPCOA), which is available online at: http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf

As a reminder, any transportation of heavy construction equipment and/or materials which requires use of oversized-transport vehicles on State Highways will need a Caltrans transportation permit. Caltrans recommends that the Project should limit construction traffic to off-peak periods to minimize the potential impact on State facilities. If construction traffic is expected to cause issues on any State facilities, including I-10 and US-101, please submit a construction traffic control plan detailing these issues for Caltrans' review.

If you have any questions regarding these comments, please contact Ronnie Escobar, the project coordinator, at Ronnie.Escobar@dot.ca.gov, and refer to GTS # 07-LA-2022-03915.

Sincerely,

Miya Edmonson

MIYA EDMONSON
LDR/CEQA Branch Chief

cc: State Clearinghouse

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SUSAN ROTH
CAMI TAYLOR
BEN THOMPSON
JON VEIN
VICTORIA VICKERS
JAMES WOLF

May 12, 2022

Mr. David Woon
Planning Assistant
Los Angeles City Planning Department
200 North Spring Street, Room 763
Los Angeles, CA. 90012

RE: 5001 Wilshire Project (ENV-2021-3327-SCEA)

Dear Mr. Woon,

These comments are submitted on behalf of Hancock Park Homeowners Association (HPHOA) on the Sustainable Community Environmental Assessment (SCEA) for 5001 Wilshire Project (ENV-2021-3327-SCEA). The Hancock Park neighborhood is a city-designated Historic Preservation Overlay Zone (HPOZ) comprised of about 1200 homes. The project site is immediately adjacent to the southwest corner of the HPOZ at the intersection of Highland Avenue and Wilshire Boulevard. Hancock Park residents, especially those on the 600 block of South Highland Avenue, will be greatly affected by this project.

As discussed in more detail below, the SCEA is deficient for a number of reasons and should not be considered for approval until the deficiencies are corrected. Our comments below address impacts related to methane gas, construction noise, and construction traffic. We also comment below about key omissions, inaccurate and contradictory information in the SCEA's Project Description (Section II), the lack of required information in the SCEA List of Preparers (Section VI), and overall document quality.

Summary Table of SCEA Deficiencies
5001 Wilshire Project

Category	Deficiency Description
Methane Gas	SCEA fails to identify and mitigate potentially significant impact (methane)
Construction Noise	Mitigation measures not specific to 5001 Wilshire Project
Construction Traffic	Mitigation measures not specific to 5001 Wilshire Project
SCEA Project Description	Key part of the project not described. Open space description inaccurate.
SCEA – List of Preparers	City staff omitted from list of preparers

Category	Deficiency Description
Overall	Poor editing, lack of quality control, missing and contradictory information in project description

Methane Gas: Perhaps the most glaring omission is SCEA's failure to fully discuss and mitigate potential hazards associated with the presence and combustion of methane gas. Methane, a colorless and odorless gas, is flammable at concentrations between 5% and 15% (by volume) in air. The site is located in a City-designated Methane Zone, hence project-related construction activities may expose methane to air at a concentration where explosions may occur. Typically, CEQA documents in locations with similar potential impacts cite adherence to the City's Department of Building Safety Methane Compliance Standards and applicable OSHA worker safety regulations to justify mitigation to a less than significant level. For some reason, those measures were not included in this document.

While the location of the project in a Methane Zone is noted in the project's Geotechnical Study (Appendix E, Page 9), this document also states "Prior to approval of the proposed project, the City of Los Angeles will require a site-specific methane study be performed to evaluate the potential for methane and other volatile gases to impact the proposed development. We recommend that a qualified methane consultant be retained to perform the study and provide mitigation measures as necessary."

Apparently, this study has not yet been completed. Since the applicant's own geotechnical study acknowledges that mitigation may be necessary, the City is not in a position to approve the SCEA since this approval requires a finding that all environmental impacts are mitigated to less than significant levels. Sections 15073.5(b) and 15088.5(a) of the *California CEQA Guidelines (2022)* also establish requirements for the recirculation of CEQA documents. Under these guidelines, it is clear that recirculation is required in this case where the SCEA fails to identify and mitigate a potentially significant impact of the project.

Construction Noise: The construction noise mitigation measures included in the SCEA are generic and not specifically tailored to the project site. Please note that the SCEA states that the construction period for the project is estimated at 32 months. Since residents of R-1 single-family homes immediately adjacent to the project site who will be exposed to this impact for this duration, noise impacts must be mitigated and the City must assure that mitigation will be effective. The SCEA estimates a 5.7 dBA increase in construction noise from an adjacent home on Highland Avenue and a 13.7 dBA increase at an adjacent home on Citrus Avenue. Under the City's CEQA Thresholds, a 5.0 dBA increase is considered significant, hence mitigation is required. The SCEA mitigates this noise with a temporary sound wall and noise-reduction equipment (mufflers) on construction vehicles and equipment. According to the SCEA, the mitigation measures will result in a sufficient reduction of construction noise to less than 5 dBA at each receptor location.

This analysis lacks the following information: (1) where specifically on the site will the temporary sound wall be placed and how close will this wall be to the nearest R-1 homes? (2) what is the proposed height of the sound wall? (3) what is the material composition of the sound wall? and (4) given, the previous three factors, how much noise reduction is likely to occur? Clearly, the location of the wall, its height and material composition are all key factors in determining how much noise will be mitigated. The SCEA provides a quantitative estimate of how construction noise will be mitigated without an explanation of how this estimate was derived.

Construction Traffic: The HPHA is pleased that the proposed haul route for this project avoids Highland Avenue and Citrus Avenue by using Wilshire Boulevard for both ingress and egress. As a result, there will be no construction impact to nearby residences from these vehicles. We are concerned, however, about the potential impact on these streets from other construction vehicles and equipment. The SCEA does not describe or prescribe how these vehicles will access the site. The Traffic Assessment (Appendix H, Page 3-4) recommends that "construction related traffic be limited to off-peak hours to the extent possible." Yet, this recommendation, or other similar measures, are not carried forward into the SCEA as mitigation measures.

Mitigation to avoid the presence of construction equipment and vehicles on Highland Avenue and on Citrus Avenue north of the project site is necessary for the following reasons: (1) the project site is located at a busy intersection (Wilshire Boulevard and Highland Avenue) which operates at Level of Service (LOS) F under existing conditions and under future conditions with and without the project. The use of construction vehicles and equipment on Highland Avenue near this intersection during peak hours, by northbound or southbound traffic will measurably worsen what is already a bad situation at this intersection. In addition, the use of these streets by these vehicles may also be limited by current restrictions which exclude vehicles that weigh more than 6,000 pounds.

The Traffic analysis in the SCEA does not address this issue. Is it the SCEA's position that this impact is less than significant? If so, the community deserves a full explanation of why. For this impact, mitigation can be achieved by limiting access by construction vehicles and equipment to Wilshire Boulevard and/or Citrus Avenue south of the R-1 homes.

SCEA Project Description: It is incumbent upon any CEQA document to fully describe the project being evaluated. It goes without saying that the description must be thorough and clear to enable the public to fully understand the project. This SCEA falls short in two ways:

(1) The SCEA Project Description (Section II) is remiss in omitting any narrative discussion about the use bollards (or other measures) to limit the intrusion of project traffic on Citrus Avenue north of the site. While the location of the bollards is shown in this section on Figure II-4 and Appendix H has a relatively full discussion of the alternatives currently being considered, it is surprising that this aspect of the project design did not warrant discussion in Section II. The use of these bollards, a reason why the project enjoys a measure of community support, is integral to understanding the impacts of the project. This information should not be buried in a technical appendix. Please modify the project description to provide, at least, an overview of this key project-related improvement to the circulation network.

(2) The Project Summary (Table II-2, Page II-9) indicates that the total required open space is 25,825 square feet (SF) and the total open space provided is 26,350 SF. To say that the total required open space is 25,825 SF is misleading because the City does not require this much open space for the project. The square footage in this table is the amount of open space required given the current zoning. As a TOC project, it is *required* to provide only 75% the total shown in the SCEA. In addition, this table shows that the project will provide 26,350 SF of open space. This is clearly not true. In an email to Debbie Alpers dated May 5, 2022, David Woon (Case Planner) acknowledges that the entire green belt open space area was not included in this open space calculation. Yet, this total (26,350 SF) is presented in the SCEA Project Description as the total open space provided by the project. The Conceptual Greenbelt Plan (Figure II-25) shows the entire area to be developed as open space. Table II-9 and the accompanying narrative should be revised to estimate square footage for the entire area shown in Figure II-25. The open space discussion in Section II does not even mention this figure. It is curious that Table II-9 shows 61 trees as open space

to be provided based on entire area shown in Figure II-25 but the rest of Table II-2 is based on open space based on only part of this open space area. Also, It is not clear whether the square footages shown in Table II-2 are repeated or used to estimate impacts elsewhere in the SCEA Environmental Impact Analysis (Section IV). If so, the document may need to be revised throughout.

List of Preparers: The list of preparers in Section VI of the SCEA is very incomplete. It has been accepted CEQA practice for many years to use this section to list the individual City and/or public agency staff that participated in the preparation of the document. In my previous discussions with both the City and the developer's consultants, it is apparent that various staff from the City Planning Department, Bureau of Engineering, Department of Transportation, Department of Water and Power, and Parks and Recreation were involved in discussing/resolving various issues in preparing this document. Certainly, others may also have also contributed. These individuals should be listed in this section of the SCEA.

Summary: If the above comments aren't enough evidence of this document's shortcomings, you are well aware from our previous emails commenting poor editing and the lack of quality control making it difficult, and frankly annoying to read. The SCEA was published on-line as fifty separate files, many figures lacked legends; one figure lacked a legend, north arrow and scale; some figures did not accurately reflect recent changes to the project by the applicant (e.g. the dwelling unit mix for the project was recently changed without changing a figure with this breakdown); two different footers were used in the document; and the Noise Appendix was published in MS-Word Review format without deleting marginal notes by the author or editor.

As the CEQA lead agency for the project, the City is responsible not only for the veracity of the technical data in the document but also that it is easily comprehensible to the public. I sincerely hope that other CEQA documents approved by the City are of higher quality than this one. As shown above, the SCEA fails to disclose and mitigate a potentially significant impact (methane). The SCEA project description leaves out a key aspect of the project, the use of bollards to block northbound traffic on Citrus Avenue. It also uses misleading and incorrect figures in discussing how much open space is provided by the project. Under these circumstances, the deficiencies above should be revised and the document recirculated for public review.

Thank you again for the opportunity to comment.

Mark Alpers
Hancock Park Homeowners Association
Land Use Committee Chair

La Brea Hancock
Homeowners Association

May 12, 2022

Mr. David Woon
Planning Assistant
Los Angeles City Planning Department
200 North Spring Street, Room 763
Los Angeles, CA. 90012

RE: 5001 Wilshire Project (ENV-2021-3327-SCEA)

Dear Mr. Woon,

These comments are submitted on behalf of the La Brea Hancock Homeowners Association (LBHHOA) on the Sustainable Community Environmental Assessment (SCEA) for the project located at 5001 Wilshire (ENV-2021-3327-SCEA). The La Brea Hancock neighborhood is comprised of about 300 R1 homes. The project site is immediately adjacent to the northwest corner of the neighborhood at the intersection of South Citrus Avenue and Wilshire Boulevard. La Brea Hancock residents, especially those on both sides of the 600 block of South Citrus Avenue, will be greatly impacted by this project.

The project will be an improvement to the mini-mall currently on the site. And the linear park between the project and our R1 neighborhood is appreciated. We strongly agree with the finding addressed in Appendix H (Page 2) that South Citrus Avenue be closed to traffic south of the Carling Way alley.

However, the SCEA Project Description (Section II) is remiss in omitting any narrative discussion about the use of bollards (or other measures) to limit the intrusion of project traffic on South Citrus Avenue north of the site. While the location of the bollards is shown in this section on Figure II-4 and Appendix H has a relatively full discussion of the alternatives currently being considered, it is surprising that this aspect of the project design did not warrant discussion in Section II. The use of these bollards, a reason why the project enjoys a measure of community support, is integral to understanding the impacts of the project. This information should not be buried in a technical appendix. Please modify the project description to provide, at least, an overview of this key project-related improvement to the circulation network.

We do have concerns related to construction noise, construction traffic, and methane gas. We also comment below about key omissions, inaccurate and contradictory information in the SCEA's Project Description (Section II),

Construction Noise:
The construction noise mitigation measures included in the SCEA are generic and not specifically tailored to the project site. Please note that the SCEA states that the construction period for the project is estimated at 32 months. Since residents of R-1 single-family homes immediately adjacent to the project site who will be exposed to this impact for this duration, noise impacts must be mitigated and the City must assure that mitigation will be effective. The SCEA estimates a 5.7 dBA increase in construction noise from an adjacent home on Highland Avenue and a 13.7 dBA increase at an adjacent home on Citrus Avenue. Under the City's CEQA Thresholds, a 5.0 dBA increase is considered significant, hence

mitigation is required. The SCEA mitigates this noise with a temporary sound wall and noise-reduction equipment (mufflers) on construction vehicles and equipment. According to the SCEA, the mitigation measures will result in a sufficient reduction of construction noise to less than 5 dBA at each receptor location.

This analysis lacks the following information:
(1) where specifically on the site will the temporary sound wall be placed and how close will this wall be to the nearest R-1 homes?
(2) what is the proposed height of the sound wall?
(3) what is the material composition of the sound wall?
(4) and given, the previous three factors, how much noise reduction is likely to occur?
(5) in addition, will the sound wall also protect the R1 homes from construction dust?

Clearly, the location of the wall, its height and material composition are all key factors in determining how much noise will be mitigated. The SCEA provides a quantitative estimate of how construction noise will be mitigated without an explanation of how this estimate was derived.

Construction Traffic:
The LBHHOA is pleased that the proposed haul route for this project avoids South Citrus Avenue and Highland Avenue by using Wilshire Boulevard for both ingress and egress. As a result, there will be no construction impact to nearby residences from these vehicles. We are concerned, however, about the potential impact on these streets from other construction vehicles and equipment. The SCEA does not describe or prescribe how these vehicles will access the site. The Traffic Assessment (Appendix H, Page 3-4) recommends that "construction related traffic be limited to off-peak hours to the extent possible." Yet, this recommendation, or other similar measures, are not carried forward into the SCEA as mitigation measures.

Mitigation to avoid the presence of construction equipment and vehicles on South Citrus Avenue north of the project site and on Highland Avenue is necessary for the following reasons:
(1) South Citrus Avenue is a narrow street with residential parking on both sides of the street
(2) The project site is located at a busy intersection (Wilshire Boulevard and Highland Avenue) which operates at Level of Service (LOS) F under existing conditions and under future conditions with and without the project. The use of construction vehicles and equipment on Highland Avenue near this intersection during peak hours, by northbound or southbound traffic will measurably worsen what is already a bad situation at this intersection.
(3) In addition, the use of these streets by these vehicles may also be limited by current restrictions which exclude vehicles that weigh more than 6,000 pounds.

The Traffic analysis in the SCEA does not address this issue. Is it the SCEA's position that this impact is less than significant? If so, the community deserves a full explanation of why. For this impact, mitigation can be achieved by limiting access by construction vehicles and equipment to Wilshire Boulevard and/or South Citrus Avenue south of the R-1 homes.

Methane Gas:
The SCEA fails to fully discuss and mitigate potential hazards associated with the presence and combustion of methane gas. Methane, a colorless and odorless gas, is flammable at concentrations between 5% and 15% (by volume) in air. The site is located in a City-designated Methane Zone, hence

project-related construction activities may expose methane to air at a concentration where explosions may occur. Typically, CEQA documents in locations with similar potential impacts cite adherence to the City's Department of Building Safety Methane Compliance Standards and applicable OSHA worker safety regulations to justify mitigation to a less than significant level. For some reason, those measures were not included in this document.

While the location of the project in a Methane Zone is noted in the project's Geotechnical Study (Appendix E, Page 9), this document also states "Prior to approval of the proposed project, the City of Los Angeles will require a site-specific methane study be performed to evaluate the potential for methane and other volatile gases to impact the proposed development. We recommend that a qualified methane consultant be retained to perform the study and provide mitigation measures as necessary."

Apparently, this study has not yet been completed. Since the applicant's own geotechnical study acknowledges that mitigation may be necessary, the City is not in a position to approve the SCEA since this approval requires a finding that all environmental impacts are mitigated to less than significant levels. Sections 15073.5(b) and 15088.5(a) of the California CEQA Guidelines (2022) also establish requirements for the recirculation of CEQA documents. Under these guidelines, it is clear that recirculation is required in this case where the SCEA fails to identify and mitigate a potentially significant impact of the project.

SCEA Project Description:
The CEQA document should fully describe the project being evaluated. The description must be thorough and clear to enable the public to fully understand the project.

The Project Summary (Table II-2, Page II-9) indicates that the total required open space is 25,825 square feet (SF) and the total open space provided is 26,350 SF. To say that the total required open space is 25,825 SF is misleading because the City does not require this much open space for the project. The square footage in this table is the amount of open space required given the current zoning. As a TOC project, it is required to provide only 75% the total shown in the SCEA. In addition, this table shows that the project will provide 26,350 SF of open space. This is clearly not true. In an email to our Hancock Park neighbor, Debbie Alpers, dated May 5, 2022, David Woon (Case Planner) acknowledges that the entire green belt open space area was not included in this open space calculation. Yet, this total (26,350 SF) is presented in the SCEA Project Description as the total open space provided by the project. The Conceptual Greenbelt Plan (Figure II-25) shows the entire area to be developed as open space. Table II-9 and the accompanying narrative should be revised to estimate square footage for the entire area shown in Figure II-25. The open space discussion in Section II does not even mention this figure. It is curious that Table II-9 shows 61 trees as open space to be provided based on entire area shown in Figure II-25 but the rest of Table II-2 is based on open space based on only part of this open space area. Also, it is not clear whether the square footages shown in Table II-2 are repeated or used to estimate impacts elsewhere in the SCEA Environmental Impact Analysis (Section IV). If so, the document may need to be revised throughout.

Summary:
The SCEA was published on-line as fifty separate files making the report difficult to access. Some figures did not accurately reflect recent changes to the project by the applicant (e.g. the dwelling unit mix for the project was recently changed without changing a figure with this breakdown)

As discussed above, the SCEA fails to disclose and mitigate a potentially significant impact (methane). The SCEA project description leaves out a key aspect of the project, the use of bollards to block northbound traffic on South Citrus Avenue. It also uses misleading and incorrect figures in discussing how much open space is provided by the project. Under these circumstances, the report should be revised and the document recirculated for public review.

Thank you for the opportunity to comment.

Cathy Roberts
President, La Brea Hancock Homeowners Association

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Via Email

May 13, 2022

David Woon
Planning Assistant
Los Angeles City Planning
200 N. Spring St., Room 763
Los Angeles, CA 90012
David.woon@lacity.org

Re: Comment on Sustainable Communities Environmental Assessment, 5001 Wilshire Project

Dear Mr. Woon:

I am writing on behalf of Supporters Alliance for Environmental Responsibility ("SAFER"), regarding the Sustainable Communities Environmental Assessment ("SCEA") prepared for the Project known as 5001 Wilshire (DIR-2021-3326-TOC-SPR-VHCA), including all actions referring or related to the construction of an 8-story, mixed-use building with 242 units and 10,900 sf of ground floor commercial uses and four levels of parking located at 5001 Wilshire Blvd. in the City of Los Angeles ("Project").

After reviewing the SCEA, SAFER requests that the City of Los Angeles (City) refrain from taking any action on the Project and SCEA at this time because (1) the SCEA fails to incorporate all feasible mitigation measures from a prior environmental impact report, and (2) the SCEA's conclusions about the Project's impacts to air quality, hazards, and hazardous materials are not supported by substantial evidence. These comments are supported by the expert comments of consulting firm Baseline Environmental Consulting ("Baseline"), Certified Industrial Hygienist, Francis "Bud" Offermann, PE, CIH, and air quality experts Matt Hagemann, P.G., C.Hg., and Paul E. Rosenfeld, Ph.D., of the Soil/Water/Air Protection Enterprise ("SWAPE"). Baseline's, Mr. Offermann's and SWAPE's comments are attached as Exhibit A, B, and C, respectively, and incorporated herein by reference.

I. PROJECT DESCRIPTION

The proposed project involves demolition of an existing two-story commercial

building and surface parking lots to develop an eight-story mixed use building with 242 residential units (10% affordable) and 10,900 sf of commercial space. Additionally, a portion of the site will be redeveloped into a 5,600 square foot green belt for publicly-accessible open space. The project includes up to 324 residential parking spaces in three underground parking levels and 30 commercial parking spaces on the ground level. The project site is in a primarily residential and commercial area.

II. LEGAL BACKGROUND

A. Sustainable Communities Environmental Assessment under SB 375.

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, SCAG's Regional Council formally adopted the Connect SoCal 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy ("2020 RTP/SCS"), which was accepted by CARB on October 30, 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. DISCUSSION

A. The SCEA is not adequate under CEQA because it fails to require all feasible mitigation measures from the 2020 RTP/SCS.

CEQA is clear that a SCEA is only appropriate where "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 the Project. Pub. Res. Code § 21155.2. In 2020, SCAG Connect SoCal prepared a 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy Program Environmental Impact Report ("2020 RTP/SCS PEIR"), which included an MMRP. The MMRP included regional mitigation measures to be implemented by SCAG and project-level mitigation measures to be applied by lead agencies to specific projects (such as the Project here).

Despite CEQA's clear directive that *all* feasible mitigation measures from prior EIRs must be applied to a project to qualify for a SCEA, numerous feasible mitigation measures from the 2020 RTP/SCS PEIR are not being applied to the Project. Specifically, Appendix A of the SCEA notes that due to its conclusion that air quality impacts would be less-than-significant, none of the RTP/SCS mitigation measures will be applied. SCEA, Appendix A, p. A-5. The SCEA also fails to implement 2020 RTP/SCS PEIR mitigation measures for Hazards and Hazardous Materials. SCEA, Appendix A, p. A-25 – A-30.

As one example regarding air quality, the 2020 RTP/SCS PEIR required that projects "use Tier 4 Final equipment or better for all engines above 50 horsepower (hp). In the event that construction equipment cannot meet to Tier 4 Final engine certification, the Project representative or contractor must demonstrate through future study with written findings supported by substantial evidence that is approved by SCAG before using other technologies/strategies." 2020 RTP/SCS PEIR, MM-AQ-1. However, the SCEA makes no mention of requiring Tier 4 equipment to mitigate the Project's air quality impacts. Instead, the SCEA claims that the Project will comply with existing regulations that have been identified and are required by the Southern California Air Quality Management District (SCAQMD). Rather than apply all feasible mitigation measures as required by CEQA, the SCEA claims that compliance with SCAQMD regulations will ensure compliance with the PEIRs' mitigation measures. SCEA, Appendix A, p. A-5.

The SCEA fundamentally misconstrues the requirements for a SCEA by not requiring *all* feasible mitigation measures from the PEIR. For air quality, the SCEA concludes that compliance with SCAQMD regulations "would satisfy the applicable requirements" of the mitigation required by the 2020 RTP/SCS PEIR. SCEA, Appendix A, p. A-5. However, such a conclusion does not explain why feasible mitigation from the prior PEIRs was not included. If a measure from the PEIRs is feasible for this Project, it must be applied in order for the Project to qualify for a SCEA. Because the SCEA here fails to apply all feasible mitigation from the PEIRs, the SCEA is improper and the City must instead prepare a negative declaration or environmental impact report ("EIR").

B. The SCEA inadequately addresses the Project's hazards and hazardous materials impacts.

Expert consulting firm Baseline Environmental Consulting (Baseline) reviewed the SCEA's Hazards and Hazardous Materials Section and associated technical studies and found various flaws in the Section's analysis, conclusions, and mitigation. Baseline's comment letter is attached as Exhibit A.

a. <u>The SCEA's analysis of subsurface contamination at the Project site is incomplete.</u>

The SCEA's Hazards and Hazardous Materials Section states that there was a historic gasoline station on the site, as well as a historic dry cleaner. Ex. A, p. 2; SCEA, p. IV-84. Additionally, Appendix A of the Phase II ESA contains maps showing that there was a greasing facility with lockers and oil storage on the Project site, indicating to Baseline that automotive maintenance was previously performed onsite. *Id.* However, the Phase II ESA fails to identify past automotive maintenance onsite as a potential source of subsurface contamination, and only included one boring where the former greasing facility building stood. *Id.* Baseline notes that there are numerous other factors which require investigation, including contaminant sources, PCB contamination,

naphthalene contamination and chlorinated solvent contamination. *Id.* at 2-3. Additionally, Baseline states that the Phase II ESA's subsurface investigation is incomplete due to its failure to evaluate potential VOCs in groundwater and soil vapor. *Id.* at 3. The City must prepare an updated SCEA which adequately identifies subsurface contamination at the Project site and mitigates impacts to the public and the environment. Pub. Res. Code §21155(b)(1)-(2).

b. The SCEA failed to analyze the potential methane impacts of the Project site.

On page IV-84, the SCEA states that the area is a potential methane zone due to its proximity to the La Brea Tar Pits. Ex. A, p. 4. However, the Hazards and Hazardous Materials section does not discuss or analyze potential impacts associated with the potential presence of subsurface methane. *Id.* Baseline states that impacts could include "the risks of explosions during construction or operation of the proposed project if elevated methane is present in the subsurface of the project site and appropriate design and construction precautions are not incorporated into the proposed project." *Id.* The City must revise the SCEA to identify these impacts and mitigate them to a level of insignificance. Pub. Res. Code §21155(b)(1)-(2).

c. The SCEA's conclusions regarding the potential for hazardous materials releases onsite is unsubstantiated.

The SCEA states that a review of the California Department of Toxic Substances Control's (DTSC) EnviroStor database indicated that there are no open cases on the Project site. Ex. A, p. 5; SCEA, p. IV-84. The SCEA therefore concludes that "there is no significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions, which could release hazardous materials." *Id.* Baseline states that a suggestion that the Project would not result in the release of hazardous materials simply because it was not listed on EnviroStor or identified to have USTs is an unsubstantiated conclusion. Ex. A, p. 5. Contaminated properties are only listed on EnviroStor if brought to the attention of DTSC, therefore a site could still have significant subsurface contamination without being listed on the site. *Id.* Additionally, USTs are not the only sources of hazardous materials contamination. *Id.* As a result, the SCEA is not supported by substantial evidence and fails to identify or mitigate potential impacts from disturbing hazardous materials.

d. The SCEA failed to fully disclose and mitigate the subsurface contamination present on the Project site.

Lastly, the SCEA fails to fully disclose contamination onsite, and fails to implement the necessary mitigation based on the potential impacts identified in the Phase II ESA. Ex. A, p. 5-6. Although the Phase II ESA prepared for the Project identifies hazardous materials contamination at the Project site, the SCEA fails to

analyze potential impacts associated with excavation and disturbance of contaminated soil and redevelopment of the contaminated property. *Id.* at 5. Further, the Phase II ESA identifies numerous contaminants in the soil, but only recommends measures that would address some of those detected contaminants. *Id.* at 6; SCEA, Appendix F. The Phase II ESA recommendations "failed to address the elevated concentration of PCE [] detected in Boring B-5," and the SCEA "failed to indicate that specific management of contaminated soil should be performed during construction of the proposed project as recommended by the Phase II ESA." Ex. A, p. 6. Without this mitigation, construction of the Project has the potential to release hazardous materials, endangering people and the environment. The SCEA must be revised to analyze and mitigate potential contamination impacts of the Project, as well as subsurface features of environmental concern.

C. 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 the Soil/Water/Air Protection Enterprise ("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 B. 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 C.

a. 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 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 to air 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.

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. B, p. 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.* at 4-5. This potential exposure level exceeds the South Coast Air Quality Management District's ("SCAQMD") CEQA significance threshold for airborne cancer risk of 10 per million.

Mr. Offermann concludes that mitigation measures should be imposed to reduce the risk of formaldehyde exposure. *Id.* at 5-6. Mr. Offermann identifies mitigation measures that are available to reduce these significant health risks, including the installation of air filters and a requirement that the applicant use only composite wood materials (e.g. hardwood plywood, medium density fiberboard, particleboard) for all interior finish systems that are made with CARB approved no-added formaldehyde (NAF) resins or ultra-low emitting formaldehyde (ULEF) resins in the buildings' interiors. *Id.* at 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").

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

is as important to CEQA's safeguards as that of nearby residents currently living near the project site.

The proposed buildings 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 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.

b. The SCEA cannot be relied upon to determine the significance of the Project's air quality impacts because the SCEA's model underestimated Project emissions.

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. C, p. 1-2. The SCEA relies on emissions calculated from the California Emissions Estimator Version CalEEMod 2016.3.2 ("CalEEMod"). SCEA, p. IV-13. 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. Ex. C, p. 1-2. CEQA requires any changes to the default values to be justified by substantial evidence. *Id.*

SWAPE reviewed the SCEA's CalEEMod output files and found that the values input into the model were inconsistent with information provided in the SCEA. *Id.* at 2. 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. Underestimated Land Use Size. Ex. C, p. 2.
2. Unsubstantiated Reduction to Architectural Coating Area. Ex. C, p. 3.
3. Unsubstantiated Changes to Individual Construction Phase Lengths. Ex. C, p. 3-5.
4. Incorrect Application of Construction-Related Mitigation Measures. Ex. C, p. 5-7.

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

estimate the Project's construction-related and operational emissions, SWAPE prepared an updated CalEEMod model with Project-specific information from the SCEA. Ex. C, p. 8. This updated modeling demonstrates that the Project's construction-related NOx emissions would exceed the SCAQMD threshold of 100 pounds per day. *Id.* This indicates a potentially significant impact which was not addressed in the SCEA.

D. 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 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 concluded that the Project would have less-than-significant construction-related and operational health risk impacts, but did not prepare a Health Risk Assessment ("HRA"). The SCEA states that its less-than-significant impact conclusion is based on its short-term construction schedule, small Project acreage, and compliance with applicable regulations. SCEA, p. IV-40. Further, the SCEA states that the Project's operational health risk impact would be less-than-significant as compared to existing conditions on the Project site because the limited amount of truck trips and the absence of stationary generators are not expected to generate substantial toxic air contaminant ("TAC") emissions. SWAPE identifies four main reasons for why the SCEA's evaluation of health risk impacts and less-than-significant conclusion is incorrect.

First, the SCEA inaccurately describes the baseline conditions at the Project site. According to CEQA Guidelines § 15125, CEQA environmental documents must describe physical environmental conditions of a Project site "as they exist at the time the notice of preparation is published." The SCEA states that the Project site includes a dry-cleaning facility that uses solvents that can cause TAC emissions. Ex. C, p. 9. However, elsewhere in the SCEA, it states that although a dry cleaner historically operated on the site from 1990 through 2015, it is no longer present on the site. Ex. C, p. 10; SCEA, p.

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

IV-84. Because the Notice of Availability for the adoption of the SCEA was issued in April 2022, the Project's baseline cannot include the dry-cleaning facility.

Second, because the City did not prepare a quantified construction and operational HRA, it failed to correlate increased emissions from the Project to adverse impacts on human health caused by those emissions. Ex. C, p. 10. SWAPE finds that this is incorrect because the Project would cause emissions through the exhaust stacks of its construction equipment over the course of 32 months and will generate 1,318 daily vehicle trips, which will cause further emissions. *Id.*; SCEA, p. II-15, IV-137. In failing to connect TAC emissions to potential health risks to nearby receptors, the Project fails to meet CEQA requirements. *See Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, 510.

Third, the California Department of Justice recommends the preparation of a quantitative HRA pursuant to the Office of Environmental Health Hazard Assessment ("OEHHA"), the organization responsible for providing guidance on conducting HRAs in California, as well as local air district guidelines. OEHHA released its most recent guidance document in 2015 describing which types of projects warrant preparation of an HRA. *See* "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at*: https://oehha.ca.gov/media/downloads/crnr/2015guidance manual.pdf. The OEHHA document recommends that all short-term projects lasting at least 2 months assess cancer risks. Ex. C, p. 10. Additionally, if a project is expected to last over 6 months, the exposure should be evaluated throughout the project using a 30-year exposure duration to estimate individual cancer risks. *Id.* at 11. 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.* The SCEA must be revised to include an analysis of health risks resulting from operation of the Project.

Lastly, in failing to prepare a construction or operational HRA, the SCEA also fails to compare excess health risk impacts to SCAQMD's threshold of 10 in one million. *Id.* at 11. SWAPE states that "an assessment of the health risk posed to nearby, existing receptors from Project construction and operation should be conducted." *Id.*

SWAPE prepared a screening-level HRA to evaluate potential impacts from Project construction using AERSCREEN, a screening-level air quality dispersion model. Ex. C, p. 11-16. 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 155 in one million for infants and 103 in one million for children. *Id.* at 15. Moreover, **the excess residential lifetime cancer risk is approximately 275 in**

one million. *Id.* The risks to infants, children, 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.

IV. CONCLUSION

For the foregoing reasons, the SCEA for the Project should be revised or an EIR prepared prior to any further action on the Project by the City. Thank you for considering these comments.

Sincerely,

Amalia Bowley Fuentes

Amalia Bowley Fuentes
LOZEAU DRURY LLP

EXHIBIT A

13 May 2022
22214-00.02793

Amalia Bowley Fuentes
Lozeau Drury LLP
1939 Harrison Street, Suite 150
Oakland, CA 94612

Subject: **Peer Review of the Hazardous Materials Analysis in the Sustainable Communities Environmental Assessment for the 5001 Wilshire Project**

Dear Ms. Bowley Fuentes:

Baseline Environmental Consulting (Baseline) has reviewed the Hazards and Hazardous Materials Section and associated technical studies of the Sustainable Communities Environmental Assessment (SCEA) for the 5001 Wilshire Project (proposed project) located at 5001 Wilshire Boulevard; 671 – 677 South Highland Avenue; and 668 South Citrus Avenue in Los Angeles, California (project site). It is our understanding that the proposed project would include the demolition of the existing two-story commercial building and surface parking lots on the project site to develop an eight-story mixed-use building.

Based on our review of the SCEA for the proposed project, we have identified flaws in the Hazards and Hazardous Materials Section including an incomplete analysis of subsurface contamination, unsubstantiated conclusions regarding hazardous materials conditions, and inadequate disclosure and mitigation of known subsurface contamination that could be disturbed by the proposed project. The specific issues are described in detail below.

Incomplete Analysis of Subsurface Contamination at the Project Site

The Hazards and Hazardous Materials Section of the SCEA indicates on page IV-82 that the section is in part based on the following reports, which are included as Appendix F of the SCEA:

- Limited Phase I and II Environmental Site Assessment Report, 5001 Wilshire Boulevard, Los Angeles, CA 90036, conducted by Waterstone Environmental, Inc., dated October 8, 2020 (referred to as the Phase II ESA below).

- Phase I Environmental Assessment Report, 0.164 Acre Parking Lot Located at 5055 Wilshire Boulevard, Los Angeles, CA 90036, conducted by Waterstone Environmental, Inc., dated July 2, 2019.

The Hazards and Hazardous Materials Section of the SCEA states the following on page IV-84:

> *The Limited Phase I Environmental Site Assessment determined that there was a historic gasoline station that operated at the site from approximately the 1940's through the 1960's and the dispensers were located along the southwestern portion of the property parallel to Wilshire Boulevard. It was also determined from the City Directories that a historic dry cleaner operated on the site from approximately 1990 through at least 2015, but is no longer present.*

Appendix A of the Phase II ESA includes Sanborn Maps dated 1950 and 1969 which depict that the building that was previously located on the project site was occupied by a greasing facility with lockers and oil storage, which indicates that automotive maintenance was previously performed at the project site. Automotive maintenance activities may have involved the use of hydraulic lifts, cleaning solvents, and various petroleum products. It is common for older automotive maintenance facilities to have waste oil underground storage tanks (USTs), oil/water separators, and floor drains/sumps which are common sources of subsurface contamination. Hydraulic oil in old hydraulic lifts may also have contained polychlorinated biphenyls (PCBs), which are highly toxic and were a common constituent in hydraulic oil prior to the U.S. Environmental Protection Agency banning the manufacture and use of PCBs in 1979. Cleaning solvents used in automotive maintenance facilities commonly include chlorinated volatile organic compounds (VOCs) such as tetrachloroethylene (PCE) and trichloroethylene (TCE), which are also highly toxic compounds. These VOCs were also commonly used as dry-cleaning solvents.

The Phase II ESA did not identify past automotive maintenance activities on the project site as a source of potential subsurface contamination, and it included only one boring (B-2) in the area of the former greasing facility building. Further investigation into known and potential subsurface contamination associated with former uses of the project site (e.g., the greasing facility, dry cleaner, and gas station) is warranted, as described below.

Contaminant Sources. Potential subsurface features of environmental concern (e.g., a potential waste oil UST and/or potential oil/water separator) could have been located on the north side of the former greasing facility in the area that is now located beneath the existing structure on the project site, which is an area that was not evaluated during the Phase II ESA. These features, if present, could be sources of undocumented subsurface contamination.

PCB Contamination. Sampling for potential PCBs was not performed as part of the Phase II ESA, but is warranted based on the past use of the site for automotive maintenance which may have included hydraulic lifts.

Naphthalene Contamination. As indicated in Table 1 and Figure 2 of the Phase II ESA (Appendix F of the SCEA), elevated concentrations of naphthalene (a highly toxic VOC) were identified in soil in the southwestern portion of the project site (in Boring B-7), with detected concentrations between depths of 5 and 15 feet that ranged from one to two orders of magnitude above the regulatory health-risk screening criteria used for comparison. The potential source and extent of naphthalene contamination was not identified in the Phase II ESA. If specific soil management methods are not performed during construction of the proposed project, vapor emissions of naphthalene from excavation of contaminated soil could potentially pose a significant health risk to construction workers on the project site and the surrounding public. Naphthalene also has a very strong odor (that of mothballs) which can be detected and cause nuisance odor complaints even at low concentrations. Vapor intrusion of naphthalene from the subsurface into indoor air could also potentially pose a significant health risk to future residents on the project site.

Chlorinated Solvent Contamination. As indicated in Table 1 and Figure 2 of the Phase II ESA (Appendix F of the SCEA), concentrations of the chlorinated solvents PCE and TCE were detected in soil samples collected from borings on the south and north sides of the existing building (Borings B-2 and B-5, respectively); however, the potential source of the PCE and TCE contamination was not identified in the Phase II ESA, and it is possible that there is more significant contamination from PCE, TCE, and other contaminants in the area beneath the existing building (e.g., in the area beneath the former dry cleaner, which is a possible source of the PCE and TCE contamination), or in other areas of the project site (e.g., along sewer lines). As indicated in Table 1 and Figure 2 of the Phase II ESA (Appendix F of the SCEA), the detected concentrations of PCE and TCE increased with depth from 15 to 20 feet in Boring B-5. This suggests that a significant release of PCE/TCE may have occurred at the project site and higher concentrations of contaminants could be present in deeper soil and groundwater. If specific soil management methods are not performed during construction of the proposed project, vapor emissions of PCE, TCE, and their breakdown products (e.g., highly toxic vinyl chloride) from excavation of contaminated soil could potentially pose a significant health risk to construction workers on the project site and the surrounding public. Vapor intrusion of PCE, TCE, and their breakdown products from the subsurface into indoor air could also pose a potentially-significant health risk to future residents on the project site.

Incomplete Subsurface Investigation. The Phase II ESA included the sampling and analysis of VOCs in soil, but it did not evaluate potential VOCs in groundwater or soil vapor. This approach is inadequate to evaluate contamination at a property where VOCs are known or suspected to be present in the subsurface, because the contamination source area (i.e., the hazardous materials release point where the highest

concentrations of contaminants could be present) can be relatively small and difficult to locate using only soil borings, particularly when the borings are not advanced within a known location of concern. Contamination from VOCs in groundwater and soil vapor are typically more widespread in the subsurface than soil contamination. Given the past land uses of the project site and because VOCs contamination has been identified in soil, further investigation of the project site is necessary to:

1) Identify the potential source areas, magnitude, and extent of contamination; and

2) Ensure that appropriate measures are implemented during construction of the project to protect construction workers, the surrounding public, the environment, and future site occupants from hazardous materials that are present and could be released from the subsurface of the project site.

Additional investigation of the project site should include sampling of groundwater and soil vapor (in addition to soil) and should include investigation of the area beneath the existing building, particularly in the areas of the former dry cleaner and sewer lines. Based on the results of additional subsurface investigation, the project may need to incorporate design and/or mitigation measures to ensure that implementation of the proposed project would not exacerbate, spread, or release the existing subsurface contamination and create a significant health risk to people and the environment.

Inadequate Analysis of Potential Methane Impacts

The Hazards and Hazardous Materials Section of the SCEA indicates on page IV-84 that according to the Phase II ESA "The area is also identified as being in a potential methane zone as a result of its close proximity to nearby oilfields and the La Brea Tar Pits which is a known area of methane concern from these petroleum sources." The Hazards and Hazardous Materials Section of the SCEA does not discuss or analyze potential impacts associated with the potential presence of subsurface methane. Such impacts could include the risks of explosions during construction or operation of the proposed project if elevated methane is present in the subsurface of the project site and appropriate design and construction precautions are not incorporated into the proposed project. Methane gas can accumulate within boreholes, excavations, utilities, vaults, basements/crawl spaces, and other poorly ventilated areas that overlie or are in direct contact with the ground in areas with elevated subsurface methane. Installation of methane vapor barriers, sensors, and ventilation systems and specific electrical installation methods can be required in areas with elevated subsurface methane. The SCEA should be revised to discuss and analyze potential impacts associated with the potential presence of subsurface methane.

Unsubstantiated Conclusions

The Hazards and Hazardous Materials Section of the SCEA states the following on page IV-84:

> *A search using the California Department of Toxic Substances Control's [DTSC's] Envirostor indicated that there are no open cases within the Project Site. The Environmental Site Assessment Reports conducted by Waterstone Environmental, Inc. did not indicate that there are any underground storage tanks on the Project Site. Furthermore, the project does not involve hazardous materials. Therefore, there is no significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions, which could release hazardous materials.*

Suggesting that the proposed project would not result in the release hazardous materials because the project site was not listed on EnviroStor or identified to have USTs is an unsubstantiated conclusion. A property may have significant subsurface contamination from hazardous materials without being listed on EnviroStor or having USTs, as a contaminated property would not be listed on EnviroStor unless it is brought to the attention of DTSC, and USTs are not the only source of hazardous materials contamination. As discussed above, hazardous materials contamination has been identified in the subsurface of the project site, and the extent and magnitude of contamination have not been defined. The proposed project could result in hazardous materials being accidentally released from the subsurface of the project site into the environment in various manners, including: vapors and dust released from excavation/grading which can present health risks for construction workers and the surrounding public; stormwater runoff from contaminated soil which can impact water quality and the environment; re-use or disposal of contaminated soil at an inappropriate location which could expose the environment or public to hazardous materials; and vapor intrusion to indoor air which could present health risks for future occupants of the project site.

Inadequate Disclosure and Mitigation of Subsurface Contamination

The Hazards and Hazardous Materials Section of the SCEA did not discuss that the Phase II ESA identified hazardous materials contamination at the project site and did not analyze potential impacts associated with excavation/disturbance of contaminated soil and redevelopment of contaminated property. According to Table 1 and Figure 2 of the Phase II ESA (Appendix F of the SCEA) concentrations of hazardous materials including total petroleum hydrocarbons as gasoline range organics and as oil range organics, ethylbenzene (a common constituent of gasoline), naphthalene, and PCE that exceed the San Francisco Bay Regional Water Quality Control Board's Tier 1 Environmental Screening Levels (ESLs) were detected in soil; other hazardous materials were also detected in soil samples at concentrations below their Tier 1 ESLs, including benzene, TCE, and cis-1,2-dichloroethene and trans-1,2-dichloroethene (which are breakdown products of TCE); and other hazardous materials that do not have ESLs established for comparison were also detected in soil samples.

Page 8 of the Phase II ESA (Appendix F of the SCEA) recommended the following:

> *Soil that are excavated during the proposed property redevelopment activities in the areas that exceed the RSL [sic] values in the vicinity of borings B-1, B-4, and B-7 should be segregated and stockpiled separately for disposal along with any other soils exhibiting elevated PID [photoionization detector[1]] readings or noticeable odors. These soils should be properly disposed of or recycled at a non-hazardous waste facility permitted to accept these soils.*

The Phase II ESA recommendations failed to address the elevated concentration of PCE (exceeding the Tier 1 ESL) detected in Boring B-5. Furthermore, the Hazards and Hazardous Materials Section of the SCEA failed to indicate that specific management of contaminated soil should be performed during construction of the proposed project as recommended by the Phase II ESA. If appropriate management of contaminated soil is not performed during construction of the proposed project, hazardous materials could be accidentally released into the environment by the proposed project as discussed above.

The SCEA needs to be revised to fully analyze and mitigate potential impacts of the proposed project that could occur due to known soil contamination, potential unidentified contamination, and potential subsurface features of environmental concern at the project site.

Conclusions

Based on our review of the SCEA analysis regarding the hazards and hazardous materials impacts of the proposed project, Baseline recommends that the City of Los Angeles Department of City Planning revise and recirculate the environmental analysis to address the environmental concerns related to hazards and hazardous materials described above.

Sincerely,

Patrick Sutton,
Senior Environmental Engineer

Cem Atabek,
Senior Environmental Engineer

PS:CA:km

[1] A photoionization detector is used to measure volatile organic vapors.

EXHIBIT B

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Date: May 12, 2022

To: Amalia Bowley Fuentes
Lozeau | Drury LLP
1939 Harrison Street, Suite 150
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From: Francis J. Offermann PE CIH

Subject: Indoor Air Quality: 5001 Wilshire Project, Los Angeles, CA
(IEE File Reference: P-4571)

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 5001 Wilshire 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.

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.

Pre-Construction Building Material/Furnishing Formaldehyde Emissions Assessment

This formaldehyde emissions assessment should be used in the environmental review under CEQA to assess the indoor formaldehyde concentrations from the proposed loading of building materials/furnishings, the area-specific formaldehyde emission rate data for building materials/furnishings, and the design minimum outdoor air ventilation rates. This assessment allows the applicant (and the City) to determine, before the conclusion of the environmental review process and the building materials/furnishings are specified, purchased, and installed, if the total chemical emissions will exceed cancer and non-cancer guidelines, and if so, allow for changes in the selection of specific material/furnishings and/or the design minimum outdoor air ventilations rates such that cancer and non-cancer guidelines are not exceeded.

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

2.) Calculate Material/Furnishing Loading. For each IAQ Zone, determine the building material and furnishing loadings (e.g., m^2 of material/m^2 floor area, units of furnishings/m^2 floor area) from an inventory of all potential indoor formaldehyde sources, including flooring, ceiling tiles, furnishings, finishes, insulation, sealants,

adhesives, and any products constructed with composite wood products containing urea-formaldehyde resins (e.g., plywood, medium density fiberboard, particleboard).

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., µg/m^2-h) of the product, but rather provide data that the formaldehyde emission rates do not exceed the maximum rate allowed for the certification. Thus, for example, the data for a certification of a specific type of flooring may be used to calculate that the area-specific emission rate of formaldehyde is less than 31 µg/m^2-h, but not the actual measured specific emission rate, which may be 3, 18, or 30 µg/m^2-h. These area-specific emission rates determined

from the product certifications of CDPH, BIFA, and other certification programs can be used as an initial estimate of the formaldehyde emission rate.

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

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

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

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 (SCEA), 5001 Wilshire Project (Impact Sciences Inc., 2022), the Project is close to roads with moderate to high traffic (e.g., Wilshire Boulevard, S. Citrus Boulevard, S. Highland Boulevard, Carling Way, etc.). The SCEA states in Table IV 13-3 that the ambient noise levels range from 56.7 to 68.7 dBA Leq, and that these measurements, which were conducted in February, 2021, are likely lower than pre-pandemic levels.

As a result of the high outdoor noise levels, the current project will require a mechanical supply of outdoor air ventilation to allow for a habitable interior environment with closed windows and doors. Such a ventilation system would allow windows and doors to be kept closed at the occupant's discretion to control exterior noise within building interiors.

$PM_{2.5}$ Outdoor Concentrations Impact. An additional impact of the nearby motor vehicle traffic associated with this project, are the outdoor concentrations of $PM_{2.5}$. According to the Sustainable Communities Environmental Assessment (SCEA), 5001 Wilshire Project (Impact Sciences Inc., 2022), the Project is located in the South Coast Air Basin, which is a State and Federal non-attainment area for $PM_{2.5}$.

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

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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Offermann, F. J. and A. T. Hodgson. 2011. Emission Rates of Volatile Organic Compounds in New Homes. Proceedings Indoor Air 2011 (12th International Conference on Indoor Air Quality and Climate 2011), June 5-10, 2011, Austin, TX.

Singer, B.C, Chan, W.R, Kim, Y., Offermann, F.J., and Walker I.S. 2020. Indoor Air Quality in California Homes with Code-Required Mechanical Ventilation. Indoor Air, Vol 30, Issue 5, 885-899.

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APPENDIX A

INDOOR FORMALDEHYDE CONCENTRATIONS
AND THE
CARB FORMALDEHYDE ATCM

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

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

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

For this calculation I utilized the floor area (2,272 ft^2), the ceiling height (8.5 ft), and the number of bedrooms (4) as defined in Appendix B (New Single-Family Residence Scenario) of the Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions for Indoor Sources Using Environmental Chambers, Version 1.1, 2017, California

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

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

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

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

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

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

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

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

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

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

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

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Education

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

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

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

Professional Experience

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

PROFESSIONAL ORGANIZATION MEMBERSHIP

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

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

American Society for Testing and Materials (ASTM)

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

American Board of Industrial Hygiene (ABIH)

American Conference of Governmental Industrial Hygienists (ACGIH)

- Bioaerosols Committee (2007-2013)

American Industrial Hygiene Association (AIHA)

Cal-OSHA Indoor Air Quality Advisory Committee

International Society of Indoor Air Quality and Climate (ISIAQ)

- Co-Chairman of Task Force on HVAC Hygiene

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

Western Construction Consultants (WESTCON)

PROFESSIONAL CREDENTIALS

Licensed Professional Engineer - Mechanical Engineering

Certified Industrial Hygienist - American Board of Industrial Hygienists

SCIENTIFIC MEETINGS AND SYMPOSIA

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

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

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

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

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

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

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

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

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

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

Healthy Indoor Environments, Anaheim, CA, April 2003.

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

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

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

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

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

SPECIAL CONSULTATION

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

EXHIBIT C

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

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May 6, 2022

Amalia Bowley Fuentes
Lozeau | Drury LLP
1939 Harrison Street, Suite 150
Oakland, CA 94618

Subject: Comments on the 5001 Wilshire Project (SCH No. 2022040267)

Dear Ms. Fuentes,

We have reviewed the March 2022 Sustainable Communities Environmental Assessment ("SCEA") for the 5001 Wilshire Project ("Project") located in the City of Los Angeles ("City"). The Project proposes to demolish an existing commercial building and parking lot and construct a 282,050-square-foot ("SF") mixed-use development, consisting of 242 residential units and 10,900-SF of commercial space, as well as 354 parking spaces, on the 1.68-acre site.

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

Air Quality

Unsubstantiated Input Parameters Used to Estimate Project Emissions

The SCEA's air quality analysis relies on emissions calculated with the California Emissions Estimator Model ("CalEEMod") Version 2016.3.2 (p. IV-13).[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

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

Environmental Quality Act ("CEQA") requires that such changes be justified by substantial evidence. Once all of the values are 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 Greenhouse Gas Technical Study ("AQ & GHG Technical Study") as Appendix B to the SCEA, we found that several model inputs were not consistent with information disclosed in the SCEA. As a result, the Project's construction and operational emissions are underestimated. An EIR should be prepared to include an updated air quality analysis that adequately evaluates the impacts that construction and operation of the Project will have on local and regional air quality.

Underestimated Land Use Size

According to the SCEA:

> "The Applicant proposes the demolition of the existing two-story commercial building and surface parking lots to develop an eight-story mixed-use building with 242 residential units and 10,900 square feet of commercial space fronting Wilshire Boulevard. The Project will encompass a total floor area of 282,050 square feet" (p. 1).

As demonstrated above, the model should have included 271,150-SF of residential space.[2] However, review of the CalEEMod output files demonstrates that the "Wilshire Highland" model includes only 243,000-SF of "Apartments Mid Rise" (see excerpt below) (Appendix B, pp. 63, 99, 129).

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	354.00	Space	0.00	141,600.00	0
Apartments Mid Rise	243.00	Dwelling Unit	1.69	243,000.00	695
Strip Mall	10.90	1000sqft	0.00	10,900.00	0

As you can see from the excerpt above, the proposed residential space is underestimated by 28,150-SF.[3] This underestimation presents an issue, as the land use size feature is used throughout CalEEMod to determine default variable and emission factors that go into the model's calculations. The square footage of a land use is used for certain calculations such as determining the wall space to be painted (i.e., VOC emissions from architectural coatings) and volume that is heated or cooled (i.e., energy impacts).[4] Thus, by underestimating the size of the proposed residential space, the model underestimates the Project's construction and operational emissions and should not be relied upon to determine Project significance.

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[2] Calculated: (282,050-SF proposed building area) – (10,900-SF proposed commercial area) = 271,150-SF proposed residential area.

[3] Calculated: (271,150-SF proposed residential area) – (243,000-SF modeled residential area) = 28,150-SF underestimated floor area.

[4] "CalEEMod User's Guide Version 2020.4.0." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 28.

Unsubstantiated Reduction to Architectural Coating Area

Review of the CalEEMod output files demonstrates that the "Wilshire Highland" model includes a manual reduction to the default architectural coating area (see excerpt below) (Appendix B, pp. 64, 100, 130).

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Residential_Exterior	164,025.00	106,616.00

As you can see from the excerpt above, the residential exterior architectural coating area is reduced by 35%, from the default value of 164,025- to 140,614-SF. As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.[5] According to the "User Entered Comments & Non-Default Data" table, the justification provided for this change is:

> "According to the Project Applicant, only 65% of the exterior building will be painted" (Appendix B, pp. 64, 100, 130).

However, this reduction remains unsupported, as the SCEA and associated documents fail to mention or justify the percentage of the proposed building exterior to be painted. This is incorrect, as 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".[6]

Here, until the SCEA provides substantial evidence to support the revised architectural coating area, we cannot verify that 65% is an accurate representation of the area to be painted.

This unsubstantiated reduction presents an issue, as CalEEMod uses architectural coating areas to calculate the Project's ROG emissions associated with painting and reapplication.[7] Thus, by including an unsubstantiated reduction to the default architectural coating area, the model may underestimate the Project's area-source emissions and should not be relied upon to determine Project significance.

Unsubstantiated Changes to Individual Construction Phase Lengths

Review of the CalEEMod output files demonstrates that the "Wilshire Highland" model includes several changes to the default individual construction phase lengths (see excerpt below) (Appendix B, pp. 64, 100, 130).

[5] "CalEEMod User's Guide Version 2020.4.0." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 1.
[6] "CalEEMod User's Guide Version 2020.4.0." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 12.
[7] "CalEEMod User's Guide Version 2020.4.0." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 36.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	45.00
tblConstructionPhase	NumDays	200.00	587.00
tblConstructionPhase	NumDays	20.00	22.00
tblConstructionPhase	NumDays	4.00	66.00
tblConstructionPhase	NumDays	10.00	45.00

As a result of these changes, the model includes the following construction schedule (see excerpt below) (Appendix B, pp. 70, 105, 135):

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days
1	Demolition	Demolition	6/1/2022	6/30/2022	5	22
2	Grading	Grading	7/1/2022	9/30/2022	5	66
3	Building Construction	Building Construction	10/3/2022	12/31/2024	5	587
4	Paving	Paving	7/1/2024	8/30/2024	5	45
5	Architectural Coating	Architectural Coating	7/1/2024	8/30/2024	5	45

As you can see in the excerpt above, the demolition phase is increased by 10%, from the default value of 20 to 22 days; the grading phase is increased by 1,550%, from the default value of 4 to 66 days; the building construction phase is increased by 194%, from the default value of 200 to 587 days; and the paving and architectural coating phases are both increased by 350%, from their default values of 10 to 45 days. As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.[8] According to the "User Entered Comments & Non-Default Data" table, the justification provided for these changes is:

> "Construction schedule provided by applicant" (Appendix B, pp. 64, 91, 130).

Furthermore, regarding the Project's anticipated construction schedule, the SCEA states:

> "The Project is anticipated to be constructed over a period of approximately 32 months, with completion anticipated in February of 2025" (p. II-15).

However, these justifications remain insufficient for two reasons.

First, the SCEA and associated documents fail to provide the above-mentioned Applicant-provided construction schedule. As such, we cannot verify the revised construction phase lengths are accurate.

Second, while the SCEA indicates the total construction duration, the SCEA fails to mention or justify the individual construction phase lengths. This is incorrect, as according to the CalEEMod User's Guide:

[8] "CalEEMod User's Guide Version 2020.4.0." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 1, 14.

> "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." [9]

Here, as the SCEA only justifies the total construction duration of 32 months, the SCEA fails to provide substantial evidence to support the revised individual construction phase lengths. As such, we cannot verify the changes.

These unsubstantiated changes present an issue, as the construction emissions are improperly spread out over a longer period of time for some phases, but not for others. According to the CalEEMod User's Guide, each construction phase is associated with different emissions activities (see excerpt below).[10]

> ***Demolition*** involves removing buildings or structures.
>
> ***Site Preparation*** involves clearing vegetation (grubbing and tree/stump removal) and removing stones and other unwanted material or debris prior to grading.
>
> ***Grading*** involves the cut and fill of land to ensure that the proper base and slope is created for the foundation.
>
> ***Building Construction*** involves the construction of the foundation, structures and buildings.
>
> ***Architectural Coating*** involves the application of coatings to both the interior and exterior of buildings or structures, the painting of parking lot or parking garage striping, associated signage and curbs, and the painting of the walls or other components such as stair railings inside parking structures.
>
> ***Paving*** involves the laying of concrete or asphalt such as in parking lots, roads, driveways, or sidewalks.

Thus, by disproportionately altering and extending some of the individual construction phase lengths without proper justification, the model assumes there are a greater number of days to complete the construction activities required by the prolonged phases. As such, there will be less construction activities required per day and, consequently, less pollutants emitted per day. As a result, the model may underestimate the peak daily emissions associated with some phases of construction and should not be relied upon to determine Project significance.

Incorrect Application of Construction-Related Mitigation Measures

Review of the CalEEMod output files demonstrates that the "Wilshire Highland" model includes the following construction-related mitigation measures (see excerpt below) (Appendix B, pp. 72, 107, 137):

> **3.1 Mitigation Measures Construction**
>
> Water Exposed Area
>
> Reduce Vehicle Speed on Unpaved Roads

[9] "CalEEMod User's Guide Version 2020.4.0." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 13-14.
[10] "CalEEMod User's Guide Version 2020.4.0." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 32.

As a result, the model includes a reduced vehicle speed of 15 miles per hour ("MPH") (see excerpt below) (Appendix B, pp. 64, 100, 130).

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15

As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.[11] According to the "User Entered Comments & Non-Default Data" table, the justification provided for the inclusion of these measures is:

> "SCAQMD Rule 403 for fugitive dust emissions" (Appendix B, pp. 64, 100, 130).

Furthermore, regarding Project compliance with fugitive dust regulations, the SCEA states:

> "The following is a list of noteworthy SCAQMD rules that are required of construction activities associated with the proposed project: [..]
>
> - Rule 403 (Fugitive Dust) – This rule requires fugitive dust sources to implement best available control measures for all sources, and all forms of visible particulate matter are prohibited from crossing any property line. This rule is intended to reduce PM10 emissions from any transportation, handling, construction, or storage activity that has the potential to generate fugitive dust" (p. IV-23).

However, the inclusion of the above-mentioned construction-related mitigation measures remain unsupported for three reasons.

First, the inclusion of the construction-related mitigation measures, based on the Project's compliance with SCAQMD Rule 403, is unsupported. According to the Association of Environmental Professionals ("AEP") *CEQA Portal Topic Paper* on mitigation measures:

> "By definition, mitigation measures are not part of the original project design. Rather, mitigation measures are actions taken by the lead agency to reduce impacts to the environment resulting from the original project design. Mitigation measures are identified by the lead agency after the project has undergone environmental review and are above-and-beyond existing laws, regulations, and requirements that would reduce environmental impacts."[12]

As demonstrated above, mitigation measures "are not part of the original project design" and are intended to go "above-and-beyond" existing regulatory requirements. As such, the inclusion of these measures, based solely on SCAQMD Rule 403, is unsubstantiated.

Second, according to the above-mentioned AEP report:

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[11] "CalEEMod User's Guide Version 2020.4.0." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 1, 14.
[12] "CEQA Portal Topic Paper Mitigation Measures." Association of Environmental Professionals (AEP), February 2020, *available at:* https://ceqaportal.org/tp/CEQA%20Mitigation%202020.pdf, p. 5.

"While not 'mitigation', a good practice is to include those project design feature(s) that address environmental impacts in the mitigation monitoring and reporting program (MMRP). Often the MMRP is all that accompanies building and construction plans through the permit process. If the design features are not listed as important to addressing an environmental impact, it is easy for someone not involved in the original environmental process to approve a change to the project that could eliminate one or more of the design features without understanding the resulting environmental impact."[13]

As you can see in the excerpt above, project design features ("PDFs") that are not formally included as mitigation measures may be eliminated from the Project's design altogether. Thus, as the above-mentioned construction-related measures are not formally included as mitigation measures, we cannot guarantee that they would be implemented, monitored, and enforced on the Project site.

Third, simply because the SCEA references SCAQMD Rule 403 does not justify the inclusion of the above-mentioned construction-related mitigation measures in the model. Specifically, according to SCAQMD Rule 403, Projects can either water unpaved roads 3 times per day, water unpaved roads 1 time per day and limit vehicle speeds to 15 mph or apply a chemical stabilizer (see excerpt below).[14]

Table 2 (Continued)

FUGITIVE DUST SOURCE CATEGORY	CONTROL ACTIONS	
Unpaved Roads	(4a)	Water all roads used for any vehicular traffic at least once per every two hours of active operations [3 times per normal 8 hour work day]; OR
	(4b)	Water all roads used for any vehicular traffic once daily and restrict vehicle speeds to 15 miles per hour; OR
	(4c)	Apply a chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface.

As you can see in the above excerpt, to simply comply with SCAQMD Rule 403, the Project may either water unpaved roads 3 times per day, water unpaved roads 1 time per day and limit vehicle speeds to 15 mph, or apply a chemical stabilizer. Thus, the "Water Exposed Area" and "Reduce Vehicle Speed on Unpaved Roads" measures are not both explicitly required by SCAQMD Rule 403, and should therefore not be included in the model. By incorrectly including several construction-related mitigation measures without properly committing to their implementation, the model may underestimate the Project's construction-related emissions and should not be relied upon to determine Project significance.

[13] "CEQA Portal Topic Paper Mitigation Measures." Association of Environmental Professionals (AEP), February 2020, *available at:* https://ceqaportal.org/tp/CEQA%20Mitigation%202020.pdf, p. 6.
[14] "Rule 403. Fugitive Dust." South Coast Air Quality Management District (SCAQMD), June 2005, *available at:* http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-403.pdf, p. 403-21, Table 2.

Updated Analysis Indicates a Potentially Significant Air Quality Impact

In an effort to more accurately estimate the Project's construction-related and operational emissions, we prepared an updated CalEEMod model, using the Project-specific information provided by the SCEA. In our updated model, we included the correct residential land use size; omitted the unsubstantiated change to the architectural coating area; proportionately altered the individual construction phase lengths to match the proposed construction duration of 32 months; and excluded the incorrect construction-related mitigation measures.[15]

Our updated analysis estimates that the Project's construction-related NO_X emissions would exceed the applicable South Coast Air Quality Management District ("SCAQMD") threshold of 100 pounds per day ("lbs/day"), as referenced by the SCEA (p. IV-32, Table IV.3-6) (see table below).[16]

SWAPE Criteria Air Pollutant Emissions	
Construction	**NO_X** (lbs/day)
SCEA	46.8
SWAPE	224.8
% Increase	380%
SCAQMD Threshold	**100**
Exceeds?	***Yes***

As you can see in the table above, the Project's construction-related NO_X emissions, as estimated by SWAPE, increase by approximately 380% and exceed the applicable SCAQMD significance threshold. Thus, our updated model demonstrates that the Project would result in a potentially significant air quality impact that was not previously identified or addressed in the SCEA. As a result, an EIR should be prepared to adequately assess and mitigate the potential air quality impacts that the Project may have on the surrounding environment.

Diesel Particulate Matter Health Risk 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 the Project construction, the SCEA states:

> "Generally, the use of diesel-powered construction equipment would be temporary and episodic. The duration of exposure would be short and exhaust from construction equipment dissipates rapidly. Current methodology for conducting health risk assessments are associated with long term exposure periods (9, 30, and 70 years). Therefore, short-term construction activities would not generate a significant health risk.

[15] See Attachment B for updated air modeling.
[16] "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.

> Additionally, the proposed project site is approximately 1.69 acres. Generally, construction for projects contained in a site of such size to represent less than significant health risk impacts due to limitations of the off-road diesel equipment able to operate and thus a reduced amount of generated DPM, reduced amount of dust-generating ground-disturbance possible compared to larger construction sites, and reduced duration of construction activities compared to the development of larger sites. Furthermore, construction would be subject to and would comply with California regulations limiting the idling of heavy-duty construction equipment to no more than 5-minutes periods, which would further reduce nearby sensitive receptors' exposure to temporary and variable DPM emissions. For these reasons, DPM generated by construction activities, in and of itself, would not be expected to expose sensitive receptors to substantial amounts of air toxics and the proposed project would have a less than significant impact" (p. IV-40).

As demonstrated above, the SCEA concludes that the Project would result in a less-than-significant construction-related health risk impact because the short-term construction schedule, small Project acreage, and compliance with applicable regulations would not result in substantial diesel particulate matter ("DPM") emissions. Furthermore, regarding the health risk impacts associated with Project operation, the SCEA states:

> "The greatest potential during long-term operations for exposure to TACs is from the use of heavy-duty diesel trucks and stationary generators that use diesel fuel. The proposed project is a 242-unit residential development with 10,900 square feet of commercial space. Once operational, the majority of vehicle trips to the Project Site would be from residents and employees and, as a result, the proposed project would attract very few diesel truck trips. Additionally, the Project does not propose any stationary generators on-site.
>
> Furthermore, the existing Project Site includes a two-story commercial building that attracts heavy-duty vehicle truck trips from vendors and includes a dry-cleaning facility that uses solvents that can cause TAC emissions. The proposed project will replace these land uses and emissions sources from the Project Site by constructing a residential development with 10,900 square feet of commercial space, which is significantly less than what is currently on the site. For these reasons, once operational, the proposed project would not expose nearby sensitive receptors to substantial amounts of air toxics and the project would have a less than significant impact" (p. IV-40 – IV-41).

As demonstrated above, the SCEA concludes that the Project would result in a less-than-significant operational health risk impact in comparison to the existing Project site because the limited amount of truck trips and absence of stationary generators are not expected to generate substantial toxic air contaminant ("TAC") emissions. 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 four reasons.

First, the SCEA's claim that "the existing Project Site includes a two-story commercial building that attracts heavy-duty vehicle truck trips from vendors and includes a dry-cleaning facility that uses solvents that can cause TAC emissions" is not entirely accurate. According to CEQA Guidelines § 15125:

> "An EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant."

As demonstrated above, the existing environmental conditions at the time of the notice of preparation ("NOP") will constitute the baseline physical conditions used to determine the significance of the Project's impacts. Regarding the existing land uses on the Project site, the SCEA states:

> "It was also determined from the City Directories that a historic dry cleaner operated on the site from approximately 1990 through at least 2015, but is no longer present" (p. IV-84).

As demonstrated above, the dry cleaning land use is no longer present on the site. As the Notice of Availability to Adopt a Sustainable Communities Environmental Assessment ("NOA") was issued in April 2022, the Project's baseline should not include the operation of dry cleaning services. Thus, the SCEA's reference to a dry-cleaning facility that uses solvents that generate TAC emissions is not relevant.

Second, 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."[17] This poses a problem, as construction of the Project would produce DPM emissions through the exhaust stacks of construction equipment over a duration of approximately 32 months (p. II-15). Furthermore, operation of the Project is expected to generate 1,318 daily vehicle trips, which would produce additional exhaust emissions and continue to expose nearby, existing sensitive receptors to DPM emissions (p. IV-137). 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. Thus, 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.

Third, the Office of Environmental Health Hazard Assessment ("OEHHA"), the organization responsible for providing guidance on conducting HRAs in California, released its most recent *Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments* in February 2015. 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.[18] Furthermore, according to OEHHA:

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[17] "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.

[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.

> "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)."[19]

Thus, 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 32-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").[20] 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, an EIR should be prepared to include an analysis of health risk impacts posed to nearby sensitive receptors from Project-generated DPM emissions.

Fourth, 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.[21] Thus, 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 Significant Impacts

In order to conduct our screening-level risk assessment we relied upon AERSCREEN, which is a screening level air quality dispersion model.[22] 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").[23, 24] 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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[19] "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.
[20] "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.
[21] "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.
[22] "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
[23] "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.
[24] "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.[25] The SCEA's CalEEMod model indicates that construction activities will generate approximately 270 pounds of DPM over the 944-day construction period.[26] 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:

$$Emission\ Rate\ \left(\frac{grams}{second}\right) = \frac{269.9\ lbs}{944\ days} \times \frac{453.6\ grams}{lbs} \times \frac{1\ day}{24\ hours} \times \frac{1\ hour}{3{,}600\ seconds} = \mathbf{0.00150\ g/s}$$

Using this equation, we estimated a construction emission rate of 0.00150 grams per second ("g/s"). Subtracting the 944-day construction period from the total residential duration of 30 years, we assumed that after Project construction, the sensitive receptor would be exposed to the Project's operational DPM for an additional 27.41 years. The SCEA's operational CalEEMod emissions indicate that operational activities will generate approximately 62 net pounds of DPM per year throughout operation.[27] Applying the same equation used to estimate the construction DPM rate, we estimated the following emission rate for Project operation:

$$Emission\ Rate\ \left(\frac{grams}{second}\right) = \frac{61.8\ lbs}{365\ days} \times \frac{453.6\ grams}{lbs} \times \frac{1\ day}{24\ hours} \times \frac{1\ hour}{3{,}600\ seconds} = \mathbf{0.000889\ g/s}$$

Using this equation, we estimated an operational emission rate of 0.000889 g/s. Construction and operation were simulated as a 1.68-acre rectangular area source in AERSCREEN, with approximate dimensions of 117- by 58-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.[28]

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.[29] According to the SCEA the nearest sensitive receptor is a single-family residence located 20 feet, or 6 meters from the Project site (p. IV-37). However, review of

[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. 8-18.
[26] See Attachment B for health risk calculations.
[27] Existing emissions subtracted from operational emissions.
[28] "Los Angeles." U.S. Census Bureau, 2020, *available at:* https://datacommons.org/place/geoId/0644000.
[29] "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.

the AERSCREEN output files demonstrates that the MEIR is located approximately 50 meters from the Project site. Thus, the single-hour concentration estimated by AERSCREEN for Project construction is approximately 4.718 µg/m^3 DPM at approximately 50 meters downwind. Multiplying this single-hour concentration by 10%, we get an annualized average concentration of 0.4718 µg/m^3 for Project construction at the MEIR. For Project operation, the single-hour concentration estimated by AERSCREEN is 2.795 µg/m^3 DPM at approximately 50 meters downwind. Multiplying this single-hour concentration by 10%, we get an annualized average concentration of 0.2795 µg/m^3 for Project operation at the MEIR.

We calculated the excess cancer risk to the MEIR using applicable HRA methodologies prescribed by OEHHA, as recommended by SCAQMD.[30] Specifically, guidance from OEHHA and the California Air Resources Board ("CARB") recommends the use of a standard point estimate approach, including high-point estimate (i.e. 95th percentile) breathing rates and age sensitivity factors ("ASF") in order to account for the increased sensitivity to carcinogens during early-in-life exposure and accurately assess risk for susceptible subpopulations such as children. The residential exposure parameters, such as the daily breathing rates ("BR/BW"), exposure duration ("ED"), age sensitivity factors ("ASF"), fraction of time at home ("FAH"), and exposure frequency ("EF") utilized for the various age groups in our screening-level HRA are as follows:

[30] "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)[31]	**Age Sensitivity Factor**[32]	**Exposure Duration** (years)	**Fraction of Time at Home**[33]	**Exposure Frequency** (days/year)[34]	**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:

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

[31] "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.

[32] "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.

[33] "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.

[34] "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 944-day construction schedule, the annualized average concentration for construction was used for the entire third trimester of pregnancy (0.25 years), entire infantile stage of life (0 – 2 years), and the first 0.34 years of the child stage of life (2 – 16 years). The annualized average concentration for operation was used for the remainder of the 30-year exposure period, which makes up the latter 13.66 years of the child stage of life and the entire adult stage of life (16 – 30 years). The results of our calculations are shown in the table below.

The Maximally Exposed Individual at an Existing Residential Receptor

Age Group	Emissions Source	Duration (years)	Concentration (ug/m3)	Cancer Risk
3rd Trimester	Construction	0.25	0.4718	6.42E-06
Infant (0 - 2)	Construction	2	0.4718	1.55E-04
	Construction	*0.34*	*0.4718*	*4.10E-06*
	Operation	*13.66*	*0.2795*	*9.88E-05*
Child (2 - 16)	Total	14		1.03E-04
Adult (16 - 30)	Operation	14	0.2795	1.12E-05
Lifetime		**30**		**2.75E-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 6.42, 155, 103, and 11.2 in one million, respectively. The excess cancer risk over the course of a residential lifetime (30 years) is approximately 275 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, an EIR should be prepared to include a refined health risk analysis which adequately and accurately evaluates health risk impacts associated with both Project construction and operation.

Feasible Mitigation Measures Available to Reduce Emissions

Our analysis demonstrates that the Project would result in potentially significant air quality and health risk 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"), as described below: [35]

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.
b) Suspend grading and earth moving when wind gusts exceed 25 miles per hour unless the soil is wet enough to prevent dust plumes.
c) Cover trucks when hauling dirt.
d) Stabilize the surface of dirt piles if not removed immediately.

[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 – 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.

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.
i) On Caltrans projects, Caltrans Standard Specifications 10-Dust Control, 17-Watering, and 18-Dust Palliative shall be incorporated into project specifications.
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.
m) Provide an operational water truck on-site at all times. Use watering trucks to minimize dust; watering should be sufficient to confine dust plumes to the project work areas. Sweep paved streets at least once per day where there is evidence of dirt that has been carried on to the roadway.
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.
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.
u) Projects should work with local cities and counties to install adequate signage that prohibits truck idling in certain locations (e.g., near schools and sensitive receptors).
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.

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

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: Construction Schedule Calculations
Attachment B: CalEEMod Output Files
Attachment C: Health Risk Calculations
Attachment D: AERSCREEN Output Files
Attachment E: Matt Hagemann CV
Attachment F: Paul E. Rosenfeld CV

Construction Schedule Calculations					
Phase	Default Phase Length	Construction Duration	%	Construction Duration	Revised Phase Length
Demolition	20	341	0.0587	944	55
Grading	4	341	0.0117	944	11
Construction	200	341	0.5865	944	554
Paving	10	341	0.0293	944	28
Architectural Coating	10	341	0.0293	944	28

	Total Default Construction Duration	Revised Construction Duration
Start Date	6/1/2022	6/1/2022
End Date	5/8/2023	12/31/2024
Total Days	341	944

Wilshire Highland

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	354.00	Space	0.00	141,600.00	0
Apartments Mid Rise	243.00	Dwelling Unit	1.69	271,150.00	695
Strip Mall	10.90	1000sqft	0.00	10,900.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2025
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Wilshire Highland - Los Angeles-South Coast County, Annual

Project Characteristics - Consistent with the SCEA's model.

Land Use - See SWAPE comment on "Underestimated Land Use Size."

Construction Phase - See SWAPE comment on "Unsubstantiated Changes to Individual Construction Phase Lengths."

Off-road Equipment - Consistent with the SCEA's model.

Off-road Equipment - Consistent with the SCEA's model.

Off-road Equipment - Consistent with the SCEA's model.

Off-road Equipment - Consistent with the SCEA's model.

Off-road Equipment - Consistent with the SCEA's model.

Trips and VMT - Consistent with the SCEA's model.

Demolition - Consistent with the SCEA's model.

Grading - Consistent with the SCEA's model.

Architectural Coating - See SWAPE comment on "Unsubstantiated Reduction to Architectural Coating Area."

Vehicle Trips - Consistent with the SCEA's model.

Woodstoves - Consistent with the SCEA's model.

Energy Use -

Construction Off-road Equipment Mitigation - See SWAPE comment on "Incorrect Application of Construction-Related Mitigation Measures."

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	28.00
tblConstructionPhase	NumDays	200.00	554.00
tblConstructionPhase	NumDays	20.00	55.00
tblConstructionPhase	NumDays	4.00	11.00
tblConstructionPhase	NumDays	10.00	28.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberWood	12.15	0.00
tblGrading	MaterialExported	0.00	65,095.00
tblLandUse	LandUseSquareFeet	243,000.00	271,150.00

tblLandUse	LotAcreage	3.19	0.00
tblLandUse	LotAcreage	6.39	1.69
tblLandUse	LotAcreage	0.25	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblTripsAndVMT	HaulingTripNumber	8,137.00	9,300.00
tblVehicleTrips	ST_TR	6.39	5.25
tblVehicleTrips	ST_TR	42.04	35.89
tblVehicleTrips	SU_TR	5.86	5.25
tblVehicleTrips	SU_TR	20.43	35.89
tblVehicleTrips	WD_TR	6.65	5.25
tblVehicleTrips	WD_TR	44.32	35.89
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2188	2.8220	1.8042	7.8400e-003	0.3730	0.0608	0.4338	0.0835	0.0572	0.1408	0.0000	737.4347	737.4347	0.0780	0.0000	739.3838
2023	0.2395	1.6494	2.1407	6.8600e-003	0.3808	0.0515	0.4323	0.1021	0.0474	0.1495	0.0000	625.8429	625.8429	0.0756	0.0000	627.7316
2024	1.1137	1.3362	1.8110	5.6900e-003	0.3123	0.0423	0.3545	0.0837	0.0390	0.1227	0.0000	518.0991	518.0991	0.0652	0.0000	519.7283
2025	0.0342	6.3000e-004	1.5700e-003	0.0000	2.6000e-004	3.0000e-005	2.9000e-004	7.0000e-005	3.0000e-005	1.0000e-004	0.0000	0.3332	0.3332	1.0000e-005	0.0000	0.3335
Maximum	**1.1137**	**2.8220**	**2.1407**	**7.8400e-003**	**0.3808**	**0.0608**	**0.4338**	**0.1021**	**0.0572**	**0.1495**	**0.0000**	**737.4347**	**737.4347**	**0.0780**	**0.0000**	**739.3838**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2188	2.8220	1.8042	7.8400e-003	0.3730	0.0608	0.4338	0.0835	0.0572	0.1408	0.0000	737.4344	737.4344	0.0780	0.0000	739.3836
2023	0.2395	1.6494	2.1407	6.8600e-003	0.3808	0.0515	0.4323	0.1021	0.0474	0.1495	0.0000	625.8427	625.8427	0.0756	0.0000	627.7314
2024	1.1137	1.3362	1.8110	5.6900e-003	0.3123	0.0423	0.3545	0.0837	0.0390	0.1227	0.0000	518.0989	518.0989	0.0652	0.0000	519.7281
2025	0.0342	6.3000e-004	1.5700e-003	0.0000	2.6000e-004	3.0000e-005	2.9000e-004	7.0000e-005	3.0000e-005	1.0000e-004	0.0000	0.3332	0.3332	1.0000e-005	0.0000	0.3335
Maximum	**1.1137**	**2.8220**	**2.1407**	**7.8400e-003**	**0.3808**	**0.0608**	**0.4338**	**0.1021**	**0.0572**	**0.1495**	**0.0000**	**737.4344**	**737.4344**	**0.0780**	**0.0000**	**739.3836**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-1-2022	8-31-2022	2.2351	2.2351
2	9-1-2022	11-30-2022	0.5445	0.5445
3	12-1-2022	2-28-2023	0.4930	0.4930
4	3-1-2023	5-31-2023	0.4750	0.4750
5	6-1-2023	8-31-2023	0.4733	0.4733
6	9-1-2023	11-30-2023	0.4716	0.4716
7	12-1-2023	2-29-2024	0.4551	0.4551
8	3-1-2024	5-31-2024	0.4474	0.4474

9	**6-1-2024**	**8-31-2024**	0.4458	0.4458
10	**9-1-2024**	**11-30-2024**	0.5072	0.5072
11	**12-1-2024**	**2-28-2025**	0.7972	0.7972
		Highest	2.2351	2.2351

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.2042	0.0717	2.5265	4.1000e-004		0.0174	0.0174		0.0174	0.0174	0.0000	53.7029	53.7029	4.8900e-003	9.1000e-004	54.0962
Energy	0.0122	0.1041	0.0447	6.6000e-004		8.4100e-003	8.4100e-003		8.4100e-003	8.4100e-003	0.0000	1,200.5477	1,200.5477	0.0278	7.4900e-003	1,203.4741
Mobile	0.4057	1.9191	5.3438	0.0216	1.9366	0.0165	1.9531	0.5190	0.0153	0.5343	0.0000	1,999.2745	1,999.2745	0.0937	0.0000	2,001.6160
Waste						0.0000	0.0000		0.0000	0.0000	25.0146	0.0000	25.0146	1.4783	0.0000	61.9726
Water						0.0000	0.0000		0.0000	0.0000	5.2791	185.5001	190.7791	0.5466	0.0137	208.5292
Total	**1.6221**	**2.0949**	**7.9149**	**0.0227**	**1.9366**	**0.0423**	**1.9789**	**0.5190**	**0.0411**	**0.5601**	**30.2936**	**3,439.0251**	**3,469.3187**	**2.1513**	**0.0221**	**3,529.6880**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.2042	0.0717	2.5265	4.1000e-004		0.0174	0.0174		0.0174	0.0174	0.0000	53.7029	53.7029	4.8900e-003	9.1000e-004	54.0962
Energy	0.0122	0.1041	0.0447	6.6000e-004		8.4100e-003	8.4100e-003		8.4100e-003	8.4100e-003	0.0000	1,200.5477	1,200.5477	0.0278	7.4900e-003	1,203.4741
Mobile	0.4057	1.9191	5.3438	0.0216	1.9366	0.0165	1.9531	0.5190	0.0153	0.5343	0.0000	1,999.2745	1,999.2745	0.0937	0.0000	2,001.6160
Waste						0.0000	0.0000		0.0000	0.0000	25.0146	0.0000	25.0146	1.4783	0.0000	61.9726
Water						0.0000	0.0000		0.0000	0.0000	5.2791	185.5001	190.7791	0.5466	0.0137	208.5292
Total	**1.6221**	**2.0949**	**7.9149**	**0.0227**	**1.9366**	**0.0423**	**1.9789**	**0.5190**	**0.0411**	**0.5601**	**30.2936**	**3,439.0251**	**3,469.3187**	**2.1513**	**0.0221**	**3,529.6880**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2022	8/16/2022	5	55	
2	Grading	Grading	8/17/2022	8/31/2022	5	11	
3	Building Construction	Building Construction	9/1/2022	10/15/2024	5	554	
4	Paving	Paving	10/16/2024	11/22/2024	5	28	
5	Architectural Coating	Architectural Coating	11/23/2024	1/1/2025	5	28	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 5.5

Acres of Paving: 0

Residential Indoor: 571,151; Residential Outdoor: 190,384; Non-Residential Indoor: 16,350; Non-Residential Outdoor: 5,450; Striped Parking Area: 8,496 (Architectural Coating – sqft)

OffRoad Equipment

Wilshire Highland - Los Angeles-South Coast County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	3	8.00	81	0.73
Demolition	Crawler Tractors	1	8.00	212	0.43
Demolition	Excavators	1	8.00	158	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Signal Boards	4	8.00	6	0.82
Demolition	Skid Steer Loaders	1	8.00	65	0.37
Demolition	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Crawler Tractors	1	8.00	212	0.43
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Rubber Tired Dozers	0	6.00	247	0.40
Grading	Signal Boards	4	8.00	6	0.82
Grading	Skid Steer Loaders	1	8.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	2	6.00	231	0.29
Building Construction	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	0	6.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	11	28.00	0.00	1,279.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	9,300.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	4	238.00	51.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	48.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1384	0.0000	0.1384	0.0210	0.0000	0.0210	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0799	0.7521	0.6253	1.2400e-003		0.0350	0.0350		0.0333	0.0333	0.0000	106.3197	106.3197	0.0214	0.0000	106.8542
Total	**0.0799**	**0.7521**	**0.6253**	**1.2400e-003**	**0.1384**	**0.0350**	**0.1734**	**0.0210**	**0.0333**	**0.0542**	**0.0000**	**106.3197**	**106.3197**	**0.0214**	**0.0000**	**106.8542**

3.2 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.1300e-003	0.1643	0.0408	4.9000e-004	0.0110	4.6000e-004	0.0115	3.0200e-003	4.4000e-004	3.4600e-003	0.0000	48.1691	48.1691	3.3300e-003	0.0000	48.2524
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1100e-003	2.3300e-003	0.0268	8.0000e-005	8.4400e-003	7.0000e-005	8.5100e-003	2.2400e-003	6.0000e-005	2.3000e-003	0.0000	7.3470	7.3470	2.0000e-004	0.0000	7.3521
Total	**8.2400e-003**	**0.1666**	**0.0677**	**5.7000e-004**	**0.0194**	**5.3000e-004**	**0.0200**	**5.2600e-003**	**5.0000e-004**	**5.7600e-003**	**0.0000**	**55.5161**	**55.5161**	**3.5300e-003**	**0.0000**	**55.6045**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1384	0.0000	0.1384	0.0210	0.0000	0.0210	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0799	0.7521	0.6253	1.2400e-003		0.0350	0.0350		0.0333	0.0333	0.0000	106.3195	106.3195	0.0214	0.0000	106.8540
Total	**0.0799**	**0.7521**	**0.6253**	**1.2400e-003**	**0.1384**	**0.0350**	**0.1734**	**0.0210**	**0.0333**	**0.0542**	**0.0000**	**106.3195**	**106.3195**	**0.0214**	**0.0000**	**106.8540**

3.2 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.1300e-003	0.1643	0.0408	4.9000e-004	0.0110	4.6000e-004	0.0115	3.0200e-003	4.4000e-004	3.4600e-003	0.0000	48.1691	48.1691	3.3300e-003	0.0000	48.2524
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1100e-003	2.3300e-003	0.0268	8.0000e-005	8.4400e-003	7.0000e-005	8.5100e-003	2.2400e-003	6.0000e-005	2.3000e-003	0.0000	7.3470	7.3470	2.0000e-004	0.0000	7.3521
Total	**8.2400e-003**	**0.1666**	**0.0677**	**5.7000e-004**	**0.0194**	**5.3000e-004**	**0.0200**	**5.2600e-003**	**5.0000e-004**	**5.7600e-003**	**0.0000**	**55.5161**	**55.5161**	**3.5300e-003**	**0.0000**	**55.6045**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.6000e-003	0.0000	6.6000e-003	8.7000e-004	0.0000	8.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.2600e-003	0.0639	0.0557	1.1000e-004		2.6500e-003	2.6500e-003		2.4600e-003	2.4600e-003	0.0000	9.5813	9.5813	2.8800e-003	0.0000	9.6533
Total	**6.2600e-003**	**0.0639**	**0.0557**	**1.1000e-004**	**6.6000e-003**	**2.6500e-003**	**9.2500e-003**	**8.7000e-004**	**2.4600e-003**	**3.3300e-003**	**0.0000**	**9.5813**	**9.5813**	**2.8800e-003**	**0.0000**	**9.6533**

3.3 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0373	1.1947	0.2968	3.5500e-003	0.0799	3.3500e-003	0.0833	0.0220	3.2000e-003	0.0252	0.0000	350.2525	350.2525	0.0242	0.0000	350.8581
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4000e-004	3.3000e-004	3.8300e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0496	1.0496	3.0000e-005	0.0000	1.0503
Total	**0.0377**	**1.1951**	**0.3006**	**3.5600e-003**	**0.0811**	**3.3600e-003**	**0.0845**	**0.0223**	**3.2100e-003**	**0.0255**	**0.0000**	**351.3021**	**351.3021**	**0.0243**	**0.0000**	**351.9084**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.6000e-003	0.0000	6.6000e-003	8.7000e-004	0.0000	8.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.2600e-003	0.0639	0.0557	1.1000e-004		2.6500e-003	2.6500e-003		2.4600e-003	2.4600e-003	0.0000	9.5812	9.5812	2.8800e-003	0.0000	9.6533
Total	**6.2600e-003**	**0.0639**	**0.0557**	**1.1000e-004**	**6.6000e-003**	**2.6500e-003**	**9.2500e-003**	**8.7000e-004**	**2.4600e-003**	**3.3300e-003**	**0.0000**	**9.5812**	**9.5812**	**2.8800e-003**	**0.0000**	**9.6533**

3.3 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0373	1.1947	0.2968	3.5500e-003	0.0799	3.3500e-003	0.0833	0.0220	3.2000e-003	0.0252	0.0000	350.2525	350.2525	0.0242	0.0000	350.8581
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4000e-004	3.3000e-004	3.8300e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0496	1.0496	3.0000e-005	0.0000	1.0503
Total	**0.0377**	**1.1951**	**0.3006**	**3.5600e-003**	**0.0811**	**3.3600e-003**	**0.0845**	**0.0223**	**3.2100e-003**	**0.0255**	**0.0000**	**351.3021**	**351.3021**	**0.0243**	**0.0000**	**351.9084**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0385	0.4050	0.3381	7.0000e-004		0.0180	0.0180		0.0166	0.0166	0.0000	61.7269	61.7269	0.0200	0.0000	62.2260
Total	**0.0385**	**0.4050**	**0.3381**	**7.0000e-004**		**0.0180**	**0.0180**		**0.0166**	**0.0166**	**0.0000**	**61.7269**	**61.7269**	**0.0200**	**0.0000**	**62.2260**

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.4700e-003	0.2080	0.0562	5.6000e-004	0.0140	3.9000e-004	0.0144	4.0300e-003	3.7000e-004	4.4100e-003	0.0000	54.2050	54.2050	3.2400e-003	0.0000	54.2859
Worker	0.0418	0.0313	0.3607	1.0900e-003	0.1135	9.1000e-004	0.1144	0.0301	8.3000e-004	0.0310	0.0000	98.7837	98.7837	2.7200e-003	0.0000	98.8517
Total	**0.0482**	**0.2393**	**0.4169**	**1.6500e-003**	**0.1274**	**1.3000e-003**	**0.1287**	**0.0342**	**1.2000e-003**	**0.0354**	**0.0000**	**152.9886**	**152.9886**	**5.9600e-003**	**0.0000**	**153.1376**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0385	0.4050	0.3381	7.0000e-004		0.0180	0.0180		0.0166	0.0166	0.0000	61.7268	61.7268	0.0200	0.0000	62.2259
Total	**0.0385**	**0.4050**	**0.3381**	**7.0000e-004**		**0.0180**	**0.0180**		**0.0166**	**0.0166**	**0.0000**	**61.7268**	**61.7268**	**0.0200**	**0.0000**	**62.2259**

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.4700e-003	0.2080	0.0562	5.6000e-004	0.0140	3.9000e-004	0.0144	4.0300e-003	3.7000e-004	4.4100e-003	0.0000	54.2050	54.2050	3.2400e-003	0.0000	54.2859
Worker	0.0418	0.0313	0.3607	1.0900e-003	0.1135	9.1000e-004	0.1144	0.0301	8.3000e-004	0.0310	0.0000	98.7837	98.7837	2.7200e-003	0.0000	98.8517
Total	**0.0482**	**0.2393**	**0.4169**	**1.6500e-003**	**0.1274**	**1.3000e-003**	**0.1287**	**0.0342**	**1.2000e-003**	**0.0354**	**0.0000**	**152.9886**	**152.9886**	**5.9600e-003**	**0.0000**	**153.1376**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1078	1.0951	0.9988	2.1000e-003		0.0483	0.0483		0.0445	0.0445	0.0000	184.5098	184.5098	0.0597	0.0000	186.0016
Total	**0.1078**	**1.0951**	**0.9988**	**2.1000e-003**		**0.0483**	**0.0483**		**0.0445**	**0.0445**	**0.0000**	**184.5098**	**184.5098**	**0.0597**	**0.0000**	**186.0016**

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0144	0.4697	0.1506	1.6100e-003	0.0418	5.5000e-004	0.0423	0.0121	5.2000e-004	0.0126	0.0000	156.9205	156.9205	8.5500e-003	0.0000	157.1342
Worker	0.1174	0.0847	0.9913	3.1500e-003	0.3390	2.6300e-003	0.3417	0.0901	2.4200e-003	0.0925	0.0000	284.4127	284.4127	7.3200e-003	0.0000	284.5958
Total	**0.1317**	**0.5543**	**1.1419**	**4.7600e-003**	**0.3808**	**3.1800e-003**	**0.3840**	**0.1021**	**2.9400e-003**	**0.1051**	**0.0000**	**441.3332**	**441.3332**	**0.0159**	**0.0000**	**441.7300**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1078	1.0951	0.9988	2.1000e-003		0.0483	0.0483		0.0445	0.0445	0.0000	184.5095	184.5095	0.0597	0.0000	186.0014
Total	**0.1078**	**1.0951**	**0.9988**	**2.1000e-003**		**0.0483**	**0.0483**		**0.0445**	**0.0445**	**0.0000**	**184.5095**	**184.5095**	**0.0597**	**0.0000**	**186.0014**

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0144	0.4697	0.1506	1.6100e-003	0.0418	5.5000e-004	0.0423	0.0121	5.2000e-004	0.0126	0.0000	156.9205	156.9205	8.5500e-003	0.0000	157.1342
Worker	0.1174	0.0847	0.9913	3.1500e-003	0.3390	2.6300e-003	0.3417	0.0901	2.4200e-003	0.0925	0.0000	284.4127	284.4127	7.3200e-003	0.0000	284.5958
Total	**0.1317**	**0.5543**	**1.1419**	**4.7600e-003**	**0.3808**	**3.1800e-003**	**0.3840**	**0.1021**	**2.9400e-003**	**0.1051**	**0.0000**	**441.3332**	**441.3332**	**0.0159**	**0.0000**	**441.7300**

3.4 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0813	0.8017	0.7870	1.6700e-003		0.0350	0.0350		0.0322	0.0322	0.0000	146.9249	146.9249	0.0475	0.0000	148.1128
Total	**0.0813**	**0.8017**	**0.7870**	**1.6700e-003**		**0.0350**	**0.0350**		**0.0322**	**0.0322**	**0.0000**	**146.9249**	**146.9249**	**0.0475**	**0.0000**	**148.1128**

3.4 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0111	0.3725	0.1162	1.2800e-003	0.0333	4.3000e-004	0.0337	9.6000e-003	4.1000e-004	0.0100	0.0000	124.4351	124.4351	6.7100e-003	0.0000	124.6028
Worker	0.0885	0.0615	0.7350	2.4300e-003	0.2699	2.0600e-003	0.2720	0.0717	1.9000e-003	0.0736	0.0000	219.4154	219.4154	5.3400e-003	0.0000	219.5489
Total	**0.0997**	**0.4340**	**0.8512**	**3.7100e-003**	**0.3032**	**2.4900e-003**	**0.3057**	**0.0813**	**2.3100e-003**	**0.0836**	**0.0000**	**343.8505**	**343.8505**	**0.0121**	**0.0000**	**344.1517**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0813	0.8017	0.7870	1.6700e-003		0.0350	0.0350		0.0322	0.0322	0.0000	146.9247	146.9247	0.0475	0.0000	148.1127
Total	**0.0813**	**0.8017**	**0.7870**	**1.6700e-003**		**0.0350**	**0.0350**		**0.0322**	**0.0322**	**0.0000**	**146.9247**	**146.9247**	**0.0475**	**0.0000**	**148.1127**

3.4 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0111	0.3725	0.1162	1.2800e-003	0.0333	4.3000e-004	0.0337	9.6000e-003	4.1000e-004	0.0100	0.0000	124.4351	124.4351	6.7100e-003	0.0000	124.6028
Worker	0.0885	0.0615	0.7350	2.4300e-003	0.2699	2.0600e-003	0.2720	0.0717	1.9000e-003	0.0736	0.0000	219.4154	219.4154	5.3400e-003	0.0000	219.5489
Total	**0.0997**	**0.4340**	**0.8512**	**3.7100e-003**	**0.3032**	**2.4900e-003**	**0.3057**	**0.0813**	**2.3100e-003**	**0.0836**	**0.0000**	**343.8505**	**343.8505**	**0.0121**	**0.0000**	**344.1517**

3.5 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.6500e-003	0.0821	0.1236	1.9000e-004		3.9300e-003	3.9300e-003		3.6300e-003	3.6300e-003	0.0000	16.4837	16.4837	5.2300e-003	0.0000	16.6143
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.6500e-003**	**0.0821**	**0.1236**	**1.9000e-004**		**3.9300e-003**	**3.9300e-003**		**3.6300e-003**	**3.6300e-003**	**0.0000**	**16.4837**	**16.4837**	**5.2300e-003**	**0.0000**	**16.6143**

3.5 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.5000e-004	4.5000e-004	5.4300e-003	2.0000e-005	1.9900e-003	2.0000e-005	2.0100e-003	5.3000e-004	1.0000e-005	5.4000e-004	0.0000	1.6211	1.6211	4.0000e-005	0.0000	1.6221
Total	**6.5000e-004**	**4.5000e-004**	**5.4300e-003**	**2.0000e-005**	**1.9900e-003**	**2.0000e-005**	**2.0100e-003**	**5.3000e-004**	**1.0000e-005**	**5.4000e-004**	**0.0000**	**1.6211**	**1.6211**	**4.0000e-005**	**0.0000**	**1.6221**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.6500e-003	0.0821	0.1236	1.9000e-004		3.9300e-003	3.9300e-003		3.6300e-003	3.6300e-003	0.0000	16.4837	16.4837	5.2300e-003	0.0000	16.6143
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.6500e-003**	**0.0821**	**0.1236**	**1.9000e-004**		**3.9300e-003**	**3.9300e-003**		**3.6300e-003**	**3.6300e-003**	**0.0000**	**16.4837**	**16.4837**	**5.2300e-003**	**0.0000**	**16.6143**

3.5 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.5000e-004	4.5000e-004	5.4300e-003	2.0000e-005	1.9900e-003	2.0000e-005	2.0100e-003	5.3000e-004	1.0000e-005	5.4000e-004	0.0000	1.6211	1.6211	4.0000e-005	0.0000	1.6221
Total	**6.5000e-004**	**4.5000e-004**	**5.4300e-003**	**2.0000e-005**	**1.9900e-003**	**2.0000e-005**	**2.0100e-003**	**5.3000e-004**	**1.0000e-005**	**5.4000e-004**	**0.0000**	**1.6211**	**1.6211**	**4.0000e-005**	**0.0000**	**1.6221**

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.9186					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4400e-003	0.0165	0.0244	4.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	3.4469	3.4469	1.9000e-004	0.0000	3.4517
Total	**0.9211**	**0.0165**	**0.0244**	**4.0000e-005**		**8.2000e-004**	**8.2000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**3.4469**	**3.4469**	**1.9000e-004**	**0.0000**	**3.4517**

3.6 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3300e-003	1.6200e-003	0.0193	6.0000e-005	7.1000e-003	5.0000e-005	7.1600e-003	1.8900e-003	5.0000e-005	1.9400e-003	0.0000	5.7720	5.7720	1.4000e-004	0.0000	5.7755
Total	**2.3300e-003**	**1.6200e-003**	**0.0193**	**6.0000e-005**	**7.1000e-003**	**5.0000e-005**	**7.1600e-003**	**1.8900e-003**	**5.0000e-005**	**1.9400e-003**	**0.0000**	**5.7720**	**5.7720**	**1.4000e-004**	**0.0000**	**5.7755**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.9186					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4400e-003	0.0165	0.0244	4.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	3.4469	3.4469	1.9000e-004	0.0000	3.4517
Total	**0.9211**	**0.0165**	**0.0244**	**4.0000e-005**		**8.2000e-004**	**8.2000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**3.4469**	**3.4469**	**1.9000e-004**	**0.0000**	**3.4517**

3.6 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3300e-003	1.6200e-003	0.0193	6.0000e-005	7.1000e-003	5.0000e-005	7.1600e-003	1.8900e-003	5.0000e-005	1.9400e-003	0.0000	5.7720	5.7720	1.4000e-004	0.0000	5.7755
Total	**2.3300e-003**	**1.6200e-003**	**0.0193**	**6.0000e-005**	**7.1000e-003**	**5.0000e-005**	**7.1600e-003**	**1.8900e-003**	**5.0000e-005**	**1.9400e-003**	**0.0000**	**5.7720**	**5.7720**	**1.4000e-004**	**0.0000**	**5.7755**

3.6 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0340					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0000e-005	5.7000e-004	9.0000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.1277	0.1277	1.0000e-005	0.0000	0.1278
Total	**0.0341**	**5.7000e-004**	**9.0000e-004**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.1277**	**0.1277**	**1.0000e-005**	**0.0000**	**0.1278**

3.6 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	5.0000e-005	6.6000e-004	0.0000	2.6000e-004	0.0000	2.6000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2055	0.2055	0.0000	0.0000	0.2056
Total	**8.0000e-005**	**5.0000e-005**	**6.6000e-004**	**0.0000**	**2.6000e-004**	**0.0000**	**2.6000e-004**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2055**	**0.2055**	**0.0000**	**0.0000**	**0.2056**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0340					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0000e-005	5.7000e-004	9.0000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.1277	0.1277	1.0000e-005	0.0000	0.1278
Total	**0.0341**	**5.7000e-004**	**9.0000e-004**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.1277**	**0.1277**	**1.0000e-005**	**0.0000**	**0.1278**

3.6 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	5.0000e-005	6.6000e-004	0.0000	2.6000e-004	0.0000	2.6000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2055	0.2055	0.0000	0.0000	0.2056
Total	**8.0000e-005**	**5.0000e-005**	**6.6000e-004**	**0.0000**	**2.6000e-004**	**0.0000**	**2.6000e-004**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2055**	**0.2055**	**0.0000**	**0.0000**	**0.2056**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4057	1.9191	5.3438	0.0216	1.9366	0.0165	1.9531	0.5190	0.0153	0.5343	0.0000	1,999.2745	1,999.2745	0.0937	0.0000	2,001.6160
Unmitigated	0.4057	1.9191	5.3438	0.0216	1.9366	0.0165	1.9531	0.5190	0.0153	0.5343	0.0000	1,999.2745	1,999.2745	0.0937	0.0000	2,001.6160

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,275.75	1,275.75	1275.75	4,359,432	4,359,432
Enclosed Parking with Elevator	0.00	0.00	0.00		
Strip Mall	391.20	391.20	391.20	744,297	744,297
Total	1,666.95	1,666.95	1,666.95	5,103,729	5,103,729

4.3 Trip Type Information

	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 Mid 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
Strip Mall	16.60	8.40	6.90	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Enclosed Parking with Elevator	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Strip Mall	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,080.0740	1,080.0740	0.0255	5.2800e-003	1,082.2845
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,080.0740	1,080.0740	0.0255	5.2800e-003	1,082.2845
NaturalGas Mitigated	0.0122	0.1041	0.0447	6.6000e-004		8.4100e-003	8.4100e-003		8.4100e-003	8.4100e-003	0.0000	120.4737	120.4737	2.3100e-003	2.2100e-003	121.1896
NaturalGas Unmitigated	0.0122	0.1041	0.0447	6.6000e-004		8.4100e-003	8.4100e-003		8.4100e-003	8.4100e-003	0.0000	120.4737	120.4737	2.3100e-003	2.2100e-003	121.1896

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	2.23972e+006	0.0121	0.1032	0.0439	6.6000e-004		8.3400e-003	8.3400e-003		8.3400e-003	8.3400e-003	0.0000	119.5198	119.5198	2.2900e-003	2.1900e-003	120.2300
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	17876	1.0000e-004	8.8000e-004	7.4000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9539	0.9539	2.0000e-005	2.0000e-005	0.9596
Total		**0.0122**	**0.1041**	**0.0447**	**6.7000e-004**		**8.4100e-003**	**8.4100e-003**		**8.4100e-003**	**8.4100e-003**	**0.0000**	**120.4737**	**120.4737**	**2.3100e-003**	**2.2100e-003**	**121.1896**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	2.23972e+006	0.0121	0.1032	0.0439	6.6000e-004		8.3400e-003	8.3400e-003		8.3400e-003	8.3400e-003	0.0000	119.5198	119.5198	2.2900e-003	2.1900e-003	120.2300
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	17876	1.0000e-004	8.8000e-004	7.4000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9539	0.9539	2.0000e-005	2.0000e-005	0.9596
Total		**0.0122**	**0.1041**	**0.0447**	**6.7000e-004**		**8.4100e-003**	**8.4100e-003**		**8.4100e-003**	**8.4100e-003**	**0.0000**	**120.4737**	**120.4737**	**2.3100e-003**	**2.2100e-003**	**121.1896**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	962299	535.9638	0.0127	2.6200e-003	537.0607
Enclosed Parking with Elevator	829776	462.1533	0.0109	2.2600e-003	463.0992
Strip Mall	147150	81.9569	1.9400e-003	4.0000e-004	82.1246
Total		**1,080.0740**	**0.0255**	**5.2800e-003**	**1,082.2845**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	962299	535.9638	0.0127	2.6200e-003	537.0607
Enclosed Parking with Elevator	829776	462.1533	0.0109	2.2600e-003	463.0992
Strip Mall	147150	81.9569	1.9400e-003	4.0000e-004	82.1246
Total		**1,080.0740**	**0.0255**	**5.2800e-003**	**1,082.2845**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.2042	0.0717	2.5265	4.1000e-004		0.0174	0.0174		0.0174	0.0174	0.0000	53.7029	53.7029	4.8900e-003	9.1000e-004	54.0962
Unmitigated	1.2042	0.0717	2.5265	4.1000e-004		0.0174	0.0174		0.0174	0.0174	0.0000	53.7029	53.7029	4.8900e-003	9.1000e-004	54.0962

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0953					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.0283					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	5.0100e-003	0.0428	0.0182	2.7000e-004		3.4600e-003	3.4600e-003		3.4600e-003	3.4600e-003	0.0000	49.6003	49.6003	9.5000e-004	9.1000e-004	49.8951
Landscaping	0.0756	0.0289	2.5083	1.3000e-004		0.0139	0.0139		0.0139	0.0139	0.0000	4.1025	4.1025	3.9400e-003	0.0000	4.2011
Total	**1.2042**	**0.0717**	**2.5265**	**4.0000e-004**		**0.0174**	**0.0174**		**0.0174**	**0.0174**	**0.0000**	**53.7029**	**53.7029**	**4.8900e-003**	**9.1000e-004**	**54.0962**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0953					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.0283					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	5.0100e-003	0.0428	0.0182	2.7000e-004		3.4600e-003	3.4600e-003		3.4600e-003	3.4600e-003	0.0000	49.6003	49.6003	9.5000e-004	9.1000e-004	49.8951
Landscaping	0.0756	0.0289	2.5083	1.3000e-004		0.0139	0.0139		0.0139	0.0139	0.0000	4.1025	4.1025	3.9400e-003	0.0000	4.2011
Total	**1.2042**	**0.0717**	**2.5265**	**4.0000e-004**		**0.0174**	**0.0174**		**0.0174**	**0.0174**	**0.0000**	**53.7029**	**53.7029**	**4.8900e-003**	**9.1000e-004**	**54.0962**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	190.7791	0.5466	0.0137	208.5292
Unmitigated	190.7791	0.5466	0.0137	208.5292

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	15.8324 / 9.98131	181.6056	0.5201	0.0130	198.4946
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.80739 / 0.494852	9.1736	0.0265	6.6000e-004	10.0347
Total		**190.7791**	**0.5466**	**0.0137**	**208.5292**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	15.8324 / 9.98131	181.6056	0.5201	0.0130	198.4946
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.80739 / 0.494852	9.1736	0.0265	6.6000e-004	10.0347
Total		**190.7791**	**0.5466**	**0.0137**	**208.5292**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	25.0146	1.4783	0.0000	61.9726
Unmitigated	25.0146	1.4783	0.0000	61.9726

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	111.78	22.6903	1.3410	0.0000	56.2143
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	11.45	2.3243	0.1374	0.0000	5.7582
Total		**25.0146**	**1.4783**	**0.0000**	**61.9726**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	111.78	22.6903	1.3410	0.0000	56.2143
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	11.45	2.3243	0.1374	0.0000	5.7582
Total		**25.0146**	**1.4783**	**0.0000**	**61.9726**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Wilshire Highland

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	354.00	Space	0.00	141,600.00	0
Apartments Mid Rise	243.00	Dwelling Unit	1.69	271,150.00	695
Strip Mall	10.90	1000sqft	0.00	10,900.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2025
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Wilshire Highland - Los Angeles-South Coast County, Summer

Project Characteristics - Consistent with the SCEA's model.

Land Use - See SWAPE comment on "Underestimated Land Use Size."

Construction Phase - See SWAPE comment on "Unsubstantiated Changes to Individual Construction Phase Lengths."

Off-road Equipment - Consistent with the SCEA's model.

Off-road Equipment - Consistent with the SCEA's model.

Off-road Equipment - Consistent with the SCEA's model.

Off-road Equipment - Consistent with the SCEA's model.

Off-road Equipment - Consistent with the SCEA's model.

Trips and VMT - Consistent with the SCEA's model.

Demolition - Consistent with the SCEA's model.

Grading - Consistent with the SCEA's model.

Architectural Coating - See SWAPE comment on "Unsubstantiated Reduction to Architectural Coating Area."

Vehicle Trips - Consistent with the SCEA's model.

Woodstoves - Consistent with the SCEA's model.

Energy Use -

Construction Off-road Equipment Mitigation - See SWAPE comment on "Incorrect Application of Construction-Related Mitigation Measures."

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	28.00
tblConstructionPhase	NumDays	200.00	554.00
tblConstructionPhase	NumDays	20.00	55.00
tblConstructionPhase	NumDays	4.00	11.00
tblConstructionPhase	NumDays	10.00	28.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberWood	12.15	0.00
tblGrading	MaterialExported	0.00	65,095.00
tblLandUse	LandUseSquareFeet	243,000.00	271,150.00

tblLandUse	LotAcreage	3.19	0.00
tblLandUse	LotAcreage	6.39	1.69
tblLandUse	LotAcreage	0.25	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblTripsAndVMT	HaulingTripNumber	8,137.00	9,300.00
tblVehicleTrips	ST_TR	6.39	5.25
tblVehicleTrips	ST_TR	42.04	35.89
tblVehicleTrips	SU_TR	5.86	5.25
tblVehicleTrips	SU_TR	20.43	35.89
tblVehicleTrips	WD_TR	6.65	5.25
tblVehicleTrips	WD_TR	44.32	35.89
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	7.9263	222.3464	63.4973	0.6738	16.2068	1.2900	17.2953	4.2705	1.2279	5.2985	0.0000	72,856.7940	72,856.7940	5.3675	0.0000	72,990.9818
2023	1.8347	12.5696	16.9337	0.0540	2.9868	0.3960	3.3828	0.7995	0.3645	1.1641	0.0000	5,429.6319	5,429.6319	0.6417	0.0000	5,445.6754
2024	68.3977	11.8274	16.2689	0.0532	2.9868	0.3617	3.3485	0.7995	0.3329	1.1324	0.0000	5,346.3815	5,346.3815	0.6355	0.0000	5,362.2678
2025	68.3791	1.2419	3.2314	7.7200e-003	0.5365	0.0554	0.5920	0.1423	0.0551	0.1974	0.0000	754.6968	754.6968	0.0263	0.0000	755.3552
Maximum	**68.3977**	**222.3464**	**63.4973**	**0.6738**	**16.2068**	**1.2900**	**17.2953**	**4.2705**	**1.2279**	**5.2985**	**0.0000**	**72,856.7940**	**72,856.7940**	**5.3675**	**0.0000**	**72,990.9818**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	7.9263	222.3464	63.4973	0.6738	16.2068	1.2900	17.2953	4.2705	1.2279	5.2985	0.0000	72,856.7940	72,856.7940	5.3675	0.0000	72,990.9818
2023	1.8347	12.5696	16.9337	0.0540	2.9868	0.3960	3.3828	0.7995	0.3645	1.1641	0.0000	5,429.6319	5,429.6319	0.6417	0.0000	5,445.6754
2024	68.3977	11.8274	16.2689	0.0532	2.9868	0.3617	3.3485	0.7995	0.3329	1.1324	0.0000	5,346.3815	5,346.3815	0.6355	0.0000	5,362.2678
2025	68.3791	1.2419	3.2314	7.7200e-003	0.5365	0.0554	0.5920	0.1423	0.0551	0.1974	0.0000	754.6968	754.6968	0.0263	0.0000	755.3552
Maximum	**68.3977**	**222.3464**	**63.4973**	**0.6738**	**16.2068**	**1.2900**	**17.2953**	**4.2705**	**1.2279**	**5.2985**	**0.0000**	**72,856.7940**	**72,856.7940**	**5.3675**	**0.0000**	**72,990.9818**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	7.1625	3.6573	21.5240	0.0229		0.3883	0.3883		0.3883	0.3883	0.0000	4,410.1781	4,410.1781	0.1186	0.0802	4,437.0400
Energy	0.0667	0.5703	0.2447	3.6400e-003		0.0461	0.0461		0.0461	0.0461		727.6688	727.6688	0.0140	0.0133	731.9930
Mobile	2.3595	10.1630	30.4902	0.1229	10.8503	0.0907	10.9410	2.9031	0.0842	2.9873		12,536.2452	12,536.2452	0.5704		12,550.5046
Total	**9.5886**	**14.3906**	**52.2588**	**0.1494**	**10.8503**	**0.5251**	**11.3754**	**2.9031**	**0.5186**	**3.4217**	**0.0000**	**17,674.0921**	**17,674.0921**	**0.7029**	**0.0935**	**17,719.5375**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	7.1625	3.6573	21.5240	0.0229		0.3883	0.3883		0.3883	0.3883	0.0000	4,410.1781	4,410.1781	0.1186	0.0802	4,437.0400
Energy	0.0667	0.5703	0.2447	3.6400e-003		0.0461	0.0461		0.0461	0.0461		727.6688	727.6688	0.0140	0.0133	731.9930
Mobile	2.3595	10.1630	30.4902	0.1229	10.8503	0.0907	10.9410	2.9031	0.0842	2.9873		12,536.2452	12,536.2452	0.5704		12,550.5046
Total	**9.5886**	**14.3906**	**52.2588**	**0.1494**	**10.8503**	**0.5251**	**11.3754**	**2.9031**	**0.5186**	**3.4217**	**0.0000**	**17,674.0921**	**17,674.0921**	**0.7029**	**0.0935**	**17,719.5375**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2022	8/16/2022	5	55	
2	Grading	Grading	8/17/2022	8/31/2022	5	11	
3	Building Construction	Building Construction	9/1/2022	10/15/2024	5	554	
4	Paving	Paving	10/16/2024	11/22/2024	5	28	
5	Architectural Coating	Architectural Coating	11/23/2024	1/1/2025	5	28	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 5.5

Acres of Paving: 0

Residential Indoor: 571,151; Residential Outdoor: 190,384; Non-Residential Indoor: 16,350; Non-Residential Outdoor: 5,450; Striped Parking Area: 8,496 (Architectural Coating – sqft)

OffRoad Equipment

Wilshire Highland - Los Angeles-South Coast County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	3	8.00	81	0.73
Demolition	Crawler Tractors	1	8.00	212	0.43
Demolition	Excavators	1	8.00	158	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Signal Boards	4	8.00	6	0.82
Demolition	Skid Steer Loaders	1	8.00	65	0.37
Demolition	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Crawler Tractors	1	8.00	212	0.43
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Rubber Tired Dozers	0	6.00	247	0.40
Grading	Signal Boards	4	8.00	6	0.82
Grading	Skid Steer Loaders	1	8.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	2	6.00	231	0.29
Building Construction	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	0	6.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	11	28.00	0.00	1,279.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	9,300.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	4	238.00	51.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	48.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.0330	0.0000	5.0330	0.7621	0.0000	0.7621			0.0000			0.0000
Off-Road	2.9036	27.3482	22.7372	0.0452		1.2709	1.2709		1.2098	1.2098		4,261.7227	4,261.7227	0.8570		4,283.1467
Total	**2.9036**	**27.3482**	**22.7372**	**0.0452**	**5.0330**	**1.2709**	**6.3040**	**0.7621**	**1.2098**	**1.9718**		**4,261.7227**	**4,261.7227**	**0.8570**		**4,283.1467**

3.2 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1845	5.7947	1.4477	0.0179	0.4066	0.0166	0.4233	0.1115	0.0159	0.1274		1,945.0915	1,945.0915	0.1316		1,948.3809
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1124	0.0745	1.0405	3.0900e-003	0.3130	2.4500e-003	0.3154	0.0830	2.2600e-003	0.0853		307.6395	307.6395	8.4900e-003		307.8517
Total	**0.2970**	**5.8692**	**2.4882**	**0.0210**	**0.7196**	**0.0191**	**0.7387**	**0.1945**	**0.0182**	**0.2126**		**2,252.7309**	**2,252.7309**	**0.1401**		**2,256.2327**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.0330	0.0000	5.0330	0.7621	0.0000	0.7621			0.0000			0.0000
Off-Road	2.9036	27.3482	22.7372	0.0452		1.2709	1.2709		1.2098	1.2098	0.0000	4,261.7227	4,261.7227	0.8570		4,283.1466
Total	**2.9036**	**27.3482**	**22.7372**	**0.0452**	**5.0330**	**1.2709**	**6.3040**	**0.7621**	**1.2098**	**1.9718**	**0.0000**	**4,261.7227**	**4,261.7227**	**0.8570**		**4,283.1466**

3.2 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1845	5.7947	1.4477	0.0179	0.4066	0.0166	0.4233	0.1115	0.0159	0.1274		1,945.0915	1,945.0915	0.1316		1,948.3809
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1124	0.0745	1.0405	3.0900e-003	0.3130	2.4500e-003	0.3154	0.0830	2.2600e-003	0.0853		307.6395	307.6395	8.4900e-003		307.8517
Total	**0.2970**	**5.8692**	**2.4882**	**0.0210**	**0.7196**	**0.0191**	**0.7387**	**0.1945**	**0.0182**	**0.2126**		**2,252.7309**	**2,252.7309**	**0.1401**		**2,256.2327**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.1995	0.0000	1.1995	0.1586	0.0000	0.1586			0.0000			0.0000
Off-Road	1.1375	11.6173	10.1194	0.0206		0.4819	0.4819		0.4478	0.4478		1,920.2775	1,920.2775	0.5777		1,934.7210
Total	**1.1375**	**11.6173**	**10.1194**	**0.0206**	**1.1995**	**0.4819**	**1.6814**	**0.1586**	**0.4478**	**0.6064**		**1,920.2775**	**1,920.2775**	**0.5777**		**1,934.7210**

3.3 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	6.7085	210.6758	52.6347	0.6510	14.7838	0.6048	15.3886	4.0526	0.5786	4.6312		70,716.7741	70,716.7741	4.7837		70,836.3667
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0803	0.0532	0.7432	2.2100e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		219.7425	219.7425	6.0600e-003		219.8941
Total	**6.7888**	**210.7291**	**53.3779**	**0.6532**	**15.0073**	**0.6066**	**15.6139**	**4.1119**	**0.5802**	**4.6921**		**70,936.5165**	**70,936.5165**	**4.7898**		**71,056.2608**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.1995	0.0000	1.1995	0.1586	0.0000	0.1586			0.0000			0.0000
Off-Road	1.1375	11.6173	10.1194	0.0206		0.4819	0.4819		0.4478	0.4478	0.0000	1,920.2775	1,920.2775	0.5777		1,934.7210
Total	**1.1375**	**11.6173**	**10.1194**	**0.0206**	**1.1995**	**0.4819**	**1.6814**	**0.1586**	**0.4478**	**0.6064**	**0.0000**	**1,920.2775**	**1,920.2775**	**0.5777**		**1,934.7210**

3.3 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	6.7085	210.6758	52.6347	0.6510	14.7838	0.6048	15.3886	4.0526	0.5786	4.6312		70,716.7741	70,716.7741	4.7837		70,836.3667
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0803	0.0532	0.7432	2.2100e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		219.7425	219.7425	6.0600e-003		219.8941
Total	**6.7888**	**210.7291**	**53.3779**	**0.6532**	**15.0073**	**0.6066**	**15.6139**	**4.1119**	**0.5802**	**4.6921**		**70,936.5165**	**70,936.5165**	**4.7898**		**71,056.2608**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8854	9.3101	7.7721	0.0162		0.4141	0.4141		0.3810	0.3810		1,564.1900	1,564.1900	0.5059		1,576.8373
Total	**0.8854**	**9.3101**	**7.7721**	**0.0162**		**0.4141**	**0.4141**		**0.3810**	**0.3810**		**1,564.1900**	**1,564.1900**	**0.5059**		**1,576.8373**

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1455	4.7088	1.2248	0.0130	0.3265	8.8500e-003	0.3354	0.0940	8.4700e-003	0.1025		1,389.6780	1,389.6780	0.0798		1,391.6717
Worker	0.9556	0.6334	8.8441	0.0262	2.6603	0.0208	2.6811	0.7055	0.0192	0.7247		2,614.9353	2,614.9353	0.0722		2,616.7397
Total	**1.1011**	**5.3423**	**10.0689**	**0.0392**	**2.9868**	**0.0297**	**3.0165**	**0.7995**	**0.0277**	**0.8272**		**4,004.6133**	**4,004.6133**	**0.1519**		**4,008.4114**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8854	9.3101	7.7721	0.0162		0.4141	0.4141		0.3810	0.3810	0.0000	1,564.1900	1,564.1900	0.5059		1,576.8373
Total	**0.8854**	**9.3101**	**7.7721**	**0.0162**		**0.4141**	**0.4141**		**0.3810**	**0.3810**	**0.0000**	**1,564.1900**	**1,564.1900**	**0.5059**		**1,576.8373**

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1455	4.7088	1.2248	0.0130	0.3265	8.8500e-003	0.3354	0.0940	8.4700e-003	0.1025		1,389.6780	1,389.6780	0.0798		1,391.6717
Worker	0.9556	0.6334	8.8441	0.0262	2.6603	0.0208	2.6811	0.7055	0.0192	0.7247		2,614.9353	2,614.9353	0.0722		2,616.7397
Total	**1.1011**	**5.3423**	**10.0689**	**0.0392**	**2.9868**	**0.0297**	**3.0165**	**0.7995**	**0.0277**	**0.8272**		**4,004.6133**	**4,004.6133**	**0.1519**		**4,008.4114**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8293	8.4237	7.6829	0.0162		0.3717	0.3717		0.3419	0.3419		1,564.5169	1,564.5169	0.5060		1,577.1668
Total	**0.8293**	**8.4237**	**7.6829**	**0.0162**		**0.3717**	**0.3717**		**0.3419**	**0.3419**		**1,564.5169**	**1,564.5169**	**0.5060**		**1,577.1668**

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1079	3.5729	1.1061	0.0126	0.3265	4.1300e-003	0.3307	0.0940	3.9400e-003	0.0980		1,345.9279	1,345.9279	0.0707		1,347.6946
Worker	0.8974	0.5731	8.1447	0.0253	2.6603	0.0202	2.6805	0.7055	0.0186	0.7242		2,519.1871	2,519.1871	0.0651		2,520.8140
Total	**1.0053**	**4.1460**	**9.2508**	**0.0378**	**2.9868**	**0.0244**	**3.0112**	**0.7995**	**0.0226**	**0.8221**		**3,865.1150**	**3,865.1150**	**0.1357**		**3,868.5086**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8293	8.4237	7.6829	0.0162		0.3717	0.3717		0.3419	0.3419	0.0000	1,564.5169	1,564.5169	0.5060		1,577.1668
Total	**0.8293**	**8.4237**	**7.6829**	**0.0162**		**0.3717**	**0.3717**		**0.3419**	**0.3419**	**0.0000**	**1,564.5169**	**1,564.5169**	**0.5060**		**1,577.1668**

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1079	3.5729	1.1061	0.0126	0.3265	4.1300e-003	0.3307	0.0940	3.9400e-003	0.0980		1,345.9279	1,345.9279	0.0707		1,347.6946
Worker	0.8974	0.5731	8.1447	0.0253	2.6603	0.0202	2.6805	0.7055	0.0186	0.7242		2,519.1871	2,519.1871	0.0651		2,520.8140
Total	**1.0053**	**4.1460**	**9.2508**	**0.0378**	**2.9868**	**0.0244**	**3.0112**	**0.7995**	**0.0226**	**0.8221**		**3,865.1150**	**3,865.1150**	**0.1357**		**3,868.5086**

3.4 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7858	7.7455	7.6038	0.0162		0.3377	0.3377		0.3106	0.3106		1,564.8014	1,564.8014	0.5061		1,577.4537
Total	**0.7858**	**7.7455**	**7.6038**	**0.0162**		**0.3377**	**0.3377**		**0.3106**	**0.3106**		**1,564.8014**	**1,564.8014**	**0.5061**		**1,577.4537**

3.4 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1053	3.5593	1.0724	0.0125	0.3265	4.0800e-003	0.3306	0.0940	3.9000e-003	0.0979		1,340.4658	1,340.4658	0.0697		1,342.2074
Worker	0.8489	0.5226	7.5927	0.0245	2.6603	0.0199	2.6802	0.7055	0.0184	0.7239		2,441.1143	2,441.1143	0.0597		2,442.6068
Total	**0.9543**	**4.0819**	**8.6651**	**0.0370**	**2.9868**	**0.0240**	**3.0108**	**0.7995**	**0.0223**	**0.8218**		**3,781.5801**	**3,781.5801**	**0.1294**		**3,784.8141**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7858	7.7455	7.6038	0.0162		0.3377	0.3377		0.3106	0.3106	0.0000	1,564.8014	1,564.8014	0.5061		1,577.4537
Total	**0.7858**	**7.7455**	**7.6038**	**0.0162**		**0.3377**	**0.3377**		**0.3106**	**0.3106**	**0.0000**	**1,564.8014**	**1,564.8014**	**0.5061**		**1,577.4537**

3.4 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1053	3.5593	1.0724	0.0125	0.3265	4.0800e-003	0.3306	0.0940	3.9000e-003	0.0979		1,340.4658	1,340.4658	0.0697		1,342.2074
Worker	0.8489	0.5226	7.5927	0.0245	2.6603	0.0199	2.6802	0.7055	0.0184	0.7239		2,441.1143	2,441.1143	0.0597		2,442.6068
Total	**0.9543**	**4.0819**	**8.6651**	**0.0370**	**2.9868**	**0.0240**	**3.0108**	**0.7995**	**0.0223**	**0.8218**		**3,781.5801**	**3,781.5801**	**0.1294**		**3,784.8141**

3.5 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6180	5.8607	8.8253	0.0136		0.2810	0.2810		0.2594	0.2594		1,297.8688	1,297.8688	0.4114		1,308.1547
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6180**	**5.8607**	**8.8253**	**0.0136**		**0.2810**	**0.2810**		**0.2594**	**0.2594**		**1,297.8688**	**1,297.8688**	**0.4114**		**1,308.1547**

3.5 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0464	0.0286	0.4147	1.3400e-003	0.1453	1.0900e-003	0.1464	0.0385	1.0000e-003	0.0395		133.3382	133.3382	3.2600e-003		133.4197
Total	**0.0464**	**0.0286**	**0.4147**	**1.3400e-003**	**0.1453**	**1.0900e-003**	**0.1464**	**0.0385**	**1.0000e-003**	**0.0395**		**133.3382**	**133.3382**	**3.2600e-003**		**133.4197**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6180	5.8607	8.8253	0.0136		0.2810	0.2810		0.2594	0.2594	0.0000	1,297.8688	1,297.8688	0.4114		1,308.1547
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6180**	**5.8607**	**8.8253**	**0.0136**		**0.2810**	**0.2810**		**0.2594**	**0.2594**	**0.0000**	**1,297.8688**	**1,297.8688**	**0.4114**		**1,308.1547**

3.5 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0464	0.0286	0.4147	1.3400e-003	0.1453	1.0900e-003	0.1464	0.0385	1.0000e-003	0.0395		133.3382	133.3382	3.2600e-003		133.4197
Total	**0.0464**	**0.0286**	**0.4147**	**1.3400e-003**	**0.1453**	**1.0900e-003**	**0.1464**	**0.0385**	**1.0000e-003**	**0.0395**		**133.3382**	**133.3382**	**3.2600e-003**		**133.4197**

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	68.0457					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**68.2265**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.6 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1712	0.1054	1.5313	4.9400e-003	0.5365	4.0200e-003	0.5406	0.1423	3.7000e-003	0.1460		492.3256	492.3256	0.0120		492.6266
Total	**0.1712**	**0.1054**	**1.5313**	**4.9400e-003**	**0.5365**	**4.0200e-003**	**0.5406**	**0.1423**	**3.7000e-003**	**0.1460**		**492.3256**	**492.3256**	**0.0120**		**492.6266**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	68.0457					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**68.2265**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.6 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1712	0.1054	1.5313	4.9400e-003	0.5365	4.0200e-003	0.5406	0.1423	3.7000e-003	0.1460		492.3256	492.3256	0.0120		492.6266
Total	**0.1712**	**0.1054**	**1.5313**	**4.9400e-003**	**0.5365**	**4.0200e-003**	**0.5406**	**0.1423**	**3.7000e-003**	**0.1460**		**492.3256**	**492.3256**	**0.0120**		**492.6266**

3.6 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	68.0457					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**68.2166**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.6 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1626	0.0964	1.4222	4.7500e-003	0.5365	3.9400e-003	0.5405	0.1423	3.6300e-003	0.1459		473.2488	473.2488	0.0110		473.5234
Total	**0.1626**	**0.0964**	**1.4222**	**4.7500e-003**	**0.5365**	**3.9400e-003**	**0.5405**	**0.1423**	**3.6300e-003**	**0.1459**		**473.2488**	**473.2488**	**0.0110**		**473.5234**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	68.0457					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**68.2166**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.6 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1626	0.0964	1.4222	4.7500e-003	0.5365	3.9400e-003	0.5405	0.1423	3.6300e-003	0.1459		473.2488	473.2488	0.0110		473.5234
Total	**0.1626**	**0.0964**	**1.4222**	**4.7500e-003**	**0.5365**	**3.9400e-003**	**0.5405**	**0.1423**	**3.6300e-003**	**0.1459**		**473.2488**	**473.2488**	**0.0110**		**473.5234**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.3595	10.1630	30.4902	0.1229	10.8503	0.0907	10.9410	2.9031	0.0842	2.9873		12,536.2452	12,536.2452	0.5704		12,550.5046
Unmitigated	2.3595	10.1630	30.4902	0.1229	10.8503	0.0907	10.9410	2.9031	0.0842	2.9873		12,536.2452	12,536.2452	0.5704		12,550.5046

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,275.75	1,275.75	1275.75	4,359,432	4,359,432
Enclosed Parking with Elevator	0.00	0.00	0.00		
Strip Mall	391.20	391.20	391.20	744,297	744,297
Total	1,666.95	1,666.95	1,666.95	5,103,729	5,103,729

4.3 Trip Type Information

	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 Mid 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
Strip Mall	16.60	8.40	6.90	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Enclosed Parking with Elevator	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Strip Mall	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0667	0.5703	0.2447	3.6400e-003		0.0461	0.0461		0.0461	0.0461		727.6688	727.6688	0.0140	0.0133	731.9930
NaturalGas Unmitigated	0.0667	0.5703	0.2447	3.6400e-003		0.0461	0.0461		0.0461	0.0461		727.6688	727.6688	0.0140	0.0133	731.9930

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	6136.21	0.0662	0.5655	0.2406	3.6100e-003		0.0457	0.0457		0.0457	0.0457		721.9070	721.9070	0.0138	0.0132	726.1969
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	48.9753	5.3000e-004	4.8000e-003	4.0300e-003	3.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004		5.7618	5.7618	1.1000e-004	1.1000e-004	5.7960
Total		**0.0667**	**0.5703**	**0.2447**	**3.6400e-003**		**0.0461**	**0.0461**		**0.0461**	**0.0461**		**727.6688**	**727.6688**	**0.0140**	**0.0133**	**731.9930**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	6.13621	0.0662	0.5655	0.2406	3.6100e-003		0.0457	0.0457		0.0457	0.0457		721.9070	721.9070	0.0138	0.0132	726.1969
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.0489753	5.3000e-004	4.8000e-003	4.0300e-003	3.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004		5.7618	5.7618	1.1000e-004	1.1000e-004	5.7960
Total		**0.0667**	**0.5703**	**0.2447**	**3.6400e-003**		**0.0461**	**0.0461**		**0.0461**	**0.0461**		**727.6688**	**727.6688**	**0.0140**	**0.0133**	**731.9930**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	7.1625	3.6573	21.5240	0.0229		0.3883	0.3883		0.3883	0.3883	0.0000	4,410.1781	4,410.1781	0.1186	0.0802	4,437.0400
Unmitigated	7.1625	3.6573	21.5240	0.0229		0.3883	0.3883		0.3883	0.3883	0.0000	4,410.1781	4,410.1781	0.1186	0.0802	4,437.0400

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5220					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.6347					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4010	3.4263	1.4580	0.0219		0.2770	0.2770		0.2770	0.2770	0.0000	4,374.0000	4,374.0000	0.0838	0.0802	4,399.9925
Landscaping	0.6048	0.2310	20.0660	1.0600e-003		0.1113	0.1113		0.1113	0.1113		36.1781	36.1781	0.0348		37.0475
Total	**7.1625**	**3.6573**	**21.5240**	**0.0229**		**0.3883**	**0.3883**		**0.3883**	**0.3883**	**0.0000**	**4,410.1781**	**4,410.1781**	**0.1186**	**0.0802**	**4,437.0400**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5220					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.6347					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4010	3.4263	1.4580	0.0219		0.2770	0.2770		0.2770	0.2770	0.0000	4,374.0000	4,374.0000	0.0838	0.0802	4,399.9925
Landscaping	0.6048	0.2310	20.0660	1.0600e-003		0.1113	0.1113		0.1113	0.1113		36.1781	36.1781	0.0348		37.0475
Total	**7.1625**	**3.6573**	**21.5240**	**0.0229**		**0.3883**	**0.3883**		**0.3883**	**0.3883**	**0.0000**	**4,410.1781**	**4,410.1781**	**0.1186**	**0.0802**	**4,437.0400**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Wilshire Highland

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	354.00	Space	0.00	141,600.00	0
Apartments Mid Rise	243.00	Dwelling Unit	1.69	271,150.00	695
Strip Mall	10.90	1000sqft	0.00	10,900.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2025
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Wilshire Highland - Los Angeles-South Coast County, Winter

Project Characteristics - Consistent with the SCEA's model.

Land Use - See SWAPE comment on "Underestimated Land Use Size."

Construction Phase - See SWAPE comment on "Unsubstantiated Changes to Individual Construction Phase Lengths."

Off-road Equipment - Consistent with the SCEA's model.

Off-road Equipment - Consistent with the SCEA's model.

Off-road Equipment - Consistent with the SCEA's model.

Off-road Equipment - Consistent with the SCEA's model.

Off-road Equipment - Consistent with the SCEA's model.

Trips and VMT - Consistent with the SCEA's model.

Demolition - Consistent with the SCEA's model.

Grading - Consistent with the SCEA's model.

Architectural Coating - See SWAPE comment on "Unsubstantiated Reduction to Architectural Coating Area."

Vehicle Trips - Consistent with the SCEA's model.

Woodstoves - Consistent with the SCEA's model.

Energy Use -

Construction Off-road Equipment Mitigation - See SWAPE comment on "Incorrect Application of Construction-Related Mitigation Measures."

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	28.00
tblConstructionPhase	NumDays	200.00	554.00
tblConstructionPhase	NumDays	20.00	55.00
tblConstructionPhase	NumDays	4.00	11.00
tblConstructionPhase	NumDays	10.00	28.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberWood	12.15	0.00
tblGrading	MaterialExported	0.00	65,095.00
tblLandUse	LandUseSquareFeet	243,000.00	271,150.00

tblLandUse	LotAcreage	3.19	0.00
tblLandUse	LotAcreage	6.39	1.69
tblLandUse	LotAcreage	0.25	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblTripsAndVMT	HaulingTripNumber	8,137.00	9,300.00
tblVehicleTrips	ST_TR	6.39	5.25
tblVehicleTrips	ST_TR	42.04	35.89
tblVehicleTrips	SU_TR	5.86	5.25
tblVehicleTrips	SU_TR	20.43	35.89
tblVehicleTrips	WD_TR	6.65	5.25
tblVehicleTrips	WD_TR	44.32	35.89
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	8.0976	224.7582	66.4943	0.6622	16.2068	1.2903	17.3047	4.2705	1.2282	5.3075	0.0000	71,608.0609	71,608.0609	5.5303	0.0000	71,746.3187
2023	1.9470	12.6144	16.3074	0.0522	2.9868	0.3962	3.3830	0.7995	0.3647	1.1643	0.0000	5,246.0925	5,246.0925	0.6418	0.0000	5,262.1378
2024	68.4186	11.8674	15.6795	0.0514	2.9868	0.3619	3.3487	0.7995	0.3331	1.1326	0.0000	5,167.7168	5,167.7168	0.6357	0.0000	5,183.6083
2025	68.3996	1.2521	3.1018	7.4400e-003	0.5365	0.0554	0.5920	0.1423	0.0551	0.1974	0.0000	727.0881	727.0881	0.0256	0.0000	727.7290
Maximum	**68.4186**	**224.7582**	**66.4943**	**0.6622**	**16.2068**	**1.2903**	**17.3047**	**4.2705**	**1.2282**	**5.3075**	**0.0000**	**71,608.0609**	**71,608.0609**	**5.5303**	**0.0000**	**71,746.3187**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	8.0976	224.7582	66.4943	0.6622	16.2068	1.2903	17.3047	4.2705	1.2282	5.3075	0.0000	71,608.0609	71,608.0609	5.5303	0.0000	71,746.3187
2023	1.9470	12.6144	16.3074	0.0522	2.9868	0.3962	3.3830	0.7995	0.3647	1.1643	0.0000	5,246.0925	5,246.0925	0.6418	0.0000	5,262.1378
2024	68.4186	11.8674	15.6795	0.0514	2.9868	0.3619	3.3487	0.7995	0.3331	1.1326	0.0000	5,167.7168	5,167.7168	0.6357	0.0000	5,183.6083
2025	68.3996	1.2521	3.1018	7.4400e-003	0.5365	0.0554	0.5920	0.1423	0.0551	0.1974	0.0000	727.0881	727.0881	0.0256	0.0000	727.7290
Maximum	**68.4186**	**224.7582**	**66.4943**	**0.6622**	**16.2068**	**1.2903**	**17.3047**	**4.2705**	**1.2282**	**5.3075**	**0.0000**	**71,608.0609**	**71,608.0609**	**5.5303**	**0.0000**	**71,746.3187**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	7.1625	3.6573	21.5240	0.0229		0.3883	0.3883		0.3883	0.3883	0.0000	4,410.1781	4,410.1781	0.1186	0.0802	4,437.0400
Energy	0.0667	0.5703	0.2447	3.6400e-003		0.0461	0.0461		0.0461	0.0461		727.6688	727.6688	0.0140	0.0133	731.9930
Mobile	2.2841	10.3704	28.9490	0.1170	10.8503	0.0911	10.9414	2.9031	0.0846	2.9877		11,940.1010	11,940.1010	0.5699		11,954.3492
Total	**9.5133**	**14.5980**	**50.7177**	**0.1435**	**10.8503**	**0.5254**	**11.3758**	**2.9031**	**0.5190**	**3.4221**	**0.0000**	**17,077.9479**	**17,077.9479**	**0.7025**	**0.0935**	**17,123.3821**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	7.1625	3.6573	21.5240	0.0229		0.3883	0.3883		0.3883	0.3883	0.0000	4,410.1781	4,410.1781	0.1186	0.0802	4,437.0400
Energy	0.0667	0.5703	0.2447	3.6400e-003		0.0461	0.0461		0.0461	0.0461		727.6688	727.6688	0.0140	0.0133	731.9930
Mobile	2.2841	10.3704	28.9490	0.1170	10.8503	0.0911	10.9414	2.9031	0.0846	2.9877		11,940.1010	11,940.1010	0.5699		11,954.3492
Total	**9.5133**	**14.5980**	**50.7177**	**0.1435**	**10.8503**	**0.5254**	**11.3758**	**2.9031**	**0.5190**	**3.4221**	**0.0000**	**17,077.9479**	**17,077.9479**	**0.7025**	**0.0935**	**17,123.3821**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2022	8/16/2022	5	55	
2	Grading	Grading	8/17/2022	8/31/2022	5	11	
3	Building Construction	Building Construction	9/1/2022	10/15/2024	5	554	
4	Paving	Paving	10/16/2024	11/22/2024	5	28	
5	Architectural Coating	Architectural Coating	11/23/2024	1/1/2025	5	28	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 5.5

Acres of Paving: 0

Residential Indoor: 571,151; Residential Outdoor: 190,384; Non-Residential Indoor: 16,350; Non-Residential Outdoor: 5,450; Striped Parking Area: 8,496 (Architectural Coating – sqft)

OffRoad Equipment

Wilshire Highland - Los Angeles-South Coast County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	3	8.00	81	0.73
Demolition	Crawler Tractors	1	8.00	212	0.43
Demolition	Excavators	1	8.00	158	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Signal Boards	4	8.00	6	0.82
Demolition	Skid Steer Loaders	1	8.00	65	0.37
Demolition	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Crawler Tractors	1	8.00	212	0.43
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Rubber Tired Dozers	0	6.00	247	0.40
Grading	Signal Boards	4	8.00	6	0.82
Grading	Skid Steer Loaders	1	8.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	2	6.00	231	0.29
Building Construction	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	0	6.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	11	28.00	0.00	1,279.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	9,300.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	4	238.00	51.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	48.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.0330	0.0000	5.0330	0.7621	0.0000	0.7621			0.0000			0.0000
Off-Road	2.9036	27.3482	22.7372	0.0452		1.2709	1.2709		1.2098	1.2098		4,261.7227	4,261.7227	0.8570		4,283.1467
Total	**2.9036**	**27.3482**	**22.7372**	**0.0452**	**5.0330**	**1.2709**	**6.3040**	**0.7621**	**1.2098**	**1.9718**		**4,261.7227**	**4,261.7227**	**0.8570**		**4,283.1467**

3.2 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1890	5.8609	1.5320	0.0176	0.4066	0.0169	0.4235	0.1115	0.0162	0.1276		1,911.0975	1,911.0975	0.1361		1,914.4991
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1254	0.0825	0.9497	2.9100e-003	0.3130	2.4500e-003	0.3154	0.0830	2.2600e-003	0.0853		289.6795	289.6795	7.9800e-003		289.8789
Total	**0.3144**	**5.9434**	**2.4817**	**0.0205**	**0.7196**	**0.0194**	**0.7390**	**0.1945**	**0.0184**	**0.2129**		**2,200.7769**	**2,200.7769**	**0.1441**		**2,204.3780**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.0330	0.0000	5.0330	0.7621	0.0000	0.7621			0.0000			0.0000
Off-Road	2.9036	27.3482	22.7372	0.0452		1.2709	1.2709		1.2098	1.2098	0.0000	4,261.7227	4,261.7227	0.8570		4,283.1466
Total	**2.9036**	**27.3482**	**22.7372**	**0.0452**	**5.0330**	**1.2709**	**6.3040**	**0.7621**	**1.2098**	**1.9718**	**0.0000**	**4,261.7227**	**4,261.7227**	**0.8570**		**4,283.1466**

3.2 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1890	5.8609	1.5320	0.0176	0.4066	0.0169	0.4235	0.1115	0.0162	0.1276		1,911.0975	1,911.0975	0.1361		1,914.4991
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1254	0.0825	0.9497	2.9100e-003	0.3130	2.4500e-003	0.3154	0.0830	2.2600e-003	0.0853		289.6795	289.6795	7.9800e-003		289.8789
Total	**0.3144**	**5.9434**	**2.4817**	**0.0205**	**0.7196**	**0.0194**	**0.7390**	**0.1945**	**0.0184**	**0.2129**		**2,200.7769**	**2,200.7769**	**0.1441**		**2,204.3780**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.1995	0.0000	1.1995	0.1586	0.0000	0.1586			0.0000			0.0000
Off-Road	1.1375	11.6173	10.1194	0.0206		0.4819	0.4819		0.4478	0.4478		1,920.2775	1,920.2775	0.5777		1,934.7210
Total	**1.1375**	**11.6173**	**10.1194**	**0.0206**	**1.1995**	**0.4819**	**1.6814**	**0.1586**	**0.4478**	**0.6064**		**1,920.2775**	**1,920.2775**	**0.5777**		**1,934.7210**

3.3 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	6.8705	213.0820	55.6966	0.6396	14.7838	0.6142	15.3980	4.0526	0.5877	4.6402		69,480.8695	69,480.8695	4.9469		69,604.5414
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0896	0.0589	0.6784	2.0800e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		206.9139	206.9139	5.7000e-003		207.0563
Total	**6.9601**	**213.1409**	**56.3749**	**0.6417**	**15.0073**	**0.6160**	**15.6233**	**4.1119**	**0.5893**	**4.7011**		**69,687.7834**	**69,687.7834**	**4.9526**		**69,811.5977**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.1995	0.0000	1.1995	0.1586	0.0000	0.1586			0.0000			0.0000
Off-Road	1.1375	11.6173	10.1194	0.0206		0.4819	0.4819		0.4478	0.4478	0.0000	1,920.2775	1,920.2775	0.5777		1,934.7210
Total	**1.1375**	**11.6173**	**10.1194**	**0.0206**	**1.1995**	**0.4819**	**1.6814**	**0.1586**	**0.4478**	**0.6064**	**0.0000**	**1,920.2775**	**1,920.2775**	**0.5777**		**1,934.7210**

3.3 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	6.8705	213.0820	55.6966	0.6396	14.7838	0.6142	15.3980	4.0526	0.5877	4.6402		69,480.8695	69,480.8695	4.9469		69,604.5414
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0896	0.0589	0.6784	2.0800e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		206.9139	206.9139	5.7000e-003		207.0563
Total	**6.9601**	**213.1409**	**56.3749**	**0.6417**	**15.0073**	**0.6160**	**15.6233**	**4.1119**	**0.5893**	**4.7011**		**69,687.7834**	**69,687.7834**	**4.9526**		**69,811.5977**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8854	9.3101	7.7721	0.0162		0.4141	0.4141		0.3810	0.3810		1,564.1900	1,564.1900	0.5059		1,576.8373
Total	**0.8854**	**9.3101**	**7.7721**	**0.0162**		**0.4141**	**0.4141**		**0.3810**	**0.3810**		**1,564.1900**	**1,564.1900**	**0.5059**		**1,576.8373**

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1528	4.6960	1.3554	0.0126	0.3265	9.1400e-003	0.3357	0.0940	8.7400e-003	0.1028		1,351.3484	1,351.3484	0.0849		1,353.4716
Worker	1.0659	0.7010	8.0724	0.0247	2.6603	0.0208	2.6811	0.7055	0.0192	0.7247		2,462.2753	2,462.2753	0.0678		2,463.9703
Total	**1.2186**	**5.3971**	**9.4278**	**0.0374**	**2.9868**	**0.0300**	**3.0168**	**0.7995**	**0.0279**	**0.8275**		**3,813.6237**	**3,813.6237**	**0.1527**		**3,817.4419**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8854	9.3101	7.7721	0.0162		0.4141	0.4141		0.3810	0.3810	0.0000	1,564.1900	1,564.1900	0.5059		1,576.8373
Total	**0.8854**	**9.3101**	**7.7721**	**0.0162**		**0.4141**	**0.4141**		**0.3810**	**0.3810**	**0.0000**	**1,564.1900**	**1,564.1900**	**0.5059**		**1,576.8373**

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1528	4.6960	1.3554	0.0126	0.3265	9.1400e-003	0.3357	0.0940	8.7400e-003	0.1028		1,351.3484	1,351.3484	0.0849		1,353.4716
Worker	1.0659	0.7010	8.0724	0.0247	2.6603	0.0208	2.6811	0.7055	0.0192	0.7247		2,462.2753	2,462.2753	0.0678		2,463.9703
Total	**1.2186**	**5.3971**	**9.4278**	**0.0374**	**2.9868**	**0.0300**	**3.0168**	**0.7995**	**0.0279**	**0.8275**		**3,813.6237**	**3,813.6237**	**0.1527**		**3,817.4419**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8293	8.4237	7.6829	0.0162		0.3717	0.3717		0.3419	0.3419		1,564.5169	1,564.5169	0.5060		1,577.1668
Total	**0.8293**	**8.4237**	**7.6829**	**0.0162**		**0.3717**	**0.3717**		**0.3419**	**0.3419**		**1,564.5169**	**1,564.5169**	**0.5060**		**1,577.1668**

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1135	3.5567	1.2044	0.0122	0.3265	4.3400e-003	0.3309	0.0940	4.1500e-003	0.0982		1,309.3807	1,309.3807	0.0748		1,311.2498
Worker	1.0042	0.6340	7.4201	0.0238	2.6603	0.0202	2.6805	0.7055	0.0186	0.7242		2,372.1950	2,372.1950	0.0611		2,373.7212
Total	**1.1177**	**4.1907**	**8.6245**	**0.0360**	**2.9868**	**0.0246**	**3.0114**	**0.7995**	**0.0228**	**0.8223**		**3,681.5756**	**3,681.5756**	**0.1358**		**3,684.9710**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8293	8.4237	7.6829	0.0162		0.3717	0.3717		0.3419	0.3419	0.0000	1,564.5169	1,564.5169	0.5060		1,577.1668
Total	**0.8293**	**8.4237**	**7.6829**	**0.0162**		**0.3717**	**0.3717**		**0.3419**	**0.3419**	**0.0000**	**1,564.5169**	**1,564.5169**	**0.5060**		**1,577.1668**

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1135	3.5567	1.2044	0.0122	0.3265	4.3400e-003	0.3309	0.0940	4.1500e-003	0.0982		1,309.3807	1,309.3807	0.0748		1,311.2498
Worker	1.0042	0.6340	7.4201	0.0238	2.6603	0.0202	2.6805	0.7055	0.0186	0.7242		2,372.1950	2,372.1950	0.0611		2,373.7212
Total	**1.1177**	**4.1907**	**8.6245**	**0.0360**	**2.9868**	**0.0246**	**3.0114**	**0.7995**	**0.0228**	**0.8223**		**3,681.5756**	**3,681.5756**	**0.1358**		**3,684.9710**

3.4 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7858	7.7455	7.6038	0.0162		0.3377	0.3377		0.3106	0.3106		1,564.8014	1,564.8014	0.5061		1,577.4537
Total	**0.7858**	**7.7455**	**7.6038**	**0.0162**		**0.3377**	**0.3377**		**0.3106**	**0.3106**		**1,564.8014**	**1,564.8014**	**0.5061**		**1,577.4537**

3.4 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1107	3.5439	1.1679	0.0122	0.3265	4.2700e-003	0.3308	0.0940	4.0800e-003	0.0981		1,304.3024	1,304.3024	0.0736		1,306.1432
Worker	0.9529	0.5781	6.9078	0.0231	2.6603	0.0199	2.6802	0.7055	0.0184	0.7239		2,298.6130	2,298.6130	0.0559		2,300.0114
Total	**1.0636**	**4.1220**	**8.0757**	**0.0352**	**2.9868**	**0.0242**	**3.0110**	**0.7995**	**0.0224**	**0.8220**		**3,602.9154**	**3,602.9154**	**0.1296**		**3,606.1546**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7858	7.7455	7.6038	0.0162		0.3377	0.3377		0.3106	0.3106	0.0000	1,564.8014	1,564.8014	0.5061		1,577.4537
Total	**0.7858**	**7.7455**	**7.6038**	**0.0162**		**0.3377**	**0.3377**		**0.3106**	**0.3106**	**0.0000**	**1,564.8014**	**1,564.8014**	**0.5061**		**1,577.4537**

3.4 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1107	3.5439	1.1679	0.0122	0.3265	4.2700e-003	0.3308	0.0940	4.0800e-003	0.0981		1,304.3024	1,304.3024	0.0736		1,306.1432
Worker	0.9529	0.5781	6.9078	0.0231	2.6603	0.0199	2.6802	0.7055	0.0184	0.7239		2,298.6130	2,298.6130	0.0559		2,300.0114
Total	**1.0636**	**4.1220**	**8.0757**	**0.0352**	**2.9868**	**0.0242**	**3.0110**	**0.7995**	**0.0224**	**0.8220**		**3,602.9154**	**3,602.9154**	**0.1296**		**3,606.1546**

3.5 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6180	5.8607	8.8253	0.0136		0.2810	0.2810		0.2594	0.2594		1,297.8688	1,297.8688	0.4114		1,308.1547
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6180**	**5.8607**	**8.8253**	**0.0136**		**0.2810**	**0.2810**		**0.2594**	**0.2594**		**1,297.8688**	**1,297.8688**	**0.4114**		**1,308.1547**

3.5 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0521	0.0316	0.3773	1.2600e-003	0.1453	1.0900e-003	0.1464	0.0385	1.0000e-003	0.0395		125.5545	125.5545	3.0600e-003		125.6309
Total	**0.0521**	**0.0316**	**0.3773**	**1.2600e-003**	**0.1453**	**1.0900e-003**	**0.1464**	**0.0385**	**1.0000e-003**	**0.0395**		**125.5545**	**125.5545**	**3.0600e-003**		**125.6309**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6180	5.8607	8.8253	0.0136		0.2810	0.2810		0.2594	0.2594	0.0000	1,297.8688	1,297.8688	0.4114		1,308.1547
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6180**	**5.8607**	**8.8253**	**0.0136**		**0.2810**	**0.2810**		**0.2594**	**0.2594**	**0.0000**	**1,297.8688**	**1,297.8688**	**0.4114**		**1,308.1547**

3.5 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0521	0.0316	0.3773	1.2600e-003	0.1453	1.0900e-003	0.1464	0.0385	1.0000e-003	0.0395		125.5545	125.5545	3.0600e-003		125.6309
Total	**0.0521**	**0.0316**	**0.3773**	**1.2600e-003**	**0.1453**	**1.0900e-003**	**0.1464**	**0.0385**	**1.0000e-003**	**0.0395**		**125.5545**	**125.5545**	**3.0600e-003**		**125.6309**

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	68.0457					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**68.2265**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.6 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1922	0.1166	1.3932	4.6500e-003	0.5365	4.0200e-003	0.5406	0.1423	3.7000e-003	0.1460		463.5858	463.5858	0.0113		463.8679
Total	**0.1922**	**0.1166**	**1.3932**	**4.6500e-003**	**0.5365**	**4.0200e-003**	**0.5406**	**0.1423**	**3.7000e-003**	**0.1460**		**463.5858**	**463.5858**	**0.0113**		**463.8679**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	68.0457					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**68.2265**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.6 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1922	0.1166	1.3932	4.6500e-003	0.5365	4.0200e-003	0.5406	0.1423	3.7000e-003	0.1460		463.5858	463.5858	0.0113		463.8679
Total	**0.1922**	**0.1166**	**1.3932**	**4.6500e-003**	**0.5365**	**4.0200e-003**	**0.5406**	**0.1423**	**3.7000e-003**	**0.1460**		**463.5858**	**463.5858**	**0.0113**		**463.8679**

3.6 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	68.0457					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**68.2166**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.6 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1831	0.1066	1.2927	4.4700e-003	0.5365	3.9400e-003	0.5405	0.1423	3.6300e-003	0.1459		445.6401	445.6401	0.0103		445.8972
Total	**0.1831**	**0.1066**	**1.2927**	**4.4700e-003**	**0.5365**	**3.9400e-003**	**0.5405**	**0.1423**	**3.6300e-003**	**0.1459**		**445.6401**	**445.6401**	**0.0103**		**445.8972**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	68.0457					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**68.2166**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.6 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1831	0.1066	1.2927	4.4700e-003	0.5365	3.9400e-003	0.5405	0.1423	3.6300e-003	0.1459		445.6401	445.6401	0.0103		445.8972
Total	**0.1831**	**0.1066**	**1.2927**	**4.4700e-003**	**0.5365**	**3.9400e-003**	**0.5405**	**0.1423**	**3.6300e-003**	**0.1459**		**445.6401**	**445.6401**	**0.0103**		**445.8972**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.2841	10.3704	28.9490	0.1170	10.8503	0.0911	10.9414	2.9031	0.0846	2.9877		11,940.1010	11,940.1010	0.5699		11,954.3492
Unmitigated	2.2841	10.3704	28.9490	0.1170	10.8503	0.0911	10.9414	2.9031	0.0846	2.9877		11,940.1010	11,940.1010	0.5699		11,954.3492

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,275.75	1,275.75	1275.75	4,359,432	4,359,432
Enclosed Parking with Elevator	0.00	0.00	0.00		
Strip Mall	391.20	391.20	391.20	744,297	744,297
Total	1,666.95	1,666.95	1,666.95	5,103,729	5,103,729

4.3 Trip Type Information

	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 Mid 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
Strip Mall	16.60	8.40	6.90	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Enclosed Parking with Elevator	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Strip Mall	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0667	0.5703	0.2447	3.6400e-003		0.0461	0.0461		0.0461	0.0461		727.6688	727.6688	0.0140	0.0133	731.9930
NaturalGas Unmitigated	0.0667	0.5703	0.2447	3.6400e-003		0.0461	0.0461		0.0461	0.0461		727.6688	727.6688	0.0140	0.0133	731.9930

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	6136.21	0.0662	0.5655	0.2406	3.6100e-003		0.0457	0.0457		0.0457	0.0457		721.9070	721.9070	0.0138	0.0132	726.1969
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	48.9753	5.3000e-004	4.8000e-003	4.0300e-003	3.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004		5.7618	5.7618	1.1000e-004	1.1000e-004	5.7960
Total		**0.0667**	**0.5703**	**0.2447**	**3.6400e-003**		**0.0461**	**0.0461**		**0.0461**	**0.0461**		**727.6688**	**727.6688**	**0.0140**	**0.0133**	**731.9930**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	6.13621	0.0662	0.5655	0.2406	3.6100e-003		0.0457	0.0457		0.0457	0.0457		721.9070	721.9070	0.0138	0.0132	726.1969
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.0489753	5.3000e-004	4.8000e-003	4.0300e-003	3.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004		5.7618	5.7618	1.1000e-004	1.1000e-004	5.7960
Total		**0.0667**	**0.5703**	**0.2447**	**3.6400e-003**		**0.0461**	**0.0461**		**0.0461**	**0.0461**		**727.6688**	**727.6688**	**0.0140**	**0.0133**	**731.9930**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	7.1625	3.6573	21.5240	0.0229		0.3883	0.3883		0.3883	0.3883	0.0000	4,410.1781	4,410.1781	0.1186	0.0802	4,437.0400
Unmitigated	7.1625	3.6573	21.5240	0.0229		0.3883	0.3883		0.3883	0.3883	0.0000	4,410.1781	4,410.1781	0.1186	0.0802	4,437.0400

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5220					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.6347					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4010	3.4263	1.4580	0.0219		0.2770	0.2770		0.2770	0.2770	0.0000	4,374.0000	4,374.0000	0.0838	0.0802	4,399.9925
Landscaping	0.6048	0.2310	20.0660	1.0600e-003		0.1113	0.1113		0.1113	0.1113		36.1781	36.1781	0.0348		37.0475
Total	**7.1625**	**3.6573**	**21.5240**	**0.0229**		**0.3883**	**0.3883**		**0.3883**	**0.3883**	**0.0000**	**4,410.1781**	**4,410.1781**	**0.1186**	**0.0802**	**4,437.0400**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5220					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.6347					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4010	3.4263	1.4580	0.0219		0.2770	0.2770		0.2770	0.2770	0.0000	4,374.0000	4,374.0000	0.0838	0.0802	4,399.9925
Landscaping	0.6048	0.2310	20.0660	1.0600e-003		0.1113	0.1113		0.1113	0.1113		36.1781	36.1781	0.0348		37.0475
Total	**7.1625**	**3.6573**	**21.5240**	**0.0229**		**0.3883**	**0.3883**		**0.3883**	**0.3883**	**0.0000**	**4,410.1781**	**4,410.1781**	**0.1186**	**0.0802**	**4,437.0400**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Construction			Total		Operation	
2022					**Emission Rate**	
Annual Emissions (tons/year)	0.0482		Total DPM (lbs)	269.9194521	Annual Emissions (tons/year)	0.0309
Daily Emissions (lbs/day)	0.264109589		Total DPM (g)	122435.4635	Daily Emissions (lbs/day)	0.169315068
Construction Duration (days)	214		Emission Rate (g/s)	0.001501141	Total DPM (lbs)	61.8
Total DPM (lbs)	56.51945205		Release Height (meters)	3	Emission Rate (g/s)	0.000888904
Total DPM (g)	25637.22345		Total Acreage	1.68	Release Height (meters)	3
Start Date	6/1/2022		Max Horizontal (meters)	116.61	Total Acreage	1.68
End Date	1/1/2023		Min Horizontal (meters)	58.30	Max Horizontal (meters)	116.61
Construction Days	214		Initial Vertical Dimension (meters)	1.5	Min Horizontal (meters)	58.30
2023			Setting	Urban	Initial Vertical Dimension (meters)	1.5
Annual Emissions (tons/year)	0.0515		Population	3,898,747	Setting	Urban
Daily Emissions (lbs/day)	0.282191781		Start Date	6/1/2022	Population	3,898,747
Construction Duration (days)	365		End Date	12/31/2024		
Total DPM (lbs)	103		Total Construction Days	944		
Total DPM (g)	46720.8		Total Years of Construction	2.59		
Start Date	1/1/2023		Total Years of Operation	27.41		
End Date	1/1/2024					
Construction Days	365					
2024						
Annual Emissions (tons/year)	0.0552					
Daily Emissions (lbs/day)	0.302465753					
Construction Duration (days)	365					
Total DPM (lbs)	110.4					
Total DPM (g)	50077.44					
Start Date	1/1/2024					
End Date	12/31/2024					
Construction Days	365					

Start date and time 05/02/22 16:33:34

AERSCREEN 21112

5001 Wilshire, Construction

5001 Wilshire, Construction

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

	METRIC	ENGLISH
** AREADATA **	----------	----------
Emission Rate:	0.150E-02 g/s	0.119E-01 lb/hr
Area Height:	3.00 meters	9.84 feet
Area Source Length:	116.61 meters	382.58 feet
Area Source Width:	58.30 meters	191.27 feet
Vertical Dimension:	1.50 meters	4.92 feet
Model Mode:	URBAN	
Population:	3898747	
Dist to Ambient Air:	1.0 meters	3. feet

** BUILDING DATA **

No Building Downwash Parameters

** TERRAIN DATA **

No Terrain Elevations

Source Base Elevation: 0.0 meters 0.0 feet

Probe distance: 5000. meters 16404. feet

No flagpole receptors

No discrete receptors used

** FUMIGATION DATA **

No fumigation requested

** METEOROLOGY DATA **

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

Minimum Wind Speed: 0.5 m/s

Anemometer Height: 10.000 meters

Dominant Surface Profile: Urban

Dominant Climate Type: Average Moisture

Surface friction velocity (u*): not adjusted

DEBUG OPTION ON

AERSCREEN output file:

2022.05.02_AERSCREEN_5001Wilshire_Construction.out

*** AERSCREEN Run is Ready to Begin

No terrain used, AERMAP will not be run

****

SURFACE CHARACTERISTICS & MAKEMET

Obtaining surface characteristics...

Using AERMET seasonal surface characteristics for Urban with Average Moisture

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

Creating met files aerscreen_01_01.sfc & aerscreen_01_01.pfl

Creating met files aerscreen_02_01.sfc & aerscreen_02_01.pfl

Creating met files aerscreen_03_01.sfc & aerscreen_03_01.pfl

Creating met files aerscreen_04_01.sfc & aerscreen_04_01.pfl

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

FLOWSECTOR started 05/02/22 16:36:49

****

Running AERMOD

Processing Winter

Processing surface roughness sector 1

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

Processing wind flow sector   1

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector   0

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

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

Processing wind flow sector   2

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector   5

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

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

Processing wind flow sector   3

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  10

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

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

Processing wind flow sector   4

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  15

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

               ***  NONE  ***

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

Processing wind flow sector   5

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  20

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

               ***  NONE  ***

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

Processing wind flow sector   6

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  25

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

               ***  NONE  ***

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

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  30

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

               ***  NONE  ***

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

  Running AERMOD

 Processing Spring

Processing surface roughness sector  1

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

Processing wind flow sector   1

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector   0

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

               ***  NONE  ***

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

Processing wind flow sector   2

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

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

               ***  NONE  ***


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

Processing wind flow sector   3


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  10


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

               ***  NONE  ***


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

Processing wind flow sector   4


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  15


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

               ***  NONE  ***


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

Processing wind flow sector   5


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

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

               ***  NONE  ***


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

Processing wind flow sector   6


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  25


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

               ***  NONE  ***


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

Processing wind flow sector   7


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  30


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

               ***  NONE  ***

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


  Running AERMOD

 Processing Summer


Processing surface roughness sector  1
```

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

Processing wind flow sector   1

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector   0

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

               ***  NONE  ***

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

Processing wind flow sector   2

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector   5

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

               ***  NONE  ***

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

Processing wind flow sector   3

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  10

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

               ***  NONE  ***

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

```
Processing wind flow sector   4

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  15

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

               ***  NONE  ***

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

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  20

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

               ***  NONE  ***

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

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  25

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

               ***  NONE  ***

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

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


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

               ***  NONE  ***

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


  Running AERMOD

 Processing Autumn


Processing surface roughness sector  1


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

Processing wind flow sector   1


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector   0


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

               ***  NONE  ***


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

Processing wind flow sector   2


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

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

               ***  NONE  ***


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

Processing wind flow sector   3


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  10


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

               ***  NONE  ***


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

Processing wind flow sector   4


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  15


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

               ***  NONE  ***


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

Processing wind flow sector   5


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  20


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

```
               ***  NONE  ***

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

Processing wind flow sector   6

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  25

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

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

Processing wind flow sector   7

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  30

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

FLOWSECTOR   ended 05/02/22 16:36:56

REFINE       started 05/02/22 16:36:56

 AERMOD Finishes Successfully for REFINE stage 3 Winter sector   0

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

*** NONE ***

REFINE ended 05/02/22 16:36:57

****

AERSCREEN Finished Successfully

With no errors or warnings

Check log file for details

****

Ending date and time 05/02/22 16:36:58

Concentration	Distance	Elevation	Diag	Season/Month	Zo	sector	Date	H0	U*	W*	DT/DZ	ZICNV
ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	HT	REF TA	HT				
0.37763E+01	1.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0							
0.43316E+01	25.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0							
0.47179E+01	50.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0							
* 0.48305E+01	59.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0							
0.33325E+01	75.00	0.00	20.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0							
0.19969E+01	100.00	0.00	5.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0							
0.14155E+01	125.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0							
0.10790E+01	150.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0							
0.86174E+00	175.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0							
0.71111E+00	200.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0							
0.60181E+00	225.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0							
0.51834E+00	250.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0							
0.45326E+00	275.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0							
0.40149E+00	300.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0							
0.35892E+00	325.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0							
0.32370E+00	350.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0							
0.29416E+00	375.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0							
0.26896E+00	400.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0							
0.24733E+00	425.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0							
0.22852E+00	450.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0							
0.21203E+00	475.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0							
0.19752E+00	500.00	0.00	5.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0							
0.18466E+00	525.00	0.00	5.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0							
0.17320E+00	550.00	0.00	5.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0							
0.16293E+00	575.00	0.00	5.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0							
0.15367E+00	600.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0

1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.14530E+00 625.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.13770E+00 650.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.13077E+00 675.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.12441E+00 700.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.11856E+00 725.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.11317E+00 750.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.10817E+00 775.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.10353E+00 800.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.99236E-01 825.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.95237E-01 850.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.91510E-01 875.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.88030E-01 900.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.84773E-01 925.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.81720E-01 950.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.78854E-01 975.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.76157E-01 1000.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.73617E-01 1025.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.71222E-01 1050.00 0.00 15.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.68956E-01 1075.00 0.00 15.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.67033E-01 1100.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.64996E-01 1125.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.63064E-01 1150.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.61229E-01 1175.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.59485E-01 1200.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.57825E-01 1225.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.56244E-01 1250.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.54736E-01 1275.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0

1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.53296E-01 1300.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.51921E-01 1325.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.50607E-01 1350.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.49348E-01 1375.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.48144E-01 1400.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.46989E-01 1425.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.45881E-01 1450.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.44818E-01 1475.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.43796E-01 1500.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.42815E-01 1525.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.41871E-01 1550.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.40962E-01 1575.00 0.00 15.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.40087E-01 1600.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.39244E-01 1625.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.38431E-01 1650.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.37646E-01 1675.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.36890E-01 1700.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.36159E-01 1725.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.35452E-01 1750.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.34770E-01 1775.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.34109E-01 1800.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.33471E-01 1825.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.32852E-01 1850.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.32254E-01 1875.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.31673E-01 1900.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.31111E-01 1924.99 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.30566E-01 1950.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0

1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.30037E-01 1975.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.29524E-01 2000.00 0.00 15.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.29025E-01 2025.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.28541E-01 2050.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.28072E-01 2075.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.27615E-01 2100.00 0.00 15.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.27171E-01 2125.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.26739E-01 2150.00 0.00 15.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.26319E-01 2175.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.25910E-01 2200.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.25513E-01 2224.99 0.00 15.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.25125E-01 2250.00 0.00 15.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.24748E-01 2275.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.24381E-01 2300.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.24023E-01 2325.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.23674E-01 2350.00 0.00 25.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.23333E-01 2375.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.23001E-01 2400.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.22678E-01 2425.00 0.00 20.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.22361E-01 2450.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.22053E-01 2475.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.21751E-01 2500.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.21457E-01 2525.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.21169E-01 2550.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.20888E-01 2575.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.20614E-01 2600.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.20345E-01 2625.00 0.00 20.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0

1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.20083E-01 2650.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.19826E-01 2675.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.19576E-01 2700.00 0.00 20.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.19330E-01 2725.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.19090E-01 2750.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.18855E-01 2775.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.18625E-01 2800.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.18399E-01 2825.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.18179E-01 2850.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.17963E-01 2875.00 0.00 25.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.17751E-01 2900.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.17544E-01 2925.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.17340E-01 2950.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.17141E-01 2975.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.16946E-01 3000.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.16754E-01 3025.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.16567E-01 3050.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.16383E-01 3075.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.16202E-01 3100.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.16025E-01 3125.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.15851E-01 3150.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.15680E-01 3174.99 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.15513E-01 3200.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.15348E-01 3225.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.15187E-01 3250.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.15029E-01 3275.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.14873E-01 3300.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0

1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.14720E-01 3325.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.14570E-01 3350.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.14422E-01 3375.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.14278E-01 3400.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.14135E-01 3425.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.13995E-01 3450.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.13857E-01 3475.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.13722E-01 3500.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.13589E-01 3525.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.13458E-01 3550.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.13330E-01 3575.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.13203E-01 3600.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.13079E-01 3625.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.12956E-01 3650.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.12836E-01 3675.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.12717E-01 3700.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.12601E-01 3725.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.12486E-01 3750.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
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1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.12261E-01 3800.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.12152E-01 3825.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.12044E-01 3850.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.11938E-01 3875.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.11833E-01 3900.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.11730E-01 3925.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.11629E-01 3950.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.11529E-01 3975.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0

1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.11430E-01 4000.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.11333E-01 4025.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.11238E-01 4050.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.11143E-01 4075.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.11051E-01 4100.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.10959E-01 4125.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.10869E-01 4150.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.10780E-01 4175.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.10692E-01 4200.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.10606E-01 4225.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.10520E-01 4250.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.10436E-01 4275.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.10353E-01 4300.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.10272E-01 4325.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.10191E-01 4350.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.10111E-01 4375.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.10033E-01 4400.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.99553E-02 4425.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.98789E-02 4450.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.98035E-02 4475.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.97290E-02 4500.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.96556E-02 4525.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.95830E-02 4550.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.95115E-02 4575.00 0.00 20.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.94408E-02 4600.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.93711E-02 4625.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.93022E-02 4650.00 0.00 20.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0

1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.92342E-02 4675.00 0.00 20.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.91671E-02 4700.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.91008E-02 4725.00 0.00 25.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.90353E-02 4750.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.89707E-02 4775.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.89068E-02 4800.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.88437E-02 4825.00 0.00 15.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.87814E-02 4850.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.87199E-02 4875.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.86591E-02 4900.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.85990E-02 4924.99 0.00 15.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.85396E-02 4950.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.84810E-02 4975.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.84230E-02 5000.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0

Start date and time 05/05/22 11:11:12

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

	METRIC	ENGLISH
** AREADATA **	---	---
Emission Rate:	0.889E-03 g/s	0.705E-02 lb/hr
Area Height:	3.00 meters	9.84 feet
Area Source Length:	116.61 meters	382.58 feet
Area Source Width:	58.30 meters	191.27 feet
Vertical Dimension:	1.50 meters	4.92 feet
Model Mode:	URBAN	
Population:	3898747	
Dist to Ambient Air:	1.0 meters	3. feet

** BUILDING DATA **

No Building Downwash Parameters

** TERRAIN DATA **

No Terrain Elevations

Source Base Elevation: 0.0 meters 0.0 feet

Probe distance: 5000. meters 16404. feet

No flagpole receptors

No discrete receptors used

** FUMIGATION DATA **

No fumigation requested

** METEOROLOGY DATA **

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

Minimum Wind Speed: 0.5 m/s

Anemometer Height: 10.000 meters

Dominant Surface Profile: Urban

Dominant Climate Type: Average Moisture

Surface friction velocity (u*): not adjusted

DEBUG OPTION ON

AERSCREEN output file:

2022.05.05_AERSCREEN_5001Wilshire_Operation.out

*** AERSCREEN Run is Ready to Begin

No terrain used, AERMAP will not be run

****

SURFACE CHARACTERISTICS & MAKEMET

Obtaining surface characteristics...

Using AERMET seasonal surface characteristics for Urban with Average Moisture

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

Creating met files aerscreen_01_01.sfc & aerscreen_01_01.pfl

Creating met files aerscreen_02_01.sfc & aerscreen_02_01.pfl

Creating met files aerscreen_03_01.sfc & aerscreen_03_01.pfl

Creating met files aerscreen_04_01.sfc & aerscreen_04_01.pfl

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

FLOWSECTOR   started 05/05/22 11:16:10

 ****

  Running AERMOD

 Processing Winter

Processing surface roughness sector 1

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

Processing wind flow sector   1

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector   0

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

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

Processing wind flow sector   2

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector   5

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

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

Processing wind flow sector   3

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  10

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

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

Processing wind flow sector   4

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  15

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

               ***  NONE  ***

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

Processing wind flow sector   5

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  20

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

               ***  NONE  ***

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

Processing wind flow sector   6

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  25

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

               ***  NONE  ***

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

```
Processing wind flow sector   7

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  30

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

               ***  NONE  ***

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

  Running AERMOD

 Processing Spring

Processing surface roughness sector  1

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

Processing wind flow sector   1

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector   0

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

               ***  NONE  ***

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

Processing wind flow sector   2

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

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

               ***  NONE  ***


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

Processing wind flow sector   3


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  10


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

               ***  NONE  ***


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

Processing wind flow sector   4


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  15


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

               ***  NONE  ***


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

Processing wind flow sector   5


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

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

               ***  NONE  ***


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

Processing wind flow sector   6


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  25


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

               ***  NONE  ***


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

Processing wind flow sector   7


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  30


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

               ***  NONE  ***

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


  Running AERMOD

 Processing Summer


Processing surface roughness sector  1
```

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

Processing wind flow sector   1

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector   0

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

               ***  NONE  ***

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

Processing wind flow sector   2

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector   5

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

               ***  NONE  ***

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

Processing wind flow sector   3

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  10

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

               ***  NONE  ***

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

```
Processing wind flow sector   4

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  15

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

               ***  NONE  ***

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

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  20

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

               ***  NONE  ***

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

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  25

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

               ***  NONE  ***

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

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


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

               ***  NONE  ***

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


  Running AERMOD

 Processing Autumn


Processing surface roughness sector  1


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

Processing wind flow sector   1


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector   0


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

               ***  NONE  ***


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

Processing wind flow sector   2


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

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

               ***  NONE  ***


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

Processing wind flow sector   3


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  10


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

               ***  NONE  ***


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

Processing wind flow sector   4


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  15


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

               ***  NONE  ***


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

Processing wind flow sector   5


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  20


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

```
               ***  NONE  ***

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

Processing wind flow sector   6

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  25

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

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

Processing wind flow sector   7

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  30

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

FLOWSECTOR   ended 05/05/22 11:16:16

REFINE       started 05/05/22 11:16:16

 AERMOD Finishes Successfully for REFINE stage 3 Winter sector   0

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

*** NONE ***

REFINE ended 05/05/22 11:16:18

****

AERSCREEN Finished Successfully

With no errors or warnings

Check log file for details

****

Ending date and time 05/05/22 11:16:19

Concentration	Distance	Elevation	Diag	Season/Month	Zo sector	Date	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	HT	REF TA	HT
0.22370E+01	1.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	310.0	2.0
0.25660E+01	25.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	310.0	2.0
0.27949E+01	50.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	310.0	2.0
* 0.28615E+01	59.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	310.0	2.0
0.19742E+01	75.00	0.00	20.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	310.0	2.0
0.11829E+01	100.00	0.00	5.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	310.0	2.0
0.83854E+00	125.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	310.0	2.0
0.63916E+00	150.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	310.0	2.0
0.51049E+00	175.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	310.0	2.0
0.42126E+00	200.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	310.0	2.0
0.35651E+00	225.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	310.0	2.0
0.30706E+00	250.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	310.0	2.0
0.26851E+00	275.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	310.0	2.0
0.23784E+00	300.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	310.0	2.0
0.21262E+00	325.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	310.0	2.0
0.19176E+00	350.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	310.0	2.0
0.17426E+00	375.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	310.0	2.0
0.15933E+00	400.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	310.0	2.0
0.14652E+00	425.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	310.0	2.0
0.13538E+00	450.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	310.0	2.0
0.12560E+00	475.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	310.0	2.0
0.11701E+00	500.00	0.00	5.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	310.0	2.0
0.10939E+00	525.00	0.00	5.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	310.0	2.0
0.10260E+00	550.00	0.00	5.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	310.0	2.0
0.96516E-01	575.00	0.00	5.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	310.0	2.0
0.91030E-01	600.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0							

1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.86073E-01 625.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.81570E-01 650.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.77464E-01 675.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.73698E-01 700.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.70232E-01 725.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.67040E-01 750.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.64078E-01 775.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.61333E-01 800.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.58786E-01 825.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.56418E-01 850.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.54210E-01 875.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.52148E-01 900.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.50219E-01 925.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.48410E-01 950.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.46712E-01 975.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.45115E-01 1000.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.43610E-01 1025.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.42191E-01 1050.00 0.00 15.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.40849E-01 1075.00 0.00 15.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.39710E-01 1100.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.38503E-01 1125.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.37359E-01 1150.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.36272E-01 1175.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.35238E-01 1200.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.34255E-01 1225.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.33318E-01 1250.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.32425E-01 1275.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0

1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.31572E-01 1300.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.30758E-01 1325.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.29979E-01 1350.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.29234E-01 1375.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.28520E-01 1400.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.27836E-01 1425.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.27180E-01 1450.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.26550E-01 1475.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.25945E-01 1500.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.25363E-01 1525.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.24804E-01 1550.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.24265E-01 1575.00 0.00 15.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.23747E-01 1600.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.23248E-01 1625.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.22766E-01 1650.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.22301E-01 1675.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.21853E-01 1700.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.21420E-01 1725.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.21002E-01 1750.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.20597E-01 1775.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.20206E-01 1800.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.19828E-01 1824.99 0.00 15.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.19461E-01 1850.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.19107E-01 1875.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.18763E-01 1900.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.18430E-01 1924.99 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.18107E-01 1950.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0

1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.17794E-01 1975.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.17490E-01 2000.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.17194E-01 2025.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.16908E-01 2050.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.16629E-01 2075.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.16359E-01 2100.00 0.00 15.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.16096E-01 2125.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.15840E-01 2150.00 0.00 30.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.15591E-01 2175.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.15349E-01 2200.00 0.00 20.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.15113E-01 2225.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.14884E-01 2250.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.14660E-01 2275.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.14443E-01 2300.00 0.00 15.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.14231E-01 2325.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.14024E-01 2350.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.13822E-01 2375.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.13626E-01 2400.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.13434E-01 2425.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.13247E-01 2450.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.13064E-01 2475.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.12885E-01 2500.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.12711E-01 2525.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.12540E-01 2550.00 0.00 15.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.12374E-01 2575.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.12211E-01 2600.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.12052E-01 2625.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0

1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.11897E-01 2650.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.11745E-01 2675.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.11596E-01 2700.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.11451E-01 2725.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.11309E-01 2750.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.11169E-01 2775.00 0.00 15.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.11033E-01 2800.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.10900E-01 2825.00 0.00 15.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.10769E-01 2850.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.10641E-01 2875.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.10515E-01 2900.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.10393E-01 2925.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.10272E-01 2950.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.10154E-01 2975.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.10039E-01 3000.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.99252E-02 3025.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.98140E-02 3050.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.97049E-02 3075.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.95979E-02 3100.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.94930E-02 3125.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.93900E-02 3150.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.92889E-02 3174.99 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.91897E-02 3199.99 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.90923E-02 3225.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.89967E-02 3250.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.89029E-02 3275.00 0.00 20.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.88107E-02 3300.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0

1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.87201E-02 3325.00 0.00 15.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.86312E-02 3350.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.85438E-02 3375.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.84579E-02 3400.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.83735E-02 3425.00 0.00 25.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.82906E-02 3450.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.82090E-02 3475.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.81289E-02 3500.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.80501E-02 3525.00 0.00 25.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.79726E-02 3550.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.78964E-02 3575.00 0.00 15.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.78215E-02 3600.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.77477E-02 3625.00 0.00 15.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.76752E-02 3650.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.76038E-02 3675.00 0.00 20.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.75336E-02 3700.00 0.00 20.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.74645E-02 3724.99 0.00 20.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.73965E-02 3750.00 0.00 15.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.73295E-02 3775.00 0.00 25.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.72636E-02 3800.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.71987E-02 3825.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.71348E-02 3849.99 0.00 15.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.70719E-02 3875.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.70100E-02 3900.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.69489E-02 3925.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.68888E-02 3950.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.68296E-02 3975.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0

1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.67713E-02 4000.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.67138E-02 4025.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.66571E-02 4050.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.66013E-02 4075.00 0.00 5.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.65463E-02 4100.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.64921E-02 4125.00 0.00 15.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.64386E-02 4150.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.63859E-02 4175.00 0.00 25.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.63339E-02 4200.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.62827E-02 4225.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.62322E-02 4250.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.61824E-02 4275.00 0.00 15.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.61333E-02 4300.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.60848E-02 4325.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.60370E-02 4350.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.59899E-02 4375.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.59434E-02 4400.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.58975E-02 4425.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.58522E-02 4450.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.58075E-02 4475.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.57634E-02 4500.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.57199E-02 4525.00 0.00 10.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.56769E-02 4550.00 0.00 15.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.56345E-02 4575.00 0.00 20.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.55926E-02 4600.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.55513E-02 4625.00 0.00 25.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.55105E-02 4650.00 0.00 0.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0

1.000 1.50 0.35 0.50 10.0 310.0 2.0
0.54703E-02 4675.00 0.00 15.0 Winter 0-360 10011001 -1.30 0.043 -9.000 0.020 -999. 21. 6.0
1.000 1.50 0.35 0.50 10.0 310.0 2.0
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SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

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

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

Education:

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

Professional Certifications:

California Professional Geologist
California Certified Hydrogeologist
Qualified SWPPP Developer and Practitioner

Professional Experience:

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

Positions Matt has held include:

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

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

Senior Regulatory and Litigation Support Analyst:

With SWAPE, Matt's responsibilities have included:

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

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

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

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

Executive Director:

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

Hydrogeology:

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

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

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

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

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

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

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

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

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

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

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

Policy:

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

Activities included the following:

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

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

Geology:

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

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

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

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

Teaching:

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

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

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

Invited Testimony, Reports, Papers and Presentations:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Other Experience:

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

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

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Paul Rosenfeld, Ph.D.

Chemical Fate and Transport & Air Dispersion Modeling

Principal Environmental Chemist

Risk Assessment & Remediation Specialist

Education

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

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

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

Professional Experience

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

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

Professional History:

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

Publications:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Presentations:

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

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

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

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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.

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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.

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

Teaching Experience:

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

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

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

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

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

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

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

Academic Grants Awarded:

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

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

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

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

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

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

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

Deposition and/or Trial Testimony:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**Air Quality,
Greenhouse Gases,
Noise Analysis**

noah tanski environmental consulting

**email: noah@ntenvironmental.net
call/text: 310-722-6346**

May 10, 2022

Re: Comments Regarding the Sustainable Communities Environmental Assessment for the Wilshire/Highland Project (ENV-2021-3327-SCEA; DIR-2021-3324-CLQ; DIR-2021-3326-TOC-SPR-VHCA; VVT-83358-CN)

Dear Mr. Woon:

I have reviewed the Wilshire/Highland Project SCEA ("Project"). This letter presents my comments regarding the Project's noise and air quality analyses and conclusions.

Unmitigated Noise Impact Not Supported by Substantial Evidence

Appendix G to the SCEA consists of the Project's "Noise and Vibration Technical Report," prepared by Impact Sciences, Inc. This report contains details regarding the methodology utilized to estimate the Project's noise and vibration impacts. However, Impact Sciences' "Noise and Vibration Technical Report" for the Project does not contain documentation supporting how unmitigated construction noise impacts were estimated for 665 S. Highland Avenue, 664 S. Citrus Avenue, and other sensitive receptors. Because of this omission, Impact Sciences' analytical process for predicting a 5.7 dBA L_{eq} unmitigated noise increase at 665 S. Highland Avenue and a 16.4 dBA L_{eq} unmitigated noise increase at 664 S. Citrus Avenue can only be indirectly and partially examined based on inferences from statements and materials contained in the SCEA and Appendix G.

The Impact Sciences "Noise and Vibration Technical Report" claims that "[n]oise levels associated with project-related construction activities were calculated using the FHWA Roadway Construction Noise Model (RCNM) and evaluated with existing ambient noise levels to determine new ambient noise levels with construction activities" (**Exhibit 1**).

Exhibit 1

4.2 Methodology

Noise levels associated with project-related construction activities were calculated using the FHWA Roadway Construction Noise Model (RCNM) and evaluated with existing ambient noise levels to determine new ambient noise levels with construction activities. The California Emissions Estimator Model (CalEEMod) construction equipment assumptions were used to develop a construction equipment list used for RCNM inputs. Noise levels were compared to the City's noise ordinance which includes provisions regarding construction noise levels.

Highlighted excerpt from the Appendix G "Noise and Vibration Technical Report."

Both the SCEA and this Appendix G report state that "demolition and grading noise impacts were modeled using the noise reference levels of excavators and front-end loaders, as these vehicles would be utilized extensively to demolish and grade for the Project." It then notes that excavators can generate "average peak" noise levels of 81 dBA at a distance of 50 feet. For front-end loaders, noise levels are 79 dBA at 50 feet. These reference noise levels are consistent with RCNM version 1.1 values. As shown below, the RCNM program utilizes reference noise levels of 80.7 dBA L_{max} at 50 feet for excavators and 79.1 dBA L_{max} at 50 feet for front-end loaders (**Exhibit 2**).

Exhibit 2

Equipment — Receptor #1: Test

	Active	Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Distance to Receptor (feet)	Estimated Shielding (dBA)
1	☑	Excavator	☐	40%	☐ 85.0	☑ 80.7	50.0	0.0
2	☑	Front End Loader	☐	40%	☐ 80.0	☑ 79.1	50.0	0.0
3	☐		☐		☐	☐		
4	☐		☐		☐	☐		
5	☐		☐		☐	☐		
6	☐		☐		☐	☐		

As indicated in the red box, the RCNM reference noise levels are 80.7 dBA at 50 feet for excavators and 79.1 dBA at 50 feet for front-end loaders, consistent with Impact Sciences' assumptions for these vehicles.

Based on these values, the RCNM program calculates that the combined noise level associated with the activities of one excavator and one front-end loader would be 79.0 dBA L_{eq} at a reference distance of 50 feet (**Exhibit 3**). Because Impact Sciences' "Noise and Vibration Technical Report" does not contain documentation supporting how unmitigated construction noise impacts were calculated for 665 S. Highland Avenue, 664 S. Citrus Avenue, and other sensitive receptors, it is not possible to substantiate whether this 79.0 dBA L_{eq} at 50 feet noise level was utilized in their analysis of unmitigated construction noise impacts. Notwithstanding, Impact Sciences' "mitigated" construction noise documentation in Appendix G indicates that a reference noise level of 79 dBA was utilized, along with a reference distance of 50 feet (**Exhibit 4**). Thus, it is inferred that Impact Sciences' analysis of unmitigated construction noise impacts relies on RCNM reference noise levels for excavators and front-end loaders.

Exhibit 3

Results

	Equipment	Calculated (dBA) Lmax*	Leq
	Total	80.7	79.0
1	Excavator	80.7	76.7
2	Front End Loader	79.1	75.1
3			
4			
5			

As indicated in the red box, RCNM calculates that the combined noise level from one excavator and one front-end loader is 79.0 dBA L_{eq} (at a distance of 50 feet).

Exhibit 4

Wilshire-Highland Project — Construction Noise - Mitigated

Reference Noise Distance: 50
Reference Noise Level: 79

Sensitive Receptor	Distance (feet)	Attenuation Factors	Maximum Construction Noise Level (RCNM)	Existing Ambient (dBA, Leq)	New Ambient (dBA, Leq)	Increase
Location #1 (665 S. Highland Ave)	15	21	58.0	68.7	69.1	0.4
Location #2 (664 S. Citrus Ave)	15	21	58.0	56.7	60.4	3.7
Location #3 (716 S. Citrus Ave)	250	9	56.0	59.6	61.2	1.6
Location #4 (John Burroughs Middle School)	500	12	47.0	59.9	60.1	0.2

As indicated in the red box, Impact Sciences' analysis assumes a reference noise level of 79 dBA L_{eq} at a reference distance of 50 feet, consistent with the RCNM value for one excavator and one front-end loader shown Exhibit 3.

The SCEA states, "The analysis assumes a 'worst case' condition where the construction equipment is located at the property line nearest to the sensitive receptors" (**Exhibit 5**). Because Impact Sciences' "Noise and Vibration Technical Report" does not contain documentation supporting how unmitigated construction noise impacts were calculated for 665 S. Highland Avenue, 664 S. Citrus Avenue, and other sensitive receptors, it is not possible to substantiate how this purported 'worst case' condition was quantified in their analysis of unmitigated construction noise impacts. Notwithstanding, the "mitigated" construction noise documentation in Appendix G indicates that mitigated noise increases at 665 S. Highland Avenue and 664 S. Citrus Avenue were calculated by assuming distances of 15 feet and 21 dBA worth of "Attenuation Factors" (**Exhibit 6**). Thus, it is inferred that the Impact Sciences analysis equates this "worst case" condition with an equipment-to-receptor distance of 15 feet for 665 S. Highland Avenue and 664 S. Citrus Avenue.

Exhibit 5

Mitigation Measure NOI-2 would require the use of sound barriers capable of achieving attenuation of at least 15 dBA along the Project's northern and western boundaries. The analysis assumes a "worst case" condition where the construction equipment is located at the property line nearest to the sensitive receptors. In this condition, the noise would need to be reduced by

Highlighted excerpt from the SCEA describing the "worst case" condition analyzed by Impact Sciences.

Exhibit 6

Wilshire-Highland Project — Construction Noise - Mitigated

Reference Noise Distance: 50
Reference Noise Level: 79

Sensitive Receptor	Distance (feet)	Attenuation Factors	Maximum Construction Noise Level (RCNM)	Existing Ambient (dBA, Leq)	New Ambient (dBA, Leq)	Increase
Location #1 (665 S. Highland Ave)	15	21	58.0	68.7	69.1	0.4
Location #2 (664 S. Citrus Ave)	15	21	58.0	56.7	60.4	3.7
Location #3 (716 S. Citrus Ave)	250	9	56.0	59.6	61.2	1.6
Location #4 (John Burroughs Middle School)	500	12	47.0	59.9	60.1	0.2

As indicated in the red box, Impact Sciences' analysis assumes a distance of 15 feet for calculating noise impacts at 665 S. Highland Avenue and 664 S. Citrus Avenue, equivalent to the "worst case" condition described in Exhibit 5.

However, if a similar RCNM analysis is conducted – one that also assumes a reference equipment noise level equivalent to one excavator and one front-end loader and an equipment-to-receptor distance of 15 feet, but with no "attenuation factors" (which, presumably, would be consistent with an unmitigated scenario) – the calculated unmitigated "maximum construction noise level" would actually be 89.5 dBA L_{eq} at 665 S. Highland Avenue and 664 S. Citrus Avenue (**Exhibit 7**). This greatly exceeds the unmitigated "maximum construction noise level" of 73.0 dBA L_{eq} that Impact Sciences has calculated for these receptors (**Exhibit 8**).

Exhibit 7

Equipment — Receptor #1: 664 S Citrus Ave and 665 S Highland Ave

	Active	Description	Impact Device	Usage(%)	Spec Lmax (dBA)		Actual Lmax (dBA)	Distance to Receptor (feet)	Estimated Shielding (dBA)
1	☑	Excavator	☐	40%	☐	85.0	☑ 80.7	15.0	0.0
2	☑	Front End Loader	☐	40%	☐	80.0	☑ 79.1	15.0	0.0
3	☐		☐		☐		☐		
4	☐		☐		☐		☐		
5	☐		☐		☐		☐		
6	☐		☐		☐		☐		

Results — Receptor #1: 664 S Citrus Ave and 665 S Highland Ave

	Equipment	Calculated (dBA) Lmax*	Calculated (dBA) Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance Day Lmax	Day Leq	Evening Lmax	Evening Leq
	Total	91.2	89.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	Excavator	91.2	87.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	Front End Loader	89.6	85.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3													

As indicated in the red boxes: when utilizing the reference noise levels of one excavator and one front-end loader, and a receptor distance of 15 feet, the resultant noise level is 89.5 dBA L_{eq} according to RCNM.

Exhibit 8

Table IV.13-4
Construction Noise Impacts at Off-Site Sensitive Receptors - Unmitigated

Receptor	Maximum Construction Noise Level (dBA L_{eq})	Existing Ambient Noise Level (dBA L_{eq})	New Ambient Noise Level (dBA L_{eq})	Increase (dBA L_{eq})	Potentially Significant ?
Location #1 – Residences at 665 S. Highland Ave	73.0	68.7	74.4	5.7	Yes
Location #2 – Residences at 664 S. Citrus Ave	73.0	56.7	73.1	16.4	Yes
Location #3 – Residences at 716 S. Citrus Ave	59.0	59.6	62.3	2.7	No
Location #4 – John Burroughs Middle School	50.0	59.9	60.3	0.4	No

Source: Impact Sciences, 2021.

As indicated in the red box, Impact Sciences discloses a calculated "Maximum Construction Noise Level" of just 73.0 dBA L_{eq} for 665 S. Highland Avenue and 664 S. Citrus Avenue.

The 89.5 dBA L_{eq} unmitigated "maximum construction noise level" calculated by the RCNM correlates with a 20.8 dBA L_{eq} increase at 665 S. Highland Avenue and a 32.8 dBA L_{eq} increase at 664 S. Citrus Avenue, which greatly exceed the respective 5.7 dBA L_{eq} and 16.4 dBA L_{eq} increases estimated by Impact Sciences for these receptors. This is not merely conflicting substantial evidence of a greater significant impact: it is

evidence that Impact Sciences' actual methodology must differ significantly from their purported RCNM-based methodology, and it must rely on unsubstantiated assumptions that are not consistent with what they have disclosed in the SCEA and in Appendix G. Or, it is evidence that the Impact Sciences analysis is inaccurate and erroneous. There is no readily apparent explanation as to how Impact Sciences could have arrived at a 5.7 dBA L_{eq} noise increase for 665 S. Highland Avenue and a 16.4 dBA L_{eq} noise increase for 664 S. Citrus Avenue without assuming: (1) an equipment-to-receptor distance that is greater than the purported 15 feet "worst case condition" for these receptors, (2) unspecified and therefore unsubstantiated "attenuation factors," or (3) some combination thereof. Obviously, unmitigated noise increases of 5.7 dBA L_{eq} and 16.4 dBA L_{eq} are easier to mitigate than increases of 20.8 dBA L_{eq} and 32.8 dBA L_{eq}. Impact Sciences should explain how they arrived at their calculated unmitigated noise increases for 665 S. Highland Avenue and 664 S. Citrus Avenue, including details regarding what, if any, attenuation factors were utilized. They should also demonstrate whether their calculated unmitigated noise increases are achievable by using the RCNM program they claim to have utilized. If the RCNM was not actually utilized, then they should disclose the actual noise modeling program or spreadsheet equation that was.

As demonstrated, the Impact Sciences analysis of the Project's unmitigated noise impacts at 665 S. Highland Avenue and 664 S. Citrus Avenue does not qualify as substantial evidence because:

1. Appendix G does not contain documentation pertaining to the analysis of the Project's unmitigated construction noise impacts. Therefore, there is no evidence in support of Impact Sciences' conclusion that the Project would result in a 5.7 dBA L_{eq} unmitigated noise increase at 665 S. Highland Avenue and a 16.4 dBA L_{eq} unmitigated noise increase at 664 S. Citrus Avenue. And if the conclusion lacks evidence, then it naturally lacks substantial evidence. Beyond identifying existing noise levels at sensitive receptors and identifying the reference noise levels of excavators and front-end loaders, the SCEA and Appendix G lack documentation of every other step in Impact Sciences' analytical process of calculating unmitigated noise impacts at sensitive receptors.
2. Even when utilizing assumptions inferred from the SCEA and Appendix G (i.e., a 79.0 dBA L_{eq} at 50 feet reference equipment noise level and a 15-foot "worst case condition" equipment-to-receptor distance), the 5.7 dBA L_{eq} unmitigated noise increase for 665 S. Highland Avenue and the 16.4 dBA L_{eq} unmitigated noise increase for 664 S. Citrus Avenue cannot be substantiated by Impact Sciences' purported RCNM methodology.[1]

Given these factors, Impact Sciences' analysis is either unsubstantiated, inaccurate, erroneous, or all three. Therefore, the determination that the Project's unmitigated construction noise impact would be a 5.7 dBA L_{eq} increase at 665 S. Highland Avenue and a 16.4 dBA L_{eq} increase at 664 S. Citrus Avenue is not supported by substantial evidence.

[1] Further, it is important to note that these inferences would not be apparent to a layperson. My experience with the subject matter allows me to reasonably infer (i.e., "piece together") Impact Sciences' use of certain assumptions, but no amount of experience and reasoning can "fill in the gaps" between Impact Sciences' stated methodological assumptions and their calculated unmitigated noise impacts. As explained earlier, there is no readily apparent explanation.

Mitigation Measure NOI-1 and NOI-2 Are Confusing, Likely Contain Errors

It should be specified that the following review of Mitigation Measure NOI-1 and NOI-2 refer to the versions of these measures that are contained in the SCEA, not those that are contained in the Appendix G "Noise and Vibration Technical Report." The SCEA measures are substantially different than those contained in that report.

The SCEA adopts Mitigation Measure NOI-1 and NOI-2 to "reduce construction noise to a below the 5 dBA threshold [sic] and to a level of less than significant," it claims.

The first issue with these measures is that they are essentially duplicates of one another, except that MM-NOI-1 establishes a performance standard of 1 dBA L_{eq} and MM-NOI-2 establishes a performance standard of 12 dBA L_{eq}. Both measures apply to "the construction phase along the northern property line," and both rely on the same "employable measures." Therefore, as written, MM-NOI-2 renders MM-NOI-1 completely moot. This is bizarre, and both mitigation measures should be reviewed for errors (**Exhibit 9**).

Exhibit 9

Mitigation Measures:

MM-NOI-1: During the construction phase along the northern property line, the project shall employ construction control measures to reduce increases in ambient noise at the closest receptors by a minimum of 1 decibel Leq. Examples of employable measures include use of mufflers, sound barriers and reducing activity levels of construction of equipment. This specification shall be included on all construction documents to ensure compliance.

MM-NOI-2: During the construction phase along the northern property line, the project shall employ construction control measures to reduce increases in ambient noise at the closest receptors by a minimum of 12 decibels Leq. Examples of employable measures include use of mufflers, sound barriers and reducing activity levels of construction of equipment. This specification shall be included on all construction documents to ensure compliance.

MM-NOI-1 and MM-NOI-2, from the SCEA.

Mitigation Measure NOI-1 and NOI-2 Do Not Establish the Performance Standard Stated by the SCEA

The second issue with these measures concerns the following statements made by the SCEA:

- "Mitigation Measure NOI-2 would require the use of sound barriers capable of achieving attenuation of at least 15 dBA along the Project's northern and western boundaries."
- "In this condition, the noise would need to be reduced by 15 dBA."
- "Nonetheless, the Mitigation Measure NOI-2 still requires a performance standard of 15 dBA reduction in noise at 15 feet of distance from the sensitive receptor to ensure noise levels do not exceed 5 dBA above measured ambient noise levels." (**Exhibit 10**)

These three statements establish the SCEA's position that in order "to ensure noise levels do not exceed 5 dBA above measured ambient noise levels," noise barriers "capable of achieving attenuation of at least

15 dBA" are required by MM-NOI-2. However, as noted earlier, MM-NOI-2 only establishes a performance standard of 12 dBA L_{eq}, which is 3 dBA less than the 15 dBA of attenuation that is allegedly required according to the quoted statements. If the statement "noise would need to be reduced by 15 dBA" is correct, then MM-NOI-2 is clearly inadequate. And if MM-NOI-2 is inadequate, then any claim that the Project's mitigated noise impacts would be less than significant after implementation of MM-NOI-2 is clearly erroneous. Therefore, implementation of MM-NOI-2 cannot be considered substantial evidence that the Project's mitigated noise impacts would be less than significant.[2]

Exhibit 10

> **Mitigation Measure NOI-2** would require the use of sound barriers capable of achieving attenuation of at least 15 dBA along the Project's northern and western boundaries. The analysis assumes a "worst case" condition where the construction equipment is located at the property line nearest to the sensitive receptors. In this condition, the noise would need to be reduced by 15 dBA. However, in practice, construction equipment will be in different places during different phases of the construction and actual sound levels will vary. For each doubling of distance construction equipment is located away from the property line to a receptor (i.e. going from a distance of 15 to 30 feet), noise attenuates by 6 dBA. Therefore, actual noise levels would be lower as the construction equipment moves further from the property line. Nonetheless, the **Mitigation Measure NOI-2** still requires a performance standard of 15 dBA reduction in noise at 15 feet of distance from the sensitive receptor to ensure noise levels do not exceed 5 dBA above measured ambient noise levels.

Highlighted excerpts from the SCEA indicate the need for MM-NOI-2 to achieve a performance standard of 15 dBA reduction in noise.

Furthermore, MM-NOI-2 does not actually implement a performance standard for noise barriers at all. The first quoted statement claims that "Mitigation Measure NOI-2 would require the use of sound barriers capable of achieving attenuation of at least 15 dBA along the Project's northern and western boundaries," but MM-NOI-2 states that "construction control measures" shall be employed to achieve a minimum 12 dBA L_{eq} reduction in noise increases "at the closest receptors." MM-NOI-2 explains that "employable measures" may include "use of mufflers, sound barriers and reducing activity levels of construction of equipment [sic]." Thus, as written, MM-NOI-2 would allow for a variety of techniques to individually or cumulatively achieve the minimum 12 dBA L_{eq} reduction performance standard. It would not actually mandate the use of noise barriers at all, let alone noise barriers "capable of achieving attenuation of at least 15 dBA."

It should also be noted that Impact Sciences' "Mitigated" construction noise documentation in Appendix G relies on 21 dBA of "attenuation factors" in order to mitigate noise impacts at the 665 S. Highland Avenue and 664 S. Citrus Avenue receptors to below the 5 dBA threshold of significance (**Exhibit 11**). This 21 dBA of attenuation is substantially greater than the 1 dBA L_{eq} performance standard established by MM-NOI-1 and the 12 dBA L_{eq} performance standard established by MM-NOI-2. This issue is addressed in greater detail later in this review. If Impact Sciences' "Mitigated" construction noise documentation is correct in requiring 21 dBA of attenuation to mitigate noise impacts at 665 S. Highland Avenue and 664 S.

[2] MM-NOI-1 only establishes a performance standard of 1 dBA L_{eq}, so it also would be incapable of satisfying the requirements laid out by the quoted statements.

Citrus Avenue to below the 5 dBA threshold of significance, then MM-NOI-1 and MM-NOI-2 are clearly inadequate. And if these measures are inadequate, then any claim that the Project's mitigated noise impacts would be less than significant after implementation of these measures is clearly erroneous. Therefore, implementation of MM-NOI-1 and MM-NOI-2 cannot be considered substantial evidence that the Project's mitigated noise impacts would be less than significant.

Exhibit 11

Wilshire-Highland Project — Construction Noise - Mitigated
Reference Noise Distance 50
Reference Noise Level 79

Sensitive Receptor	Distance (feet)	Attenuation Factors	Maximum Construction Noise Level (RCNM)	Existing Ambient (dBA, Leq)	New Ambient (dBA, Leq)	Increase
Location #1 (665 S. Highland Ave)	15	21	58.0	68.7	69.1	0.4
Location #2 (664 S. Citrus Ave)	15	21	58.0	56.7	60.4	3.7
Location #3 (716 S. Citrus Ave)	250	9	56.0	59.6	61.2	1.6
Location #4 (John Burroughs Middle School)	500	12	47.0	59.9	60.1	0.2

As indicated, Impact Sciences relies on 21 dBA worth of "attenuation factors" in order to mitigate noise impacts at 665 S. Highland Avenue and 664 S. Citrus Avenue – substantially greater than the performance standards established by MM-NOI-1 and MM-NOI-2.

Mitigation Measure NOI-1 and NOI-2 Would Not Reduce Noise Exposure for Nearby Sensitive Receptors

Impact Sciences accurately identifies the following sensitive receptors in proximity of the Project site: John Burroughs Middle School, Mansfield Avenue Park, and a multitude of residential land uses located along Citrus Avenue and Highland Avenue. Despite this, the Impact Sciences analysis only assesses impacts to four specific sensitive receptors (e.g., 665 S. Highland Avenue, 664 S. Citrus Avenue, 716 S. Citrus Avenue, and John Burroughs Middle School). This is not necessarily an issue; a project's impact can oftentimes be properly assessed – and mitigated – via the analysis of several representative or "keystone" receptors. When employing this method, though, it is crucial to remember that all nearby receptors must receive their appropriate mitigations – not just the select "keystone" receptors that were analyzed.

The Impact Sciences analysis correctly (if inaccurately) identifies the potential for unmitigated significant construction noise impacts to occur at 665 S. Highland Avenue and 664 S. Citrus Avenue, which are both to the immediate north of the Project. MM-NOI-1 and MM-NOI-2 seem targeted at reducing noise impacts to these receptors, as they specifically regulate "the construction phase along the northern property line." However, as written, neither MM-NOI-1 nor MM-NOI-2 would provide any mitigation for Mansfield Avenue Park, 665 S. Citrus Avenue, or other receptors that possess direct line-of-sight to the Project's western flank. The SCEA seems to acknowledge the necessity of mitigating the Project's construction noise impacts to these receptors when alleging that MM-NOI-2 "would require the use of sound barriers capable of achieving attenuation of at least 15 dBA along the Project's northern and western boundaries" (underlined for emphasis). But it is plainly evident that this consideration has not been factored into MM-NOI-1 or MM-NOI-2. And, as discussed earlier, neither MM-NOI-1 nor MM-NOI-2 would actually mandate the use of noise barriers at all.

If the Impact Sciences analysis relies on the presumption that Mansfield Avenue Park and 665 S. Citrus Avenue would experience construction noise-related impacts that are similar to the 664 S. Citrus Avenue receptor – i.e., a significant unmitigated impact – then impacts to Mansfield Avenue Park and 665 S. Citrus Avenue would be significant and unavoidable, because neither MM-NOI-1 nor MM-NOI-2 establish, or can

be purported to establish, mitigation along the Project's western flank with direct line-of-sight to these receptors. Thus, implementation of MM-NOI-1 and MM-NOI-2 cannot be considered substantial evidence that the Project's mitigated noise impacts would be less than significant at these receptors.

Mitigation Measure NOI-1 and NOI-2 Rely on Unsubstantiated Mitigation

The third issue with these measures is that they rely on unsubstantiated mitigation from mufflers. Both MM-NOI-1 and MM-NOI-2 list "use of mufflers" as examples of "construction control measures to reduce increases in ambient noise at the closest receptors," but neither the SCEA nor Impact Sciences' Appendix G "Noise and Vibration Technical Report" contain any discussion explaining how "use of mufflers" may be employed to reduce the source noise levels of construction equipment, such as excavators and front-end loaders. Impact Sciences' "Mitigated" construction noise documentation in Appendix G states that "[a] 3 dBA attenuation was given for the addition of mufflers." No reference is cited to substantiate this assumption that the "addition of mufflers" would provide 3 dBA of attenuation to construction equipment (**Exhibit 12**).

Exhibit 12

Wilshire-Highland Project — Construction Noise - Mitigated
Reference Noise Distance 50
Reference Noise Level 79

Sensitive Receptor	Distance (feet)	Attenuation Factors	Maximum Construction Noise Level (RCNM)	Existing Ambient (dBA, Leq)	New Ambient (dBA, Leq)	Increase
Location #1 (665 S. Highland Ave)	15	21	58.0	68.7	69.1	0.4
Location #2 (664 S. Citrus Ave)	15	21	58.0	56.7	60.4	3.7
Location #3 (716 S. Citrus Ave)	250	9	56.0	59.6	61.2	1.6
Location #4 (John Burroughs Middle School)	500	12	47.0	59.9	60.1	0.2

A 6 dBA attenuation was given for hard ground surfuce, and 3 dBA reduction was given for the first row of buildings intervening between the construction site and sensitive receptors (1.5 dBA for subsequent intervening structures), as recommended by the Caltrans Technical Noise Supplement.

A 15 dBA attenuation was given for sound barrier shielding along the northern and western boundaries of the project to obstruct line of sight noise travel from the project site to residences immediately adjacent to the north and residences along Citrus Ave. A 3 dBA attenuation was given for the addition of mufflers.

The highlighted excerpt regarding "addition of mufflers," from the Appendix G "Mitigated" construction noise documentation.

As the Impact Sciences analysis specifically concerns the operations of excavator and front-end loader vehicles, "use of mufflers" would presumably involve outfitting the exhaust systems of these vehicles with retrofit or aftermarket mufflers to reduce their noise levels. Therefore, by relying on mitigation from mufflers, the Impact Sciences analysis must assume one of the following: (1) that the Project's excavator, front-end loader, and other construction equipment would not be equipped with mufflers to begin with; or (2) that the Project's excavator, front-end loader, and other construction equipment could be retrofitted with higher-performing mufflers than their original systems.

The first assumption, if true, would be highly speculative because modern construction equipment – especially heavy equipment such as excavators and front-end loaders – come pre-equipped with advanced exhaust system technologies that include silencers and emissions control devices. It is rather implausible that any commercial construction fleet used for the Project would contain unmuffled heavy equipment, especially excavators and front-end loaders. This is especially true given the fact that the CARB Off-Road Diesel Regulation requires the increasing modernization of off-road diesel-fueled fleets.

The second assumption would also be highly speculative due to the latter point. As noted, modern construction equipment frequently possess advanced exhaust system technologies that include emissions control devices. CARB also requires complex reporting practices to document vehicle and engine information compliance for all off-road diesel vehicles that are 25 horsepower or greater. One major retailer of aftermarket engine solutions, Donaldson Company, Inc., has verified that their entire line of aftermarket mufflers is for pre-emissions engines only (i.e., 2007 or earlier engines). This means that their line of aftermarket mufflers cannot be applied to equipment that is newer than the 2008 model year.

Given these considerations, any assumption that the exhaust systems of modern construction equipment can be replaced, altered, or outfitted with retrofit or aftermarket mufflers to achieve improved noise performance should be substantiated with evidence, either from fleet operators, manufacturers, or via documented real-life examples. Unless Impact Sciences provides evidence to substantiate their assumption that "addition of mufflers" to the Project's excavators and front-end loaders would be capable of mitigating noise levels by 3 dBA, requiring "use of mufflers" via implementation of MM-NOI-1 and MM-NOI-2 cannot be considered substantial evidence that the Project's mitigated noise impacts would be less than significant.

Additionally, both MM-NOI-1 and MM-NOI-2 list "reducing activity levels of construction of equipment [sic]" as examples of "construction control measures to reduce increases in ambient noise at the closest receptors," but the SCEA does not contain any discussion explaining the meaning of this vague measure, how it could be enforced, and how it could reduce the Project's construction noise impacts.

Mitigation Measure NOI-1 and NOI-2 Are Vague, Unenforceable, and Inadequate

Despite including performance standards of 1 dBA L_{eq} and 12 dBA L_{eq}, respectively, MM-NOI-1 and MM-NOI-2 do not contain any binding commitments to specific mitigation techniques, merely the requirement to "employ construction control measures." The SCEA does not contain any explanation how "construction control measures" would actually be implemented to achieve the performance standards. Moreover, the SCEA does not explain nor does it substantiate how "use of mufflers, sound barriers and reducing activity levels of construction of equipment [sic]" would actually be capable of achieving the performance standards.

The measures contain language that "[t]his specification shall be included on all construction documents to ensure compliance," but this introduces additional ambiguity (i.e., what is meant by "specification"?) and does not establish an actual enforcement mechanism. This may even be construed as a tacit admission that the SCEA seeks to improperly defer the formulation of actual mitigation measures to a later time, i.e. commit to "specifics" later. If so, the SCEA fails to explain why specific mitigation requirements and implementation plans cannot be committed to in the present-tense, especially when considering that installation of noise barriers is a common mitigation measure for reducing construction noise impacts. And if the SCEA does in fact intend to defer specific mitigation requirements and implementation plans to a future date, it fails to require a study or report that would devise these requirements and plans.

Furthermore, and as discussed earlier, the SCEA explicitly states that a performance standard of 15 dBA – not 1 dBA L_{eq} or 12 dBA L_{eq} – would be required to ensure that noise impacts do not exceed the threshold of significance (see previous **Exhibit 10**). As also discussed earlier, the "Mitigated" construction noise documentation in Appendix G indicates that 21 dBA of "attenuation factors" were assumed in order to

mitigate noise impacts at the 665 S. Highland Avenue and 664 S. Citrus Avenue receptors to below the 5 dBA threshold of significance (see previous **Exhibit 11**). Therefore, the SCEA and Appendix G themselves contain evidence that the performance standards adopted by MM-NOI-1 and MM-NOI-2 would be inadequate in reducing the Project's construction noise levels to a less than significant impact. Given the inadequacy of MM-NOI-1 and MM-NOI-2, their implementation cannot be considered substantial evidence that the Project's mitigated noise impacts would be less than significant.

Mitigated Noise Impact Cannot Be Substantiated by Purported RCNM Methodology

As discussed previously, Impact Sciences' "Noise and Vibration Technical Report" claims that "[n]oise levels associated with project-related construction activities were calculated using the FHWA Roadway Construction Noise Model (RCNM) and evaluated with existing ambient noise levels to determine new ambient noise levels with construction activities." Impact Sciences' "mitigated" construction noise documentation indicates that a reference noise level of 79 dBA was utilized for their analysis, along with a reference distance of 50 feet (see previous **Exhibit 4**). This is consistent with their explanation that "demolition and grading noise impacts were modeled using the noise reference levels of excavators and front-end loaders." The "mitigated" construction noise documentation also indicates that mitigated noise increases at 665 S. Highland Avenue and 664 S. Citrus Avenue were calculated by assuming distances of 15 feet, which is consistent with the SCEA's explanation that the analysis assumed "a 'worst case' condition where the construction equipment is located at the property line nearest to the sensitive receptors" (see previous **Exhibit 5** and **Exhibit 6**). Further, the "mitigated" construction noise documentation indicates that 21 dBA worth of "attenuation factors" were assumed when calculating mitigated noise increases at 665 S. Highland Avenue and 664 S. Citrus Avenue (see previous **Exhibit 11**).[3] Based on these assumptions, Impact Sciences calculates that the Project's mitigated "maximum construction noise level" would be 58.0 dBA L_{eq} at 665 S. Highland Avenue and 664 S. Citrus Avenue. This noise level correlates with an 0.4 dBA L_{eq} increase at 665 S. Highland Avenue and a 3.7 dBA L_{eq} increase at 664 S. Citrus Avenue (**Exhibit 13**).

Exhibit 13

Wilshire-Highland Project — Construction Noise - Mitigated
Reference Noise Distance 50
Reference Noise Level 79

Sensitive Receptor	Distance (feet)	Attenuation Factors	Maximum Construction Noise Level (RCNM)	Existing Ambient (dBA, Leq)	New Ambient (dBA, Leq)	Increase
Location #1 (665 S. Highland Ave)	15	21	58.0	68.7	69.1	0.4
Location #2 (664 S. Citrus Ave)	15	21	58.0	56.7	60.4	3.7
Location #3 (716 S. Citrus Ave)	250	9	56.0	59.6	61.2	1.6
Location #4 (John Burroughs Middle School)	500	12	47.0	59.9	60.1	0.2

As indicated, Impact Science calculates that the mitigated "maximum construction noise level (RCNM)" would be 58.0 dBA L_{eq} at 665 S. Highland Avenue and 664 S. Citrus Avenue. This correlates with a 0.4 dBA L_{eq} increase at 665 S. Highland Avenue and a 3.7 dBA L_{eq} increase at 664 S. Citrus Avenue.

[3] Impact Sciences' 21 dBA worth of "Attenuation Factors" for 665 S. Highland Avenue and 664 S. Citrus Avenue are disputable, which is an issue addressed later in this review. But for the purposes of this specific issue – that Impact Sciences' mitigated noise impact cannot be substantiated by their purposed RCNM methodology – the validity of these "attenuation factors" is immaterial and therefore left unaddressed.

However, if a similar RCNM analysis is conducted – one that also assumes a reference equipment noise level of 79 dBA at 50 feet, an equipment-to-receptor distance of 15 feet for 665 S. Highland Avenue and 664 S. Citrus Avenue, and 21 dBA worth of "attenuation factors" for these receptors – then the calculated mitigated "maximum construction noise level" would in fact be 68.5 dBA L_{eq} at these receptors (**Exhibit 14**). This noise level correlates with a 2.9 dBA L_{eq} increase at 665 S. Highland Avenue and a 12.1 dBA L_{eq} increase at 664 S. Citrus Avenue. Both of these mitigated construction noise impacts exceed the respective impacts calculated by Impact Sciences, and the latter impact is in excess of the 5 dBA threshold of significance, as well – a significant and unavoidable impact.

Exhibit 14

Equipment — Receptor #1: 664 S Citrus Ave and 665 S Highland Ave

	Active	Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Distance to Receptor (feet)	Estimated Shielding (dBA)
1	☑	Excavator	☐	40%	85.0	80.7	15.0	21.0
2	☑	Front End Loader	☐	40%	80.0	79.1	15.0	21.0
3	☐		☐					
4	☐		☐					
5	☐		☐					
6	☐		☐					

Results

Receptor #1: 664 S Citrus Ave and 665 S Highland Ave

		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dB			
				Day		Evening		Night		Day		Evening	
	Equipment	Lmax*	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
	Total	70.2	68.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	Excavator	70.2	66.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	Front End Loader	68.6	64.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3													

As shown, the RCNM analysis assumes the reference equipment noise level associated with one excavator and one front-end loader, and a receptor distance of 15 feet. To account for the 21 dBA worth of "attenuation factors," 21 dBA worth of "shielding" has been assumed (RCNM does not actually include the term "attenuation factors"). The result: a mitigated "maximum construction noise level" of 68.5 dBA L_{eq} for 664 S. Citrus Avenue and 665 S. Highland Avenue, as shown in the red box.

This is not merely conflicting substantial evidence of a significant impact: it is evidence that Impact Sciences' actual methodology must differ significantly from their purported RCNM-based methodology, and it must rely on unsubstantiated assumptions that are not consistent with what they have disclosed in the SCEA and in Appendix G. Or, it is evidence that the Impact Sciences analysis is inaccurate and erroneous. There is no readily apparent explanation as to how Impact Sciences could have arrived at an 0.4 dBA L_{eq} increase at 665 S. Highland Avenue and a 3.7 dBA L_{eq} increase at 664 S. Citrus Avenue without assuming: (1) an equipment-to-receptor distance that is greater than the 15-foot modeling distance that they have disclosed for these receptors, (2) unspecified, undisclosed, and therefore unsubstantiated "attenuation factors" that go beyond the 21 dBA worth of "attenuation factors" that they have disclosed for these receptors, or (3) some combination thereof. Given that Impact Sciences' analysis of mitigated construction noise impacts at 665 S. Highland Avenue and 664 S. Citrus Avenue is unsubstantiated, erroneous, or both, it does not qualify as substantial evidence. Therefore, the determination that the Project's construction noise impact would be "less than significant with mitigation" is not supported by substantial evidence.

Impact Sciences should explain how they arrived at their calculated mitigated noise increases for 665 S. Highland Avenue and 664 S. Citrus Avenue, including details regarding what distances and attenuation factors were actually utilized. They should also demonstrate whether their calculated mitigated noise increases are achievable by using the RCNM program they claim to have utilized. If the RCNM was not actually utilized, then they should disclose the actual noise modeling program or spreadsheet equation that was.

Mitigated Noise Impact Relies on Unsubstantiated "Attenuation Factors"

As previously discussed, Impact Sciences' "mitigated" construction noise documentation indicates that 21 dBA worth of "attenuation factors" were assumed when calculating mitigated noise increases at 665 S. Highland Avenue and 664 S. Citrus Avenue (see previous **Exhibit 11**). Neither the SCEA nor Appendix G contain any explanation as to what these 21 dBA worth of "attenuation factors" may consist of, and details that are contained in the SCEA and Appendix G only add further uncertainty.

For example, MM-NOI-1 and MM-NOI-2 only establish a performance standard up to 12 dBA L_{eq}. This suggests that Impact Sciences' analysis relies on 9 dBA worth of "attenuation factors" that are in addition to the maximum 12 dBA L_{eq} reduction that would be required by MM-NOI-2. If so, it is unclear what the additional 9 dBA worth of "attenuation factors" would consist of or account for; no explanation is given.

Impact Sciences' "mitigated" construction noise documentation contains several notes regarding "attenuation factors," but no specific explanation regarding the application of these factors to the analysis (**Exhibit 15**). At least, the application of these factors to the analysis is not adequately substantiated. For example, one note claims "[a] 15 dBA attenuation was given for sound barrier shielding along the northern and western boundaries of the project to obstruct line of sight noise travel from the project site to residences immediately adjacent to the north and residences along Citrus Ave." This would seem to account for 15 of 21 dBA worth of "attenuation factors" for 665 S. Highland Avenue and 664 S. Citrus Avenue, ignoring the fact that neither MM-NOI-1 nor MM-NOI-2 explicitly require use of sound barriers at all, much less sound barriers that would achieve a performance standard of 15 dBA. Notwithstanding, this leaves an additional 6 dBA worth of "attenuation factors" to account for. The next note claims that "[a] 3 dBA attenuation was given for the addition of mufflers." This would seem to account for an additional 3 dBA worth of "attenuation factors" for 665 S. Highland Avenue and 664 S. Citrus Avenue, ignoring the fact that neither MM-NOI-1 nor MM-NOI-2 explicitly require the use of mufflers at all and the fact that this 3 dBA of attenuation from mufflers is entirely unsubstantiated. Notwithstanding, this leaves an additional 3 dBA worth of "attenuation factors" to account for.[4]

However, there is no stated explanation that would account for this remaining 3 dBA worth of "attenuation factors." Another note claims "a 3 dBA reduction was given for the first row of buildings intervening between the construction site and sensitive receptors (1.5 dBA for subsequent intervening structures)," but there is no row of buildings intervening between the Project and either 665 S. Highland Avenue or 664 S. Citrus Avenue; both receptors directly abut the Project site to the north. Therefore, this 3 dBA reduction could not – or at least should not – have been applied to either 665 S. Highland Avenue or 664 S. Citrus Avenue. The remaining note states "[a] 6 dBA attenuation was given for hard ground surfuce [sic]," but this obviously exceeds the remaining 3 dBA worth of "attenuation factors." Therefore,

[4] I.e., 21 dBA worth of "attenuation factors" minus 15 dBA from sound barriers and 3 dBA from mufflers (allegedly) equals a remaining 3 dBA worth of "attenuation factors" to account for.

as demonstrated, there is no explicit or otherwise apparent reasoning behind the 21 dBA worth of "attenuation factors" that Impact Sciences assumed when calculating mitigated noise increases at 665 S. Highland Avenue and 664 S. Citrus Avenue; the application of 21 dBA worth of "attenuation factors" is unsubstantiated, erroneous, or both. Thus, Impact Sciences' analysis of mitigated noise impacts at 665 S. Highland Avenue and 664 S. Citrus Avenue does not qualify as substantial evidence, and the determination that the Project's construction noise impact would be "less than significant with mitigation" is therefore not supported by substantial evidence.

One issue merits further discussion: the statement that "6 dBA attenuation was given for hard ground surfuce [sic]." This seems to suggest that an additional 6 dBA of attenuation occurs when noise propagates over a hard ground surface, in addition to whatever attenuation would be predicted by geometric spreading alone (i.e., the inverse square law). "Caltrans Technical Noise Supplement" is cited in support of this statement. Impact Sciences should clarify the meaning of this statement and disclose if and how it was applied to their analysis of unmitigated and mitigated construction noise impacts. The exact reference from the "Caltrans Technical Noise Supplement" should also be identified. To this reviewer's knowledge, Caltrans' 2013 *Technical Noise Supplement to the Traffic Noise Analysis Protocol* contains no such concept as described.

Exhibit 15

Wilshire-Highland Project — Construction Noise - Mitigated

Reference Noise Distance: 50
Reference Noise Level: 79

Sensitive Receptor	Distance (feet)	Attenuation Factors	Maximum Construction Noise Level (RCNM)	Existing Ambient (dBA, Leq)	New Ambient (dBA, Leq)	Increase
Location #1 (665 S. Highland Ave)	15	21	58.0	68.7	69.1	0.4
Location #2 (664 S. Citrus Ave)	15	21	58.0	56.7	60.4	3.7
Location #3 (716 S. Citrus Ave)	250	9	56.0	59.6	61.2	1.6
Location #4 (John Burroughs Middle School)	500	12	47.0	59.9	60.1	0.2

A 6 dBA attenuation was given for hard ground surfuce, and 3 dBA reduction was given for the first row of buildings intervening between the construction site and sensitive receptors (1.5 dBA for subsequent intervening structures), as recommended by the Caltrans Technical Noise Supplement.

A 15 dBA attenuation was given for sound barrier shielding along the northern and western boundaries of the project to obstruct line of sight noise travel from the project site to residences immediately adjacent to the north and residences along Citrus Ave. A 3 dBA attenuation was given for the addition of mufflers.

The highlighted excerpts contain Impact Sciences' notes regarding "attenuation factors."

Determination of Significance Relies on Erroneous Claim That the Construction Noise Analysis Examines a "Worst-Case-Scenario"

Fundamental to Impact Sciences' assessment that the Project's construction noise impacts would not expose sensitive receptors to noise increases in excess of the 5 dBA threshold – and thus the determination that the Project's construction noise impacts would be less than significant with mitigation – is the following claim: "…excavators and front-end loaders have the greatest potential to cause sustained and significant noise impacts at nearby receptors. The impacts of other construction equipment and vehicles would be neither as loud nor as extensive over the duration of the Project's demolition, grading, and other phases. Therefore, this analysis examines a worst-case-scenario; the noise impacts of all other construction equipment and phases would not exceed the impacts analyzed here" (**Exhibit 16**). This is not a fact-based assumption or opinion: it is unsubstantiated and demonstrably untrue.

Exhibit 16

For this Project, demolition and grading noise impacts were modeled using the noise reference levels of excavators and front-end loaders, as these vehicles would be utilized extensively to demolish and grade for the Project. Excavators can produce average peak noise levels of 81 dBA at a reference distance of 50 feet; front-end loaders, 79 dBA. Compounding their noise impacts is the fact that these vehicles commonly operate in tandem. Excavators remove soils and demolished materials, and front-end loaders transport this matter to on-site stockpiles or haul trucks for off-site export. As a result, excavators and front-end loaders have the greatest potential to cause sustained and significant noise impacts at nearby receptors. The impacts of other construction equipment and vehicles would be neither as loud nor as extensive over the duration of the Project's demolition, grading, and other phases. Therefore, this analysis examines a worst-case-scenario; the noise impacts of all other construction equipment and phases would not exceed the impacts analyzed here. The projected noise impact from excavators and front-end loaders are shown in **Table IV.13-4, Construction Noise Impacts at Off-Site Sensitive Receptors – Unmitigated** and summarized below.

The highlighted excerpt, from the SCEA.

Appendix B contains Impact Sciences' "Air Quality and Greenhouse Gas Emission Technical Report" for the Project. Attachment A for this report contains CalEEMod output files for Impact Science's air quality and greenhouse gases analyses, as well as construction data and equipment information sheets for the Project. The "General Information" documentation indicates that a vibratory pile driver would be utilized to install approximately 169 piles for the Project (**Exhibit 17**). According to RCNM version 1.1, vibratory pile drivers generate maximum noise levels of 100.8 dBA L_{max} at 50 feet. Based on this noise level, the RCNM program calculates that the noise level associated with the activities of one vibratory pile driver would be 93.8 dBA L_{eq} at a reference distance of 50 feet (**Exhibit 18**). If other construction vehicles would work in tandem with vibratory pile driver activities, then the associated noise levels would be even greater. The "Demolition Details" sheet indicates that three concrete/industrial saws would be utilized for demolition (**Exhibit 19**). According to RCNM version 1.1, concrete saws generate maximum noise levels of 89.6 dBA L_{max} at 50 feet. Based on this noise level, the RCNM program calculates that the noise level associated with the activities of one concrete saw would be 82.6 dBA L_{eq} at a reference distance of 50 feet (**Exhibit 20**).

Exhibit 17

DATA, EQUIPMENT AND TIME ESTIMATE – General Information

Project: Wilshire/ Highland

LAND USE TYPE	UNITS/SF

ZONING (Will this project require one?)
Zone Change?
Yes ☐
No ☐
GPA?
Yes ☐
No ☐

START DATES – One-Phase	(Month/ Year)	Duration (Months)
Demolition (if applicable):	6-2022	1
Grading:	7-2022	3
Paving:	7-24	2
Construction:	10-2022	27
Painting:	7-24	2

Pile Driving
Is pile driving required?
Yes ☐
No ☒
Number of piles: 169 +/-
Duration (days): 60 days
Type of pile driving (e.g., diesel hammer, hydraulic hammer, hydraulic press-in, vibratory, etc.): Vibratory

As indicated, the Project would require a vibratory pile driver to install approximately 169 piles.

Exhibit 18

Equipment — Receptor #1: 664 S Citrus Ave and 665 S Highland Ave

	Active	Description	Impact Device	Usage(%)	Spec Lmax (dBA)		Actual Lmax (dBA)	Distance to Receptor (feet)	Estimated Shielding (dBA)
1	☑	Vibratory Pile Driver	☐	20%	☐	95.0	☑ 100.8	50.0	0.0
2	☐		☐		☐		☐		
3	☐		☐		☐		☐		
4	☐		☐		☐		☐		
5	☐		☐		☐		☐		
6	☐		☐		☐		☐		

Results

Receptor #1: 664 S Citrus Ave and 665 S Highland Ave

		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (d			
				Day		Evening		Night		Day		Evening	
	Equipment	Lmax*	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
	Total	100.8	93.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	Vibratory Pile Driver	100.8	93.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2													

As indicated, the RCNM reference noise level for vibratory pile drivers is 100.8 dBA at 50 feet. The activities of one vibratory pile driver would result in a noise level of 93.8 dBA L_{eq} at a distance of 50 feet.

Exhibit 19

DEMOLITION DETAILS

Project: Wilshire/ Highland

DEMOLITION

Units	Type of Equipment
	~~Barge/Drill Rigs~~
3	Concrete/Industrial Saws
	~~Crane~~
1	Crawler Tractors
	Crushing/Processing Equip.
1	Excavators
	Graders
	Off-Highway Tractors
	Off-Highway Trucks
	Other Equipment
	Pavers
	~~Paving Equipment~~

BUILDING DEMOLITION
Structure Dimensions

Width	Length	Height
160	264	30

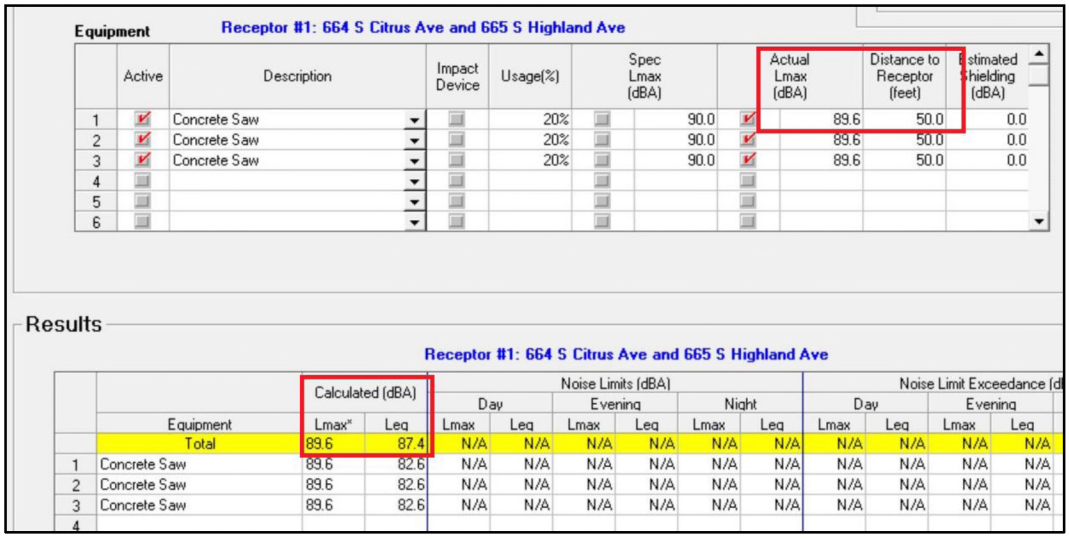
or Tons of Demolished Material

Haul Truck Data:
Number of Trips/Day: TBD
Round Trip to Disposal Site: TBD (miles)
Approx. Cubic Yards of Each Truck: TBD

Asbestos Containing Material:
(Check One)
Known to be Present? ☐ Yes ☐ No

As indicated, the Project would require three concrete/industrial saws.

Exhibit 20



Equipment — Receptor #1: 664 S Citrus Ave and 665 S Highland Ave

	Active	Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Distance to Receptor (feet)	Estimated Shielding (dBA)
1	☑	Concrete Saw	☐	20%	90.0	89.6	50.0	0.0
2	☑	Concrete Saw	☐	20%	90.0	89.6	50.0	0.0
3	☑	Concrete Saw	☐	20%	90.0	89.6	50.0	0.0
4	☐		☐					
5	☐		☐					
6	☐		☐					

Results

Receptor #1: 664 S Citrus Ave and 665 S Highland Ave

	Equipment	Calculated (dBA) Lmax*	Calculated (dBA) Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dB) Day Lmax	Day Leq	Evening Lmax	Evening Leq
	Total	89.6	87.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	Concrete Saw	89.6	82.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	Concrete Saw	89.6	82.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3	Concrete Saw	89.6	82.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4													

As indicated, the RCNM reference noise level for concrete saws is 89.6 dBA at 50 feet. The activities of three concrete saws would result in a noise level of 87.4 dBA L_{eq} at 50 feet.

As discussed earlier, Impact Sciences relied on the reference noise level associated with the activities of one excavator and one front-end loader, which is 79 dBA L_{eq} at a distance of 50 feet (see previous **Exhibit 2**, **Exhibit 3**, and **Exhibit 4**). Thus, Impact Sciences' own appendix materials contain evidence that louder equipment would in fact be utilized by the Project's construction, disproving their claim that other construction equipment would not be as loud as excavators and front-end loaders. Therefore, Impact Sciences' excavator and front-end loader-based analysis that relies on the fundamental assumption that louder equipment would not be utilized is not substantial evidence that the Project's construction noise impact would be less than significant after mitigation.

Updated Analysis Indicates That Construction Noise-Related Impacts Would Be Potentially Significant and Unavoidable

The following updated analysis has been prepared to more-accurately estimate the Project's potential construction-related noise impacts. The updated analysis relies exclusively on the following details:

- Project-specific information contained in the SCEA and its appendices;
- Objective, quantifiable measurements – i.e., distance to receptors;
- Verifiable and fact-based assumptions made by Impact Sciences – i.e., not those that which are unsubstantiated and/or not readily apparent;
- Impact Sciences' purported RCNM methodology; and
- The actual performance standards established by MM-NOI-1 and MM-NOI-2.

Thus, the results of the updated analysis are not merely conflicting evidence of a potentially significant and unavoidable impact: by relying solely on the listed considerations, the results are proof that Impact Sciences has conducted an inaccurate and erroneous analysis that fails to identify the extent of the Project's potentially significant construction-related noise impacts and properly mitigate them.

The analysis focuses on two scenarios: noise from excavator and front-end loader activities, which is the scenario utilized by Impact Sciences' analysis; and noise from vibratory pile driving. As discussed earlier,

Appendix B contains evidence that the Project would utilize a vibratory pile driver to install approximately 169 piles for the Project. The analysis assesses these scenarios' noise impacts to three sensitive receptors: 665 S. Highland Avenue, 664 S. Citrus Avenue, and Mansfield Avenue Park. As explained earlier, it is reasonably inferred that the Impact Sciences analysis relies on the presumption that Mansfield Avenue Park would experience construction noise-related impacts that are similar to the 664 S. Citrus Avenue receptor. While this may be true for the excavator and front-end loader-based scenario analyzed by Impact Sciences, it does not apply to the vibratory pile driving scenario.

Scenario 1: The following scenario relies on the reference noise levels of excavators and front-end loaders, which, according to Impact Sciences, "would be utilized extensively to demolish and grade for the Project." As explained earlier, the 81 dBA at 50 feet reference noise level for excavators and the 79 dBA at 50 feet reference noise level for front-end loaders assumed by Impact Sciences are consistent with RCNM version 1.1 values for these vehicles (see previous **Exhibit 2** and **Exhibit 3**). Based on these values, the RCNM program calculates that the combined noise level associated with the activities of one excavator and one front-end loader would be 79.0 dBA L_{eq} at a reference distance of 50 feet, which is consistent with Impact Sciences' "mitigated" construction noise documentation (see previous **Exhibit 3** and **Exhibit 4**).

A 15-foot equipment-to-receptor distance has been utilized for 664 S. Citrus Avenue and 665 S. Highland Avenue, which is consistent with Impact Sciences' assumption that is equated to a "worst case condition" (see previous **Exhibit 5** and **Exhibit 6**). For Mansfield Avenue Park, a distance of 50 feet has been utilized. As there are no intervening structures or other features that would separate the Project's construction activities from these sensitive receptors, no "attenuation factors" have been applied to the unmitigated noise impact calculations.

According to RCNM, Scenario 1 would expose 664 S. Citrus Avenue and 665 S. Highland Avenue to unmitigated "maximum construction noise levels" of 89.5 dBA L_{eq} (**Exhibit 21**). Mansfield Avenue Park would be exposed to an unmitigated "maximum construction noise level" of 79.0 dBA L_{eq} (**Exhibit 22**).

Exhibit 21

Equipment — Receptor #1: 664 S Citrus Ave and 665 S Highland Ave

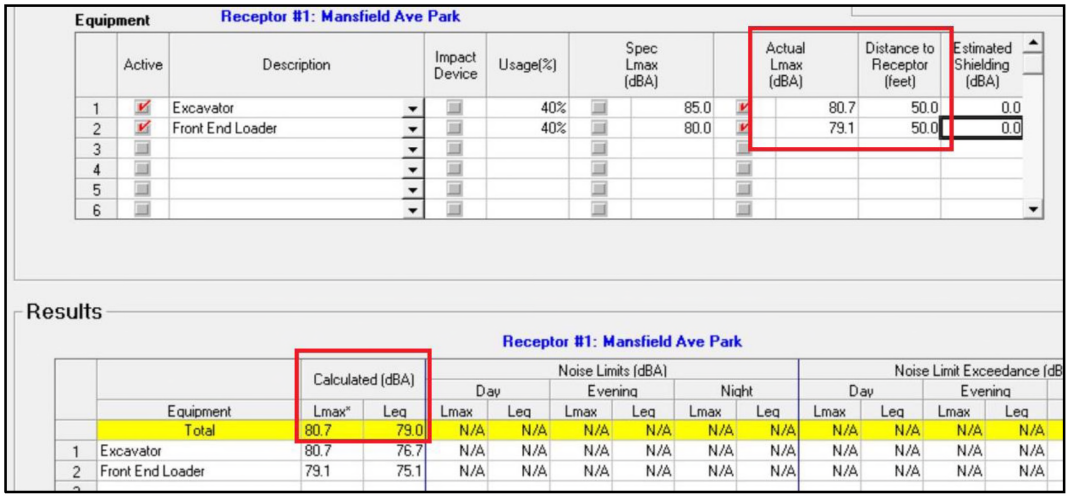
	Active	Description	Impact Device	Usage(%)	Spec Lmax (dBA)		Actual Lmax (dBA)	Distance to Receptor (feet)	Estimated Shielding (dBA)
1	☑	Excavator	☐	40%	☐	85.0	☑ 80.7	15.0	0.0
2	☑	Front End Loader	☐	40%	☐	80.0	☑ 79.1	15.0	0.0
3	☐		☐		☐		☐		
4	☐		☐		☐		☐		
5	☐		☐		☐		☐		
6	☐		☐		☐		☐		

Results — Receptor #1: 664 S Citrus Ave and 665 S Highland Ave

	Equipment	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)			
				Day		Evening		Night		Day		Evening	
		Lmax*	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
	Total	91.2	89.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	Excavator	91.2	87.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	Front End Loader	89.6	85.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3													

As indicated: when utilizing the reference noise levels of one excavator and one front-end loader, and a receptor distance of 15 feet for 664 S. Citrus Avenue and 665 S. Highland Avenue, the resultant noise level is 89.5 dBA L_{eq} according to RCNM.

Exhibit 22



Equipment — Receptor #1: Mansfield Ave Park

	Active	Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Distance to Receptor (feet)	Estimated Shielding (dBA)
1	☑	Excavator		40%	85.0	80.7	50.0	0.0
2	☑	Front End Loader		40%	80.0	79.1	50.0	0.0
3								
4								
5								
6								

Results

Receptor #1: Mansfield Ave Park

		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dB			
				Day		Evening		Night		Day		Evening	
	Equipment	Lmax*	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
	Total	80.7	79.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	Front End Loader	79.1	75.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

As indicated: when utilizing the reference noise levels of one excavator and one front-end loader, and a receptor distance of 50 feet for Mansfield Avenue Park, the resultant noise level is 79.0 dBA L_{eq} according to RCNM.

As shown in **Table 1**, below, the resultant unmitigated noise increases would be 32.8 dBA L_{eq} at 664 S. Citrus Avenue, 20.8 dBA L_{eq} at 665 S. Highland Avenue, and 22.3 dBA L_{eq} at Mansfield Avenue Park. These estimated construction noise increases would exceed the SCEA's significance threshold of 5 dBA.

Table 1
Scenario 1 Noise Impacts at Off-Site Sensitive Receptors – Unmitigated

Receptor	"Maximum Construction Noise Level" (dBA L_{eq})	Existing Ambient Noise Level (dBA L_{eq})	New Ambient Noise Level (dBA L_{eq})	Increase (dBA L_{eq})
664 S. Citrus Avenue	89.5	56.7	89.5	32.8
665 S. Highland Avenue	89.5	68.7	89.5	20.8
Mansfield Avenue Park	79.0	56.7[A]	79.0	22.3

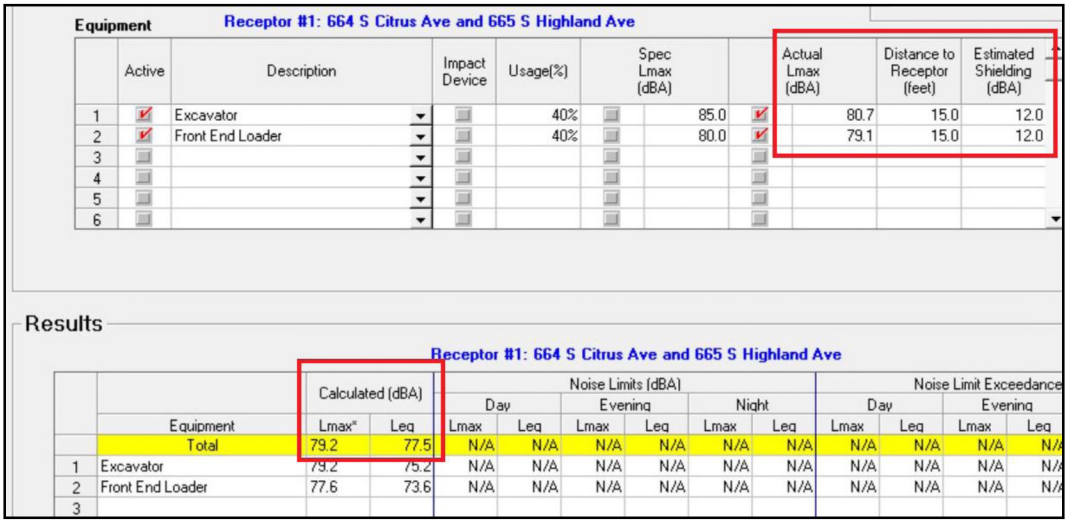
[A] The 56.7 dBA L_{eq} "Location #2" noise measurement has been applied to Mansfield Avenue Park due to its proximity to Location #2 and its similar orientation to nearby noise sources.

Source: NTEC, 2022. Ambient noise levels obtained from the SCEA.

To mitigate this impact, MM-NOI-2 establishes a performance standard of 12 dBA reduction in noise for construction activities occurring "along the northern property line." As explained earlier, neither MM-NOI-1 nor MM-NOI-2 establish, or can be purported to establish, mitigation along the Project's western flank with direct line-of-sight to Mansfield Avenue Park. Thus, the following analysis of Scenario 1's mitigated construction noise impact takes into account a 12 dBA reduction – or "attenuation factor" – for 664 S. Citrus Avenue and 665 S. Highland Avenue (which are north of the Project), but no reduction for Mansfield Avenue Park (which is to the west). According to RCNM, Scenario 1 would expose 664 S. Citrus Avenue and 665 S. Highland Avenue to mitigated "maximum construction noise levels" of 77.5 dBA L_{eq}

(**Exhibit 23**). Because no mitigation would apply to Mansfield Avenue Park, it would continue to experience a post-mitigation "maximum construction noise level" of 79.0 dBA L_{eq}.

Exhibit 23



Equipment — Receptor #1: 664 S Citrus Ave and 665 S Highland Ave

	Active	Description	Impact Device	Usage(%)	Spec Lmax (dBA)		Actual Lmax (dBA)	Distance to Receptor (feet)	Estimated Shielding (dBA)
1	☑	Excavator	☐	40%	☐	85.0	☑ 80.7	15.0	12.0
2	☑	Front End Loader	☐	40%	☐	80.0	☑ 79.1	15.0	12.0
3	☐		☐		☐		☐		
4	☐		☐		☐		☐		
5	☐		☐		☐		☐		
6	☐		☐		☐		☐		

Results — Receptor #1: 664 S Citrus Ave and 665 S Highland Ave

		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance			
				Day		Evening		Night		Day		Evening	
	Equipment	Lmax*	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
	Total	79.2	77.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	Excavator	79.2	75.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	Front End Loader	77.6	73.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3													

As indicated, 12 dBA worth of "shielding" has been assumed, which is equivalent to the 12 dBA performance standard established by MM-NOI-2. The result: a mitigated "maximum construction noise level" of 77.5 dBA L_{eq} for 664 S. Citrus Avenue and 665 S. Highland Avenue.

As shown in **Table 2**, below, the resultant post-mitigation noise increases would be 20.8 dBA L_{eq} at 664 S. Citrus Avenue, 9.3 dBA L_{eq} at 665 S. Highland Avenue, and 22.3 dBA L_{eq} at Mansfield Avenue Park. These estimated construction noise increases would exceed the SCEA's significance threshold of 5 dBA – a significant and unavoidable impact. Additionally, the "maximum construction noise levels" experienced by these receptors would also exceed the 75 dBA at 50 feet construction noise limit established by LAMC Section 112.05.

Table 2
Scenario 1 Noise Impacts at Off-Site Sensitive Receptors – Mitigated

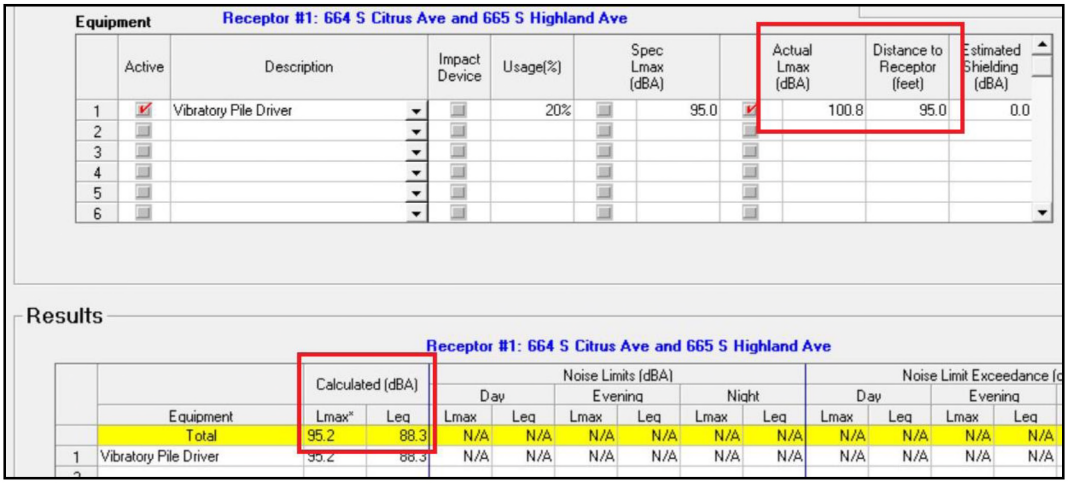
Receptor	"Maximum Construction Noise Level" (dBA L_{eq})	Existing Ambient Noise Level (dBA L_{eq})	New Ambient Noise Level (dBA L_{eq})	Increase (dBA L_{eq})
664 S. Citrus Avenue	77.5	56.7	77.5	20.8
665 S. Highland Avenue	77.5	68.7	78.0	9.3
Mansfield Avenue Park	79.0	56.7	79.0	22.3
Source: NTEC, 2022. Ambient noise levels obtained from the SCEA.				

Scenario 2: The following scenario relies on the reference noise level of a vibratory pile driver, which, according to Impact Sciences' Appendix B "General Information" documentation, would be utilized to install approximately 169 piles for the Project (see previous **Exhibit 17**). As discussed earlier, vibratory pile drivers generate maximum noise levels of 100.8 dBA L_{max} at 50 feet, according to RCNM version 1.1. Based on this noise level, the RCNM program calculates that the noise level associated with the activities of one vibratory pile driver would be 93.8 dBA L_{eq} at a reference distance of 50 feet (see previous **Exhibit 18**).

For 664 S. Citrus Avenue and 665 S. Highland Avenue, a 95-foot equipment-to-receptor distance has been utilized. This is approximately equivalent to the distance between these receptors and the footprint of the Project's proposed eight-story mixed-use building. It is reasonably presumed that any vibratory pile driving would occur within the footprint of this proposed building – not within the footprint of the proposed green belt. Impact Sciences may confirm the accuracy of this assumption. For Mansfield Avenue Park, a 50-foot distance was utilized. As there are no intervening structures or other features that would separate the Project's construction activities from these sensitive receptors, no "attenuation" factors have been applied to the unmitigated noise impact calculations.

According to RCNM, Scenario 2 would expose 664 S. Citrus Avenue and 665 S. Highland Avenue to unmitigated "maximum construction noise levels" of 88.3 dBA L_{eq} (**Exhibit 24**). Mansfield Avenue Park would be exposed to an unmitigated "maximum construction noise level" of 93.8 dBA L_{eq} (**Exhibit 25**).

Exhibit 24



Equipment — Receptor #1: 664 S Citrus Ave and 665 S Highland Ave

	Active	Description	Impact Device	Usage(%)	Spec Lmax (dBA)		Actual Lmax (dBA)	Distance to Receptor (feet)	Estimated Shielding (dBA)
1	☑	Vibratory Pile Driver	☐	20%	☐	95.0	☑	100.8	95.0	0.0
2	☐		☐		☐		☐			
3	☐		☐		☐		☐			
4	☐		☐		☐		☐			
5	☐		☐		☐		☐			
6	☐		☐		☐		☐			

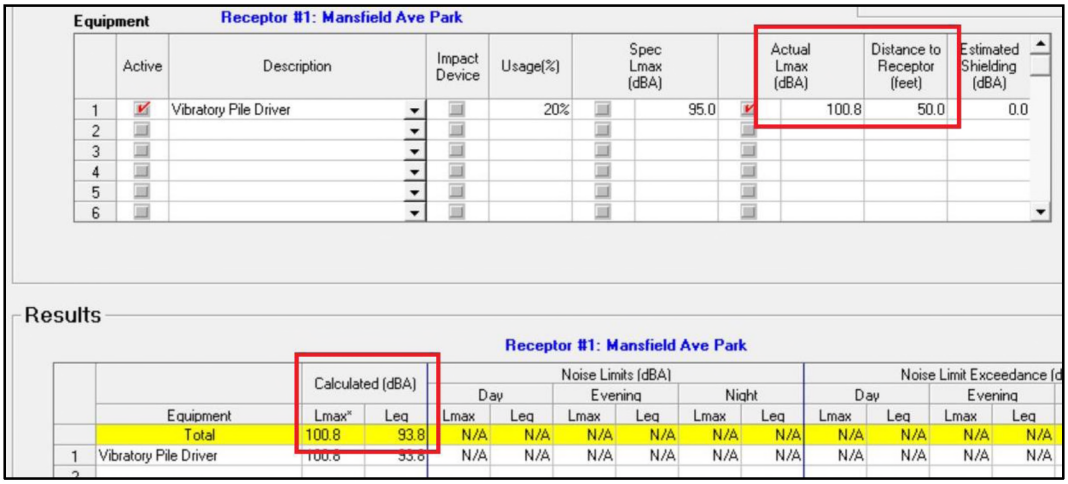
Results

Receptor #1: 664 S Citrus Ave and 665 S Highland Ave

		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (d			
				Day		Evening		Night		Day		Evening	
	Equipment	Lmax*	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
	Total	95.2	88.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	Vibratory Pile Driver	95.2	88.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

As indicated: when utilizing the reference noise level of one vibratory pile driver and a receptor distance of 95 feet for 664 S. Citrus Avenue and 665 S. Highland Avenue, the resultant noise level is 88.3 dBA L_{eq} according to RCNM.

Exhibit 25



Equipment — Receptor #1: Mansfield Ave Park

	Active	Description	Impact Device	Usage(%)	Spec Lmax (dBA)		Actual Lmax (dBA)	Distance to Receptor (feet)	Estimated Shielding (dBA)
1	☑	Vibratory Pile Driver	☐	20%	☐	95.0	☑	100.8	50.0	0.0
2	☐		☐		☐		☐			
3	☐		☐		☐		☐			
4	☐		☐		☐		☐			
5	☐		☐		☐		☐			
6	☐		☐		☐		☐			

Results — Receptor #1: Mansfield Ave Park

		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (d			
				Day		Evening		Night		Day		Evening	
	Equipment	Lmax*	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
	Total	100.8	93.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	Vibratory Pile Driver	100.8	93.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

As indicated: when utilizing the reference noise level of one vibratory pile driver and a receptor distance of 50 feet for Mansfield Avenue Park, the resultant noise level is 93.8 dBA L_{eq} according to RCNM.

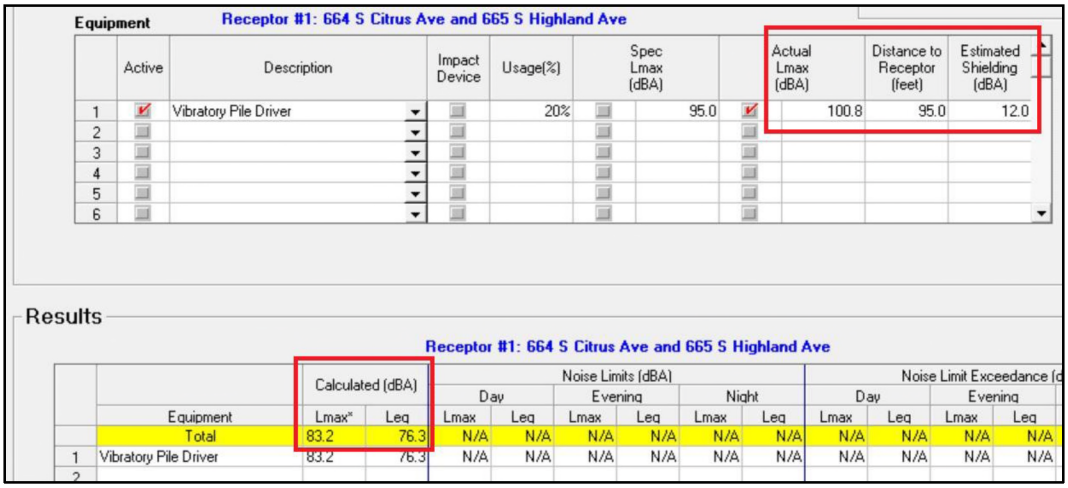
As shown in **Table 3**, below, the resultant unmitigated noise increases would be 31.6 dBA L_{eq} at 664 S. Citrus Avenue, 19.6 dBA L_{eq} at 665 S. Highland Avenue, and 37.1 dBA L_{eq} at Mansfield Avenue Park. These estimated construction noise increases would exceed the SCEA's significance threshold of 5 dBA.

Table 3
Scenario 2 Noise Impacts at Off-Site Sensitive Receptors – Unmitigated

Receptor	"Maximum Construction Noise Level" (dBA L_{eq})	Existing Ambient Noise Level (dBA L_{eq})	New Ambient Noise Level (dBA L_{eq})	Increase (dBA L_{eq})
664 S. Citrus Avenue	88.3	56.7	88.3	31.6
665 S. Highland Avenue	88.3	68.7	88.3	19.6
Mansfield Avenue Park	93.8	56.7	93.8	37.1
Source: NTEC, 2022. Ambient noise levels obtained from the SCEA.				

To mitigate this impact, MM-NOI-2 establishes a performance standard of 12 dBA reduction in noise for construction activities occurring "along the northern property line." As explained earlier, neither MM-NOI-1 nor MM-NOI-2 establish, or can be purported to establish, mitigation along the Project's western flank with direct line-of-sight to Mansfield Avenue Park. Thus, the following analysis of Scenario 2's mitigated construction noise impact takes into account a 12 dBA reduction – or "attenuation factor" – for 664 S. Citrus Avenue and 665 S. Highland Avenue, but no reduction for Mansfield Avenue Park. According to RCNM, Scenario 2 would expose 664 S. Citrus Avenue and 665 S. Highland Avenue to mitigated "maximum construction noise levels" of 76.3 dBA L_{eq} (**Exhibit 26**). Because no mitigation would apply to Mansfield Avenue Park, it would continue to experience a post-mitigation "maximum construction noise level" of 93.8 dBA L_{eq}.

Exhibit 26



Equipment — Receptor #1: 664 S Citrus Ave and 665 S Highland Ave

	Active	Description	Impact Device	Usage(%)	Spec Lmax (dBA)		Actual Lmax (dBA)	Distance to Receptor (feet)	Estimated Shielding (dBA)
1	☑	Vibratory Pile Driver	☐	20%	☐	95.0	☑	100.8	95.0	12.0
2	☐		☐		☐		☐			
3	☐		☐		☐		☐			
4	☐		☐		☐		☐			
5	☐		☐		☐		☐			
6	☐		☐		☐		☐			

Results

Receptor #1: 664 S Citrus Ave and 665 S Highland Ave

		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (d			
				Day		Evening		Night		Day		Evening	
	Equipment	Lmax*	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
	Total	83.2	76.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	Vibratory Pile Driver	83.2	76.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2													

As indicated, 12 dBA worth of "shielding" has been assumed, which is equivalent to the 12 dBA performance standard established by MM-NOI-2. The result: a mitigated "maximum construction noise level" of 76.3 dBA L_{eq} for 664 S. Citrus Avenue and 665 S. Highland Avenue.

As shown in **Table 4**, below, the resultant post-mitigation noise increases would be 19.6 dBA L_{eq} at 664 S. Citrus Avenue, 8.3 dBA L_{eq} at 665 S. Highland Avenue, and 37.1 dBA L_{eq} at Mansfield Avenue Park. These estimated construction noise increases would exceed the SCEA's significance threshold of 5 dBA – a significant and unavoidable impact. Additionally, the "maximum construction noise levels" experienced by these receptors would also exceed the 75 dBA at 50 feet construction noise limit established by LAMC Section 112.05.

Table 4
Scenario 2 Noise Impacts at Off-Site Sensitive Receptors – Mitigated

Receptor	"Maximum Construction Noise Level" (dBA L_{eq})	Existing Ambient Noise Level (dBA L_{eq})	New Ambient Noise Level (dBA L_{eq})	Increase (dBA L_{eq})
664 S. Citrus Avenue	76.3	56.7	76.3	19.6
665 S. Highland Avenue	76.3	68.7	78.0	8.3
Mansfield Avenue Park	93.8	56.7	93.8	37.1
Source: NTEC, 2022. Ambient noise levels obtained from the SCEA.				

Construction Worker Parking and "Building Material Laydown" Details Unclear

The SCEA describes that "[c]onstruction worker parking and building material laydown during construction of the proposed project would take place on the Project Site." This makes sense, given that the existing site contains a paved surface parking lot and public street that would be redeveloped into a greenbelt. However, Impact Sciences' CalEEMod output documentation for the Project indicates that the

entire site, including these paved areas, would be demolished within the first month of construction activities. It should be clarified whether this means that after demolition of the paved surface parking lot and public street, construction worker parking and building material laydown would take place on the unpaved remnants of these areas, which may become a persistent source of fugitive dust and track-out over the course of construction. Or would these areas be demolished at a later time, closer to construction of the greenbelt, in order to minimize fugitive dust emissions?

Construction Air Quality Analysis Relies on Unsubstantiated Localized Significant Thresholds for a 2-Acre Project

The SCEA utilizes the SCAQMD's LST methodology for analyzing localized construction-related air quality impacts at nearby sensitive receptors. Impact Sciences correctly identifies that the Project is located in SRA No. 1, "Central LA." They utilize "LSTs for receptors located at 25 meters," which is also consistent with the LST methodology.

However, Impact Sciences states that because "[t]he proposed project site is approximately 1.685-acres…the LST threshold for two acres was used for the construction LST analysis." Impact Sciences does not cite any source or reference substantiating their act of rounding up the Project's area in order to apply less-stringent two-acre LSTs, nor do they rationalize this decision in any way. The SCAQMD has developed LST "look-up tables" for project areas that are one, two, and five-acres in size. There are a number of SCAQMD recommendations for determining the appropriate LSTs for a project – rounding up the Project's area is not one of them.

For example, the SCAQMD's webpage for localized significance thresholds contains the following instruction: "If evaluating the project in CalEEMod, please refer to the suggested guidance in determining the maximum daily disturbed acreage."[5] The referenced guidance is SCAQMD's "Fact Sheet for Applying CalEEMod to Localized Significance Thresholds" document.[6] Essentially, this document instructs that a project's area should be based on the "maximum daily disturbed acreage" that is associated with its construction equipment for any particular phase. The following table is used to determine the "maximum number of acres disturbed" that is associated with various construction vehicles (**Exhibit 27**).

[5] http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/localized-significance-thresholds

[6] http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/caleemod-guidance.pdf?sfvrsn=2

Exhibit 27

Equipment Type	Acres/8hr-day
Crawler Tractors	0.5
Graders	0.5
Rubber Tired Dozers	0.5
Scrapers	1

This table shows the "maximum daily disturbed acreage" that is associated with various construction vehicles.

The document's "Example 1" demonstrates this concept (**Exhibit 28**).

Exhibit 28

Example 1
A 15-acre development proposes to use one grader, one scraper, and one tractor for eight hours each during Site Preparation activities (the peak day in this case). As the maximum daily disturbed acreage for this equipment is 2 acres (0.5+1+0.5=2), the project proponent should compare CalEEMod reported emissions against the 2-acre LST lookup tables.

Example 1 from SCAQMD's "Fact Sheet for Applying CalEEMod to Localized Significant Thresholds.

As demonstrated, the 15-acre area of the development has no relation to the applicable LST. Rather, because the equipment used for site preparation would be associated with a maximum daily disturbed acreage of two acres, the project is instructed to "compare CalEEMod reported emissions against the 2-acre LST lookup tables."

Impact Sciences' CalEEMod output documentation indicates that the Project's demolition activities were modeled assuming the use of 3 concrete/industrial saws, 1 crawler tractor, 1 excavator, 1 rubber tired dozer, 4 signal boards, and 1 skid steer loader. Utilizing the table shown in **Exhibit 27**, these vehicles would be associated with a "maximum daily disturbed acreage" of 1 acre per day. Thus, in accordance with SCAQMD guidance, Impact Sciences' should have compared their "CalEEMod reported emissions" against the 1-acre LST lookup tables. **Table 5** compares the Project's demolition-related on-site emissions with 1-acre LSTs for SRA No. 1.

Table 5
Localized Significance of On-Site Demolition-Related Emissions

	Emissions in lbs per day					
	VOC	NO_X	CO	SO_x	PM_{10}	$PM_{2.5}$
Localized Emissions						
Demolition	2.90	27.35	22.74	<0.1	6.18	1.95
Localized Significance Threshold	-	74	680	-	5	3
Exceed Threshold?	-	**No**	**No**	-	**Yes**	**No**
Source: On-site demolition emissions obtained from Impact Sciences' CalEEMod output documentation in Appendix B.						

As shown, when compared with LSTs for 1 acre, the Project's PM_{10} emissions from on-site demolition activities (as calculated by Impact Sciences using CalEEMod) would exceed the five pounds per day threshold of significance. This demonstrates that Impact Sciences' unsubstantiated "rounding up" has resulted in failure to identify a potentially significant impact due to the Project's emissions of PM_{10}.

In separate guidance concerning sample construction scenarios, the SCAQMD recommends what to do if "project acreage is between the project acreages on the LST mass rate look-up tables." The SCAQMD recommends that the "easiest option would be to use the sample construction scenario and LSTs for acreage that is smaller than the proposed project. For example, if the proposed project is 2.5 acres, then use the two-acre sample construction scenario and LSTs." Impact Sciences does not rely on sample construction scenarios in their analysis of the Project's air quality impacts, but this guidance nevertheless establishes the SCAQMD's position that rounding down to LSTs for smaller acreage is appropriate – not rounding up.[7]

Because Impact Sciences' analysis of the Project's localized construction emissions relies on unsubstantiated "rounding up" to less-stringent LSTs for two acres, it does not qualify as substantial evidence. Therefore, the determination that the Project's localized air quality impact to nearby sensitive receptors would be less than significant is not supported by substantial evidence.

This concludes my review of the Wilshire/Highland Project SCEA. I appreciate the opportunity to comment on this Project. Thank you for considering these comments, and feel free to contact me with any questions regarding this review.

Respectfully,

Noah Tanski, Principal

[7] http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-sample-construction-scenario-report.pdf?sfvrsn=2

David Woon <david.woon@lacity.org>

5001 WILSHIRE --> FIGURE II-5 AND FIGURE II-25

1 message

Debbie Alpers <dnaandco@icloud.com> Thu, Apr 14, 2022 at 4:21 PM
To: David Woon <david.woon@lacity.org>
Cc: Debbie Alpers <dnaandco@icloud.com>, Mark Alpers <mdalpers@aol.com>

Attachments available until May 14, 2022

Dear David,

Two of the important aspects of this project are the following:

1. Placement of transformers —> not on pedestrian walkway
2. Location of pedestrian path in green space
3. Location pedestrian path on Highland Ave side of the site (more distant to residential home)

The two figures cited in the subject line show different renderings.

I have included screen shots for your convenience.

I would like to request that Figure 11-5 is updated to the corrected version.

Thank you for your attention to this.

Debbie Alpers

Click to Download
Figure II-5 Site-First Floor Plan.pdf
1.2 MB

Click to Download
Figure II-25 Conceptual Greenbelt Plan_rev.pdf
51.7 MB

David Woon <david.woon@lacity.org>

5001 WILSHIRE --> TRANSFORMER LOCATION PENDING DWP APPROVAL

Debbie Alpers <dnaandco@icloud.com> Thu, Apr
To: David Woon <david.woon@lacity.org>
Cc: Debbie Alpers <dnaandco@icloud.com>, Mark Alpers <mdalpers@aol.com>

David,

I would like to **request the documents and communications regarding "Transformer Location Pending DWP Approval."**

Throughout the 50 separate documents posted on line today, there are 2 references to Transformer Location. They are on:
Figure II-4: Project Plot Plan
Figure II-25: Conceptual Greenbelt Plan

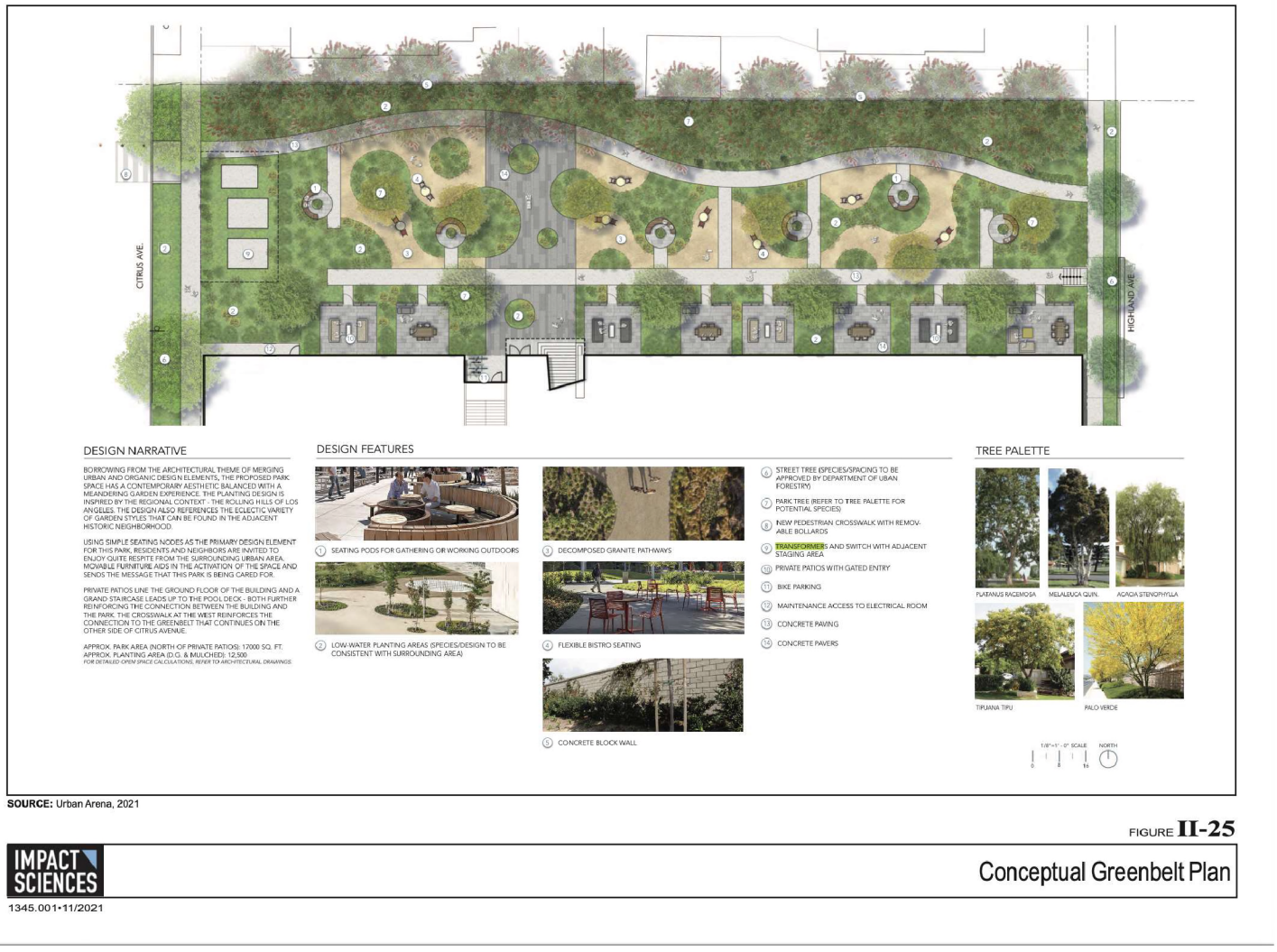
As you can see from the two figures referenced above there are differences in (1) the number of transformers/switches (3 and 4) and (2) the location of the transformers (on the concrete pavi walkway and *not* on the walkway).

This was an important issue to many of the adjacent residents and brought to the City's Planning Department attention early in the process. This was also discussed with the developer's tean 2021.

I would appreciate the documents being provided at least 5 business days before the close of the comment period.

Thank you.

Debbie Alpers



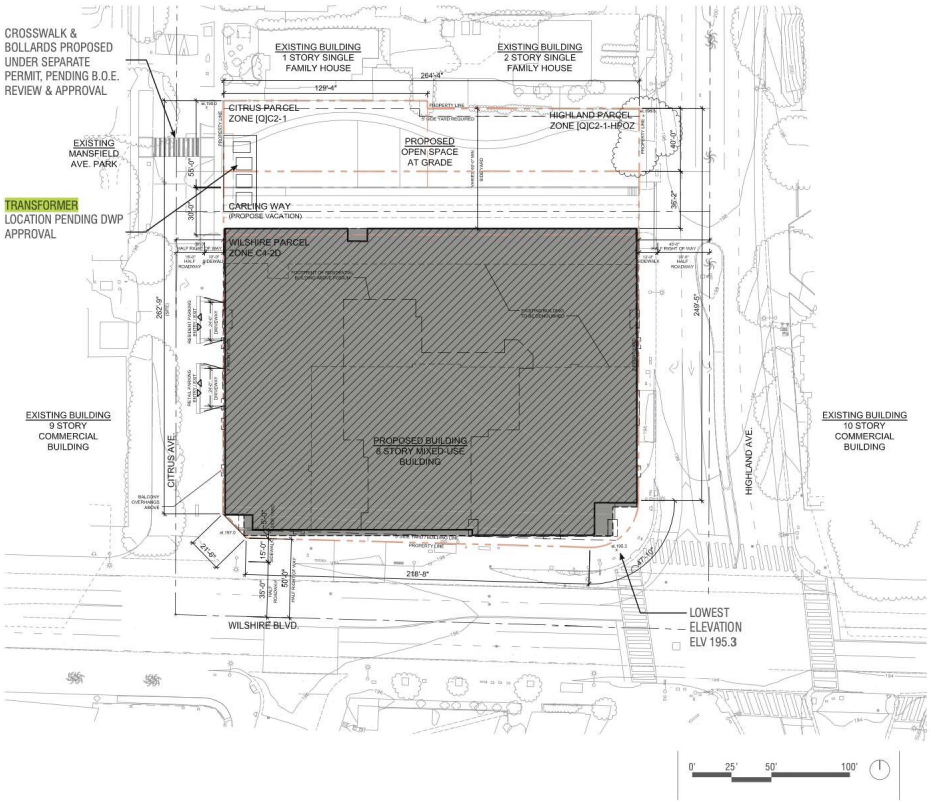
SOURCE: Urban Arena, 2021

FIGURE **II-25**

IMPACT SCIENCES

Conceptual Greenbelt Plan

1345.001•11/2021



LEGAL DESCRIPTION:

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF LOS ANGELES IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

LOT 37 OF TRACT NO. 5049, IN THE CITY OF LOS ANGELES, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 54, PAGE 52 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

APN: 5507-019-014 PARCEL B:

LOT 34 OF TRACT NO. 5049, IN THE CITY OF LOS ANGELES, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 54, PAGE 52 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

APN: 5507-019-012 PARCEL C:

LOTS 35 AND 36 OF TRACT 5049, IN THE CITY OF LOS ANGELES, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 54, PAGE 52 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

EXCEPT ALL OIL, PETROLEUM, NATURAL GAS, MINERAL RIGHTS AND OTHER HYDROCARBON SUBSTANCES LYING BELOW A DEPTH OF 500 VERTICAL FEET FROM THE SURFACE OF SAID LAND, FOR THE PURPOSE OF EXPLORING FOR, EXTRACTING, MINING, BORING, REMOVING OR MARKETING SAID SUBSTANCES, HOWEVER, WITHOUT ANY RIGHT OF ANY ENTRY UPON THE SURFACE OF SAID LAND, AS RESERVED BY GULF OIL CORPORATION, A PENNSYLVANIA CORPORATION, BY DEED RECORDED DECEMBER 27, 1978 AS INSTRUMENT NO. 78-1435072 OF OFFICIAL RECORDS.

APN: 5507-019-029

PROJECT ADDRESSES

5001 W. WILSHIRE BLVD, LOS ANGELES CA
671-677 S. HIGHLAND AVE, LOS ANGELES CA
668 S. CITRUS AVE, LOS ANGELES CA

BUILDING DESCRIPTION

- 8-STORY MIXED-USE BUILDING OVER 3 BASEMENT LEVELS OF PARKING
- 243 APARTMENT UNITS, UTILIZING TOC3 DENSITY BONUS
- 10,900 SF COMMERCIAL AT GROUND FLOOR
- 354 PARKING STALLS

PROJECT SUMMARY

SEE SHEET A-1.3 FOR PROJECT SUMMARY

NOTES
- ALL EXISTING STRUCTURES TO BE DEMOLISHED.
- NO EXISTING TREES ON-SITE; ONE EXISTING TREE IN THE ADJACENT RIGHT-OF-WAY AT THE NORTHEAST CORNER.

LEGEND

- PROPOSED MIXED-USE BUILDING
- BASEMENT PARKING BELOW
- FOOTPRINT OF RESIDENTIAL BUILDING ABOVE PODIUM LEVEL
- EXISTING BUILDING TO BE DEMOLISHED (ALL EXISTING STRUCTURES TO BE DEMOLISHED)

SOURCE: TCA Architects, 2021

FIGU

IMPACT SCIENCES

Project Pl

1345.001•04/2021

David Woon <david.woon@lacity.org>

5001 WILSHIRE --> SECTION V. LIST OF PREPARERS

1 message

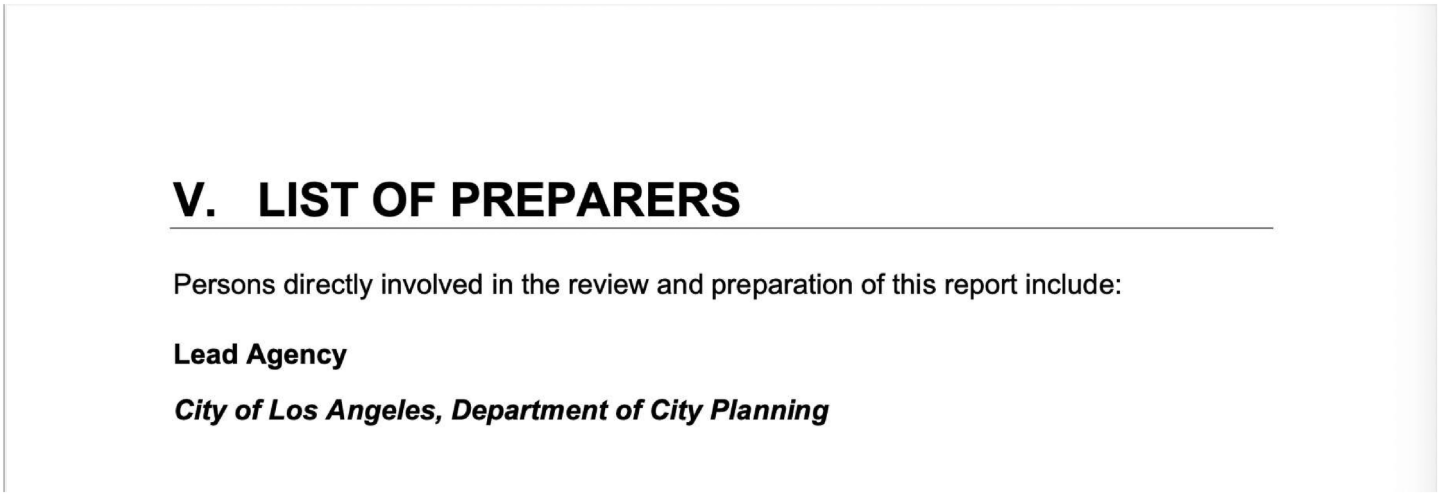
Debbie Alpers <dnaandco@icloud.com> Fri, Apr 15, 2022 at 10:06 AM
To: David Woon <david.woon@lacity.org>
Cc: Debbie Alpers <dnaandco@icloud.com>, Mark Alpers <mdalpers@aol.com>

Hi David,

Section I. Introduction, Part D. Organization of the SCEA, Section V. List of Preparers (Page I-4) states the following:

> V. **List of Preparers.** This section provides a list of City personnel, other governmental agencies, and consultant team members that participated in the preparation of the SCEA.

Section V - List of Preparers (Page V-1) does not list the City personnel involved in the review and preparation of the Report.



V. LIST OF PREPARERS

Persons directly involved in the review and preparation of this report include:

Lead Agency

City of Los Angeles, Department of City Planning

I request that the Applicant identify by name and title the persons from the City of Los Angeles, Department of City Planning directly involved in the review and preparation of the report. Would you please provide this to me no later than 5 days before the close of the comment period?

Thank you.
Debbie Alpers

David Woon <david.woon@lacity.org>

5001 WILSHIRE --> I. INTRODUCTION --> SECTION B. PROJECT SUMMARY

1 message

Debbie Alpers <dnaandco@icloud.com> Fri, Apr 15, 2022 at 10:39 AM
To: David Woon <david.woon@lacity.org>
Cc: Debbie Alpers <dnaandco@icloud.com>, Mark Alpers <mdalpers@aol.com>

Hi David,

SECTION A. INTRODUCTION

1. What is the exact number of parking spaces that will be provided?

"The Project would provide *up to 354 parking spaces* with 324 parking spaces location within the Project's three subterranean levels…"

The Basement Floor 1 (106 Parking spaces), Floor 2 and Floor 3 (109 parking spaces/evel) appear to show 324 subterranean parking spaces.

I request that the Applicant apply the correct number of parking spaces in the Project Summary.

Thank you.
Debbie Alpers

David Woon <david.woon@lacity.org>

5001 WILSHIRE --> GREENBELT/OPENSPACE

1 message

Debbie Alpers <dnaandco@icloud.com> Sat, Apr 16, 2022 at 4:18 PM
To: David Woon <david.woon@lacity.org>
Cc: Debbie Alpers <dnaandco@icloud.com>, Mark Alpers <mdalpers@aol.com>

Hi David,

What is the status of the greenbelt/open space in terms of the following:

1. ownership
2. maintenance
3. security

I recall that you mentioned this involved multiple LA City Departments such as Parks and Recreation.

Would you please provide the documents that describe these terms.

There is no clarification regarding this in the materials that were posted online.

Thank you.
Debbie Alpers

David Woon <david.woon@lacity.org>

5001 WILSHIRE --> PRIVATE BALCONIES

1 message

Debbie Alpers <dnaandco@icloud.com> Mon, Apr 18, 2022 at 7:26 AM
To: David Woon <david.woon@lacity.org>
Cc: Debbie Alpers <dnaandco@icloud.com>, Mark Alpers <mdalpers@aol.com>

Hi David,

In the initial filings, the Applicant provided the following details regarding Private Balconies:

5850 SF = 117 X 50 SF

In the SCEA, the Applicant listed Private Balconies at 5,250 SF. There is no further detail on this in the documents. The Floor Plans, showing Private Balconies, do not appear to have been revised. It was also detailed that these balconies would be lighted (not previously in the initial filings. At a meeting with residents in September 2021, residents expressed concerns regarding the number of balconies facing north as well as the size of the balconies. The Applicant stated that some Juliet style balconies would be incorporated in the design.

Would you please provide the details on the Private Balconies, in terms of number, location and square feet?

Thank you.
Debbie Alpers

The Sustainable Communities Environmental Assessment (SCEA) for the **5001 Wilshire Project** is an unfinished, poorly edited and reviewed collection of 50 separate data files containing a large number of errors. In fact, the document sets the stage with a typographical error on Page I.

Given this, I request that the fifty (50) data files be removed from the Los Angeles City Planning website and are edited/updated by the Applicant and comprehensively reviewed by the City. Another alternative would be for the Los Angeles City Planning to extend the comment period by a minimum of 30 days.

Among the highlights of these errors are:

1. Two different document footers are used; *neither* correspond correctly to the Project Name

Project Name:	5001 Wilshire Project
Footers:	Wilshire/Highland Project (used in Table of Contents, Section II – VI))
	Wilshire/Highland Mixed-Use Project (used in Section I. Introduction)

2. Figures missing information (examples below)

Figure II-2:	There is no legend, including scale (in feet) and North direction
Figure II-7:	There is no legend defining A1, A1.1, A3, A4, A5, A6, B1, B1.1, B3, S1, S2.1
Figure II-8:	There is no legend defining A1, A1.1, A3, A4, A5, A6, B1, B1.1, B3, S1, S2.1
Figure II-9:	There is no legend defining A1, A1.1, A3, A4, A5, A6, B1, B1.1, B3, S1, S2.1

3. Sections of content are missing from the document

Section V. List of Preparers:	There are no persons for the City of Los Angeles, Department of City Planning
Section II. Project Description:	There is no content provided for Access and Circulation (Page II-10)

4. Figures in the document have not been updated to accurately reflect changes made by the Applicant

   Figure II-4
   Figure II-5

5. The number of residential units – specifically 2-bedrooms and 3-bedrooms – has been changed without any apparent change to the figures. Note: This is further complicated by the absence of legends (item #2 referenced above)

6. Appendix G - Noise is presented in "review mode"

7. Typographical errors

8. Consistent terminology not used throughout the document

Section II. Project Description, page II-1:	Project, proposed project (all lower case)
Section II. Project Description, page II-3:	Proposed Project (capitalized)

9. Errors in the Table of Contents vs document content

Table of Contents: IV. D. 2.:	Agricultural Resources
Section IV: Environmental Checklist:	Agricultural and Forestry Resources

10. Inconsistent styles used in the same section of the document

Section IV. 13:	Noise (lower caps)
Section IV.14:	POPULATION AND HOUSING (all caps)
Section IV.15:	Public Services (lower caps)

May 13, 2022

Mr. David Woon
Planning Assistant
Los Angeles City Planning Department
200 North Spring Street, Room 763
Los Angeles, CA. 90012

RE: 5001 Wilshire Project (ENV-2021-3327-SCEA)

Dear Mr. Woon,

I am submitting these comments on the Sustainable Community Environmental Assessment (SCEA) for the project located at 5001 Wilshire Boulevard (ENV-2021-3327-SCEA). I live at 422 S. Orange Drive, a few blocks from the project.

I generally am in favor of the project, which will replace an outdated mini-mall. In addition, I think the proposed green belt will be an improvement for the neighborhood. I do have a few concerns, which many of my neighbors share, as described below.

Traffic on Residential Streets:
My main concern is traffic that the project will generate traffic on our narrow residential streets, particularly South Citrus Avenue. I strongly agree with the finding addressed in Appendix H (Page 2) that South Citrus Avenue be closed to traffic south of the Carling Way alley.

I am concerned that the SCEA Project Description (Section II) has no narrative discussion about the use of bollards (or other measures) to limit the intrusion of project traffic on South Citrus Avenue north of the site. While the location of the bollards is shown in this section on Figure II-4, and Appendix H has a relatively full discussion of the alternatives currently being considered, it is surprising that this aspect of the project design did not warrant discussion in Section II. The use of these bollards, a reason why the project enjoys a measure of community support, is integral to understanding the impacts of the project. This information should not be buried in a technical appendix. Please modify the project description to provide, at least, an overview of this key project-related improvement to the circulation network.

Construction Noise:
The construction noise mitigation measures included in the SCEA are generic and not specifically tailored to the project site. Please note that the SCEA states that the construction period for the project is estimated at 32 months. Because residents of R-1 single-family homes immediately adjacent to the project site will be exposed to this impact for this duration, noise impacts must be mitigated and the City must assure that mitigation will be effective. The SCEA estimates a 5.7 dBA increase in construction noise from an adjacent home on Highland Avenue and a 13.7 dBA increase at an adjacent home on Citrus Avenue. Under the City's CEQA Thresholds, a 5.0 dBA increase is considered significant, hence mitigation is required. The SCEA mitigates this noise with a temporary sound wall and noise-reduction equipment (mufflers) on construction vehicles and equipment. According to the SCEA, the mitigation measures will result in a sufficient reduction of construction noise to less than 5 dBA at each receptor location.

This analysis lacks the following information:

(1) where specifically on the site will the temporary sound wall be placed and how close will this wall be to the nearest R-1 homes?
(2) what is the proposed height of the sound wall?
(3) what is the material composition of the sound wall?
(4) and given the previous three factors, how much noise reduction is likely to occur?
(5) in addition, will the sound wall also protect the R1 homes from construction dust?

Clearly, the location of the wall, its height and material composition are all key factors in determining how much noise will be mitigated. The SCEA provides a quantitative estimate of how construction noise will be mitigated without an explanation of how this estimate was derived.

Construction Traffic:
I am pleased that the proposed haul route for this project avoids South Citrus Avenue and Highland Avenue by using Wilshire Boulevard for both ingress and egress. As a result, there will be no construction impact to nearby residences from these vehicles. I am concerned, however, about the potential impact on these streets from other construction vehicles and equipment. The SCEA does not describe or prescribe how these vehicles will access the site. The Traffic Assessment (Appendix H, Page 3-4) recommends that "construction related traffic be limited to off-peak hours to the extent possible." Yet, this recommendation, or other similar measures, are not carried forward into the SCEA as mitigation measures.

Mitigation to avoid the presence of construction equipment and vehicles on South Citrus Avenue north of the project site and on Highland Avenue is necessary for the following reasons:
(1) South Citrus Avenue is a narrow street with residential parking on both sides of the street
(2) The project site is located at a busy intersection (Wilshire Boulevard and Highland Avenue) which operates at Level of Service (LOS) F under existing conditions and under future conditions with and without the project. The use of construction vehicles and equipment on Highland Avenue near this intersection during peak hours, by northbound or southbound traffic, will measurably worsen what is already a bad situation at this intersection.
(3) In addition, the use of these streets by these vehicles may also be limited by current restrictions which exclude vehicles that weigh more than 6,000 pounds.

The Traffic analysis in the SCEA does not address this issue. Is it the SCEA's position that this impact is less than significant? If so, the community deserves a full explanation why. For this impact, mitigation can be achieved by limiting access by construction vehicles and equipment to Wilshire Boulevard and/or South Citrus Avenue south of the R-1 homes.

Thank you for the opportunity to comment.

Jill Brown
422 S. Orange Drive

David Woon <david.woon@lacity.org>

5001 Wilshire SCEA Comments (ENV-2021-3327-SCEA)

TFR <tomflesch@sbcglobal.net> Thu, May 12, 2022 at 11:49 AM
To: Paul Schneider <pschneid24@ca.rr.com>, "anne.schneider.2020@lawmail.usc.edu" <anne.schneider.2020@lawmail.usc.edu>, "amkafton@sbcglobal.net" <amkafton@sbcglobal.net>, Sean Silk <moeandjake@aol.com>, "weihongyan@yahoo.com" <weihongyan@yahoo.com>, "riqiao@yahoo.com" <riqiao@yahoo.com>, Mark Alpers <mdalpers@aol.com>, "david.woon@lacity.org" <david.woon@lacity.org>, "paul.koretz@lacity.org" <paul.koretz@lacity.org>
Cc: Debbie Alpers <dnaandco@me.com>, Suzan Fellman <suzan@suzanfellman.com>, Phillip Messina <pmessina98@aol.com>, Genia Kaplan Quinn <genia@geniaquinn.com>, Cindy Chvatal <snorekel@gmail.com>

Dear Mr. Woon
Planning Assistant
Los Angeles Planning Department
200 North Spring Street, Room 763
Los Angeles, CA 90012

Re: 5001 Wilshire Project (ENV – 2021-6627-SCEA)

Dear Mr. Woon,

In regard to the above-mentioned project, my family at 653 S. Highland Avenue would like to input on the proposed project with the following concerns:

1. The paramount concern regarding this project is noise abatement from the daily residential occupation of the complex. An eight-story complex with balconies facing the north side of the building will create untenable noise to the single-family homes directly below and in line with the project. As such, it is requested that no balconies become a part of the north side of the complex, (except for Juliet type balconies that cannot be physically accessed other than for small flowerpots, plants and as an architectural accommodation for the benefit of the project).

   It should be noted that this is the only complex along the Wilshire corridor that is adjacent to R1 residential properties that proposes balconies. As such, the land use of this project directly interferes with the use and enjoyment of those adjacent single family residential properties. Note that a commercial office building with no balconies, (the Cochran Building on the Northeast corner of Wilshire and Highland) does not create any noise to those residential properties adjacent directly to the North of that building. Additionally, a commercial building is not open 24/7 as is a residential building.

2. The second criterion that is of paramount concern is traffic mitigation. Clearly, an eight-story building is going to engender substantial traffic once completed. Highland and Wilshire are major artery lines in the city. Parking on Wilshire Blvd is out of the question currently. The complex must have sufficient parking to accommodate residents, guests, and commercial traffic. If this is not taken into consideration, Highland Avenue will become a 24/7 parking lot subservient to the complex. The fact that a subway line will mitigate traffic is pure speculation, and to contemplate that those residents will forgo an automobile in a high rise, high rent complex for public transportation, is both unrealistic and disingenuous.

The above two components, taken together should be taken into consideration regarding every step of the approval process and as to the entire planning of the project as it may affect its final development.

This is not an all-inclusive statement of the impact that this project has on the community. From what we have understood as the current state of the project's proposal, this development must be substantially curtailed to accommodate property owners that are directly impacted to mitigate against the concerns stated above.

Respectfully Submitted,

Tom Flesch
Amy Kafton

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Tom Flesch Realty
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Los Angeles, CA 90036
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Office Hours:
Monday - Thursday 9:00 am - 5:00 pm
Friday - 9:00 am - 12:00 pm
Sat, Sun, Holidays - Closed
tomflesch@sbcglobal.net

On Thursday, May 12, 2022, 10:36:29 AM PDT, TFR <tomflesch@sbcglobal.net> wrote:

Mark,

This is excellent. Thank you so much for your representation and hard work.

Tom Flesch

This message contains information which may be confidential and privileged. Unless you are the addressee (or authorized to receive e-mails for the addressee), you may not use, copy or disclose to anyone this message or any information contained in this message. If you have received this message in error, please advise the sender by reply e-mail to Tom Flesch (tomflesch@sbcglobal.net) and delete the message. Thank you.

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Friday - 9:00 am - 12:00 pm
Sat, Sun, Holidays - Closed
tomflesch@sbcglobal.net

On Thursday, May 12, 2022, 08:16:02 AM PDT, Mark Alpers <mdalpers@aol.com> wrote:

Here are my comments submitted this am to David Woon.

Begin forwarded message:
[Quoted text hidden]

David Woon <david.woon@lacity.org>

5001 Wilshire SCEA Comments (ENV-2021-3327-SCEA)

1 message

weihong yan <weihongyan@yahoo.com> Thu, May 12, 2022 at 1:39 PM
To: "david.woon@lacity.org" <david.woon@lacity.org>
Cc: "paul.koretz@lacity.org" <paul.koretz@lacity.org>, "joan.pelico@lacity.org" <joan.pelico@lacity.org>, "dylan.sittig@lacity.org" <dylan.sittig@lacity.org>, "snorekel@gmail.com" <snorekel@gmail.com>

May 12, 2022

VIA ELECTRONIC MAIL (David.Woon@lacity.org)

Mr David Woon

City of Los Angeles, Department of City Planning

200 North Spring Street, Room. 763

Los Angeles, CA 90012

Re: Public Comment—residents and owners Renli Qiao and Weihong Yan at 633 and 621 S. Highland Avenue Los Angeles, CA 90036

Case No. ENV-2021-3327-SCEA

Related Case No. DIR-2021-3324-CLQ, DIR-2021-3326-TOC-SPR-VHCA,

VTT-83358-CN

Council District: 5 (Koretz)

Community Plan Areas—Wilshire

Project Location—5001 W. Wilshire Boulevard; 671 – 677 S. Highland

Avenue; & 668 S. Citrus Avenue, Los Angeles, CA, 90036

Dear Mr Woon,

We live on the South 600s block of Highland Ave (between Wilshire and 6th Street). We are writing to make you aware of our serious concerns on the Project planned for the afore-mentioned cases that are located immediately adjacent to our homes. Since our neighbors have raised many concerns that we concur with, we will focus on 3 issues.

1 Traffic jam

During the >20 years we lived here, the traffic on Highland Avenue has become increasingly heavy and fast, to the point that it jeopardizes the safety of the residents on both sides of the street. On the intersection of 6th Street and Highland Ave, major collisions occur intolerably frequent (15 over last year alone including one deadly, based on our underestimate). On the other end of the block (Wilshire/Highland), the traffic is so congested that it routinely backs up all the way to 6th Street. It is now difficult to get into the street from our driveways especially during the rush hours. The residents of the area have complained to various authorities and at least 2 sessions of “to meet police officers” were held, but nothing has changed.

Currently, there are 3 lanes on Highland Ave at joint with Wilshire. However, dedicated left turn and right turn each takes up one lane and leaves only one lane for through traffic. The fast traffic from 2-lanes Highland has to merge into single lane before crossing Wilshire, which is the reason for the severe traffic jam on our block.

With such a background, if a giant residential building of >240 units is built on the Wilshire/Highland intersection, it is easily foreseeable that the traffic jam on Highland will only worsen.

2 Parking

We know the building was planned along with the construction of subway on Wilshire, but we ALSO know that it is very unlikely for a single line of subway in a major metropolitan area to change people's travel habit or pattern of public transportation significantly.

Thus, the number of parking spaces currently designed for this building seems seriously insufficient. Also, sufficient number of additional spaces (beside residential) should be available as facilities for large gathering/partying (such as swimming pool) are included in the building design.

Along each side of Highland Ave, only 20 parking spaces are available on the street on this block. Any spill over parking from the building will easily fill up the street.

We request that the development of the giant building should include the following designs:

1) Widen Highland Ave at Wilshire to 4 lanes with 2 lanes for through traffic;

2) Double the number of residential parking spaces in the building;

3) Make our block into permit parking (like for the same block of Citrus Avenue).

3 Hancock Park Historical Preservation Area

Hancock Park has been established as a Historic Preservation Overlay Zone (HPOZ). The South border of this HPOZ is Wilshire. The Development of the cases number falls within Hancock Park and thus must follow all the requirement of HPOZ. We have not seen proof of Authorization that allows major change in the appearance of the HPOZ.

Sincerely,

Renli Qiao (Signed)

Weihong Yan (signed)

FENTON
LAW GROUP | LLP

May 10, 2022

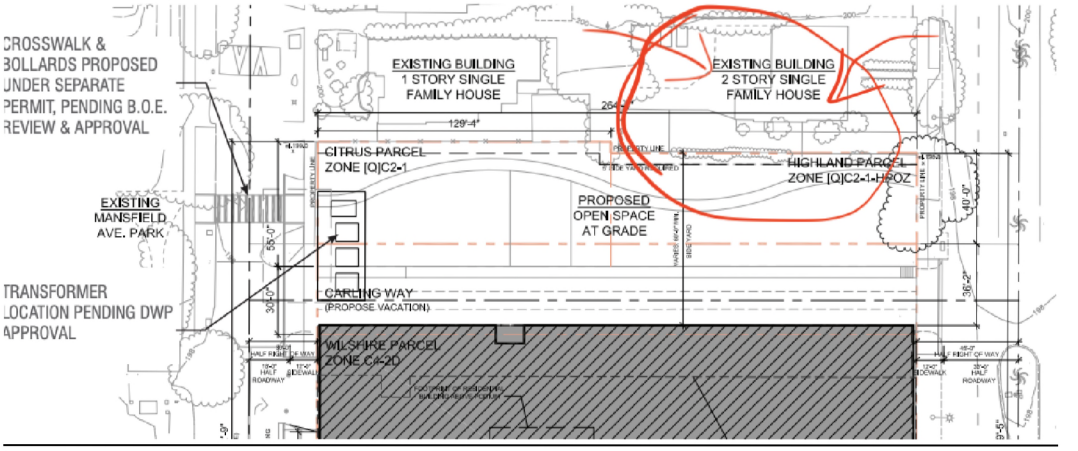
VIA ELECTRONIC MAIL (David.Woon@lacity.org)

David Woon
City of Los Angeles, Department of City Planning
200 North Spring Street, Room. 763
Los Angeles, CA 90012

Re: Public Comment—resident Anne Schneider at 665 S. Highland Avenue Los Angeles, CA 90036
Case No. ENV-2021-3327-SCEA
Related Case No. DIR-2021-3324-CLQ, DIR-2021-3326-TOC-SPR-VHCA, VTT-83358-CN
Council District: 5 (Koretz)
Community Plan Areas—Wilshire
Project Location—5001 W. Wilshire Boulevard; 671 – 677 S. Highland Avenue; & 668 S. Citrus Avenue, Los Angeles, CA, 90036

Dear Mr. Woon,

My name is Anne Schneider, and I am an attorney and resident at the property my parents own on Highland Avenue, immediately behind the aforementioned project site (address 665 South Highland Avenue, Los Angeles, California, 90036). Please consider this correspondence my formal public comment regarding the 5001 Wilshire Development Project ("the Project"). Although we *generally* support the Project, we do so with limitations, which we outline below.



I. Noise Concerns—Roof Deck, Pool Deck Green Space & Resident Balconies

I am concerned about noise coming from the proposed green space/belt, outdoor balcony spaces, roof deck, and pool deck once the Project is finished. The Project Proposal/Report promises a 2,000 SF roof deck, 5,250 SF of private balconies, and a massive "green space" which will be available to the 200-plus residents living in the proposed development.[1] [2] The Project Proposal indicates that it will have a pool deck, which will be directly accessible from the green belt, which is adjacent to our property.[3]

Hundreds of residents will have access to the green space, roof deck, and pool deck at any given time of day or night. Noise travels very far in our neighborhood, and noisy neighbors can make for sleepless nights and disturb the peace and quiet of our private residence. These common areas, as well as the balconies of the townhouses facing Highland Avenue will surely become spots for large gatherings and parties. Importantly, this Project would be the only one along the Wilshire Corridor that proposes balconies facing R1 zoned homes as of the date of this letter. There is no mention of any kind of restrictions on when and in what ways residents will be able to use the common areas or their balconies.

We propose that the balconies facing Highland Avenue either be removed entirely or shortened significantly in the hopes of reducing noise pollution in our neighborhood. We also propose that the green space, roof deck, and pool deck areas have strict hourly requirements, for example that after sundown they cannot be used other than to pass through, or that loud parties be prohibited after certain hours on the roof deck, pool deck, and green space, and that those policies be enforced.

II. Privacy Concerns—Roof Deck, Green Space, Pool Deck & Residential Balconies

In addition to concerns about noise, we also have serious concerns about privacy. This 8-story development will hover over our modest two-story residence. We are worried that residents will be able to look directly into the windows of our home. We are also worried that this development will take away our access to sunlight in our backyard, which is our own little slice of heaven.

We propose that the developer work closely with us to ensure that these concerns are addressed with deference to our interests as much as reasonably possible.

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[1] Page ll-10 of the Project Report.
[2] Page ll-17 of the Project Report.
[3] Figure II-26 of the Project Report.

III. Parking Concerns

The Project Proposal does not contain nearly enough parking spaces to accommodate its residents, which poses a threat to our already highly congested street. Specifically, the Project provides 324 residential parking spaces, which amounts to only 1.34 parking spaces per dwelling unit.[4]

My family and I stack park our cars in our driveway, and we often need to move our cars around to let one of us out. During this process of moving cars, we often temporarily park one car on Highland Avenue, which is already incredibly busy. We are concerned that we will have trouble parking on our own street, or even switching our cars in the driveway with the lack of parking that the project has provided.[5] [6] We are also concerned that we will have trouble hosting guests for lack of parking available on the street when Project residents and their guests begin to utilize our street parking in order to accommodate the lack of adequate parking spaces available in their own development.

Table II-3
Vehicle Parking Summary

Required Residential (LAMC)	Per Unit	Units	Spaces
< 3 habitable rooms	1	66	66
3 habitable rooms	1.5	113	170
> 3 habitable rooms	2	63	126
Total			362

Required Residential (TOC Tier 3)	Per Unit	Units	Spaces
Residential (per unit)	0.5	242	121

Required Commercial	Ratio	SF	Spaces
Retail	1 per 250 sf	10,000	40
Office	1 per 500 sf	900	2
TOC Reduction (30%)			**30**
Total			**151**

We propose that the developers incorporate better parking accommodations for the residents and guests of the Project. The current arrangement is largely unrealistic. Wishing that Los Angeles residents will use public transit does not mean that they will *actually use* public transit in practice. Instead, the residents of our street will be the victims of rose-colored glasses.

[4] Page II-11 of the Project Report.
[5] The Project provides "up to . . . 324 residential parking spaces located within the Project's three subterranean levels." Page II-1 of the Project Report.
[6] "LAMC Section 12.21A.4(a) requires at least one parking space for each dwelling unit of less than three habitable rooms, one and one-half parking spaces for each dwelling unit of three habitable rooms, and two parking spaces for each dwelling unit of more than three habitable rooms. The Project proposes 66 studio units, 113 one-bedroom units, and 62 two-bedroom units and one three-bedroom unit, which would result in an overall residential parking requirement of 362 parking spaces." Page II-10 of the Project Report.

To encourage Los Angeles residents to use public transit, efforts should be made to improve the safety and efficiency of public transit available instead of limiting the parking available.

IV. Construction Issues— Parking of Vehicles; Dust Pollution; Noise & Time of Construction

We are concerned about the ramifications of dust pollution and noise pollution on our property during construction over the 32-month construction timeline set for the Project.[7] According to the Project Report, Construction is permitted any time after 7:00 A.M. until 9:00 P.M. on business days, and can begin any time after 8:00 A.M. on Saturdays. Additionally, the Project will include 65,095 cubic yards of soil will be brought to the Project Site.[8]

We propose that the developers provide us with concrete information as to how they intend to protect the people in my home from unhealthy air quality and noise pollution during the construction phase of the project.

V. Conclusion

Although we support the idea of improving the commercial space immediately next to us, we want to make sure that our interests (i.e., privacy and safety) are respected during this process. We would also like to ensure that our street's integrity, and the integrity of our home as well as our own right to quiet enjoyment of our own private property are respected. Please email us at the following addresses to further discuss the aforementioned concerns:

anne.schneider.2020@lawmail.usc.edu
pschneid24@ca.rr.com

Very truly yours,

Anne Schneider
By: Anne Schneider
Paul Schneider
Lisa Schneider

[7] Page ll-15 of the Project Proposal.
[8] Page ll-15 of the Project Proposal.

David Woon <david.woon@lacity.org>

Re: 5001 Wilshire SCEA Comments (ENV-2021-3327-SCEA)

Sean Silk <moeandjake@aol.com> Thu, May 12, 2022 at 5:20 PM
Reply-To: Sean Silk <moeandjake@aol.com>
To: "david.woon@lacity.org" <david.woon@lacity.org>

VIA ELECTRONIC MAIL (David.Woon@lacity.org)

David Woon
City of Los Angeles, Department of City Planning
200 North Spring Street, Room. 763
Los Angeles, CA 90012

Re: Public Comment—residents and owners Sean and Susan Silk, 639 S. Highland Avenue Los Angeles, CA 90036
Case No. ENV-2021-3327-SCEA

Related Case No. DIR-2021-3324-CLQ, DIR-2021-3326-TOC-SPR-VHCA,

VTT-83358-CN

Council District: 5 (Koretz)
Community Plan Areas—Wilshire

Project Location—5001 W. Wilshire Boulevard; 671 – 677 S. Highland

Avenue; & 668 S. Citrus Avenue, Los Angeles, CA, 90036

Dear Mr. Woon,

Regarding the 5001 Wilshire Project (ENV - 2021- 6627 - SCEA) and as 18- year residents at 639 S. Highland Ave., we write to you today to express our serious concerns regarding the Wilshire Project.

Of most importance, north-facing balconies should not be allowed. The privacy of our immediate neighbors needs to be taken into consideration. Additionally, excessive noise will emanate from the use of outside balconies along with cars entering and exiting the garage.
Traffic will increase along Highland Ave. but there will still only be one lane going southbound on Highland through Wilshire. The current backup on Highland during rush hour is at capacity (meaning it backs up all the way to 6th St.). These streets were not built to sustain and handle the amounts of traffic we see in the present day. The impact of additional traffic due to the added occupancy of this proposed building will be of no consequence. Parking on Highland will also be affected. As it stands, because of the proximity to Wilshire, parking has become an issue. We ask that permit parking be implemented for residents of the 600 block of South Highland Ave.

The scope of this project is just simply too big not to have several egregious impacts- mostly traffic, noise, and general quality of life. Our neighborhood is an established HPOZ community, with the majority of neighbors engaged with community issues and concerns, while also giving back in many ways - - not just to our neighborhood, but to many surrounding neighborhoods as well.

Thank you for your time and for allowing us to comment and be heard. It is truly appreciated.

Sincerley,
Sean and Susan Silk