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VIA E-MAIL

December 8, 2021

El Segundo Planning Commission
City of El Segundo
350 Main Street
El Segundo, CA 90245
Em: planning@elsegundo.org

RE: Agenda Item No. H-1: Pacific Coast Commons Specific Plan Project

Dear Chair Baldino and Honorable Commissioners,

On behalf of the Southwest Regional Council of Carpenters (“**Southwest Carpenters**” or “**SWRCC**”), my Office is submitting these comments on Agenda Item No. H-1 for the November 18, 2021 City Planning Commission Meeting for the City of El Segundo’s (“**City**” or “**Lead Agency**”) Final Environmental Impact Report (“**FEIR** or **DEIR**”) (SCH No. 2020050508) for the Pacific Coast Commons Specific Plan Project. The Project proposes to demolish existing structures, including a former restaurant with meeting/ballroom space, a rental car tenant, and the existing surface parking lots of the Fairfield Inn & Suites by Marriott and Aloft Hotel properties, and would allow for the development of up to 263 new housing units and approximately 11,250 gross square feet of new commercial/retail uses, and associated parking. (“**Project**”).

The Southwest Carpenters is a labor union representing 50,000 union carpenters in six states and has a strong interest in well ordered land use planning and addressing the environmental impacts of development projects.

Individual members of the Southwest Carpenters live, work and recreate in the City and surrounding communities and would be directly affected by the Project’s environmental impacts.

The Southwest Carpenters expressly reserves the right to supplement these comments at or prior to hearings on the Project, and at any later hearings and proceedings related to this Project. Cal. Gov. Code § 65009(b); Cal. Pub. Res. Code § 21177(a); *Bakersfield*

Citizens for Local Control v. Bakersfield (2004) 124 Cal. App. 4th 1184, 1199-1203; see *Galante Vineyards v. Monterey Water Dist.* (1997) 60 Cal. App. 4th 1109, 1121.

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

Moreover, SWRCC requests that the Lead Agency provide notice for any and all notices referring or related to the Project issued under the California Environmental Quality Act (“**CEQA**”), Cal Public Resources Code (“**PRC**”) § 21000 *et seq.*, and the California Planning and Zoning Law (“**Planning and Zoning Law**”), Cal. Gov’t Code §§ 65000–65010. California Public Resources Code Sections 21092.2, and 21167(f) and Government Code Section 65092 require agencies to mail such notices to any person who has filed a written request for them with the clerk of the agency’s governing body.

The City should require the Applicant provide additional community benefits such as requiring local hire and use of a skilled and trained workforce to build the Project. The City should require the use of workers who have graduated from a Joint Labor Management apprenticeship training program approved by the State of California, or have at least as many hours of on-the-job experience in the applicable craft which would be required to graduate from such a state approved apprenticeship training program or who are registered apprentices in an apprenticeship training program approved by the State of California.

Community benefits such as local hire and skilled and trained workforce requirements can also be helpful to reduce environmental impacts and improve the positive economic impact of the Project. Local hire provisions requiring that a certain percentage of workers reside within 10 miles or less of the Project Site can reduce the length of vendor trips, reduce greenhouse gas emissions and providing localized economic benefits. Local hire provisions requiring that a certain percentage of workers reside within 10 miles or less of the Project Site can reduce the length of vendor trips, reduce greenhouse gas emissions and providing localized economic benefits. As environmental consultants Matt Hagemann and Paul E. Rosenfeld note:

[A]ny local hire requirement that results in a decreased worker trip length from the default value has the potential to result in a reduction of construction-related GHG emissions, though the significance of the reduction would vary based on the location and urbanization level of the project site.

March 8, 2021 SWAPE Letter to Mitchell M. Tsai re Local Hire Requirements and Considerations for Greenhouse Gas Modeling.

Skilled and trained workforce requirements promote the development of skilled trades that yield sustainable economic development. As the California Workforce Development Board and the UC Berkeley Center for Labor Research and Education concluded:

. . . labor should be considered an investment rather than a cost – and investments in growing, diversifying, and upskilling California’s workforce can positively affect returns on climate mitigation efforts. In other words, well trained workers are key to delivering emissions reductions and moving California closer to its climate targets.¹

Recently, on May 7, 2021, the South Coast Air Quality Management District found that the “[u]se of a local state-certified apprenticeship program or a skilled and trained workforce with a local hire component” can result in air pollutant reductions.²

Cities are increasingly adopting local skilled and trained workforce policies and requirements into general plans and municipal codes. For example, the City of Hayward 2040 General Plan requires the City to “promote local hiring . . . to help achieve a more positive jobs-housing balance, and reduce regional commuting, gas consumption, and greenhouse gas emissions.”³

¹ California Workforce Development Board (2020) Putting California on the High Road: A Jobs and Climate Action Plan for 2030 at p. ii, *available at* <https://laborcenter.berkeley.edu/wp-content/uploads/2020/09/Putting-California-on-the-High-Road.pdf>

² South Coast Air Quality Management District (May 7, 2021) Certify Final Environmental Assessment and Adopt Proposed Rule 2305 – Warehouse Indirect Source Rule – Warehouse Actions and Investments to Reduce Emissions Program, and Proposed Rule 316 – Fees for Rule 2305, Submit Rule 2305 for Inclusion Into the SIP, and Approve Supporting Budget Actions, *available at* <http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2021/2021-May7-027.pdf?sfvrsn=10>

³ City of Hayward (2014) Hayward 2040 General Plan Policy Document at p. 3-99, *available at* https://www.hayward-ca.gov/sites/default/files/documents/General_Plan_FINAL.pdf.

In fact, the City of Hayward has gone as far as to adopt a Skilled Labor Force policy into its Downtown Specific Plan and municipal code, requiring developments in its Downtown area to requiring that the City “[c]ontribute to the stabilization of regional construction markets by spurring applicants of housing and nonresidential developments to require contractors to utilize apprentices from state-approved, joint labor-management training programs, . . .”⁴ In addition, the City of Hayward requires all projects 30,000 square feet or larger to “utilize apprentices from state-approved, joint labor-management training programs.”⁵

Locating jobs closer to residential areas can have significant environmental benefits. As the California Planning Roundtable noted in 2008:

People who live and work in the same jurisdiction would be more likely to take transit, walk, or bicycle to work than residents of less balanced communities and their vehicle trips would be shorter. Benefits would include potential reductions in both vehicle miles traveled and vehicle hours traveled.⁶

In addition, local hire mandates as well as skill training are critical facets of a strategy to reduce vehicle miles traveled. As planning experts Robert Cervero and Michael Duncan noted, simply placing jobs near housing stock is insufficient to achieve VMT reductions since the skill requirements of available local jobs must be matched to those held by local residents.⁷ Some municipalities have tied local hire and skilled and trained workforce policies to local development permits to address transportation issues. As Cervero and Duncan note:

In nearly built-out Berkeley, CA, the approach to balancing jobs and housing is to create local jobs rather than to develop new housing.” The

⁴ City of Hayward (2019) Hayward Downtown Specific Plan at p. 5-24, *available at* <https://www.hayward-ca.gov/sites/default/files/Hayward%20Downtown%20Specific%20Plan.pdf>.

⁵ City of Hayward Municipal Code, Chapter 10, § 28.5.3.020(C).

⁶ California Planning Roundtable (2008) Deconstructing Jobs-Housing Balance at p. 6, *available at* <https://cprroundtable.org/static/media/uploads/publications/cpr-jobs-housing.pdf>

⁷ Cervero, Robert and Duncan, Michael (2006) Which Reduces Vehicle Travel More: Jobs-Housing Balance or Retail-Housing Mixing? *Journal of the American Planning Association* 72 (4), 475-490, 482, *available at* <http://reconnectingamerica.org/assets/Uploads/UTCT-825.pdf>.

city's First Source program encourages businesses to hire local residents, especially for entry- and intermediate-level jobs, and sponsors vocational training to ensure residents are employment-ready. While the program is voluntary, some 300 businesses have used it to date, placing more than 3,000 city residents in local jobs since it was launched in 1986. When needed, these carrots are matched by sticks, since the city is not shy about negotiating corporate participation in First Source as a condition of approval for development permits.

The City should consider utilizing skilled and trained workforce policies and requirements to benefit the local area economically and mitigate greenhouse gas, air quality and transportation impacts.

The City should also require the Project to be built to standards exceeding the current 2019 California Green Building Code to mitigate the Project's environmental impacts and to advance progress towards the State of California's environmental goals.

I. **THE PROJECT WOULD BE APPROVED IN VIOLATION OF THE CALIFORNIA ENVIRONMENTAL QUALITY ACT**

A. Background Concerning the California Environmental Quality Act

CEQA has two basic purposes. First, CEQA is designed to inform decision makers and the public about the potential, significant environmental effects of a project. 14 California Code of Regulations (“**CCR**” or “**CEQA Guidelines**”) § 15002(a)(1).⁸ “Its purpose is to inform the public and its responsible officials of the environmental consequences of their decisions *before* they are made. Thus, the EIR ‘protects not only the environment but also informed self-government.’ [Citation.]” *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal. 3d 553, 564. The EIR has been described as “an environmental ‘alarm bell’ whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return.” *Berkeley Keep Jets Over the Bay v. Bd. of Port Comm’rs.* (2001) 91 Cal.

⁸ The CEQA Guidelines, codified in Title 14 of the California Code of Regulations, section 15000 *et seq.*, are regulatory guidelines promulgated by the state Natural Resources Agency for the implementation of CEQA. (Cal. Pub. Res. Code § 21083.) The CEQA Guidelines are given “great weight in interpreting CEQA except when . . . clearly unauthorized or erroneous.” *Center for Biological Diversity v. Department of Fish & Wildlife* (2015) 62 Cal. 4th 204, 217.

App. 4th 1344, 1354 (“*Berkeley Jets*”); *County of Inyo v. Yorty* (1973) 32 Cal. App. 3d 795, 810.

Second, CEQA directs public agencies to avoid or reduce environmental damage when possible by requiring alternatives or mitigation measures. CEQA Guidelines § 15002(a)(2) and (3). *See also, Berkeley Jets*, 91 Cal. App. 4th 1344, 1354; *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553; *Laurel Heights Improvement Ass’n v. Regents of the University of California* (1988) 47 Cal. 3d 376, 400. The EIR serves to provide public agencies and the public in general with information about the effect that a proposed project is likely to have on the environment and to “identify ways that environmental damage can be avoided or significantly reduced.” CEQA Guidelines § 15002(a)(2). If the project has a significant effect on the environment, the agency may approve the project only upon finding that it has “eliminated or substantially lessened all significant effects on the environment where feasible” and that any unavoidable significant effects on the environment are “acceptable due to overriding concerns” specified in CEQA section 21081. CEQA Guidelines § 15092(b)(2)(A–B).

While the courts review an EIR using an “abuse of discretion” standard, “the reviewing court is not to ‘uncritically rely on every study or analysis presented by a project proponent in support of its position.’ A ‘clearly inadequate or unsupported study is entitled to no judicial deference.’” *Berkeley Jets*, 91 Cal.App.4th 1344, 1355 (emphasis added) (quoting *Laurel Heights*, 47 Cal.3d at 391, 409 fn. 12). Drawing this line and determining whether the EIR complies with CEQA’s information disclosure requirements presents a question of law subject to independent review by the courts. *Sierra Club v. Cnty. of Fresno* (2018) 6 Cal. 5th 502, 515; *Madera Oversight Coalition, Inc. v. County of Madera* (2011) 199 Cal. App. 4th 48, 102, 131. As the court stated in *Berkeley Jets*, 91 Cal. App. 4th at 1355:

A prejudicial abuse of discretion occurs “if the failure to include relevant information precludes informed decision-making and informed public participation, thereby thwarting the statutory goals of the EIR process.

The preparation and circulation of an EIR is more than a set of technical hurdles for agencies and developers to overcome. The EIR’s function is to ensure that government officials who decide to build or approve a project do so with a full understanding of the environmental consequences and, equally important, that the public is assured those consequences have been considered. For the EIR to serve these goals it must present information so that the foreseeable impacts of pursuing the

project can be understood and weighed, and the public must be given an adequate opportunity to comment on that presentation before the decision to go forward is made. *Communities for a Better Environment v. Richmond* (2010) 184 Cal. App. 4th 70, 80 (quoting *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 449–450).

B. CEQA Requires Revision and Recirculation of an Environmental Impact Report When Substantial Changes or New Information Comes to Light

Section 21092.1 of the California Public Resources Code requires that “[w]hen significant new information is added to an environmental impact report after notice has been given pursuant to Section 21092 ... but prior to certification, the public agency shall give notice again pursuant to Section 21092, and consult again pursuant to Sections 21104 and 21153 before certifying the environmental impact report” in order to give the public a chance to review and comment upon the information. CEQA Guidelines § 15088.5.

Significant new information includes “changes in the project or environmental setting as well as additional data or other information” that “deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative).” CEQA Guidelines § 15088.5(a). Examples of significant new information requiring recirculation include “new significant environmental impacts from the project or from a new mitigation measure,” “substantial increase in the severity of an environmental impact,” “feasible project alternative or mitigation measure considerably different from others previously analyzed” as well as when “the draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.” *Id.*

An agency has an obligation to recirculate an environmental impact report for public notice and comment due to “significant new information” regardless of whether the agency opts to include it in a project’s environmental impact report. *Cadiz Land Co. v. Rail Cycle* (2000) 83 Cal.App.4th 74, 95 [finding that in light of a new expert report disclosing potentially significant impacts to groundwater supply “the EIR should have been revised and recirculated for purposes of informing the public and governmental agencies of the volume of groundwater at risk and to allow the public and governmental agencies to respond to such information.”]. If significant new information was brought to the attention of an agency prior to certification, an agency

is required to revise and recirculate that information as part of the environmental impact report.

Here, the City has made significant revisions to the Draft EIR which are detailed in the FEIR beginning on page 3-1 of that document. These revisions require recirculation of the EIR for an additional public comment period. These are not minor non-substantive revisions.

The City has significantly altered its transportation and cumulative impacts analyses. The City has now added three additional related projects and attached them to the FEIR as Appendix A in the *Revised Future Analysis*. As a result, all related impacts are substantially altered and the EIR needs to be recirculated to allow for adequate public review and comment. The City has changed its transportation analysis as it relates to trip generation, traffic volume, and level of service analysis. (See FEIR, Appendix A.) These changes are accompanied by dozens of pages of expert data analysis that cannot be left to the public for a last-minute glance.

C. The FEIR Failed to Respond to SWRCC's and Expert's Comments

CEQA requires that a lead agency “evaluate comments on environmental issues received from persons who reviewed the draft EIR” and provide a written response with good faith and reasoned analysis. CEQA Guidelines § 15088. The responses are required to be provided in a revision to the draft EIR or in a separate section in the final EIR. *Id.*

SWRCC submitted comments to the DEIR on April 12, 2021 addressed to Planner Paul Samaras. Upon review of the FEIR, it does not appear that the City responded to or considered SWRCC's comments. Those comments are attached hereto as Exhibit A for the City's renewed consideration. A copy of the e-mail where my Office transmitted these comments are attached as Exhibit B.

III. CONCLUSION

Commenters request that the City deny the Project's proposed Site Plan Review and any other discretionary approvals the City finds necessary and order the revision and recirculation of the Project's environmental impact report to address the aforementioned concerns.

Please contact my Office if you have any questions or concerns.

Sincerely,



Mitchell M. Tsai

Attorneys for Southwest Regional
Council of Carpenters

Attached:

April 12, 2021 SWRCC Letter to Paul Samaras and Exhibits (Exhibit A); and

April 12, 2021 E-mail from Leon Ramsey Jr, Mitchell M. Tsai, Attorney at Law to Paul Samaras (Exhibit B).

EXHIBIT A

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155 South El Molino Avenue
Suite 104
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VIA E-MAIL

April 12, 2021

Paul Samaras
City of El Segundo
350 Main Street
El Segundo, CA 90245
Em: psamaras@elsegundo.org

RE: Pacific Coast Commons Specific Plan Project

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Moreover, Commenter requests that the Lead Agency provide notice for any and all notices referring or related to the Project issued under the California Environmental Quality Act (“**CEQA**”), Cal Public Resources Code (“**PRC**”) § 21000 *et seq*, and the California Planning and Zoning Law (“**Planning and Zoning Law**”), Cal. Gov’t Code §§ 65000–65010. California Public Resources Code Sections 21092.2, and 21167(f) and Government Code Section 65092 require agencies to mail such notices to any person who has filed a written request for them with the clerk of the agency’s governing body.

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The City should also require the Project to be built to standards exceeding the current 2019 California Green Building Code to mitigate the Project’s environmental impacts and to advance progress towards the State of California’s environmental goals.

I. EXPERTS

This comment letter includes comments from air quality and greenhouse gas experts Matt Hagemann, P.G., C.Hg. and Paul Rosenfeld, Ph.D. concerning the DEIR. Their comments, attachments, and Curriculum Vitae (“CV”) are attached hereto and are incorporated herein by reference.

Matt Hagemann, P.G., C.Hg. (“Mr. Hagemann”) has over 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

¹ California Workforce Development Board (2020) Putting California on the High Road: A Jobs and Climate Action Plan for 2030 at p. ii, available at <https://laborcenter.berkeley.edu/wp-content/uploads/2020/09/Putting-California-on-the-High-Road.pdf>

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, Mr. Hagemann also served as Senior Hydrogeologist in the oversight of the assessment of seven major military facilities undergoing base closer. 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, Mr. Hagemann has worked as a founding partner with SWAPE (Soil/Water/Air Protection Enterprise). At SWAPE, Mr. Hagemann 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.

Mr. Hagemann has a Bachelor of Arts degree in geology from Humboldt State University in California and a Masters in Science degree from California State University Los Angeles in California.

Paul Rosenfeld, Ph.D. ("Dr. Rosenfeld") is a principal environmental chemist at SWAPE. Dr. Rosenfeld has over 25 years' experience conducting environmental investigations and risk assessments for evaluating impacts on human health, property, and ecological receptors. His expertise focuses on the fate and transport of environmental contaminants, human health risks, exposure assessment, and ecological restoration. Dr. Rosenfeld has evaluated and modeled emissions from unconventional oil drilling operations, oil spills, landfills, boilers and incinerators, process stacks, storage tanks, confined animal feeding operations, and many other industrial and agricultural sources. 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 investigated and designed remediation programs and risk assessments for contaminated sites containing lead, heavy metals, mold, bacteria, particular matter, petroleum hydrocarbons, chlorinated solvents, pesticides, radioactive waste, dioxins and furans, semi- and volatile organic compounds, PCBs, PAHs, 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 dozens of sites and has testified as an expert witness on more than ten cases involving exposure to air contaminants from industrial sources.

Dr. Rosenfeld has a Ph.D. in soil chemistry from the University of Washington, M.S. in environmental science from U.C. Berkeley, and B.A. in environmental studies from U.C. Santa Barbara.

II. **THE PROJECT WOULD BE APPROVED IN VIOLATION OF THE CALIFORNIA ENVIRONMENTAL QUALITY ACT**

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B. CEQA Requires Revision and Recirculation of an Environmental Impact Report When Substantial Changes or New Information Comes to Light

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Significant new information includes “changes in the project or environmental setting as well as additional data or other information” that “deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative).” CEQA Guidelines § 15088.5(a). Examples of significant new information requiring recirculation include “new significant environmental impacts from the project or from a new mitigation measure,” “substantial increase in the severity of an environmental impact,” “feasible project alternative or mitigation measure considerably different from others previously analyzed” as well as when “the draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.” *Id.*

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C. Due to the COVID-19 Crisis, the City Must Adopt a Mandatory Finding of Significance that the Project May Cause a Substantial Adverse Effect on Human Beings and Mitigate COVID-19 Impacts

CEQA requires that an agency make a finding of significance when a Project may cause a significant adverse effect on human beings. PRC § 21083(b)(3); CEQA Guidelines § 15065(a)(4).

Public health risks related to construction work requires a mandatory finding of significance under CEQA. Construction work has been defined as a Lower to High-risk activity for COVID-19 spread by the Occupations Safety and Health Administration. Recently, several construction sites have been identified as sources of community spread of COVID-19.³

SWRCC recommends that the Lead Agency adopt additional CEQA mitigation measures to mitigate public health risks from the Project's construction activities. SWRCC requests that the Lead Agency require safe on-site construction work practices as well as training and certification for any construction workers on the Project Site.

In particular, based upon SWRCC's experience with safe construction site work practices, SWRCC recommends that the Lead Agency require that while construction activities are being conducted at the Project Site:

Construction Site Design:

- The Project Site will be limited to two controlled entry points.
- Entry points will have temperature screening technicians taking temperature readings when the entry point is open.
- The Temperature Screening Site Plan shows details regarding access to the Project Site and Project Site logistics for conducting temperature screening.
- A 48-hour advance notice will be provided to all trades prior to the first day of temperature screening.

³ Santa Clara County Public Health (June 12, 2020) COVID-19 CASES AT CONSTRUCTION SITES HIGHLIGHT NEED FOR CONTINUED VIGILANCE IN SECTORS THAT HAVE REOPENED, available at <https://www.sccgov.org/sites/covid19/Pages/press-release-06-12-2020-cases-at-construction-sites.aspx>.

- The perimeter fence directly adjacent to the entry points will be clearly marked indicating the appropriate 6-foot social distancing position for when you approach the screening area. Please reference the Apex temperature screening site map for additional details.
- There will be clear signage posted at the project site directing you through temperature screening.
- Provide hand washing stations throughout the construction site.

Testing Procedures:

- The temperature screening being used are non-contact devices.
- Temperature readings will not be recorded.
- Personnel will be screened upon entering the testing center and should only take 1-2 seconds per individual.
- Hard hats, head coverings, sweat, dirt, sunscreen or any other cosmetics must be removed on the forehead before temperature screening.
- Anyone who refuses to submit to a temperature screening or does not answer the health screening questions will be refused access to the Project Site.
- Screening will be performed at both entrances from 5:30 am to 7:30 am.; main gate [ZONE 1] and personnel gate [ZONE 2]
- After 7:30 am only the main gate entrance [ZONE 1] will continue to be used for temperature testing for anybody gaining entry to the project site such as returning personnel, deliveries, and visitors.
- If the digital thermometer displays a temperature reading above 100.0 degrees Fahrenheit, a second reading will be taken to verify an accurate reading.

- If the second reading confirms an elevated temperature, DHS will instruct the individual that he/she will not be allowed to enter the Project Site. DHS will also instruct the individual to promptly notify his/her supervisor and his/her human resources (HR) representative and provide them with a copy of Annex A.

Planning

- Require the development of an Infectious Disease Preparedness and Response Plan that will include basic infection prevention measures (requiring the use of personal protection equipment), policies and procedures for prompt identification and isolation of sick individuals, social distancing (prohibiting gatherings of no more than 10 people including all-hands meetings and all-hands lunches) communication and training and workplace controls that meet standards that may be promulgated by the Center for Disease Control, Occupational Safety and Health Administration, Cal/OSHA, California Department of Public Health or applicable local public health agencies.⁴

The United Brotherhood of Carpenters and Carpenters International Training Fund has developed COVID-19 Training and Certification to ensure that Carpenter union members and apprentices conduct safe work practices. The Agency should require that all construction workers undergo COVID-19 Training and Certification before being allowed to conduct construction activities at the Project Site.

D. The DEIR's Mitigation Measures are Impermissibly Vague and Defer Critical Details

The DEIR improperly defers critical details of mitigation measures. Feasible mitigation measures for significant environmental effects must be set forth in an EIR for

⁴ See also The Center for Construction Research and Training, North America's Building Trades Unions (April 27 2020) NABTU and CPWR COVID-19 Standards for U.S. Construction Sites, available at https://www.cpwr.com/sites/default/files/NABTU_CPWR_Standards_COVID-19.pdf; Los Angeles County Department of Public Works (2020) Guidelines for Construction Sites During COVID-19 Pandemic, available at https://dpw.lacounty.gov/building-and-safety/docs/pw_guidelines-construction-sites.pdf.

consideration by the lead agency's decision makers and the public before certification of the EIR and approval of a project. The formulation of mitigation measures generally cannot be deferred until after certification of the EIR and approval of a project. CEQA Guidelines § 15126.4(a)(1)(B) ("...[f]ormulation of mitigation measures should not be deferred until some future time.").

Deferring critical details of mitigation measures undermines CEQA's purpose as a public information and decision-making statute. "[R]eliance on tentative plans for future mitigation after completion of the CEQA process significantly undermines CEQA's goals of full disclosure and informed decisionmaking; and[,] consequently, these mitigation plans have been overturned on judicial review as constituting improper deferral of environmental assessment." *Communities for a Better Environment v. City of Richmond* (2010) 184 Cal. App. 4th 70, 92 ("*Communities*"). As the Court noted in *Sundstrom v. County of Mendocino* (1988) 202 Cal.App.3d 296, 307, "[a] study conducted after approval of a project will inevitably have a diminished influence on decision-making. Even if the study is subject to administrative approval, it is analogous to the sort of post hoc rationalization of agency actions that has been repeatedly condemned in decisions construing CEQA."

A lead agency's adoption of an EIR's proposed mitigation measure for a significant environmental effect that merely states a "generalized goal" to mitigate a significant effect without committing to any specific criteria or standard of performance violates CEQA by improperly deferring the formulation and adoption of enforceable mitigation measures. *San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal.App.4th 645, 670; *Communities*, 184 Cal.App.4th at 93 ("EIR merely proposes a generalized goal of no net increase in greenhouse gas emissions and then sets out a handful of cursorily described mitigation measures for future consideration that might serve to mitigate the [project's significant environmental effects.]); cf. *Sacramento Old City Assn. v. City Council* (1991) 229 Cal.App.3d 1011, 1028-1029 (upheld EIR that set forth a range of mitigation measures to offset significant traffic impacts where performance criteria would have to be met, even though further study was needed and EIR did not specify which measures had to be adopted by city).].

The following Project mitigation measures are impermissibly vague and defer critical details:

- MM-CUL-1: Calls for development, but does not include details, of a Worker Environmental

Awareness Program (WEAP) in order to address impacts to archeological resources;

- MM-GEO-1: Calls for a paleontologist to prepare a Paleontological Resources Impact Mitigation Program (PRIMP) to mitigate unique paleontological resources but does not include any details of the PRIMP for review;
- MM-HAZ-1: Calls for incorporation of “abatement procedures” to remove asbestos, lead, etc. but does not include any specific performance standards for removal and does not include any plan in the DEIR for review; and
- MM-HAZ-2: Calls for development of a Hazardous Materials Contingency Plan (HMCP) to address potential impacts relating to soil and vapor intrusion with the 76 gas station adjacent to PCC-North, but again, fails to include any plan or any performance standards by which soil vapor would be mitigated to less than significant levels.

(DEIR, ES-10~16.)

E. The DEIR Fails to Support Its Findings with Substantial Evidence

When new information is brought to light showing that an impact previously discussed in the DEIR but found to be insignificant with or without mitigation in the DEIR’s analysis has the potential for a significant environmental impact supported by substantial evidence, the EIR must consider and resolve the conflict in the evidence. See *Visalia Retail, L.P. v. City of Visalia* (2018) 20 Cal. App. 5th 1, 13, 17; see also *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal. App. 4th 1099, 1109. While a lead agency has discretion to formulate standards for determining significance and the need for mitigation measures—the choice of any standards or thresholds of significance must be “based to the extent possible on scientific and factual data and an exercise of reasoned judgment based on substantial evidence. CEQA Guidelines § 15064(b); *Cleveland Nat’l Forest Found. v. San Diego Ass’n of Gov’ts* (2017) 3 Cal. App. 5th 497, 515; *Mission Bay Alliance v. Office of Community Inv. & Infrastructure* (2016) 6 Cal. App. 5th 160, 206. And when there is evidence that an

impact could be significant, an EIR cannot adopt a contrary finding without providing an adequate explanation along with supporting evidence. *East Sacramento Partnership for a Livable City v. City of Sacramento* (2016) 5 Cal. App. 5th 281, 302.

In addition, a determination that regulatory compliance will be sufficient to prevent significant adverse impacts must be based on a project-specific analysis of potential impacts and the effect of regulatory compliance. In *Californians for Alternatives to Toxics v. Department of Food & Agric.* (2005) 136 Cal. App. 4th 1, the court set aside an EIR for a statewide crop disease control plan because it did not include an evaluation of the risks to the environment and human health from the proposed program but simply presumed that no adverse impacts would occur from use of pesticides in accordance with the registration and labeling program of the California Department of Pesticide Regulation. *See also Ebbetts Pass Forest Watch v Department of Forestry & Fire Protection* (2008) 43 Cal. App. 4th 936, 956 (fact that Department of Pesticide Regulation had assessed environmental effects of certain herbicides in general did not excuse failure to assess effects of their use for specific timber harvesting project).

1. *The DEIR Fails to Support its Findings on Greenhouse Gas Impacts with Substantial Evidence.*

CEQA Guidelines § 15064.4 allow a lead agency to determine the significance of a project's GHG impact via a qualitative analysis (e.g., extent to which a project complies with regulations or requirements of state/regional/local GHG plans), and/or a quantitative analysis (e.g., using model or methodology to estimate project emissions and compare it to a numeric threshold). So too, CEQA Guidelines allow lead agencies to select what model or methodology to estimate GHG emissions so long as the selection is supported with substantial evidence, and the lead agency "should explain the limitations of the particular model or methodology selected for use." CEQA Guidelines § 15064.4(c).

CEQA Guidelines sections 15064.4(b)(3) and 15183.5(b) allow a lead agency to consider a project's consistency with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

CEQA Guidelines §§ 15064.4(b)(3) and 15183.5(b)(1) make clear qualified GHG reduction plans or CAPs should include the following features:

- (1) **Inventory:** Quantify GHG emissions, both existing and projected over a specified time period, resulting from activities (e.g., projects) within a defined geographic area (e.g., lead agency jurisdiction);
- (2) **Establish GHG Reduction Goal:** Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable;
- (3) **Analyze Project Types:** Identify and analyze the GHG emissions resulting from specific actions or categories of actions anticipated within the geographic area;
- (4) **Craft Performance Based Mitigation Measures:** Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;
- (5) **Monitoring:** Establish a mechanism to monitor the CAP progress toward achieving said level and to require amendment if the plan is not achieving specified levels;

Collectively, the above-listed CAP features tie qualitative measures to quantitative results, which in turn become binding via proper monitoring and enforcement by the jurisdiction—all resulting in real GHG reductions for the jurisdiction as a whole, and the substantial evidence that the incremental contribution of an individual project is not cumulatively considerable.

Here, the DEIR's analysis of greenhouse gas emissions impacts is not supported by substantial evidence for all of the reasons outlined in SWAPE's April 12, 2021 letter regarding their review of the DEIR⁵:

- The DEIR utilized an incorrect and unsubstantiated quantitative analysis of emissions;
- The DEIR incorrectly relied upon an outdated quantitative GHG threshold;

⁵ April 12, 2021 SWAPE Letter to Greg Sonstein re Comments on Pacific Coast Commons Specific Plan Project. Attached hereto as Exhibit D.

- The DEIR failed to identify a potentially significant GHG impact; and
- The DEIR failed to consider performance-based standards under CARB’s 2017 Scoping Plan, and failed to consider performance-based standards under SCAG’s RTP/SCS plan.

(Exhibit D, 20-27.)

Additionally, the DEIR needs to consider and incorporate all of the feasible mitigation measures to reduce identified GHG impacts proposed by SWAPE. (Exhibit D, 27-34.)

2. *The DEIR Fails to Support its Findings on Air Quality Impacts with Substantial Evidence.*

Second, the DEIR’s Air Quality analysis is fundamentally flawed and not supported by substantial evidence for all the reasons outlined in SWAPE’s comments, including:

- Use of unsubstantiated input parameters to estimate project emissions,
 - Underestimated land use sizes;
 - Failure to model all required demolition;
 - Unsubstantiated changed to acres of grading values;
 - Unsubstantiated changes to material silt content values;
 - Unsubstantiated change to hauling trip numbers;
 - Unsubstantiated changes to architectural and area coating areas;
 - Underestimated operational vehicle trip rates;
 - Unsubstantiated changes to energy use values;
 - Unsubstantiated changes to wastewater treatment system percentages;
 - Incorrect application of construction-related mitigation measures;
 - Incorrect application of mobile-related operational mitigation measures;
 - and
 - Failing to adequately analyze diesel particulate matter health risk emissions and identify a potentially significant health risk impact.

(Exhibit D, 1-19.)

Additionally, as noted above, the DEIR fails to consider or include many feasible mitigation measures proposed by SWAPE to reduce significant air quality impacts.

(DEIR, 27-34.) The DEIR needs to be revised and recirculated with a substantiated air quality analysis that includes all feasible mitigation measures to reduce impacts.

3. *The DEIR Fails to Support its Findings on Transportation Impacts with Substantial Evidence.*

CEQA Guidelines § 15064.3(b) requires analysis of a Project's vehicle miles traveled (VMT) impacts as part of the environmental document's transportation impacts analysis. According to the DEIR, the OPR technical guidance suggests that projects which have a VMT per capita of 15% or more below existing conditions may indicate a less than significant transportation impact relating to VMT. (DEIR, 4.13-21~2.) Assuming then this is the proper methodology, the DEIR concludes that the Project would have a less than significant VMT impact because the project is predicted to exhibit more than a 15% reduction in VMT over VMT per capita for the City as a whole, and the region. (DEIR, 4.13-22.)

The DEIR estimates a VMT per capita of 10.9 based upon the project site's location within TAZ (transportation analysis zone) 21125100—yet, it is not clear that this VMT estimate accounts for trips other than home-based VMT which is traced back to residences.⁶ Home-based VMT excludes work trips and other trips not originating from residences in the Project area. Thus, the TAZ estimate is not an accurate reflection of actual (or total) VMT per capita for the TAZ cannot be relied upon to determine VMT impact significance. A home-based VMT analysis is even less supported in the case of a project that includes mixed-use development, as here, such as a hotel and retail uses where home-based VMT estimates will not accurately reflect total VMT.

The DEIR should be revised and recirculated with a transportation analysis that includes total VMT estimates.

4. *The DEIR Fails to Support its Findings on Hazards and Hazardous Materials Impacts with Substantial Evidence.*

Appendix F of the DEIR (Phase I ESA) identifies numerous potentially hazardous waste sites in and around the Project site. Though some of these sites have received regulatory closure, the DEIR identifies at least one site “which could impact the

⁶ See, e.g., *Transportation Analysis Updates in Santa Clarita* (May 19, 2020), prepared for City of Santa Clarita by Fehr & Peers, p. 15. Available at <https://www.santa-clarita.com/Home/ShowDocument?id=18536>.

Project site.” (DEIR, 4.7-4.) The DEIR also identifies at least three other hazardous material release sites but postulates they would “not likely impact the environmental condition of the Project site. (*Id.*) Additionally, numerous UST violations were identified near the Project site; a gas station has been under ongoing operations since the 1930s which also includes environmental hazard violations for releases of petroleum products; and other multiple sources of PCE and TCE contamination were identified in the Project site area relating to manufacturing operations. (DEIR, 4.7-5.)

Despite all this evidence of potential hazardous substances release and a Phase I ESA of the site or area, the DEIR concludes that there would be no long-term operational impacts involving the release of hazardous materials. (DEIR, 4.7-21.) The City simply cannot rule out a risk to future Project site occupants from release of hazardous materials from all of these known sources without a Phase II ESA. The DEIR admits that ongoing operations of the former 76 gas station indicate a potential for release of hazardous substances, and many sources of PCE and TCE are present in the area that may require mitigation that have not been characterized at the site. This information does not support a conclusion of a less than significant impact without further studies. The DEIR should be revised and recirculated to include a Phase II ESA of the Project site that includes the surrounding area to adequately analyze whether there are potential impacts that may require mitigation.

F. The Project Objectives are Unduly Narrow

Project objectives should not be so narrowly defined that they preclude consideration of reasonable alternatives for achieving the project's underlying purpose. *North Coast Rivers Alliance v Kawamura* (2015) 243 Cal. App. 4th 647, 668. Inconsistency with only some project objectives may not be an appropriate basis to eliminate impact-reducing project alternatives from analysis in an EIR. See CEQA Guidelines § 15126.6(c), (f). The fact that a proposed alternative does not meet all of the Project Objectives is not an appropriate basis to eliminate impact-reducing alternatives from analysis in an EIR. CEQA Guidelines § 15126.6(c), (f). Objectives should be based on the underlying purpose of the project, rather than the specific nature of the proposed project. *Habitat & Watershed Caretakers v City of Santa Cruz* (2013) 213 Cal. App. 4th 1277, 1299 (holding that the project objective of implementing a settlement agreement relating to expansion of a University of California campus was too narrow and too focused on the nature of the Project).

Here, the EIR provides extremely narrow and specific objectives that essentially only describe the proposed Project, rather than the purpose of the project:

- Objective 1 calls for maintaining existing hotel uses; and
- Objective 5 calls for increasing the efficient use of land by eliminating surface parking lots and providing parking garages that allow for sharing among hotel commercial, and residential land uses.

(DEIR, 3-18.)

Effectively, the above Project objectives so narrowly define the scope of the Project that it curtails any meaningful analysis or consideration of Project alternatives that could substantially reduce the Project’s environmental impacts. A revised and recirculated DEIR should include amended Project objectives that do not circumscribe the EIR’s Alternatives’ analysis.

III. THE PROJECT VIOLATES THE STATE PLANNING AND ZONING LAW AS WELL AS THE CITY’S GENERAL PLAN

A. Background Regarding the State Planning and Zoning Law

Each California city and county must adopt a comprehensive, long-term general plan governing development. *Napa Citizens for Honest Gov. v. Napa County Bd. of Supervisors* (2001) 91 Cal. App.4th 342, 352, citing Gov. Code §§ 65030, 65300. The general plan sits at the top of the land use planning hierarchy (See *DeVita v. County of Napa* (1995) 9 Cal. App. 4th 763, 773), and serves as a “constitution” or “charter” for all future development. *Lesher Communications, Inc. v. City of Walnut Creek* (1990) 52 Cal. App. 3d 531, 540.

General plan consistency is “the linchpin of California’s land use and development laws; it is the principle which infused the concept of planned growth with the force of law.” See *Debottari v. Norco City Council* (1985) 171 Cal. App. 3d 1204, 1213.

State law mandates two levels of consistency. First, a general plan must be internally or “horizontally” consistent: its elements must “comprise an integrated, internally consistent and compatible statement of policies for the adopting agency.” (See Gov. Code § 65300.5; *Sierra Club v. Bd. of Supervisors* (1981) 126 Cal. App. 3d 698, 704.) A general plan amendment thus may not be internally inconsistent, nor may it cause the general plan as a whole to become internally inconsistent. See *DeVita*, 9 Cal. App. 4th at 796 fn. 12.

Second, state law requires “vertical” consistency, meaning that zoning ordinances and other land use decisions also must be consistent with the general plan. (See Gov. Code § 65860(a)(2) [land uses authorized by zoning ordinance must be “compatible with the objectives, policies, general land uses, and programs specified in the [general] plan.”]; see also *Neighborhood Action Group v. County of Calaveras* (1984) 156 Cal. App. 3d 1176, 1184.) A zoning ordinance that conflicts with the general plan or impedes achievement of its policies is invalid and cannot be given effect. See *Lesher*, 52 Cal. App. 3d at 544.

State law requires that all subordinate land use decisions, including conditional use permits, be consistent with the general plan. See Gov. Code § 65860(a)(2); *Neighborhood Action Group*, 156 Cal. App. 3d at 1184.

A project cannot be found consistent with a general plan if it conflicts with a general plan policy that is “fundamental, mandatory, and clear,” regardless of whether it is consistent with other general plan policies. See *Endangered Habitats League v. County of Orange* (2005) 131 Cal. App. 4th 777, 782-83; *Families Unafraid to Uphold Rural El Dorado County v. Bd. of Supervisors* (1998) 62 Cal. App. 4th 1332, 1341-42 (“FUTURE”).

Moreover, even in the absence of such a direct conflict, an ordinance or development project may not be approved if it interferes with or frustrates the general plan’s policies and objectives. See *Napa Citizens*, 91 Cal. App. 4th at 378-79; see also *Lesher*, 52 Cal. App. 3d at 544 (zoning ordinance restricting development conflicted with growth-oriented policies of general plan).

B. The DEIR Fails to Demonstrate Consistency with SCAG’s RTP/SCS Plan

Senate Bill No. 375 requires regional planning agencies to include a sustainable communities strategy in their regional transportation plans. Gov. Code § 65080, sub.(b)(2)(B). CEQA Guidelines § 15125(d) provides that an EIR “shall discuss any inconsistencies between the proposed project and...regional plans. Such regional plans include...regional transportation plans.” Thus, CEQA requires analysis of any inconsistencies between the Project and the relevant RTP/SCS plan.

In September 2008, SB 375 (Gov. Code § 65080(b) et seq.) was instituted to help achieve AB 32 goals through strategies including requiring regional agencies to prepare a Sustainable Communities Strategy (“SCS”) to be incorporated into their Regional Transportation Plan (“RTP”). The RTP links land use planning with the regional

transportation system so that the region can grow smartly and sustainably, while also demonstrating how the region will meet targets set by CARB that reduce the per capita GHG emission from passenger vehicles in the region.

According to SWAPE’s comments, the DEIR failed to consider performance-based standards under the RTP/SCS plan. The DEIR failed to evaluate whether the Project is consistent with per capita GHG emission targets, or daily vehicle miles traveled. (Ex. D, 24.) And according to SWAPE’s analysis and conclusion, the Project exceeds both per capita GHG emissions targets and daily VMT per capita—thus, the Project is not consistent with SCAG’s RTP/SCS Plan.

C. The DEIR Fails to Demonstrate Consistency with the State Housing Law’s Regional Housing Needs Assessment Requirements and the City’s Obligations to Fulfill those Requirements in its Housing Element

State law requires that jurisdictions provide their fair share of regional housing needs and adopt a general plan for future growth (California Government Code Section 65300). The California Department of Housing and Community Development (HCD) is mandated to determine state-wide housing needs by income category for each Council of Governments (COG) throughout the state. The housing need is determined based on four broad household income categories: very low (households making less than 50 percent of median family income), low (50 to 80 percent of median family income), moderate (80 to 120 percent of median family income), and above moderate (more than 120 percent of median family income). The intent of the future needs allocation by income groups is to relieve the undue concentration of very low and low-income households in a single jurisdiction and to help allocate resources in a fair and equitable manner.

CEQA requires the DEIR analyze the Project’s consistency with the State’s housing goals. CEQA Guidelines section 15125(d) requires that an environmental impact report “discuss any inconsistencies between the proposed project and applicable general plans, specific plans and regional plans. *See also Golden Door Properties, LLC v. County of San Diego* (2020) 50 Cal. App. 5th 467, 543.

A Court “[w]hen reviewing whether a discussion is sufficient to satisfy CEQA, . . . the EIR (1) includes sufficient detail to enable those who did not participate in its preparation to understand and to consider meaningfully the issues the proposed project raises [citation omitted], and (2) makes a reasonable effort to substantively

connect a project's air quality impacts to likely health consequences.” (*Sierra Club v. County of Fresno* (2018) 6 Cal. 5th 502, 510 [citing *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 405.]; see also PRC §§ 21002.1(e), 21003(b).) The Court may determine whether a CEQA environmental document sufficiently discloses information required by CEQA de novo as “noncompliance with the information disclosure provisions” of CEQA is a failure to proceed in a manner required by law. (PRC § 21005(a); see also *Sierra Club v. County of Fresno* (2018) 6 Cal. 5th 502, 515.)

SCAG is the COG for Los Angeles County and has determined that the City’s RHNA for the 6th Cycle allocation period is 189 units for very low income residents, 88 units for low income residents, 84 units for moderate income residents, and 131 unit for above moderate income residents for a total of 492 housing units.⁷

First, the City fails to analyze consistency with the latest RHNA allocation in the DEIR. (DEIR, 4.11-6.) Second, the Project fails to include *any* affordable housing units as part of the Project for residents with income below above moderate. The City is required to meet the housing needs of all of city residents under the state housing law. While the DEIR calls for a provision in a future development agreement to include some affordable housing units, at this stage of the Project, none are included and no development agreement has been drafted.

The DEIR should be revised and recirculated with an affordable housing component.

IV. **CONCLUSION**

Commenters request that the City deny the Project’s proposed Site Plan Review and any other discretionary approvals the City finds necessary and order the revision and recirculation of the Project’s environmental impact report to address the aforementioned concerns.

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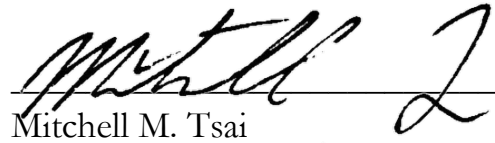
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⁷ SCAG Regional Housing Needs Assessment Final Allocation, 6th Cycle Final RHNA Allocation Plan. Available at <https://scag.ca.gov/rhna>.

Please contact my Office if you have any questions or concerns.

Sincerely,

A handwritten signature in black ink, appearing to read "Mitchell M. Tsai", is written over a horizontal line. The signature is stylized and cursive.

Attorneys for Southwest Regional
Council of Carpenters

Attached:

March 8, 2021 SWAPE Letter to Mitchell M. Tsai re Local Hire Requirements and Considerations for Greenhouse Gas Modeling (Exhibit A);

Air Quality and GHG Expert Paul Rosenfeld CV (Exhibit B);

Air Quality and GHG Expert Matt Hagemann CV (Exhibit C); and

April 12, 2021 SWAPE Letter to Greg Sonstein re Comments on the Pacific Coast Commons Specific Plan Project (Exhibit D).

EXHIBIT A



Technical Consultation, Data Analysis and
Litigation Support for the Environment

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March 8, 2021

Mitchell M. Tsai
155 South El Molino, Suite 104
Pasadena, CA 91101

Subject: Local Hire Requirements and Considerations for Greenhouse Gas Modeling

Dear Mr. Tsai,

Soil Water Air Protection Enterprise ("SWAPE") is pleased to provide the following draft technical report explaining the significance of worker trips required for construction of land use development projects with respect to the estimation of greenhouse gas ("GHG") emissions. The report will also discuss the potential for local hire requirements to reduce the length of worker trips, and consequently, reduced or mitigate the potential GHG impacts.

Worker Trips and Greenhouse Gas Calculations

The California Emissions Estimator Model ("CalEEMod") is a "statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects."¹ CalEEMod quantifies construction-related emissions associated with land use projects resulting from off-road construction equipment; on-road mobile equipment associated with workers, vendors, and hauling; fugitive dust associated with grading, demolition, truck loading, and on-road vehicles traveling along paved and unpaved roads; and architectural coating activities; and paving.²

The number, length, and vehicle class of worker trips are utilized by CalEEMod to calculate emissions associated with the on-road vehicle trips required to transport workers to and from the Project site during construction.³

¹ "California Emissions Estimator Model." CAPCOA, 2017, available at: <http://www.aqmd.gov/caleemod/home>.

² "California Emissions Estimator Model." CAPCOA, 2017, available at: <http://www.aqmd.gov/caleemod/home>.

³ "CalEEMod User's Guide." CAPCOA, November 2017, available at: http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 34.

Specifically, the number and length of vehicle trips is utilized to estimate the vehicle miles travelled (“VMT”) associated with construction. Then, utilizing vehicle-class specific EMFAC 2014 emission factors, CalEEMod calculates the vehicle exhaust, evaporative, and dust emissions resulting from construction-related VMT, including personal vehicles for worker commuting.⁴

Specifically, in order to calculate VMT, CalEEMod multiplies the average daily trip rate by the average overall trip length (see excerpt below):

$$\text{“VMT}_d = \Sigma(\text{Average Daily Trip Rate}_i * \text{Average Overall Trip Length}_i) _n$$

Where:

n = Number of land uses being modeled.”⁵

Furthermore, to calculate the on-road emissions associated with worker trips, CalEEMod utilizes the following equation (see excerpt below):

$$\text{“Emissions}_{\text{pollutant}} = \text{VMT} * \text{EF}_{\text{running,pollutant}}$$

Where:

$\text{Emissions}_{\text{pollutant}}$ = emissions from vehicle running for each pollutant

VMT = vehicle miles traveled

$\text{EF}_{\text{running,pollutant}}$ = emission factor for running emissions.”⁶

Thus, there is a direct relationship between trip length and VMT, as well as a direct relationship between VMT and vehicle running emissions. In other words, when the trip length is increased, the VMT and vehicle running emissions increase as a result. Thus, vehicle running emissions can be reduced by decreasing the average overall trip length, by way of a local hire requirement or otherwise.

Default Worker Trip Parameters and Potential Local Hire Requirements

As previously discussed, the number, length, and vehicle class of worker trips are utilized by CalEEMod to calculate emissions associated with the on-road vehicle trips required to transport workers to and from the Project site during construction.⁷ In order to understand how local hire requirements and associated worker trip length reductions impact GHG emissions calculations, it is important to consider the CalEEMod default worker trip parameters. CalEEMod provides recommended default values based on site-specific information, such as land use type, meteorological data, total lot acreage, project type and typical equipment associated with project type. If more specific project information is known, the user can change the default values and input project-specific values, but the California Environmental Quality Act (“CEQA”) requires that such changes be justified by substantial evidence.⁸ The default number of construction-related worker trips is calculated by multiplying the

⁴ “Appendix A Calculation Details for CalEEMod.” CAPCOA, October 2017, available at: http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 14-15.

⁵ “Appendix A Calculation Details for CalEEMod.” CAPCOA, October 2017, available at: http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 23.

⁶ “Appendix A Calculation Details for CalEEMod.” CAPCOA, October 2017, available at: http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 15.

⁷ “CalEEMod User’s Guide.” CAPCOA, November 2017, available at: http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 34.

⁸ CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 1, 9.

number of pieces of equipment for all phases by 1.25, with the exception of worker trips required for the building construction and architectural coating phases.⁹ Furthermore, the worker trip vehicle class is a 50/25/25 percent mix of light duty autos, light duty truck class 1 and light duty truck class 2, respectively.”¹⁰ Finally, the default worker trip length is consistent with the length of the operational home-to-work vehicle trips.¹¹ The operational home-to-work vehicle trip lengths are:

“[B]ased on the location and urbanization selected on the project characteristic screen. These values were supplied by the air districts or use a default average for the state. Each district (or county) also assigns trip lengths for urban and rural settings” (emphasis added).¹²

Thus, the default worker trip length is based on the location and urbanization level selected by the User when modeling emissions. The below table shows the CalEEMod default rural and urban worker trip lengths by air basin (see excerpt below and Attachment A).¹³

Worker Trip Length by Air Basin		
Air Basin	Rural (miles)	Urban (miles)
Great Basin Valleys	16.8	10.8
Lake County	16.8	10.8
Lake Tahoe	16.8	10.8
Mojave Desert	16.8	10.8
Mountain Counties	16.8	10.8
North Central Coast	17.1	12.3
North Coast	16.8	10.8
Northeast Plateau	16.8	10.8
Sacramento Valley	16.8	10.8
Salton Sea	14.6	11
San Diego	16.8	10.8
San Francisco Bay Area	10.8	10.8
San Joaquin Valley	16.8	10.8
South Central Coast	16.8	10.8
South Coast	19.8	14.7
Average	16.47	11.17
Minimum	10.80	10.80
Maximum	19.80	14.70
Range	9.00	3.90

⁹ “CalEEMod User’s Guide.” CAPCOA, November 2017, available at: http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 34.

¹⁰ “Appendix A Calculation Details for CalEEMod.” CAPCOA, October 2017, available at: http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 15.

¹¹ “Appendix A Calculation Details for CalEEMod.” CAPCOA, October 2017, available at: http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 14.

¹² “Appendix A Calculation Details for CalEEMod.” CAPCOA, October 2017, available at: http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 21.

¹³ “Appendix D Default Data Tables.” CAPCOA, October 2017, available at: http://www.aqmd.gov/docs/default-source/caleemod/05_appendix-d2016-3-2.pdf?sfvrsn=4, p. D-84 – D-86.

As demonstrated above, default rural worker trip lengths for air basins in California vary from 10.8- to 19.8- miles, with an average of 16.47 miles. Furthermore, default urban worker trip lengths vary from 10.8- to 14.7- miles, with an average of 11.17 miles. Thus, while default worker trip lengths vary by location, default urban worker trip lengths tend to be shorter in length. Based on these trends evident in the CalEEMod default worker trip lengths, we can reasonably assume that the efficacy of a local hire requirement is especially dependent upon the urbanization of the project site, as well as the project location.

Practical Application of a Local Hire Requirement and Associated Impact

To provide an example of the potential impact of a local hire provision on construction-related GHG emissions, we estimated the significance of a local hire provision for the Village South Specific Plan (“Project”) located in the City of Claremont (“City”). The Project proposed to construct 1,000 residential units, 100,000-SF of retail space, 45,000-SF of office space, as well as a 50-room hotel, on the 24-acre site. The Project location is classified as Urban and lies within the Los Angeles-South Coast County. As a result, the Project has a default worker trip length of 14.7 miles.¹⁴ In an effort to evaluate the potential for a local hire provision to reduce the Project’s construction-related GHG emissions, we prepared an updated model, reducing all worker trip lengths to 10 miles (see Attachment B). Our analysis estimates that if a local hire provision with a 10-mile radius were to be implemented, the GHG emissions associated with Project construction would decrease by approximately 17% (see table below and Attachment C).

Local Hire Provision Net Change	
Without Local Hire Provision	
Total Construction GHG Emissions (MT CO ₂ e)	3,623
Amortized Construction GHG Emissions (MT CO ₂ e/year)	120.77
With Local Hire Provision	
Total Construction GHG Emissions (MT CO ₂ e)	3,024
Amortized Construction GHG Emissions (MT CO ₂ e/year)	100.80
% Decrease in Construction-related GHG Emissions	17%

As demonstrated above, by implementing a local hire provision requiring 10 mile worker trip lengths, the Project could reduce potential GHG emissions associated with construction worker trips. More broadly, any local hire requirement that results in a decreased worker trip length from the default value has the potential to result in a reduction of construction-related GHG emissions, though the significance of the reduction would vary based on the location and urbanization level of the project site.

This serves as an example of the potential impacts of local hire requirements on estimated project-level GHG emissions, though it does not indicate that local hire requirements would result in reduced construction-related GHG emission for all projects. As previously described, the significance of a local hire requirement depends on the worker trip length enforced and the default worker trip length for the project’s urbanization level and location.

¹⁴ “Appendix D Default Data Tables.” CAPCOA, October 2017, available at: http://www.aqmd.gov/docs/default-source/caleemod/05_appendix-d2016-3-2.pdf?sfvrsn=4, p. D-85.

Disclaimer

SWAPE has received limited discovery. 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,

A handwritten signature in blue ink, appearing to read "M Hagemann".

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

A handwritten signature in blue ink, appearing to read "Paul Rosenfeld".

Paul E. Rosenfeld, Ph.D.

EXHIBIT B



Paul Rosenfeld, Ph.D.

Principal Environmental Chemist

Chemical Fate and Transport & Air Dispersion Modeling

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 unconventional oil drilling operations, oil spills, landfills, boilers and incinerators, process stacks, storage tanks, confined animal feeding operations, and many other industrial and agricultural sources. 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 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, 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 dozens of sites and has testified as an expert witness on more than ten cases involving exposure to air contaminants from industrial 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 H₂O 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

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Presentations:

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

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

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

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

Rosenfeld, P. E. (October 15-18, 2007). The Repeated Trespass of Tritium-Contaminated Water Into A Surrounding Community Form Repeated Waste Spills From A Nuclear Power Plant. *The 23rd Annual International Conferences on Soils Sediment and Water*. Platform lecture conducted from University of Massachusetts, Amherst MA.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Rosenfeld, P.E. and Grey, M. A. (November 11-14, 2002). Using High-Carbon Wood Ash to Control Odor at a Green Materials Composting Facility. *Soil Science Society Annual Conference*. 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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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 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 Agrosiences, 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 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 Iowa District Court For Wapello County
Jerry Dovico, et al., Plaintiffs vs. Valley View Sine LLC, et al., Defendants
Law No.: LALA105144 - Division A
Rosenfeld Deposition, August 2015

In The Iowa District Court For Wapello County
Doug Pauls, et al., et al., Plaintiffs vs. Richard Warren, et al., Defendants
Law No.: LALA105144 - Division A
Rosenfeld Deposition, August 2015

In The Circuit Court of Ohio County, West Virginia
Robert Andrews, et al. v. Antero, et al.
Civil Action NO. 14-C-30000
Rosenfeld Deposition, June 2015

In The Third Judicial District County of Dona Ana, New Mexico
Betty Gonzalez, et al. Plaintiffs vs. Del Oro Dairy, Del Oro Real Estate LLC, Jerry Settles and Deward
DeRuyter, Defendants
Rosenfeld Deposition: July 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 United States District Court Western District of Oklahoma
Tommy McCarty, et al., Plaintiffs, v. Oklahoma City Landfill, LLC d/b/a Southeast Oklahoma City
Landfill, et al. Defendants.
Case No. 5:12-cv-01152-C
Rosenfeld Deposition: July 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 of Southern District of Texas Galveston Division

Kyle Cannon, Eugene Donovan, Genaro Ramirez, Carol Sassler, and Harvey Walton, each Individually and on behalf of those similarly situated, *Plaintiffs*, vs. BP Products North America, Inc., *Defendant*.

Case 3:10-cv-00622

Rosenfeld Deposition: February 2012

Rosenfeld Trial: April 2013

In the Circuit Court of Baltimore County Maryland

Philip E. Cvach, II et al., *Plaintiffs* vs. Two Farms, Inc. d/b/a Royal Farms, Defendants

Case Number: 03-C-12-012487 OT

Rosenfeld Deposition: September 2013

EXHIBIT C



Technical Consultation, Data Analysis and
Litigation Support for the Environment

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Santa Monica, California 90401
Tel: (949) 887-9013
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Matthew F. Hagemann, P.G., C.Hg., QSD, QSP

**Geologic and Hydrogeologic Characterization
Industrial Stormwater Compliance
Investigation and Remediation Strategies
Litigation Support and Testifying Expert
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 25 years of experience in environmental policy, assessment and remediation. 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) while also working with permit holders to improve hydrogeologic characterization and water quality monitoring.

Matt has worked closely with U.S. EPA legal counsel and the technical staff of several states in the application and enforcement of RCRA, Safe Drinking Water Act and Clean Water Act regulations. Matt has trained the technical staff in the States of California, Hawaii, Nevada, Arizona and the Territory of Guam in the conduct of investigations, groundwater fundamentals, and sampling techniques.

Positions Matt has held include:

- Founding Partner, Soil/Water/Air Protection Enterprise (SWAPE) (2003 – present);
- Geology Instructor, Golden West College, 2010 – 2014;
- 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 100 environmental impact reports since 2003 under CEQA that identify significant issues with regard to hazardous waste, water resources, water quality, air quality, Valley Fever, 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 industrial facilities.
- Manager of a project to provide technical assistance to a community adjacent to a former Naval shipyard under a grant from the U.S. EPA.
- 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.
- Expert witness on two cases involving MTBE litigation.
- Expert witness and litigation support on the impact of air toxins and hazards at a school.
- Expert witness in litigation at a former plywood plant.

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 taught physical geology (lecture and lab and introductory geology at Golden West College in Huntington Beach, California from 2010 to 2014.

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, Colorado.

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 representatives, 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 examination, 2009-2011.

EXHIBIT D



Technical Consultation, Data Analysis and
Litigation Support for the Environment

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April 12, 2021

Greg Sonstein, Esq.
Mitchell M. Tsai, Attorney at Law
155 South El Molino Avenue Suite 104
Pasadena, CA 91101

Subject: Comments on the Pacific Coast Commons Specific Plan (SCH No. 2020050508)

Dear Mr. Sonstein,

We have reviewed the February 2021 Draft Environmental Impact Report ("DEIR") for the Pacific Coast Commons Specific Plan ("Project") located in the City of El Segundo ("City"). The Project proposes to the adoption of a Specific Plan that would allow for the continued operation of 596 hotel rooms and construction of 263 housing units, 11,252-SF of commercial/retail uses, and 792 parking stalls on the 6.385-acre site.

Our review concludes that the DEIR fails to adequately evaluate the Project's air quality, health risk, and greenhouse gas impacts. As a result, emissions and health risk impacts associated with construction and operation of the proposed Project are underestimated and inadequately addressed. An updated EIR should be prepared to adequately assess and mitigate the potential air quality, health risk, and greenhouse gas impacts that the project may have on the surrounding environment.

Air Quality

Unsubstantiated Input Parameters Used to Estimate Project Emissions

The DEIR's air quality analysis relies on emissions calculated with CalEEMod.2016.3.2 (p. 4.2-1).¹ CalEEMod provides recommended default values based on site-specific information, such as land use type, meteorological data, total lot acreage, project type and typical equipment associated with project type. If more specific project information is known, the user can change the default values and input project-specific values, but the California Environmental Quality Act ("CEQA") requires that such changes

¹ CAPCOA (November 2017) CalEEMod User's Guide, http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4.

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 Appendix C-1, "CalEEMod Outputs," and Appendix C-2, "Health Risk Assessment Report," to the DEIR, we found that several model inputs were not consistent with information disclosed in the DEIR. As a result, the Project's construction and operational emissions are underestimated. As a result, an updated 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 Sizes

According to the DEIR, the Project proposes to construct 327,021-SF of residential development, 11,252-SF of commercial/retail uses, and 792 parking spaces (p. 3-2). However, review of the CalEEMod output files demonstrates that the "Pacific Coast Commons Specific Plan Project" and "Pacific Coast Commons Specific Plan Project Mit" models include only 314,659-SF of residential space, 11,000-SF of commercial/retail space, and 763 parking spaces (see excerpt below) (Appendix C-1, pp. 3, 51, 95; Appendix C-2, pp. 33).

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area
Enclosed Parking with Elevator	763.00	Space	0.00	305,200.00
Other Asphalt Surfaces	12.65	1000sqft	0.00	12,650.00
High Turnover (Sit Down Restaurant)	3.70	1000sqft	0.00	3,700.00
Apartments Mid Rise	263.00	Dwelling Unit	0.00	314,659.00
Regional Shopping Center	7.30	1000sqft	5.35	7,300.00

As you can see in the excerpt above, the proposed residential, commercial/retail, and parking land uses are underestimated by 12,362-SF, 252-SF, and 29 spaces, respectively. These underestimations present an issue, as the land use type and size features are used throughout CalEEMod to determine default variable and emission factors that go into the model's calculations.² For example, 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). Thus, by underestimating the sizes of the proposed residential, commercial/retail, and parking land uses, the models underestimate the Project's emissions and should not be relied upon to determine Project significance.

² "CalEEMod User's Guide." CAPCOA, November 2017, available at: http://www.aqmd.gov/docs/default-source/caleemod/upgrades/2016.3/01_user-39-s-guide2016-3-1.pdf?sfvrsn=2, p. 17

Failure to Model All Required Demolition

According to the CalEEMod User's Guide, "[h]aul trips are based on the amount of material that is demolished, imported or exported assuming a truck can handle 16 cubic yards of material."³ Therefore, the air model calculates a default number of hauling trips based upon the amount of demolition material inputted into the model. According to the DEIR:

"During Phase 1, it was assumed that 41,660-SF of buildings and 6,000-SF of pavement would require demolition. For Phases 2 and 3, it was assumed that a total of 131,000 square feet of pavement would require demolition" (p. 4.2-25).

As such, the models should have included at least 178,660-SF of demolition.⁴ When correctly inputting 178,660-SF of building demolition, the model calculates a default demolition hauling trip number of 812 trips. However, review of the CalEEMod output files demonstrates that the "Pacific Coast Commons Specific Plan Project" and the "Pacific Coast Commons Specific Plan Project Mit" models include only 381 total default hauling trips, which were artificially increased to 400 hauling trips (see excerpts below) (Appendix C-1, pp. 13, 61, 105; Appendix C-2, pp. 42).

Table Name	Column Name	Default Value	New Value
tblTripsAndVMT	HaulingTripNumber	189.00	200.00
tblTripsAndVMT	HaulingTripNumber	192.00	200.00

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number
Demolition - Phase 1	6	80.00	20.00	200.00
Site Preparation - Phase 1	7	50.00	10.00	0.00
Grading - Phase 1	6	80.00	10.00	0.00
Building Construction - Phase 1	9	120.00	30.00	0.00
Paving - Phase 1	6	40.00	10.00	0.00
Architectural Coating - Phase 1	1	80.00	20.00	0.00
Demolition - Phases 2 and 3	6	100.00	40.00	200.00
Site Preparation - Phases 2 and 3	7	120.00	20.00	0.00
Grading - Phases 2 and 3	6	160.00	20.00	1,720.00
Building Construction - Phases 2 and 3	9	300.00	60.00	0.00
Paving - Phases 2 and 3	6	80.00	20.00	0.00
Architectural Coating - Phases 2 and 3	1	240.00	40.00	0.00

³ http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 14

⁴ Calculated: (41,660-SF of buildings demolition) + (6,000-SF of pavement demolition) + (131,000-SF of pavement demolition) = 178,660-SF of demolition.

As you can see in the excerpts above, the default number of demolition hauling trips was underestimated by 431 trips.⁵ As such, the models fail to include the total amount of demolition required for the Project.

This underestimation presents an issue, as the total amount of demolition material is used by CalEEMod to determine emissions associated with this phase of construction; the three primary operations that generate dust emission during the demolition phase are mechanical or explosive dismemberment, site removal of debris, and on-site truck traffic on paved and unpaved road.⁶ By failing to include the total amount of required demolition, the models underestimate emissions associated with fugitive dust, site removal, as well as exhaust from hauling trucks traveling to and from the site, and should not be relied upon to determine the significance of the Project's air quality impacts.

Unsubstantiated Changes to Acres of Grading Values

Review of the CalEEMod output files demonstrates that the "Pacific Coast Commons Specific Plan Project" and the "Pacific Coast Commons Specific Plan Project Mit" models include reductions to the default acres of grading values (see excerpt below) (Appendix C-1, pp. 6, 54, 98; Appendix C-2, pp. 36).

Table Name	Column Name	Default Value	New Value
tblGrading	AcresOfGrading	21.50	0.74
tblGrading	AcresOfGrading	21.00	3.14

As you can see in the excerpt above, the acres of grading values were reduced by approximately 97%, from the default value of 21.5- to 0.74-acres, and 85%, from the default value of 21- to 3.14-acres. As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.⁷ According to the "User Entered Comments & Non-Default Data" table, the justification provided for these changes is: "17,000 CY of soil export during Phase 2" (Appendix C-1, pp. 4, 52, 96; Appendix C-2, pp. 34). Furthermore, regarding the acres of grading value, the DEIR states:

"During grading activities, fugitive dust can be generated from the movement of dirt on the Project site. CalEEMod estimates dust from dozers moving dirt around, dust from graders or scrapers leveling the land, and loading or unloading dirt into haul trucks. Each of those activities is calculated differently in CalEEMod, based on the number of acres traversed by the grading equipment" (emphasis) (p. 4.2-23).

However, these reductions remain unsupported for two reasons. First, the justification provided by the "User Entered Comments & Non-Default Data" table fails to address the revised acres of grading value. Second, according to the CalEEMod User's Guide:

"[T]he dimensions (e.g., length and width) of the grading site have no impact on the calculation, only the total area to be graded. In order to properly grade a piece of land multiple passes with

⁵ Calculated: (812 demolition hauling trips) – (381 trips demolition hauling trips) = 431 demolition hauling trips.

⁶ CalEEMod User Guide, Appendix A, p. 11, available at: <http://www.caleemod.com/>

⁷ CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 2, 9

equipment may be required. The acres is based on the equipment list and days in grading or site preparation phase according to the anticipated maximum number of acres a given piece of equipment can pass over in an 8-hour workday.”⁸

Thus, as the dimensions of the Project site have no impact on the acres of grading value, and the DEIR fails to substantiate this change, we cannot verify the revised acres of grading values.

These unsubstantiated reductions present an issue, as CalEEMod uses the acres of grading value to estimate the dust emissions associated with grading.⁹ Thus, by including unsubstantiated reductions to the default acres of grading values, the models may underestimate the Project’s construction-related emissions and should not be relied upon to determine Project significance.

Unsubstantiated Changes to Material Moisture Content Bulldozing Values

Review of the CalEEMod output files demonstrates that the “Pacific Coast Commons Specific Plan Project” and the “Pacific Coast Commons Specific Plan Project Mit” models include several changes to the default material moisture content bulldozing values (see excerpt below) (Appendix C-1, pp. 6, 54, 98; Appendix C-2, pp. 36).

Table Name	Column Name	Default Value	New Value
tblGrading	MaterialMoistureContentBulldozing	7.90	17.00
tblGrading	MaterialMoistureContentBulldozing	7.90	17.00
tblGrading	MaterialMoistureContentBulldozing	7.90	17.00

As you can see in the excerpt above, the material moisture content bulldozing values were increased from the default value of 7.9% to 17%. As previously mentioned, the CalEEMod User’s Guide requires any changes to model defaults be justified.¹⁰ According to the “User Entered Comments & Non-Default Data” table, the justification provided for these changes is: “17,000 CY of soil export during Phase 2” (Appendix C-1, pp. 4, 52, 96; Appendix C-2, pp. 34).

However, this change remains unsupported for two reasons. First, the justification provided by the “User Entered Comments & Non-Default Data” table fails to address the revised material moisture content bulldozing values. Second, the DEIR and associated documents fail to mention or justify these changes whatsoever.

⁸ “Appendix A Calculation Details for CalEEMod.” available at: http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 9.

⁹ “Appendix A Calculation Details for CalEEMod.” available at: http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 9.

¹⁰ CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 2, 9

These unsubstantiated changes present an issue, as CalEEMod uses the material moisture content bulldozing values to calculate the dust emission factor associated with bulldozing.¹¹ Specifically, CalEEMod utilizes the following equations:¹²

$$EF_{TSP} = \frac{C_{TSP} \times S^{1.2}}{M^{1.3}}, \text{ and } EF_{PM_{2.5}} = EF_{TSP} \times F_{PM_{2.5}}$$

$$EF_{PM_{15}} = \frac{C_{PM_{15}} \times S^{1.5}}{M^{1.4}}, \text{ and } EF_{PM_{10}} = EF_{PM_{15}} \times F_{PM_{10}}$$

Where:

EF = emission factor (lb/hr)
 C = arbitrary coefficient used by AP-42
 M = material moisture content (%)
 S = material silt content (%)
 F = scaling factor

As demonstrated above, there is an inverse relationship between material moisture content and dust emission factors. In other words, when the material moisture content percentage increases, the dust emission factor decreases. As such, by including unsubstantiated increases to the material moisture content values, the models may underestimate the emissions associated with bulldozing. Thus, the models may underestimate the Project's construction-related emissions and should not be relied upon to determine Project significance.

Unsubstantiated Changes to Material Silt Content Values

Review of the CalEEMod output files demonstrates that the "Pacific Coast Commons Specific Plan Project" and the "Pacific Coast Commons Specific Plan Project Mit" models include several reductions to the default material silt content values (see excerpt below) (Appendix C-1, pp. 6, 54, 98; Appendix C-2, pp. 36).

Table Name	Column Name	Default Value	New Value
tblGrading	MaterialSiltContent	6.90	3.30
tblGrading	MaterialSiltContent	6.90	3.30
tblGrading	MaterialSiltContent	6.90	3.30
tblGrading	MaterialSiltContent	6.90	3.30

As you can see in the excerpt above, the material silt content values were increased from the default value to 6.9% to 3.3%. As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.¹³ According to the "User Entered Comments & Non-Default Data" table, the

¹¹ "Appendix A Calculation Details for CalEEMod." available at: http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 10.

¹² "Appendix A Calculation Details for CalEEMod." available at: http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 10.

¹³ CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 2, 9

justification provided for these changes is: “17,000 CY of soil export during Phase 2” (Appendix C-1, pp. 4, 52, 96; Appendix C-2, pp. 34).

However, this change remains unsupported for two reasons. First, the justification provided by the “User Entered Comments & Non-Default Data” table fails to address the revised material silt content values. Second, the DEIR and associated documents fail to mention or justify these changes whatsoever.

These unsubstantiated changes present an issue, because CalEEMod uses the material silt content values to calculate the dust emission factor associated with bulldozing.¹⁴ Specifically, CalEEMod utilizes the following equations:¹⁵

$$EF_{TSP} = \frac{C_{TSP} \times s^{1.2}}{M^{1.3}}, \text{ and } EF_{PM_{2.5}} = EF_{TSP} \times F_{PM_{2.5}}$$

$$EF_{PM_{15}} = \frac{C_{PM_{15}} \times s^{1.5}}{M^{1.4}}, \text{ and } EF_{PM_{10}} = EF_{PM_{15}} \times F_{PM_{10}}$$

Where:

EF = emission factor (lb/hr)
 C = arbitrary coefficient used by AP-42
 M = material moisture content (%)
 S = material silt content (%)
 F = scaling factor

As demonstrated above, there is a direct relationship between material silt content and dust emission factors. In other words, when the material silt content percentage decreases, the dust emission factor decreases as well. As such, by including unsubstantiated increases to the material silt content values, the models may underestimate the emissions associated with bulldozing. Thus, the models may underestimate the Project’s construction-related emissions and should not be relied upon to determine Project significance.

Unsubstantiated Changes to Hauling Trip Numbers

Review of the CalEEMod output files demonstrates that the “Pacific Coast Commons Specific Plan Project” model includes several changes to the default hauling trip numbers (see excerpt below) (Appendix C-1, pp. 6-7, 54, 98).

¹⁴ “Appendix A Calculation Details for CalEEMod.” available at: http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 10.

¹⁵ “Appendix A Calculation Details for CalEEMod.” available at: http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 10.

Table Name	Column Name	Default Value	New Value
tblTripsAndVMT	HaulingTripNumber	189.00	200.00
tblTripsAndVMT	HaulingTripNumber	192.00	200.00
tblTripsAndVMT	HaulingTripNumber	2,125.00	1,720.00

As you can see in the excerpt above, the number of hauling trips was collectively reduced by 386 trips, from the cumulative default value of 2,506 trips to 2,120 trips.¹⁶ As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.¹⁷ According to the "User Entered Comments and Non-Default Data" table, the justification provided for these changes is: "Updated per applicant" (Appendix C-1, pp. 4, 52, 96). Furthermore, the DEIR states:

"Haul truck trips during the demolition and grading phases were based on demolition and earthwork quantities provided" (p. 4.2-25).

However, these justifications are insufficient, as the DEIR and associated documents fail to provide the calculations or explain how the revised hauling trip numbers were derived "based on demolition and earthwork quantities." As such, we cannot verify the revised hauling trip numbers.

These unsubstantiated changes present an issue, as CalEEMod uses number of hauling trips to estimate the construction-related emissions associated with on-road vehicles.¹⁸ Thus, by including unsubstantiated changes to the default hauling trip numbers, the model may underestimate the Project's mobile-source construction-related emissions and should not be relied upon to determine Project significance.

Unsubstantiated Changes to Architectural and Area Coating Areas

Review of the CalEEMod output files demonstrates that the "Pacific Coast Commons Specific Plan Project" and "Pacific Coast Commons Specific Plan Project Mit" models include several reductions to the default architectural and area coating areas (see excerpt below) (Appendix C-1, pp. 5, 52-53, 96-97; Appendix C-2, pp. 34-35).

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Residential_Exterior	212,395.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	212,395.00	212,213.00
tblArchitecturalCoating	ConstArea_Residential_Interior	637,184.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	637,184.00	636,338.00
tblAreaCoating	Area_Parking	19071	1959

¹⁶ Calculated: (189 + 192 + 2,125 default hauling trips) – (200 + 200 + 1,720 revised hauling trips) = 386 net decrease in hauling trips.

¹⁷ CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 2, 9

¹⁸ CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 34.

As you can see in the excerpt above, the architectural coating areas were reduced by 850,607-SF, from the cumulative default value of 1,699,158- to 848,551-SF;¹⁹ and the area coating area for the proposed parking land use was reduced by 17,112-SF, from the default value of 19,701- to 1,959-SF.²⁰ As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.²¹ According to the "User Entered Comments and Non-Default Data" table, the justification provided for these changes is: "Updated SF per phase" (Appendix C-1, pp. 4, 52, 96; Appendix C-2, pp. 34). However, these reductions remain unsupported for two reasons.

First, the DEIR and associated documents fail to mention or justify the changes to the construction-related architectural coating areas whatsoever. As such, we cannot verify the revised architectural coating areas.

Second, regarding the operational area coating areas, the DEIR states:

"Consistent with CalEEMod defaults, it is assumed that the residential surface area for painting equals 2.7 times the floor square footage, with 75% assumed for interior coating and 25% assumed for exterior surface coating. For nonresidential land uses (e.g., retail, community, and commercial areas), it is assumed that the surface area for painting equals 2.0 times the floor square footage, with 75% assumed for interior coating and 25% assumed for exterior surface coating. For the parking garage, the architectural coating area is assumed to be 6% of the total square footage, consistent with the supporting CalEEMod studies provided as an appendix to the CalEEMod User's Guide" (emphasis added) (p. 4.2-28).

As demonstrated above, the DEIR claims that the Project's area coating areas are consistent with CalEEMod defaults. Thus, as the area coating area was reduced from the default value, the change is unsubstantiated and inconsistent with the information provided in the DEIR. As such, we cannot verify the revised area coating area.

These unsubstantiated reductions present an issue, as CalEEMod uses architectural and area coating areas to calculate ROG emissions associated with painting and reapplication.²² Thus, by including unsubstantiated reductions to the default architectural and area coating areas, the models may underestimate the Project's area-source emissions and should not be relied upon to determine Project significance.

¹⁹ Calculated: (212,395-SF + 212,395-SF + 637,184-SF + 637,184-SF default architectural coating areas) – (212,213-SF + 636,338-SF revised architectural coating areas) = 850,607-SF net decrease in architectural coating areas.

²⁰ 19,70-SF default area coating area – 1,959-SF revised area coating area = 17,112-SF net decrease in area coating area.

²¹ CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 2, 9

²² CalEEMod User Guide, available at: http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 35, 42.

Underestimated Operational Vehicle Trip Rates

According to the Traffic Impact Analysis (“TIA”), provided in Appendix J-1 to the DEIR, the Project is expected to generate approximately 2,517 average daily vehicle trips (see excerpt below) (p. 30, Table 4).

Land Use	ITE Land Use Code	Size	Trip Generation Rates [a]							Daily
			Daily	AM Peak Hour			PM Peak Hour			
				Rate	In%	Out%	Rate	In%	Out%	
PROPOSED PROJECT										
Pacific Coast Commons North										
Residential Units [b]	221	143 DU	Equation	Equation	24%	76%	Equation	61%	39%	778
Less: Transit/Walk/Bike			5%	5%			5%			(39)
Total Driveway Trips										739
Retail	820	2.223 ksf	37.75	0.94	62%	38%	3.81	48%	52%	84
Less: Transit/Walk/Bike			5%	5%			5%			(4)
Total Driveway Trips										80
Fairfield Parking										
Retail	820	3.273 ksf	37.75	0.94	62%	38%	3.81	48%	52%	124
Less: Transit/Walk/Bike			5%	5%			5%			(6)
Total Driveway Trips										118
Pacific Coast Commons South										
Residential Units [b]	221	120 DU	Equation	Equation	24%	76%	Equation	61%	39%	652
Less: Transit/Walk/Bike			5%	5%			5%			(33)
Total Driveway Trips										619
Retail	820	2.056 ksf	37.75	0.94	62%	38%	3.81	48%	52%	78
Less: Transit/Walk/Bike			5%	5%			5%			(4)
Total Driveway Trips										74
Fast Casual Restaurant [c]	930	3.700 ksf	315.17	14.13	55%	45%	14.13	55%	45%	1,166
Less: Transit/Walk/Bike			5%	5%			5%			(58)
Total Driveway Trips										1,108
Less: Pass-by [d]			20%	20%			20%			(221)
Net External Vehicle Trips										887
TOTAL PROJECT EXTERNAL VEHICLE TRIPS										2,517

As such, the models should have included trip rates that reflect the number of average daily operational vehicle trips estimated by the TIA. However, review of the CalEEMod output files demonstrates that the “Pacific Coast Commons Specific Plan Project” model includes only 2,506.08 weekday and 2,271.19 Saturday vehicle trips (see excerpt below) (Appendix C-1, pp. 42, 90, 134).

Land Use	Average Daily Trip Rate		
	Weekday	Saturday	Sunday
Apartments Mid Rise	1,357.08	1,304.48	1196.65
Enclosed Parking with Elevator	0.00	0.00	0.00
High Turnover (Sit Down Restaurant)	887.00	1,104.78	919.71
Other Asphalt Surfaces	0.00	0.00	0.00
Regional Shopping Center	262.00	306.60	154.83
Total	2,506.08	2,715.86	2,271.19

As you can see in the excerpt above, the weekday and Sunday trip numbers are underestimated by approximately 11- and 246-trips, respectively. As such, the trip rates inputted into the proposed land use models are underestimated and inconsistent with the information provided by the TIA.

These inconsistencies present an issue, as CalEEMod uses the operational vehicle trip rates to calculate the emissions associated with the Project's operational on-road vehicles.²³ Thus, by including underestimated operational vehicle trip rates, the model underestimates the Project's mobile-source operational emissions and should not be relied upon to determine Project significance.

Unsubstantiated Changes to Energy Use Values

Review of the CalEEMod output files demonstrates that the "Pacific Coast Commons Specific Plan Project" model includes several reductions to the default energy use values (see excerpt below) (Appendix C-1, pp. 5-6, 53, 97).

Table Name	Column Name	Default Value	New Value
tblEnergyUse	T24E	179.76	176.16
tblEnergyUse	T24E	3.92	3.50
tblEnergyUse	T24E	8.71	7.78
tblEnergyUse	T24E	2.93	2.62
tblEnergyUse	T24NG	5,911.46	5,615.89
tblEnergyUse	T24NG	78.56	77.77
tblEnergyUse	T24NG	0.95	0.94

As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.²⁴ According to the "User Entered Comments and Non-Default Data" table, the justification provided for these changes is: "Assume compliance with 2019 Title 24 Standards" (Appendix C-1, pp. 4, 52, 96). Furthermore, regarding 2019 Title 24 Standards, the DEIR states:

"CalEEMod assumes compliance with the 2016 Title 24 Building Energy Efficiency Standards. The default values were updated to reflect the more stringent 2019 Title 24 Building Energy Efficiency Standards, which became effective on January 1, 2020" (p. 4.2-28).

However, these justifications are insufficient. Simply because the 2019 Title 24 standards expect a reduction in building energy consumption does not guarantee that these reductions would be implemented locally on the Project site. Absent additional information demonstrating that these reductions would be achieved through the implementation, monitoring, and enforcement of energy-related mitigation measures, we are unable to verify the revised energy use values inputted into the model.

These unsubstantiated reductions present an issue, as CalEEMod uses the energy use values to calculate the Project's emissions associated with building electricity and non-hearth natural gas usage.²⁵ By including unsubstantiated changes to the default energy use values, the model may underestimate the Project's energy-source operational emissions and should not be relied upon to determine Project significance.

²³ "CalEEMod User Guide." CAPCOA, November 2017, available at: <http://www.caleemod.com/>, p. 35.

²⁴ CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 2, 9

²⁵ CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 43

Unsubstantiated Changes to Wastewater Treatment System Percentages

Review of the CalEEMod output files demonstrates that the “Pacific Coast Commons Specific Plan Project” model includes several manual changes to the default wastewater system percentages (see excerpt below) (Appendix C-1, pp. 8, 55-56, 99-100).

Table Name	Column Name	Default Value	New Value
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00

As you can see in the excerpt above, the model assumes that the Project’s wastewater would be treated 100% aerobically. As previously mentioned, the CalEEMod User’s Guide requires any changes to model defaults be justified.²⁶ According to the “User Entered Comments and Non-Default Data” table, the justification provided for these changes is: “Assume 100% aerobic” (Appendix C-1, pp. 4, 52, 96). However, these changes remain unsupported. According to the DEIR:

“Water consumption estimates for both indoor and outdoor water use and associated electricity consumption from water use and wastewater generation were estimated using default values in CalEEMod” (p. 4.6-27).

As demonstrated above, the DEIR claims that the electricity consumption from wastewater generation was estimated using the CalEEMod default values. Thus, the changes to the wastewater treatment system percentages are unsubstantiated and inconsistent with the information provided in the DEIR. As such, we cannot verify the revised values.

These inconsistencies present an issue, as each type of wastewater treatment system is associated with different GHG emission factors, which are used by CalEEMod to calculate the Project’s total GHG emissions.²⁷ Thus, by including unsubstantiated changes to the default wastewater treatment system percentages, the model may underestimate the Project’s GHG emissions and should not be relied upon to determine Project significance.

²⁶ CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 2, 9

²⁷ CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 45.

Incorrect Application of Construction-Related Mitigation Measures

Review of the CalEEMod output files demonstrates that the “Pacific Coast Commons Specific Plan Project” model includes the following construction-related mitigation measures (see excerpt below) (Appendix C-1, pp. 14, 62, 106):

3.1 Mitigation Measures Construction

Replace Ground Cover
Water Exposed Area

Furthermore, review of the CalEEMod output files demonstrates that the “Pacific Coast Commons Specific Plan Project Mit” model includes the following construction-related mitigation measure (see excerpt below) (Appendix C-2, pp. 43):

3.1 Mitigation Measures Construction

Water Exposed Area

As previously mentioned, the CalEEMod User’s Guide requires any changes to model defaults be justified.²⁸ According to the “User Entered Comments and Non-Default Data” table for the “Pacific Coast Commons Specific Plan Project” model, the justification provided for the inclusion of these measures is: “Water three times daily and replace ground cover” (Appendix C-1, pp. 4, 52, 96). However, no justification was provided by the “User Entered Comments and Non-Default Data” table for the “Pacific Coast Commons Specific Plan Project Mit” model. Furthermore, the DEIR states:

“The proposed Project would be required to comply with SCAQMD Rule 403 to control dust emissions generated during the grading activities. Standard construction practices that would be employed to reduce fugitive dust emissions include watering of the active sites three times per day depending on weather conditions” (p. 4.2-34).

However, the inclusion of the above-mentioned construction-related mitigation measures remains unsupported. Simply because the DEIR states that the Project would comply with SCAQMD Rule 403 does not justify the inclusion of the above-mentioned construction-related mitigation measures in the models. 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

²⁸ CalEEMod User Guide, available at: http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 2, 9.

project has undergone environmental review and are above-and-beyond existing laws, regulations, and requirements that would reduce environmental impacts” (emphasis added).²⁹

As you can see in the excerpt 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 the Project’s compliance with SCAQMD Rule 403, is unsubstantiated. By including construction-related mitigation measures without properly committing to their implementation, the models may underestimate the Project’s construction-related emissions and should not be relied upon to determine Project significance.

Incorrect Application of Mobile-Related Operational Mitigation Measures

Review of the CalEEMod output files demonstrates that the “Pacific Coast Commons Specific Plan Project” model includes the following mobile-, water-, and waste-related operational mitigation measures (see excerpt below) (Appendix C-1, pp. 42, 47, 49, 90, 134):

Mobile-Related:

4.1 Mitigation Measures Mobile

Improve Destination Accessibility
Increase Transit Accessibility
Improve Pedestrian Network

Water-Related:

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Waste-Related:

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

As previously mentioned, the CalEEMod User’s Guide requires any changes to model defaults be justified.³⁰ According to the “User Entered Comments and Non-Default Data” table, the justifications provided for the inclusion of the mobile-, water-, and waste-related measures are: “Increase transit accessibility (0.2 miles) and improve pedestrian network,” “Reduce water consumption by 20% per CalGreen,” and “Assume 50% waste disposed per AB 939” (Appendix C-1, pp. 4, 52, 96). However, the inclusion of these operational mitigation measures remains unsupported for three reasons.

²⁹ “CEQA Portal Topic Paper Mitigation Measures.” AEP, February 2020, available at: <https://ceqaportal.org/tp/CEQA%20Mitigation%202020.pdf>, p. 5.

³⁰ CalEEMod User Guide, available at: http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 2, 9.

First, the DEIR fails to mention or justify the inclusion of the above-mentioned operational mitigation measures.

Second, the inclusion of these operational mitigation measures, based on the Project's compliance with existing policies and regulations, is unsupported. As previously stated, according to the 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" (emphasis added).*³¹

As you can see in the excerpt 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 the Project's compliance with existing policies and regulations, is unsubstantiated.

Third, AEP guidance states:

*"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" (emphasis added).*³²

As you can see in the excerpts above, design features that are not formally included as mitigation measures may be eliminated from the Project's design altogether. Thus, as the above-mentioned mobile-, water-, and waste-related operational measures are not formally included as mitigation measures, we cannot guarantee that they would be implemented, monitored, and enforced on the Project site. As a result, the inclusion of the above-mentioned operational mitigation measures in the model is incorrect. By including several operational mitigation measures without properly committing to their implementation, the model may underestimate the Project's operational emissions and should not be relied upon to determine Project significance.

Diesel Particulate Matter Health Risk Emissions Inadequately Evaluated

The DEIR concludes that the proposed Project would result in a less-than-significant health risk impact based on a quantified construction health risk analysis ("HRA"). Specifically, the DEIR estimates that

³¹ "CEQA Portal Topic Paper Mitigation Measures." AEP, February 2020, available at: <https://cegaportal.org/tp/CEQA%20Mitigation%202020.pdf>, p. 5.

³² "CEQA Portal Topic Paper Mitigation Measures." AEP, February 2020, available at: <https://cegaportal.org/tp/CEQA%20Mitigation%202020.pdf>, p. 6.

Project construction would result in a mitigated excess cancer risk of 4.23 in one million, which would not exceed the threshold of 10 in one million (see excerpt below) (p. 4.2-38, Table 4.2-13).

Table 4.2-13. Summary of Maximum Cancer and Chronic Health Risks - Mitigated

Impact Analysis	Impact Parameter	Units	Project Impact	CEQA Threshold	Level of Significance
<i>Maximally Exposed Individual Resident</i>					
Construction HRA	Cancer Risk	Per Million	4.23	10	Less than Significant
	Chronic Hazard Index	Index Value	0.002	1.0	Less than Significant

Source: See Appendix C-2 for complete results.

Notes: CEQA = California Environmental Quality Act; HRA = Health Risk Assessment

However, the DEIR's evaluation of the Project's potential health risk impacts, as well as the less-than-significant impact conclusion, is incorrect for three reasons.

First, the DEIR's construction HRA is incorrect, as it relies upon an exhaust PM₁₀ estimate from a flawed air model (Appendix C-2, p. 9). As previously discussed, when we reviewed the Project's CalEEMod output files, provided in the CalEEMod Outputs as Appendix C-1 and the HRA Report as Appendix C-2 to the DEIR, we found that several of the values inputted into the model are not consistent with information disclosed in the DEIR and associated documents. As a result, the construction HRA utilizes an underestimated diesel particulate matter ("DPM") concentration to calculate the cancer risk associated with Project construction. As such, the DEIR underestimates the Project's construction-related cancer risk and should not be relied upon to determine Project significance.

Second, the DEIR fails to evaluate the Project's operational toxic air contaminants ("TACs") and associated health risk impacts. This is incorrect, as the TIA indicates that the proposed land uses are expected to generate approximately 2,517 average daily vehicle trips, which will generate additional exhaust emissions and continue to expose nearby sensitive receptors to DPM emissions (p. 30, Table 4). The DEIR fails to discuss the potential TACs associated with Project operation or indicate the concentrations at which such pollutants would trigger adverse health effects. Without making a reasonable effort to connect the Project's operational TAC emissions to the potential health risks posed to nearby receptors, the DEIR is inconsistent with CEQA's requirement to correlate the increase in emissions generated by the Project with the potential adverse impacts on human health.

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, as referenced by HRA Report (Appendix C-2, p. 7).³³ The OEHHA document recommends that exposure from projects lasting more than 6 months be evaluated for the duration of the project and recommends that an exposure duration of 30 years be used to estimate individual cancer risk for the maximally exposed individual resident ("MEIR").³⁴ Even though we were not provided with the expected lifetime of

³³ "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, available at: http://oehha.ca.gov/air/hot_spots/hotspots2015.html

³⁴ "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, available at: http://oehha.ca.gov/air/hot_spots/2015/2015GuidanceManual.pdf, p. 8-6, 8-15

the Project, we can reasonably assume that the Project will operate for at least 30 years, if not more. Therefore, we recommend that health risk impacts from Project operation also be evaluated, as a 30-year exposure duration vastly exceeds the 6-month requirement set forth by OEHHA. This recommendation reflects the most recent state health risk policies, and as such, we recommend that an analysis of health risk impacts posed to nearby sensitive receptors from Project operation be included in an updated EIR for the Project.

Fourth, while the DEIR includes an HRA evaluating the potential health risk impacts posed by Project construction to nearby, existing receptors, the HRA fails to evaluate the cumulative lifetime cancer risk to nearby, existing receptors as a result of all phases of Project construction and operation together. According to OEHHA guidance, as referenced by the HRA Report, “the excess cancer risk is calculated separately for each age grouping and then summed to yield cancer risk at the receptor location” (Appendix C-2, p. 7).³⁵ However, the DEIR’s HRA fails to sum each age bin to evaluate the total cancer risk over the course of Project construction and operation. This is incorrect and, thus, an updated EIR should be prepared to quantify the cumulative excess cancer risk posed by Project construction and operation to nearby, existing receptors, and compare it to the SCAQMD threshold of 10 in one million.

Screening-Level Assessment Indicates a Potentially Significant Health Risk Impact

In order to conduct our screening-level risk assessment we relied upon AERSCREEN, which is a screening level air quality dispersion model.³⁶ The model replaced SCREEN3, and AERSCREEN is included in the OEHHA³⁷ and the California Air Pollution Control Officers Associated (CAPCOA)³⁸ guidance as the appropriate air dispersion model for Level 2 health risk screening assessments (“HRSAs”). A Level 2 HRSA utilizes a limited amount of site-specific information to generate maximum reasonable downwind concentrations of air contaminants to which nearby sensitive receptors may be exposed. If an unacceptable air quality hazard is determined to be possible using AERSCREEN, a more refined modeling approach is required prior to approval of the Project.

We prepared a preliminary HRA of the Project’s operational health risk impact to sensitive receptors using the annual PM₁₀ exhaust estimates from the DEIR’s annual CalEEMod output files, consistent with the HRA Report’s methodology (Appendix C-2, p. 9). Consistent with recommendations set forth by OEHHA, we used a residential exposure duration of 30 years, starting from the 3rd trimester stage of life. Subtracting the 1,034-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 27.17 years, approximately. The DEIR’s CalEEMod model indicates that operational activities will generate approximately 87 pounds of DPM per year of operation. The AERSCREEN model relies on a continuous average emission rate to simulate maximum downward

³⁵ “Guidance Manual for preparation of Health Risk Assessments.” OEHHA, February 2015, *available at*: <https://oehha.ca.gov/media/downloads/cnr/2015guidancemanual.pdf> p. 8-4

³⁶ U.S. EPA (April 2011) AERSCREEN Released as the EPA Recommended Screening Model, http://www.epa.gov/ttn/scram/guidance/clarification/20110411_AERSCREEN_Release_Memo.pdf

³⁷ Supra, fn 20.

³⁸ CAPCOA (July 2009) Health Risk Assessments for Proposed Land Use Projects, http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA_HRA_LU_Guidelines_8-6-09.pdf.

concentrations from point, area, and volume emission sources. To account for the variability in equipment usage and truck trips over Project operation, we calculated an average DPM emission rate by the following equation.

$$\text{Emission Rate } \left(\frac{\text{grams}}{\text{second}} \right) = \frac{87.4 \text{ lbs}}{365 \text{ days}} \times \frac{453.6 \text{ grams}}{\text{lbs}} \times \frac{1 \text{ day}}{24 \text{ hours}} \times \frac{1 \text{ hour}}{3,600 \text{ seconds}} = \mathbf{0.00126 \text{ g/s}}$$

Using this equation, we estimated an operational emission rate of 0.00126 g/s. Operation was simulated as a 6.39-acre rectangular area source in AERSCREEN, with dimensions of 256 meters by 101 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 AERSCREEN model generates maximum reasonable estimates of single-hour DPM concentrations from the Project Site. EPA guidance suggests that in screening procedures, the annualized average concentration of an air pollutant to be estimated by multiplying the single-hour concentration by 10%.³⁹ According to the HRA Report, the closest residential receptors are located 25 feet west of the Project site (Appendix C-2, p. 1). However, review of the AERSCREEN output files demonstrates that the *maximally* exposed receptor is located approximately 125 meters from the Project site. Thus, for Project operation, the single-hour concentration at the MEIR estimated by AERSCREEN is approximately 1.937 µg/m³ DPM at approximately 125 meters downwind. Multiplying this single-hour concentration by 10%, we get an annualized average concentration of 0.1937 µg/m³ for Project operation at the MEIR.

We calculated the excess cancer risk to the MEIR using applicable HRA methodologies prescribed by OEHHA. Consistent with the construction period of 1,034 days inputted into the DEIR's CalEEMod model, the annualized average concentration for Project operation was used for the remaining 13.42 years of the child stage of life (2 - 16 years) and the entire adult stage of life (16 – 30 years).

Consistent with the HRA Report's methodology, we used Age Sensitivity Factors ("ASFs") to account for the heightened susceptibility of young children to the carcinogenic toxicity of air pollution (Appendix C-2, p. 7). When applying ASFs, the quantified cancer risk should be multiplied by a factor of ten during the third trimester of pregnancy and during the first two years of life (infant), as well as multiplied by a factor of three during the child stage of life (2 – 16 years). Furthermore, in accordance with the guidance set forth by OEHHA, we used the 95th percentile breathing rates for infants.⁴⁰ Finally, according to SCAQMD guidance, we used a Fraction of Time At Home ("FAH") Value of 1 for the 3rd trimester and

³⁹ U.S. EPA (October 1992) Screening Procedures for Estimating the Air Quality Impact of Stationary Sources Revised, http://www.epa.gov/ttn/scram/guidance/guide/EPA-454R-92-019_OCR.pdf.

⁴⁰ "Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics 'Hot Spots' Information and Assessment Act," July 2018, available at: <http://www.aqmd.gov/docs/default-source/planning/risk-assessment/ab2588supplementalguidelines.pdf>, p. 16.

"Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, available at: <https://oehha.ca.gov/media/downloads/cnr/2015guidancemanual.pdf>

infant receptors.⁴¹ We used a cancer potency factor of $1.1 \text{ (mg/kg-day)}^{-1}$ and an averaging time of 25,550 days. The results of our calculations are shown below.

The Maximum Exposed Individual at an Existing Residential Receptor (MEIR)					
Activity	Duration (years)	Concentration (ug/m3)	Breathing Rate (L/kg-day)	ASF	Cancer Risk with ASFs*
Total Construction	2.83				4.2E-06
Operation	13.42	0.1937	572	3	6.7E-05
Child Exposure Duration	13.42			Child Exposure	6.7E-05
Operation	14.00	0.1937	261	1	7.8E-06
Adult Exposure Duration	14.00			Adult Exposure	7.8E-06
Lifetime Exposure Duration	30.25			Lifetime Exposure	7.9E-05

As demonstrated in the table above, the excess cancer risk to adults and children at the MEIR located approximately 125 meters away, over the course of Project operation, utilizing ASFs, are approximately 7.8 and 67 in one million, respectively. When summing the Project's estimated operational cancer risks, as estimated by SWAPE, with the DEIR's purported construction-related cancer risk of 4.23 in one million, we estimate a lifetime excess cancer risk of approximately 79 in one million (p. 18). Thus, the child and lifetime cancer risks exceed the SCAQMD threshold of 10 in one million, resulting in a potentially significant impact not previously addressed or identified by the DEIR.

An agency must include an analysis of health risks that connects the Project's air emissions with the health risk posed by those emissions. 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 construction and operational HRA shown above is to demonstrate the link between the proposed Project's emissions and the potential health risk. Our screening-level HRA demonstrates that construction and operation of the Project could result in a potentially significant health risk impact, when correct exposure assumptions and up-to-date, applicable guidance are used. Therefore, since our screening-level construction HRA indicates a potentially significant impact, an updated EIR should include a reasonable effort to connect the Project's air quality emissions and the potential health risks posed to nearby receptors. Thus, an updated EIR should include a quantified air pollution model as well as an updated, quantified refined health risk assessment which adequately and accurately evaluates health risk impacts associated with both Project construction and operation.

⁴¹ "Risk Assessment Procedures for Rules 1401, 1401.1, and 212." SCAQMD, August 2017, available at: http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1401/riskassessmentprocedures_2017_080717.pdf, p. 7.

Greenhouse Gas

Failure to Adequately Evaluate Greenhouse Gas Emissions

The DEIR estimates that the Project would generate net annual greenhouse gas (“GHG”) emissions of 2,920.96 metric tons of carbon dioxide equivalents per year (“MT CO₂e/year”), which would not exceed the SCAQMD bright-line threshold of 3,000 MT CO₂e/year (p. 4.6-28 – 4.6-29, Table 4.6-4).

Table 4.6-4. Estimated Operational Greenhouse Gas Emissions

Emission Source	CO ₂	CH ₄	N ₂ O	CO ₂ e
	Metric Tons per Year			
Area	4.45	<0.01 ^a	0.00	4.56
Energy (natural gas and electricity)	951.51	0.03	0.01	955.38
Mobile	1,764.82	0.08	0.00	1,766.93
Solid waste	17.53	1.04	0.00	43.42
Water supply and wastewater	80.60	0.02	0.01	84.77
Construction (amortized over 30 years)	—	—	—	65.90
Total Emissions				2,920.96
SCAQMD GHG Threshold				3,000
Exceeds thresholds?				No

Notes: CO₂ = carbon dioxide; CH₄ = methane; N₂O = nitrogen dioxide; CO₂e = carbon dioxide equivalent.

See Appendix C-1 for complete results.

Proposed Project GHG emissions are based on the “mitigated” CalEEMod outputs, which includes reduction in indoor and outdoor water consumption, consistent with CALGreen and compliance with the AB 939 waste reduction goal.

^a <0.01 = value less than reported 0.01 metric tons per year.

Furthermore, the DEIR relies upon the Project’s consistency with the City of El Segundo Climate Action Plan (“CAP”), SCAG’s 2020-2045 RTP/SCS, CALGreen, CARB’s *Scoping Plan*, and the General Plan’s Air Quality Element, as well as EO S-3-05 and SB 32, in order to conclude that the Project would result in a less-than-significant GHG impact (p. 4.6-29 - 4.6-48). However, the DEIR’s GHG analysis, as well as the subsequent less-than-significant impact conclusion, is incorrect for five reasons.

- (1) The DEIR’s quantitative GHG analysis relies upon an incorrect and unsubstantiated air model;
- (2) The DEIR’s quantitative GHG analysis relies upon an outdated threshold;
- (3) The DEIR’s unsubstantiated air model indicates a potentially significant impact;
- (4) The DEIR fails to consider the performance-based standards under CARB’s *Scoping Plan*; and
- (5) The DEIR fails to consider the performance-based standards under SCAG’s RTP/SCS.

1) *Incorrect and Unsubstantiated Quantitative Analysis of Emissions*

As previously stated, the DEIR estimates that the Project would generate net annual GHG emissions of 2,920.96 MT CO₂e/year (p. 4.6-28 – 4.6-29, Table 4.6-4). However, the DEIR’s quantitative GHG analysis is unsubstantiated. As previously discussed, when we reviewed the CalEEMod Outputs, provided as Appendix C-1 to the DEIR, we found that several of the values inputted into the model are not consistent with information disclosed in the DEIR. As a result, the model underestimates the Project’s emissions, and the DEIR’s quantitative GHG analysis should not be relied upon to determine Project significance. An updated EIR should be prepared that adequately assesses the potential GHG impacts that construction and operation of the proposed Project may have on the surrounding environment.

2) *Incorrect Reliance on an Outdated Quantitative GHG Threshold*

As previously discussed, the DEIR estimates that the Project would generate net annual GHG emissions 2,920.96 MT CO₂e/year, which would not exceed the SCAQMD bright-line threshold of 3,000 MT CO₂e/year (p. 4.6-28 – 4.6-29, Table 4.6-4). However, the guidance that provided the 3,000 MTCO₂/year threshold, the SCAQMD's 2008 *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules, and Plans* report, was developed when the Global Warming Solutions Act of 2006, commonly known as "AB 32", was the governing statute for GHG reductions in California. AB 32 requires California to reduce GHG emissions to 1990 levels by 2020.⁴² As it is already April 2021, thresholds for 2020 are not applicable to the proposed Project. As such, the SCAQMD bright-line threshold of 3,000 MT CO₂e/year is outdated and inapplicable to the proposed Project, and the DEIR's less-than-significant GHG impact conclusion should not be relied upon.

Instead, we recommend that the Project apply the widely-used 2030 "Substantial Progress" threshold of 660 MT CO₂e/year⁴³ and AEP's "2030 Land Use Efficiency Threshold" of 2.6 metric tons of CO₂ equivalents per service population per year ("MT CO₂e/SP/year").⁴⁴ In support of thresholds for projects with a horizon year beyond 2020, AEP's guidance *states*:

"Once the state has a full plan for 2030 (which is expected in 2017), and then a project with a horizon between 2021 and 2030 should be evaluated based on a threshold using the 2030 target. A more conservative approach would be to apply a 2030 threshold based on SB 32 for any project with a horizon between 2021 and 2030 regardless of the status of the Scoping Plan Update" (emphasis added).⁴⁵

As the California Air Resources Board ("CARB") adopted *California's 2017 Climate Change Scoping Plan* in November of 2017, the proposed Project "should be evaluated based on a threshold using the 2030 target," according to the relevant guidance referenced above. We recommend the preparation of an updated EIR to compare the Project's estimated GHG emissions, as estimated in an updated air model,

⁴² HEALTH & SAFETY CODE 38550, *available at*:

https://leginfo.ca.gov/faces/codes_displaySection.xhtml?lawCode=HSC&sectionNum=38550.

⁴³ See: "JEFFERSON UNION HIGH SCHOOL DISTRICT FACULTY & STAFF HOUSING PROJECT AIR QUALITY & GREENHOUSE GAS ASSESSMENT." City of Daly City, June 2019, *available at*:

https://files.ceqanet.opr.ca.gov/257215-2/attachment/k-aC8VdC7LV3xz75yuUmtGiiExH-Y7HEPQ-dU-YlxuhNp95Dx9bK_TbVP3sWar00-Zx87dh7ji80vbRH0, p. 7; "TO 20-01 PAPÉ MACHINERY AIR QUALITY & GREENHOUSE GAS EMISSIONS ASSESSMENT." City of Fremont, February 2020, *available at*: "SOLAR4AMERICA ICE FACILITY EXPANSION AIR QUALITY AND GREENHOUSE GAS EMISSION ASSESSMENT." City of San Jose, September 2019, *available at*: https://www.fremont.gov/DocumentCenter/View/44974/4_Appendix-1_Air-Quality-GHG-Assessment, p. 18; and <https://www.sanjoseca.gov/Home/ShowDocument?id=45200>, p. 6.

⁴⁴ "Beyond Newhall and 2020: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California." Association of Environmental Professionals (AEP), October 2016, *available at*: https://califaep.org/docs/AEP-2016_Final_White_Paper.pdf, p. 40.

⁴⁵ "Beyond Newhall and 2020: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California." Association of Environmental Professionals (AEP), October 2016, *available at*: https://califaep.org/docs/AEP-2016_Final_White_Paper.pdf, p. 40.

to the widely-used 2030 “Substantial Progress” threshold of 660 MT CO₂e/year⁴⁶ and AEP’s “2030 Land Use Efficiency Threshold” of 2.6 MT CO₂e/SP/year.

3) *Failure to Identify a Potentially Significant GHG Impact*

When applying the widely-used 2030 “Substantial Progress” threshold of 660 MT CO₂e/year⁴⁷ and AEP “2030 Land Use Efficiency Threshold” of 2.6 MT CO₂e/SP/year,⁴⁸ the DEIR’s incorrect and unsubstantiated air model indicates a potentially significant GHG impact.⁴⁹ As previously stated, the DEIR estimates that the Project would generate net annual GHG emissions of 2,920.96 MT CO₂e/year (p. 4.6-28 – 4.6-29, Table 4.6-4). Furthermore, according to CAPCOA’s *CEQA & Climate Change* report, service population is defined as “the sum of the number of residents and the number of jobs supported by the project.”⁵⁰ The DEIR estimates that the Project would house and employ approximately 618 residents and 56 employees, respectively, resulting in a service population of 674 people (p. IV.G-17, Table IV.G-4; IV.G-19, Table IV.G-5).⁵¹ When dividing the Project’s GHG emissions, as estimated by the DEIR, by a service population of 674 people, we find that the Project would emit approximately 4.3 MT CO₂e/SP/year (see table below).⁵²

⁴⁶ See: “JEFFERSON UNION HIGH SCHOOL DISTRICT FACULTY & STAFF HOUSING PROJECT AIR QUALITY & GREENHOUSE GAS ASSESSMENT.” City of Daly City, June 2019, *available at*: https://files.ceqanet.opr.ca.gov/257215-2/attachment/k-aC8VdC7LV3xz75yuUmtGiiExH-Y7HEPQ-dU-YlxuhNp95Dx9bK_TbVP3sWar00-Zx87dh7ji80vbRH0, p. 7; “TO 20-01 PAPÉ MACHINERY AIR QUALITY & GREENHOUSE GAS EMISSIONS ASSESSMENT.” City of Fremont, February 2020, *available at*: “SOLAR4AMERICA ICE FACILITY EXPANSION AIR QUALITY AND GREENHOUSE GAS EMISSION ASSESSMENT.” City of San Jose, September 2019, *available at*: https://www.fremont.gov/DocumentCenter/View/44974/4_Appendix-1_Air-Quality-GHG-Assessment, p. 18; and <https://www.sanjoseca.gov/Home/ShowDocument?id=45200>, p. 6.

⁴⁷ See: “JEFFERSON UNION HIGH SCHOOL DISTRICT FACULTY & STAFF HOUSING PROJECT AIR QUALITY & GREENHOUSE GAS ASSESSMENT.” City of Daly City, June 2019, *available at*: https://files.ceqanet.opr.ca.gov/257215-2/attachment/k-aC8VdC7LV3xz75yuUmtGiiExH-Y7HEPQ-dU-YlxuhNp95Dx9bK_TbVP3sWar00-Zx87dh7ji80vbRH0, p. 7; “TO 20-01 PAPÉ MACHINERY AIR QUALITY & GREENHOUSE GAS EMISSIONS ASSESSMENT.” City of Fremont, February 2020, *available at*: “SOLAR4AMERICA ICE FACILITY EXPANSION AIR QUALITY AND GREENHOUSE GAS EMISSION ASSESSMENT.” City of San Jose, September 2019, *available at*: https://www.fremont.gov/DocumentCenter/View/44974/4_Appendix-1_Air-Quality-GHG-Assessment, p. 18; and <https://www.sanjoseca.gov/Home/ShowDocument?id=45200>, p. 6.

⁴⁸ “Beyond Newhall and 2020: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California.” Association of Environmental Professionals (AEP), October 2016, *available at*: https://califaep.org/docs/AEP-2016_Final_White_Paper.pdf, p. 40.

⁴⁹ “Beyond Newhall and 2020: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California.” Association of Environmental Professionals (AEP), October 2016, *available at*: https://califaep.org/docs/AEP-2016_Final_White_Paper.pdf, p. 40.

⁵⁰ CAPCOA (Jan. 2008) *CEQA & Climate Change*, p. 71-72, <http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA-White-Paper.pdf>.

⁵¹ Calculated: 618 residents + 56 employees = 674 service population.

⁵² Calculated: (2,920.96 MT CO₂e/year) / (674 service population) = (4.3 MT CO₂e/SP/year).

DEIR Modeling Greenhouse Gas Emissions	
Project Phase	Proposed Project (MT CO ₂ e/year)
Net Annual GHG Emissions	2,921
Threshold	660
Exceed?	Yes
Service Population	674
Service Population Efficiency	4.3
Threshold	2.6
Exceed?	Yes

As demonstrated above, the Project's net annual GHG emissions and service population efficiency, as estimated by the DEIR, exceed the 2030 "Substantial Progress" threshold of 660 MT CO₂e/SP/year and AEP's "2030 Land Use Efficiency Threshold" of 2.6 MT CO₂e/SP/year, respectively. As a result, the DEIR's less-than-significant GHG impact conclusion should not be relied upon. An updated EIR should be prepared for the Project and mitigation measures should be implemented to reduce the Project's GHG emissions to less-than-significant levels.

4) Failure to Consider Performance-based Standards Under CARB's 2017 Scoping Plan

As previously discussed, the DEIR relies upon the Project's consistency with CARB's 2017 *Scoping Plan* to determine Project GHG significance (p. 4.6-41 – 4.6-45). However, this is incorrect, as the DEIR fails to consider performance-based measures proposed by CARB.

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

In reaching the State's long-term GHG emission reduction goals, CARB's 2017 *Scoping Plan* explicitly cites to SB 375 and the VMT reductions anticipated under the implementation of Sustainable Community Strategies.⁵³ CARB has identified the population and daily VMT from passenger autos and light-duty vehicles at the state and county level for each year between 2010 to 2050 under a "baseline scenario" that includes "current projections of VMT included in the existing Regional Transportation Plans/Sustainable Communities Strategies (RTP/SCSs) adopted by the State's 18 Metropolitan Planning Organizations (MPOs) pursuant to SB 375 as of 2015."⁵⁴ By dividing the projected daily VMT by the population, we calculated the daily VMT per capita for each year at the state and county level for 2010 (baseline year), 2025 (Project operational year), and 2030 (target years under SB 32) (see table below and Attachment B).

⁵³ "California's 2017 Climate Change Scoping Plan." CARB, November 2017, available at: https://ww3.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf, p. 25, 98, 101-103.

⁵⁴ "Supporting Calculations for 2017 Scoping Plan-Identified VMT Reductions," Excel Sheet "Readme." CARB, January 2019, available at: https://ww2.arb.ca.gov/sites/default/files/2019-01/sp_mss_vmt_calculations_jan19_0.xlsx.

2017 Scoping Plan Daily VMT Per Capita						
	Los Angeles County			State		
Year	Population	LDV VMT Baseline	VMT Per Capita	Population	LDV VMT Baseline	VMT Per Capita
2010	9,838,771	216,979,221.64	22.05	37,335,085	836,463,980.46	22.40
2025	10,671,800	217,340,094.90	20.37	42,326,397	929,443,512.65	21.96
2030	10,868,614	215,539,586.12	19.83	43,939,250	957,178,153.19	21.78

The below table compares the 2017 *Scoping Plan* daily VMT per capita values against the daily VMT per capita values for the Project based on SWAPE's updated modeling (see table below and Attachment B).

Daily VMT Per Capita from Passenger & Light-Duty Trucks, Exceedances under 2017 Scoping Plan Performance-Based SB 375 Benchmarks	
Sources	Project
	SWAPE Modeling
Annual VMT from Auto & Light-Duty Vehicles	5,937,594
Daily VMT from Auto & Light-Duty Vehicles	16,267
Service Population	674
Daily VMT Per Capita	24.14
2017 Scoping Plan Benchmarks, Statewide	
22.40 VMT (2010 Baseline) Exceed?	Yes
21.96 VMT (2025 Projected) Exceed?	Yes
21.78 VMT (2030 Projected) Exceed?	Yes
2017 Scoping Plan Benchmarks, Los Angeles County Specific	
22.05 VMT (2010 Baseline) Exceed?	Yes
20.37 VMT (2025 Projected) Exceed?	Yes
19.83 VMT (2030 Projected) Exceed?	Yes

As shown above, SWAPE's updated modeling shows that the Project exceeds the CARB 2017 *Scoping Plan* projections for 2010, 2025, and 2030. Because the Project exceeds the CARB 2017 *Scoping Plan* performance-based daily VMT per capita projections, the Project conflicts with the CARB 2017 *Scoping Plan* and SB 375. As such, the DEIR's claim that the proposed Project would not conflict with the CARB 2017 *Scoping Plan* is unsupported. Project-specific EIR should be prepared for the proposed Project to provide additional information and analysis to conclude less-than-significant GHG impacts.

5) Failure to Consider Performance-based Standards under SCAG's RTP/SCS

Here, as discussed above, the DEIR concludes that the Project would be consistent with SCAG's RTP/SCS (p. 4.6-34 – 4.6-37). However, the DEIR fails to consider whether or not the Project meets any of the specific performance-based goals underlying SCAG's RTP/SCS and SB 375, such as: i) per capita GHG emission targets, or ii) daily vehicles miles traveled ("VMT") per capita benchmarks.

i. SB 375 Per Capita GHG Emission Goals

SB 375 was signed into law in September 2008 to enhance the state’s ability to reach AB 32 goals by directing CARB to develop regional 2020 and 2035 GHG emission reduction targets for passenger vehicles (autos and light-duty trucks). In March 2018, CARB adopted updated regional targets requiring a 19 percent decrease in VMT for the SCAG region by 2035. This goal is reflected in SCAG’s 2020 RTP/SCS Program Environmental Impact Report (“PEIR”),⁵⁵ in which the 2020 RTP/SCS PEIR updates the per capita emissions to 18.8 lbs/day in 2035 (see excerpt below).⁵⁶

**Table 3.8-10
SB 375 Analysis**

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

Note:

/a/ Based on EMFAC2007

/b/ Based on EMFAC2014 and SCAG modeling, 2019.

/c/ Includes off-model adjustments for 2035 and 2045

Source: SCAG modeling, 2019.

<http://www.scag.ca.gov/committees/CommitteeDocLibrary/jointRCPC110515fullagn.pdf>

In order to evaluate consistency with this SB 375 objective and SCAG’s RTP/SCS performance-based goal, SWAPE calculated the Project’s per-capita CO₂ emissions from passenger and light duty vehicles (calculations attached hereto as Attachment B). First, total annual GHG mobile emissions were multiplied by the percentage of auto and light-duty truck fleet mix, then converted into total pounds per day, then divided by the estimated service population of 674. The below table shows the per capita emissions for the Project based on SWAPE’s updated modeling (see table below and Attachment B).

⁵⁵ “Connect SoCal Certified Final Program Environmental Impact Report.” SCAG, May 2020, *available at:* https://scag.ca.gov/sites/main/files/file-attachments/fpeir_connectsocal_complete.pdf?1607981618.

⁵⁶ “Connect SoCal Certified Final Program Environmental Impact Report.” SCAG, May 2020, *available at:* https://scag.ca.gov/sites/main/files/file-attachments/fpeir_connectsocal_complete.pdf?1607981618, p. 3.8-74.

CO ₂ e Per Capita Emissions from Passenger & Light-Duty Trucks,	
Exceedances under RTP/SCS Performance-Based SB 375 Goals	
Sources	Project
	SWAPE Modeling
Annual Mobile Emissions (MT CO ₂ e/year)	2,553.25
Passenger & Light-Duty Fleet Mix (%)	91.23%
Daily CO ₂ e Emissions (lbs/day)	14,068.52
Service Population	674
Per Capita Emissions (lbs/day)	20.87
18.8 lbs/day/SP (2045 Target) Exceeded?	Yes

As shown in the above table, when utilizing the DEIR's modeling, the Project would result in 20.87 pounds per day per service population ("lbs/day/SP") emissions. This exceeds SCAG's 2035 target of 18.8-lbs/day/SP, indicating that the Project is inconsistent with SB 375 and SCAG's RTP/SCS.

i. SB 375 RTP/SCS Daily VMT Per Capita Target

Under the SCAG's 2020 RTP/SCS, daily VMT per capita in the SCAG region should decrease from 23.2 VMT in 2016 to 20.7 VMT by 2045.⁵⁷ Daily VMT per capita in Los Angeles County should decrease from 22.2 to 19.2 VMT during that same period.⁵⁸

Here, however, the DEIR fails to consider any of the above-mentioned performance-based VMT targets. In order to evaluate consistency with the RTP/SCS's performance-based VMT reduction targets, SWAPE calculated the Project's VMT from passenger and light duty vehicles (calculations attached hereto as Attachment B). First, annual VMTs from passenger automobile and light-duty vehicle were calculated based on the CalEEMod default fleet mix, converted into daily VMT, and divided by the estimated service population of 674. The below table shows the daily VMT per capita for the Project based on SWAPE's updated modeling (see table below and Attachment B).

⁵⁷ "Connect SoCal." SCAG, September 2020, available at: https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocial-plan_0.pdf?1606001176, pp. 138.

⁵⁸ "Connect SoCal." SCAG, September 2020, available at: https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocial-plan_0.pdf?1606001176, pp. 138.

Daily VMT Per Capita from Passenger & Light-Duty Trucks, Exceedances under RTP/SCS Performance-Based SB 375 Target	
Sources	Project
	SWAPE Modeling
Annual VMT from Auto & Light-Duty Vehicles	5,937,594
Daily VMT from Auto & Light-Duty Vehicles	16,267
Service Population	674
Daily VMT Per Capita	24.14
2020 RTP/SCS Benchmarks, SCAG-Wide	
23.2 VMT (2016 Baseline) Exceed?	Yes
20.7 VMT (2045 Target) Exceed?	Yes
2020 RTP/SCS Benchmarks, Los Angeles County	
22.2 VMT (2016 Baseline) Exceed?	Yes
19.2 VMT (2045 Target) Exceed?	Yes

As shown in the above table, based on a service population of 674, the Project would result in 24.14 VMT per capita from passenger auto and light-duty truck vehicles. This exceeds all SCAG-wide and Los Angeles County-specific benchmarks and targets under SCAG's 2020 RTP/SCS. Thus, based on SWAPE's updated modeling, the Project would exceed the 2016 baseline and 2045 target VMT per capita values for both Los Angeles County and the SCAG region as a whole, indicating that the Project conflicts with the SCAG's RTP/SCS and SB 375.

Feasible Mitigation Measures Available to Reduce Emissions

Our analysis demonstrates that the Project would result in potentially significant health risk and GHG impacts that should be mitigated further. In an effort to reduce the Project's emissions, we identified several mitigation measures that are applicable to the proposed Project. Feasible mitigation measures can be found in CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures*.⁵⁹ Therefore, to reduce the Project's emissions, consideration of the following measures should be made:

CAPCOA's <i>Quantifying Greenhouse Gas Mitigation Measures</i> ⁶⁰	
Measures – Energy	
Building Energy Use	
Install Programmable Thermostat Timers	
Obtain Third-party HVAC Commissioning and Verification of Energy Savings	

⁵⁹ <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>

⁶⁰ "Quantifying Greenhouse Gas Mitigation Measures." California Air Pollution Control Officers Association (CAPCOA), August 2010, available at: <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>, p.

Install Energy Efficient Appliances
Install Energy Efficient Boilers
<i>Lighting</i>
Install Higher Efficacy Public Street and Area Lighting
Limit Outdoor Lighting Requirements
Replace Traffic Lights with LED Traffic Lights
<i>Alternative Energy Generation</i>
Establish Onsite Renewable or Carbon-Neutral Energy Systems
Establish Onsite Renewable Energy System – Solar Power
Utilize a Combined Heat and Power System
Measures – Transportation
<i>Land Use/Location</i>
Increase Density
Increase Destination Accessibility
Integrate Affordable and Below Market Rate Housing
<i>Neighborhood/Site Enhancements</i>
Provide Pedestrian Network Improvements, such as: • Compact, mixed-use communities • Interconnected street network • Narrower roadways and shorter block lengths • Sidewalks • Accessibility to transit and transit shelters • Traffic calming measures and street trees • Parks and public spaces • Minimize pedestrian barriers
Provide Traffic Calming Measures, such as: • Marked crosswalks • Count-down signal timers • Curb extensions • Speed tables • Raised crosswalks • Raised intersections • Median islands • Tight corner radii • Roundabouts or mini-circles • On-street parking • Planter strips with trees • Chicanes/chokers
Implement a Neighborhood Electric Vehicle (NEV) Network.
Create Urban Non-Motorized Zones

Dedicate Land for Bike Trails
<i>Parking Policy/Pricing</i>
Limit Parking Supply through: • Elimination (or reduction) of minimum parking requirements • Creation of maximum parking requirements • Provision of shared parking
Unbundle Parking Costs from Property Cost
Implement Market Price Public Parking (On-Street)
Require Residential Area Parking Permits
<i>Commute Trip Reduction Programs</i>
Implement Commute Trip Reduction (CTR) Program – Voluntary • Carpooling encouragement • Ride-matching assistance • Preferential carpool parking • Flexible work schedules for carpools • Half time transportation coordinator • Vanpool assistance • Bicycle end-trip facilities (parking, showers and lockers) • New employee orientation of trip reduction and alternative mode options • Event promotions and publications • Flexible work schedule for employees • Transit subsidies • Parking cash-out or priced parking • Shuttles • Emergency ride home
Implement Commute Trip Reduction (CTR) Program – Required Implementation/Monitoring • Established performance standards (e.g. trip reduction requirements) • Required implementation • Regular monitoring and reporting
Provide Ride-Sharing Programs • Designate a certain percentage of parking spaces for ride sharing vehicles • Designating adequate passenger loading and unloading and waiting areas for ride-sharing vehicles • Providing a web site or messaging board for coordinating rides • Permanent transportation management association membership and funding requirement.
Implement Subsidized or Discounted Transit Program
Provide End of Trip Facilities, including: • Showers • Secure bicycle lockers • Changing spaces
Encourage Telecommuting and Alternative Work Schedules, such as: • Staggered starting times • Flexible schedules

Compressed work weeks
Implement Commute Trip Reduction Marketing, such as: - New employee orientation of trip reduction and alternative mode options - Event promotions - Publications
Implement Preferential Parking Permit Program
Implement Car-Sharing Program
Provide Employer-Sponsored Vanpool/Shuttle
Implement Bike-Sharing Programs
Price Workplace Parking, such as: - Explicitly charging for parking for its employees; - Implementing above market rate pricing; - Validating parking only for invited guests; - Not providing employee parking and transportation allowances; and - Educating employees about available alternatives.
Implement Employee Parking “Cash-Out”
<i>Transit System Improvements</i>
Transit System Improvements, including: - Grade-separated right-of-way, including bus only lanes (for buses, emergency vehicles, and sometimes taxis), and other Transit Priority measures. Some systems use guideways which automatically steer the bus on portions of the route. - Frequent, high-capacity service - High-quality vehicles that are easy to board, quiet, clean, and comfortable to ride. - Pre-paid fare collection to minimize boarding delays. - Integrated fare systems, allowing free or discounted transfers between routes and modes. - Convenient user information and marketing programs. - High quality bus stations with Transit Oriented Development in nearby areas. - Modal integration, with BRT service coordinated with walking and cycling facilities, taxi services, intercity bus, rail transit, and other transportation services.
Implement Transit Access Improvements, such as: - Sidewalk/crosswalk safety enhancements - Bus shelter improvements
Expand Transit Network
Increase Transit Service Frequency/Speed
Provide Local Shuttles
<i>Road Pricing/Management</i>
Implement Area or Cordon Pricing
Improve Traffic Flow, such as: - Signalization improvements to reduce delay; - Incident management to increase response time to breakdowns and collisions;

- Intelligent Transportation Systems (ITS) to provide real-time information regarding road conditions and directions; and - Speed management to reduce high free-flow speeds.
Required Project Contributions to Transportation Infrastructure Improvement Projects
Install Park-and-Ride Lots
<i>Vehicles</i>
Utilize Alternative Fueled Vehicles, such as: - Biodiesel (B20) - Liquefied Natural Gas (LNG) - Compressed Natural Gas (CNG)
Utilize Electric or Hybrid Vehicles
Measures – Water
<i>Water Supply</i>
Use Reclaimed Water
Use Gray Water
Use Locally Sourced Water Supply
<i>Water Use</i>
Install Low-Flow Water Fixtures
Adopt a Water Conservation strategy
Design Water-Efficient Landscapes (see California Department of Water Resources Model Water Efficient Landscape Ordinance), such as: - Reducing lawn sizes; - Planting vegetation with minimal water needs, such as native species; - Choosing vegetation appropriate for the climate of the project site; - Choosing complimentary plants with similar water needs or which can provide each other with shade and/or water.
Use Water-Efficient Landscape Irrigation Systems (“Smart” irrigation control systems)
Reduce Turf in Landscapes and Lawns
Measures – Area Landscaping
<i>Landscaping Equipment</i>
Prohibit Gas Powered Landscape Equipment
Electric Yard Equipment Compatibility
Measures – Solid Waste
<i>Solid Waste</i>
Recycle Demolished Construction Material
Measures – Vegetation
<i>Vegetation</i>
Urban Tree Planting

Create New Vegetated Open Space
Measures – Construction
Construction
Use Alternative Fuels for Construction Equipment
Urban Tree Planting
Use Electric and Hybrid Construction Equipment
Limit Construction Equipment Idling Beyond Regulation Requirements
Institute a Heavy-Duty Off-Road Vehicle Plan, including: • Construction vehicle inventory tracking system; • Requiring hour meters on equipment; • Document the serial number, horsepower, manufacture age, fuel, etc. of all onsite equipment; and • Daily logging of the operating hours of the equipment.
Implement a Construction Vehicle Inventory Tracking System
Measures – Miscellaneous
Miscellaneous
Establish a Carbon Sequestration Project, such as: • Geologic sequestration or carbon capture and storage techniques, in which CO₂ from point sources is captured and injected underground; • Terrestrial sequestration in which ecosystems are established or preserved to serve as CO₂ sinks; • Novel techniques involving advanced chemical or biological pathways; or • Technologies yet to be discovered.
Establish Off-Site Mitigation
Use Local and Sustainable Building Materials
Require Environmentally Responsible Purchasing, such as: • Purchasing products with sustainable packaging; • Purchasing post-consumer recycled copier paper, paper towels, and stationary; • Purchasing and stocking communal kitchens with reusable dishes and utensils; • Choosing sustainable cleaning supplies; • Leasing equipment from manufacturers who will recycle the components at their end of life; • Choosing ENERGY STAR appliances and Water Sense-certified water fixtures; • Choosing electronic appliances with built in sleep-mode timers; • Purchasing ‘green power’ (e.g. electricity generated from renewable or hydropower) from the utility; and • Choosing locally-made and distributed products.

Furthermore, in an effort to reduce the Project’s emissions, we identified several mitigation measures that are applicable to the proposed Project from NEDC’s *Diesel Emission Controls in Construction*

Projects.⁶¹ Therefore, to reduce the Project’s emissions, consideration of the following measures should be made:

NEDC’s Diesel Emission Controls in Construction Projects⁶²	
Measures – Diesel Emission Control Technology	
a.	Diesel Onroad Vehicles All diesel nonroad vehicles on site for more than 10 total days must have either (1) engines that meet EPA onroad emissions standards or (2) emission control technology verified by EPA or CARB to reduce PM emissions by a minimum of 85%.
b.	Diesel Generators All diesel generators on site for more than 10 total days must be equipped with emission control technology verified by EPA or CARB to reduce PM emissions by a minimum of 85%.
c.	Emission control technology shall be operated, maintained, and serviced as recommended by the emission control technology manufacturer.
Measures – Additional Diesel Requirements	
a.	Construction shall not proceed until the contractor submits a certified 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.
b.	If the contractor subsequently needs to bring on site equipment not on the list, the contractor shall submit written notification within 24 hours that attests the equipment complies with all contract conditions and provide information.
c.	All diesel equipment shall comply with all pertinent local, state, and federal regulations relative to exhaust emission controls and safety.
d.	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.
Reporting	
a.	For each onroad diesel vehicle, nonroad construction equipment, or generator, the contractor shall submit to the developer’s representative a report prior to bringing said equipment on site that includes: i. Equipment type, equipment manufacturer, equipment serial number, engine manufacturer, engine model year, engine certification (Tier rating), horsepower, and engine serial number.

⁶¹ “Diesel Emission Controls in Construction Projects.” Northeast Diesel Collaborative (NEDC), December 2010, available at: <https://www.epa.gov/sites/production/files/2015-09/documents/nedc-model-contract-sepcification.pdf>.

⁶² “Diesel Emission Controls in Construction Projects.” Northeast Diesel Collaborative (NEDC), December 2010, available at: <https://www.epa.gov/sites/production/files/2015-09/documents/nedc-model-contract-sepcification.pdf>.

ii.	The type of emission control technology installed, serial number, make, model, manufacturer, and EPA/CARB verification number/level.
iii.	The Certification Statement signed and printed on the contractor's letterhead.
b.	The contractor shall submit to the developer's representative a monthly report that, for each onroad 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. Quality of fuel, including sulfur content (percent by weight)

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 updated EIR should be prepared to include all feasible mitigation measures, as well as include an updated health risk and GHG analysis 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:	SWAPE Health Risk Calculations
Attachment B:	SWAPE GHG and VMT Calculations
Attachment C:	SWAPE Project CalEEMod Modeling
Attachment D:	SWAPE Project AERSCREEN Modeling
Attachment E:	Paul Rosenfeld CV
Attachment F:	Matt Hagemann CV

Operation	
Emission Rate	
Annual Emissions (tons/year)	0.0437
Daily Emissions (lbs/day)	0.239452055
Emission Rate (g/s)	0.00126
Release Height (meters)	3
Initial Vertical Dimension (meters)	1.5
Max Horizontal (meters)	256.0
Min Horizontal (meters)	101.0
Total Acreage	6.389151095
Setting	Urban
Population	16,731
Total Pounds of DPM	
Total DPM (lbs)	87.4

The Maximum Exposed Individual at an Existing Residential Receptor (MEIR)

Activity	Duration (years)	Concentration (ug/m3)	Breathing Rate (L/kg-day)	ASF	Cancer Risk with ASFs*
Total Construction	2.83				4.2E-06
Operation	13.42	0.1937	572	3	6.7E-05
<i>Child Exposure Duration</i>	13.42			<i>Child Exposure</i>	6.7E-05
Operation	14.00	0.1937	261	1	7.8E-06
<i>Adult Exposure Duration</i>	14.00			<i>Adult Exposure</i>	7.8E-06
Lifetime Exposure Duration	30.25			Lifetime Exposure	7.9E-05

Attachment B

GHG CALCULATIONS: SWAPE Modeling

Line (L)	Value	Unit
Total Emissions From Passenger and Light Duty Vehicles		
1	2,553.25	Mobile Emissions (MT CO ₂ e/year)
2	91.23%	Passenger and Light-Duty VMT Fleet Mix
3	2,329.20	Passenger and Light Duty Vehicle Emissions (MT CO ₂ e/year) [Calc: (L1*L2)]
4	14,068.52	Passenger and Light-Duty Vehicle Emissions (Total lbs CO ₂ e/day) [Calc: (L3 converted into lbs) / (365 days)]
5	674	Service Population [618 residents + 56 long-term jobs]
6	20.87	Per Service Population Emissions (lbs CO ₂ e/day/SP) [Calc: (L4/L5)]
Daily VMT Per Capita From Passenger and Light Duty Vehicles		
7	6,508,735	Project Total VMT (CalEEMod Annual Output, Tbl. 4.2 Trip Summary)
8	91.23%	Passenger and Light-Duty VMT Fleet Mix (see L2)
9	5,937,594	VMT from Passenger & Light-Duty Vehicles
10	16,267	Daily VMT from Passenger & Light-Duty Vehicles [Calc: (L9/365)]
11	674	Service Population [618 residents + 56 long-term jobs]
12	24.14	Daily VMT Per Capita [(Calc: L10/L11)]

CO ₂ e Per Capita Emissions from Passenger & Light-Duty Trucks,	
Exceedances under RTP/SCS Performance-Based SB 375 Goals	
Sources	Project
	SWAPE Modeling
Annual Mobile Emissions (MT CO ₂ e/year)	2,553.25
Passenger & Light-Duty Fleet Mix (%)	91.23%
Daily CO ₂ e Emissions (lbs/day)	14,068.52
Service Population	674
Per Capita Emissions (lbs/day)	20.87
18.8 lbs/day/SP (2035 Goal) Exceeded?	Yes

Daily VMT Per Capita from Passenger & Light-Duty Trucks,	
Exceedances under RTP/SCS Performance-Based SB 375 Target	
Sources	Project
	SWAPE Modeling
Annual VMT from Auto & Light-Duty Vehicles	5,937,594
Daily VMT from Auto & Light-Duty Vehicles	16,267
Service Population	674
Daily VMT Per Capita	24.14
2020 RTP/SCS Benchmarks, SCAG-Wide	
23.2 VMT (2016 Baseline) Exceed?	Yes
20.7 VMT (2045 Target) Exceed?	Yes
2020 RTP/SCS Benchmarks, Los Angeles County	
22.2 VMT (2016 Baseline) Exceed?	Yes
19.2 VMT (2045 Target) Exceed?	Yes

2017 Scoping Plan Daily VMT Per Capita						
	Los Angeles County			State		
Year	Population	LDV VMT Baseline	VMT Per Capita	Population	LDV VMT Baseline	VMT Per Capita
2010	9,838,771	216,979,221.64	22.05	37,335,085	836,463,980.46	22.40
2025	10,671,800	217,340,094.90	20.37	42,326,397	929,443,512.65	21.96
2030	10,868,614	215,539,586.12	19.83	43,939,250	957,178,153.19	21.78

Daily VMT Per Capita from Passenger & Light-Duty Trucks, Exceedances under 2017 Scoping Plan Performance-Based SB 375 Benchmarks	
Sources	Project
	SWAPE Modeling
Annual VMT from Auto & Light-Duty Vehicles	5,937,594
Daily VMT from Auto & Light-Duty Vehicles	16,267
Service Population	674
Daily VMT Per Capita	24.14
2017 Scoping Plan Benchmarks, Statewide	
22.40 VMT (2010 Baseline) Exceed?	Yes
21.96 VMT (2025 Projected) Exceed?	Yes
21.78 VMT (2030 Projected) Exceed?	Yes
2017 Scoping Plan Benchmarks, Los Angeles County Specific	
22.05 VMT (2010 Baseline) Exceed?	Yes
20.37 VMT (2025 Projected) Exceed?	Yes
19.83 VMT (2030 Projected) Exceed?	Yes

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Annual

Pacific Coast Commons Specific Plan Project
South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	792.00	Space	0.00	316,800.00	0
Other Asphalt Surfaces	12.65	1000sqft	0.00	12,650.00	0
High Turnover (Sit Down Restaurant)	4.95	1000sqft	0.00	3,952.00	0
Apartments Mid Rise	263.00	Dwelling Unit	0.00	327,021.00	752
Regional Shopping Center	7.30	1000sqft	5.35	7,300.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	8			Operational Year	2025
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	561.77	CH4 Intensity (lb/MW hr)	0.02	N2O Intensity (lb/MW hr)	0.005

1.3 User Entered Comments & Non-Default Data

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Annual

Project Characteristics - Consistent with the DEIR's model.

Land Use - See SWAPE comment regarding underestimated land use sizes.

Construction Phase - Consistent with the DEIR's model.

Trips and VMT - See SWAPE comment regarding hauling trips. Worker and vendor trips consistent with the DEIR's model.

On-road Fugitive Dust -

Demolition - See SWAPE comment regarding demolition.

Grading - See SWAPE comment regarding acres of grading values, material moisture content, and material silt content. Material export consistent with the DEIR's model.

Architectural Coating - Architectural coating EFs consistent with the DEIR's model. See SWAPE comment regarding architectural coating areas.

Vehicle Trips - See SWAPE comment regarding operational vehicle trip rates.

Woodstoves - Consistent with the DEIR's model.

Area Coating - See SWAPE comment regarding area coating areas.

Energy Use -

Water And Wastewater - See SWAPE comment regarding wastewater treatment percentages.

Construction Off-road Equipment Mitigation - See SWAPE comment regarding construction-related mitigation measures.

Mobile Land Use Mitigation - See SWAPE comment regarding operational mitigation measures.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblConstructionPhase	NumDays	20.00	43.00
tblConstructionPhase	NumDays	20.00	44.00
tblConstructionPhase	NumDays	230.00	262.00

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Annual

tblConstructionPhase	NumDays	230.00	195.00
tblConstructionPhase	NumDays	20.00	21.00
tblConstructionPhase	NumDays	20.00	42.00
tblConstructionPhase	NumDays	20.00	44.00
tblConstructionPhase	NumDays	20.00	42.00
tblConstructionPhase	NumDays	20.00	43.00
tblConstructionPhase	NumDays	20.00	44.00
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	NumDays	10.00	22.00
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	223.55	237.00
tblFireplaces	NumberNoFireplace	26.30	26.00
tblFireplaces	NumberWood	13.15	0.00
tblGrading	MaterialExported	0.00	17,000.00
tblLandUse	LandUseSquareFeet	4,950.00	3,952.00
tblLandUse	LandUseSquareFeet	263,000.00	327,021.00
tblLandUse	LotAcreage	7.13	0.00
tblLandUse	LotAcreage	0.29	0.00
tblLandUse	LotAcreage	0.11	0.00
tblLandUse	LotAcreage	6.92	0.00
tblLandUse	LotAcreage	0.17	5.35
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.02
tblProjectCharacteristics	CO2IntensityFactor	702.44	561.77
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	84.00	60.00

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Annual

tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	84.00	30.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	WorkerTripNumber	15.00	80.00
tblTripsAndVMT	WorkerTripNumber	332.00	300.00
tblTripsAndVMT	WorkerTripNumber	15.00	80.00
tblTripsAndVMT	WorkerTripNumber	66.00	240.00
tblTripsAndVMT	WorkerTripNumber	18.00	50.00
tblTripsAndVMT	WorkerTripNumber	15.00	80.00
tblTripsAndVMT	WorkerTripNumber	332.00	120.00
tblTripsAndVMT	WorkerTripNumber	15.00	40.00
tblTripsAndVMT	WorkerTripNumber	66.00	80.00
tblTripsAndVMT	WorkerTripNumber	15.00	100.00
tblTripsAndVMT	WorkerTripNumber	18.00	120.00
tblTripsAndVMT	WorkerTripNumber	15.00	160.00
tblVehicleTrips	HS_TTP	19.20	19.40
tblVehicleTrips	HW_TTP	40.20	40.00
tblVehicleTrips	ST_TR	6.39	4.96
tblVehicleTrips	ST_TR	158.37	298.59
tblVehicleTrips	ST_TR	49.97	42.00

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tblVehicleTrips	SU_TR	5.86	5.04
tblVehicleTrips	SU_TR	131.84	205.83
tblVehicleTrips	SU_TR	25.24	23.51
tblVehicleTrips	WD_TR	6.65	5.18
tblVehicleTrips	WD_TR	127.15	179.90
tblVehicleTrips	WD_TR	42.70	36.05
tblWoodstoves	WoodstoveDayYear	25.00	0.00
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					
2021	0.1147	1.1622	0.7437	1.6700e-003	0.3552	0.0526	0.4077	0.1637	0.0485	0.2122	0.0000	150.2960	150.2960	0.0339	0.0000	151.1444
2022	1.3593	2.3980	2.6886	5.9700e-003	0.2647	0.1049	0.3696	0.0870	0.0983	0.1853	0.0000	532.1323	532.1323	0.0866	0.0000	534.2970
2023	0.3592	2.9109	3.2200	9.1800e-003	0.7656	0.1075	0.8731	0.2899	0.1002	0.3901	0.0000	832.8981	832.8981	0.1113	0.0000	835.6806
2024	1.2711	1.3401	1.9799	5.3600e-003	0.2854	0.0473	0.3327	0.0765	0.0443	0.1208	0.0000	483.9751	483.9751	0.0547	0.0000	485.3423
Maximum	1.3593	2.9109	3.2200	9.1800e-003	0.7656	0.1075	0.8731	0.2899	0.1002	0.3901	0.0000	832.8981	832.8981	0.1113	0.0000	835.6806

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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					
2021	0.1147	1.1622	0.7436	1.6700e-003	0.3552	0.0526	0.4077	0.1637	0.0485	0.2122	0.0000	150.2959	150.2959	0.0339	0.0000	151.1442
2022	1.3593	2.3980	2.6886	5.9700e-003	0.2647	0.1049	0.3696	0.0870	0.0983	0.1853	0.0000	532.1320	532.1320	0.0866	0.0000	534.2966
2023	0.3592	2.9109	3.2200	9.1800e-003	0.7656	0.1075	0.8731	0.2899	0.1002	0.3901	0.0000	832.8977	832.8977	0.1113	0.0000	835.6802
2024	1.2711	1.3401	1.9799	5.3600e-003	0.2854	0.0473	0.3327	0.0765	0.0443	0.1208	0.0000	483.9749	483.9749	0.0547	0.0000	485.3421
Maximum	1.3593	2.9109	3.2200	9.1800e-003	0.7656	0.1075	0.8731	0.2899	0.1002	0.3901	0.0000	832.8977	832.8977	0.1113	0.0000	835.6802

	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
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	10-1-2021	12-31-2021	1.2749	1.2749
2	1-1-2022	3-31-2022	0.7105	0.7105
3	4-1-2022	6-30-2022	0.6789	0.6789
4	7-1-2022	9-30-2022	0.6863	0.6863
5	10-1-2022	12-31-2022	1.6766	1.6766
6	1-1-2023	3-31-2023	0.9521	0.9521
7	4-1-2023	6-30-2023	0.8759	0.8759
8	7-1-2023	9-30-2023	0.7218	0.7218

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9	10-1-2023	12-31-2023	0.7269	0.7269
10	1-1-2024	3-31-2024	0.6806	0.6806
11	4-1-2024	6-30-2024	1.1803	1.1803
12	7-1-2024	9-30-2024	0.7515	0.7515
		Highest	1.6766	1.6766

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	1.4385	0.0313	2.7201	1.4000e-004		0.0151	0.0151		0.0151	0.0151	0.0000	4.4507	4.4507	4.3000e-003	0.0000	4.5580
Energy	0.0218	0.1894	0.1017	1.1900e-003		0.0151	0.0151		0.0151	0.0151	0.0000	1,013.3250	1,013.3250	0.0325	0.0111	1,017.4326
Mobile	0.5540	2.7968	6.6649	0.0275	2.4727	0.0200	2.4927	0.6625	0.0186	0.6810	0.0000	2,550.3837	2,550.3837	0.1146	0.0000	2,553.2478
Waste						0.0000	0.0000		0.0000	0.0000	38.0730	0.0000	38.0730	2.2501	0.0000	94.3242
Water						0.0000	0.0000		0.0000	0.0000	6.0845	95.4263	101.5108	0.6283	0.0156	121.8697
Total	2.0143	3.0176	9.4867	0.0288	2.4727	0.0501	2.5228	0.6625	0.0487	0.7112	44.1575	3,663.5856	3,707.7431	3.0298	0.0267	3,791.4324

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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	1.4385	0.0313	2.7201	1.4000e-004		0.0151	0.0151		0.0151	0.0151	0.0000	4.4507	4.4507	4.3000e-003	0.0000	4.5580
Energy	0.0218	0.1894	0.1017	1.1900e-003		0.0151	0.0151		0.0151	0.0151	0.0000	1,013.3250	1,013.3250	0.0325	0.0111	1,017.4326
Mobile	0.5540	2.7968	6.6649	0.0275	2.4727	0.0200	2.4927	0.6625	0.0186	0.6810	0.0000	2,550.3837	2,550.3837	0.1146	0.0000	2,553.2478
Waste						0.0000	0.0000		0.0000	0.0000	38.0730	0.0000	38.0730	2.2501	0.0000	94.3242
Water						0.0000	0.0000		0.0000	0.0000	6.0845	95.4263	101.5108	0.6283	0.0156	121.8697
Total	2.0143	3.0176	9.4867	0.0288	2.4727	0.0501	2.5228	0.6625	0.0487	0.7112	44.1575	3,663.5856	3,707.7431	3.0298	0.0267	3,791.4324

	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
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**

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition - Phase 1	Demolition	10/1/2021	10/31/2021	5	21	
2	Site Preparation - Phase 1	Site Preparation	11/1/2021	11/30/2021	5	22	
3	Grading - Phase 1	Grading	12/1/2021	1/31/2022	5	44	
4	Building Construction - Phase 1	Building Construction	2/1/2022	10/31/2022	5	195	
5	Paving - Phase 1	Paving	11/1/2022	12/31/2022	5	44	
6	Architectural Coating - Phase 1	Architectural Coating	11/1/2022	12/31/2022	5	44	
7	Demolition - Phases 2 and 3	Demolition	1/1/2023	2/28/2023	5	42	
8	Site Preparation - Phases 2 and 3	Site Preparation	3/1/2023	3/30/2023	5	22	
9	Grading - Phases 2 and 3	Grading	4/1/2023	5/30/2023	5	42	
10	Building Construction - Phases 2 and 3	Building Construction	6/1/2023	5/31/2024	5	262	
11	Paving - Phases 2 and 3	Paving	6/1/2024	7/31/2024	5	43	
12	Architectural Coating - Phases 2 and 3	Architectural Coating	6/1/2024	7/31/2024	5	43	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 662,218; Residential Outdoor: 220,739; Non-Residential Indoor: 18,378; Non-Residential Outdoor: 6,126; Striped Parking Area: 19,767 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition - Phase 1	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition - Phase 1	Excavators	3	8.00	158	0.38
Demolition - Phase 1	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation - Phase 1	Rubber Tired Dozers	3	8.00	247	0.40

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Site Preparation - Phase 1	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading - Phase 1	Excavators	1	8.00	158	0.38
Grading - Phase 1	Graders	1	8.00	187	0.41
Grading - Phase 1	Rubber Tired Dozers	1	8.00	247	0.40
Grading - Phase 1	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction - Phase 1	Cranes	1	7.00	231	0.29
Building Construction - Phase 1	Forklifts	3	8.00	89	0.20
Building Construction - Phase 1	Generator Sets	1	8.00	84	0.74
Building Construction - Phase 1	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction - Phase 1	Welders	1	8.00	46	0.45
Paving - Phase 1	Pavers	2	8.00	130	0.42
Paving - Phase 1	Paving Equipment	2	8.00	132	0.36
Paving - Phase 1	Rollers	2	8.00	80	0.38
Architectural Coating - Phase 1	Air Compressors	1	6.00	78	0.48
Demolition - Phases 2 and 3	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition - Phases 2 and 3	Excavators	3	8.00	158	0.38
Demolition - Phases 2 and 3	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation - Phases 2 and 3	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation - Phases 2 and 3	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading - Phases 2 and 3	Excavators	1	8.00	158	0.38
Grading - Phases 2 and 3	Graders	1	8.00	187	0.41
Grading - Phases 2 and 3	Rubber Tired Dozers	1	8.00	247	0.40
Grading - Phases 2 and 3	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction - Phases 2 and 3	Cranes	1	7.00	231	0.29
Building Construction - Phases 2 and 3	Forklifts	3	8.00	89	0.20
Building Construction - Phases 2 and 3	Generator Sets	1	8.00	84	0.74
Building Construction - Phases 2 and 3	Tractors/Loaders/Backhoes	3	7.00	97	0.37

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Building Construction - Phases 2 and 3	Welders	1	8.00	46	0.45
Paving - Phases 2 and 3	Pavers	2	8.00	130	0.42
Paving - Phases 2 and 3	Paving Equipment	2	8.00	132	0.36
Paving - Phases 2 and 3	Rollers	2	8.00	80	0.38
Architectural Coating - Phases 2 and 3	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 - Phase 1	6	80.00	20.00	406.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation - Phase 1	7	50.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading - Phase 1	6	80.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction - Phase 1	9	120.00	30.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving - Phase 1	6	40.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating - Phase 1	1	80.00	20.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition - Phases 2 and 3	6	100.00	40.00	406.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation - Phases 2 and 3	7	120.00	20.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading - Phases 2 and 3	6	160.00	20.00	2,125.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction - Phases 2 and 3	9	300.00	60.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving - Phases 2 and 3	6	80.00	20.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating - Phases 2 and 3	1	240.00	40.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

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3.2 Demolition - Phase 1 - 2021**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					0.0440	0.0000	0.0440	6.6600e-003	0.0000	6.6600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0332	0.3301	0.2264	4.1000e-004		0.0163	0.0163		0.0151	0.0151	0.0000	35.7008	35.7008	0.0101	0.0000	35.9520
Total	0.0332	0.3301	0.2264	4.1000e-004	0.0440	0.0163	0.0603	6.6600e-003	0.0151	0.0218	0.0000	35.7008	35.7008	0.0101	0.0000	35.9520

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	1.4900e-003	0.0529	0.0112	1.5000e-004	3.4900e-003	1.6000e-004	3.6500e-003	9.6000e-004	1.5000e-004	1.1100e-003	0.0000	15.1580	15.1580	1.0400e-003	0.0000	15.1839
Vendor	6.0000e-004	0.0203	5.0400e-003	5.0000e-005	1.3200e-003	4.0000e-005	1.3600e-003	3.8000e-004	4.0000e-005	4.2000e-004	0.0000	5.1271	5.1271	3.2000e-004	0.0000	5.1352
Worker	3.5000e-003	2.5900e-003	0.0293	9.0000e-005	9.2200e-003	7.0000e-005	9.2900e-003	2.4500e-003	6.0000e-005	2.5100e-003	0.0000	8.0275	8.0275	2.2000e-004	0.0000	8.0329
Total	5.5900e-003	0.0758	0.0455	2.9000e-004	0.0140	2.7000e-004	0.0143	3.7900e-003	2.5000e-004	4.0400e-003	0.0000	28.3126	28.3126	1.5800e-003	0.0000	28.3521

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3.2 Demolition - Phase 1 - 2021**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					0.0440	0.0000	0.0440	6.6600e-003	0.0000	6.6600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0332	0.3301	0.2264	4.1000e-004		0.0163	0.0163		0.0151	0.0151	0.0000	35.7008	35.7008	0.0101	0.0000	35.9520
Total	0.0332	0.3301	0.2264	4.1000e-004	0.0440	0.0163	0.0603	6.6600e-003	0.0151	0.0218	0.0000	35.7008	35.7008	0.0101	0.0000	35.9520

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	1.4900e-003	0.0529	0.0112	1.5000e-004	3.4900e-003	1.6000e-004	3.6500e-003	9.6000e-004	1.5000e-004	1.1100e-003	0.0000	15.1580	15.1580	1.0400e-003	0.0000	15.1839
Vendor	6.0000e-004	0.0203	5.0400e-003	5.0000e-005	1.3200e-003	4.0000e-005	1.3600e-003	3.8000e-004	4.0000e-005	4.2000e-004	0.0000	5.1271	5.1271	3.2000e-004	0.0000	5.1352
Worker	3.5000e-003	2.5900e-003	0.0293	9.0000e-005	9.2200e-003	7.0000e-005	9.2900e-003	2.4500e-003	6.0000e-005	2.5100e-003	0.0000	8.0275	8.0275	2.2000e-004	0.0000	8.0329
Total	5.5900e-003	0.0758	0.0455	2.9000e-004	0.0140	2.7000e-004	0.0143	3.7900e-003	2.5000e-004	4.0400e-003	0.0000	28.3126	28.3126	1.5800e-003	0.0000	28.3521

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3.3 Site Preparation - Phase 1 - 2021**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					0.1987	0.0000	0.1987	0.1092	0.0000	0.1092	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0428	0.4455	0.2327	4.2000e-004		0.0225	0.0225		0.0207	0.0207	0.0000	36.7793	36.7793	0.0119	0.0000	37.0767
Total	0.0428	0.4455	0.2327	4.2000e-004	0.1987	0.0225	0.2212	0.1092	0.0207	0.1299	0.0000	36.7793	36.7793	0.0119	0.0000	37.0767

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	3.1000e-004	0.0106	2.6400e-003	3.0000e-005	6.9000e-004	2.0000e-005	7.1000e-004	2.0000e-004	2.0000e-005	2.2000e-004	0.0000	2.6856	2.6856	1.7000e-004	0.0000	2.6899
Worker	2.2900e-003	1.6900e-003	0.0192	6.0000e-005	6.0300e-003	5.0000e-005	6.0800e-003	1.6000e-003	4.0000e-005	1.6400e-003	0.0000	5.2561	5.2561	1.4000e-004	0.0000	5.2597
Total	2.6000e-003	0.0123	0.0218	9.0000e-005	6.7200e-003	7.0000e-005	6.7900e-003	1.8000e-003	6.0000e-005	1.8600e-003	0.0000	7.9417	7.9417	3.1000e-004	0.0000	7.9495

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3.3 Site Preparation - Phase 1 - 2021**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					0.1987	0.0000	0.1987	0.1092	0.0000	0.1092	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0428	0.4455	0.2327	4.2000e-004		0.0225	0.0225		0.0207	0.0207	0.0000	36.7792	36.7792	0.0119	0.0000	37.0766
Total	0.0428	0.4455	0.2327	4.2000e-004	0.1987	0.0225	0.2212	0.1092	0.0207	0.1299	0.0000	36.7792	36.7792	0.0119	0.0000	37.0766

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	3.1000e-004	0.0106	2.6400e-003	3.0000e-005	6.9000e-004	2.0000e-005	7.1000e-004	2.0000e-004	2.0000e-005	2.2000e-004	0.0000	2.6856	2.6856	1.7000e-004	0.0000	2.6899
Worker	2.2900e-003	1.6900e-003	0.0192	6.0000e-005	6.0300e-003	5.0000e-005	6.0800e-003	1.6000e-003	4.0000e-005	1.6400e-003	0.0000	5.2561	5.2561	1.4000e-004	0.0000	5.2597
Total	2.6000e-003	0.0123	0.0218	9.0000e-005	6.7200e-003	7.0000e-005	6.7900e-003	1.8000e-003	6.0000e-005	1.8600e-003	0.0000	7.9417	7.9417	3.1000e-004	0.0000	7.9495

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3.4 Grading - Phase 1 - 2021**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					0.0809	0.0000	0.0809	0.0393	0.0000	0.0393	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0263	0.2845	0.1824	3.4000e-004		0.0133	0.0133		0.0123	0.0123	0.0000	29.9618	29.9618	9.6900e-003	0.0000	30.2040
Total	0.0263	0.2845	0.1824	3.4000e-004	0.0809	0.0133	0.0943	0.0393	0.0123	0.0516	0.0000	29.9618	29.9618	9.6900e-003	0.0000	30.2040

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	3.3000e-004	0.0111	2.7600e-003	3.0000e-005	7.2000e-004	2.0000e-005	7.5000e-004	2.1000e-004	2.0000e-005	2.3000e-004	0.0000	2.8077	2.8077	1.8000e-004	0.0000	2.8121
Worker	3.8300e-003	2.8300e-003	0.0321	1.0000e-004	0.0101	8.0000e-005	0.0102	2.6800e-003	7.0000e-005	2.7500e-003	0.0000	8.7921	8.7921	2.4000e-004	0.0000	8.7980
Total	4.1600e-003	0.0140	0.0348	1.3000e-004	0.0108	1.0000e-004	0.0109	2.8900e-003	9.0000e-005	2.9800e-003	0.0000	11.5998	11.5998	4.2000e-004	0.0000	11.6101

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3.4 Grading - Phase 1 - 2021**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					0.0809	0.0000	0.0809	0.0393	0.0000	0.0393	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0263	0.2845	0.1824	3.4000e-004		0.0133	0.0133		0.0123	0.0123	0.0000	29.9617	29.9617	9.6900e-003	0.0000	30.2040
Total	0.0263	0.2845	0.1824	3.4000e-004	0.0809	0.0133	0.0943	0.0393	0.0123	0.0516	0.0000	29.9617	29.9617	9.6900e-003	0.0000	30.2040

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	3.3000e-004	0.0111	2.7600e-003	3.0000e-005	7.2000e-004	2.0000e-005	7.5000e-004	2.1000e-004	2.0000e-005	2.3000e-004	0.0000	2.8077	2.8077	1.8000e-004	0.0000	2.8121
Worker	3.8300e-003	2.8300e-003	0.0321	1.0000e-004	0.0101	8.0000e-005	0.0102	2.6800e-003	7.0000e-005	2.7500e-003	0.0000	8.7921	8.7921	2.4000e-004	0.0000	8.7980
Total	4.1600e-003	0.0140	0.0348	1.3000e-004	0.0108	1.0000e-004	0.0109	2.8900e-003	9.0000e-005	2.9800e-003	0.0000	11.5998	11.5998	4.2000e-004	0.0000	11.6101

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3.4 Grading - Phase 1 - 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					0.0749	0.0000	0.0749	0.0360	0.0000	0.0360	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0205	0.2190	0.1604	3.1000e-004		9.8800e-003	9.8800e-003		9.0900e-003	9.0900e-003	0.0000	27.3575	27.3575	8.8500e-003	0.0000	27.5787
Total	0.0205	0.2190	0.1604	3.1000e-004	0.0749	9.8800e-003	0.0848	0.0360	9.0900e-003	0.0451	0.0000	27.3575	27.3575	8.8500e-003	0.0000	27.5787

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	2.8000e-004	9.6300e-003	2.3800e-003	3.0000e-005	6.6000e-004	2.0000e-005	6.8000e-004	1.9000e-004	2.0000e-005	2.1000e-004	0.0000	2.5410	2.5410	1.6000e-004	0.0000	2.5449
Worker	3.2900e-003	2.3400e-003	0.0270	9.0000e-005	9.2200e-003	7.0000e-005	9.2800e-003	2.4500e-003	6.0000e-005	2.5100e-003	0.0000	7.7397	7.7397	1.9000e-004	0.0000	7.7446
Total	3.5700e-003	0.0120	0.0294	1.2000e-004	9.8800e-003	9.0000e-005	9.9600e-003	2.6400e-003	8.0000e-005	2.7200e-003	0.0000	10.2807	10.2807	3.5000e-004	0.0000	10.2895

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3.4 Grading - Phase 1 - 2022**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					0.0749	0.0000	0.0749	0.0360	0.0000	0.0360	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0205	0.2190	0.1604	3.1000e-004		9.8800e-003	9.8800e-003		9.0900e-003	9.0900e-003	0.0000	27.3575	27.3575	8.8500e-003	0.0000	27.5787
Total	0.0205	0.2190	0.1604	3.1000e-004	0.0749	9.8800e-003	0.0848	0.0360	9.0900e-003	0.0451	0.0000	27.3575	27.3575	8.8500e-003	0.0000	27.5787

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	2.8000e-004	9.6300e-003	2.3800e-003	3.0000e-005	6.6000e-004	2.0000e-005	6.8000e-004	1.9000e-004	2.0000e-005	2.1000e-004	0.0000	2.5410	2.5410	1.6000e-004	0.0000	2.5449
Worker	3.2900e-003	2.3400e-003	0.0270	9.0000e-005	9.2200e-003	7.0000e-005	9.2800e-003	2.4500e-003	6.0000e-005	2.5100e-003	0.0000	7.7397	7.7397	1.9000e-004	0.0000	7.7446
Total	3.5700e-003	0.0120	0.0294	1.2000e-004	9.8800e-003	9.0000e-005	9.9600e-003	2.6400e-003	8.0000e-005	2.7200e-003	0.0000	10.2807	10.2807	3.5000e-004	0.0000	10.2895

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3.5 Building Construction - Phase 1 - 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	0.1664	1.5225	1.5954	2.6300e-003		0.0789	0.0789		0.0742	0.0742	0.0000	225.9321	225.9321	0.0541	0.0000	227.2853
Total	0.1664	1.5225	1.5954	2.6300e-003		0.0789	0.0789		0.0742	0.0742	0.0000	225.9321	225.9321	0.0541	0.0000	227.2853

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	7.8000e-003	0.2684	0.0663	7.3000e-004	0.0184	4.9000e-004	0.0189	5.3200e-003	4.7000e-004	5.7900e-003	0.0000	70.7841	70.7841	4.3500e-003	0.0000	70.8928
Worker	0.0458	0.0326	0.3765	1.1900e-003	0.1284	9.4000e-004	0.1293	0.0341	8.6000e-004	0.0350	0.0000	107.8034	107.8034	2.7100e-003	0.0000	107.8712
Total	0.0536	0.3009	0.4428	1.9200e-003	0.1468	1.4300e-003	0.1482	0.0394	1.3300e-003	0.0407	0.0000	178.5875	178.5875	7.0600e-003	0.0000	178.7639

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3.5 Building Construction - Phase 1 - 2022**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	0.1664	1.5225	1.5954	2.6300e-003		0.0789	0.0789		0.0742	0.0742	0.0000	225.9318	225.9318	0.0541	0.0000	227.2850
Total	0.1664	1.5225	1.5954	2.6300e-003		0.0789	0.0789		0.0742	0.0742	0.0000	225.9318	225.9318	0.0541	0.0000	227.2850

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	7.8000e-003	0.2684	0.0663	7.3000e-004	0.0184	4.9000e-004	0.0189	5.3200e-003	4.7000e-004	5.7900e-003	0.0000	70.7841	70.7841	4.3500e-003	0.0000	70.8928
Worker	0.0458	0.0326	0.3765	1.1900e-003	0.1284	9.4000e-004	0.1293	0.0341	8.6000e-004	0.0350	0.0000	107.8034	107.8034	2.7100e-003	0.0000	107.8712
Total	0.0536	0.3009	0.4428	1.9200e-003	0.1468	1.4300e-003	0.1482	0.0394	1.3300e-003	0.0407	0.0000	178.5875	178.5875	7.0600e-003	0.0000	178.7639

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3.6 Paving - Phase 1 - 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	0.0243	0.2448	0.3208	5.0000e-004		0.0125	0.0125		0.0115	0.0115	0.0000	44.0606	44.0606	0.0143	0.0000	44.4169
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0243	0.2448	0.3208	5.0000e-004		0.0125	0.0125		0.0115	0.0115	0.0000	44.0606	44.0606	0.0143	0.0000	44.4169

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	5.9000e-004	0.0202	4.9900e-003	5.0000e-005	1.3900e-003	4.0000e-005	1.4200e-003	4.0000e-004	4.0000e-005	4.4000e-004	0.0000	5.3239	5.3239	3.3000e-004	0.0000	5.3321
Worker	3.4400e-003	2.4500e-003	0.0283	9.0000e-005	9.6500e-003	7.0000e-005	9.7300e-003	2.5600e-003	6.0000e-005	2.6300e-003	0.0000	8.1083	8.1083	2.0000e-004	0.0000	8.1134
Total	4.0300e-003	0.0226	0.0333	1.4000e-004	0.0110	1.1000e-004	0.0112	2.9600e-003	1.0000e-004	3.0700e-003	0.0000	13.4322	13.4322	5.3000e-004	0.0000	13.4455

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3.6 Paving - Phase 1 - 2022**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	0.0243	0.2448	0.3208	5.0000e-004		0.0125	0.0125		0.0115	0.0115	0.0000	44.0606	44.0606	0.0143	0.0000	44.4168
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0243	0.2448	0.3208	5.0000e-004		0.0125	0.0125		0.0115	0.0115	0.0000	44.0606	44.0606	0.0143	0.0000	44.4168

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	5.9000e-004	0.0202	4.9900e-003	5.0000e-005	1.3900e-003	4.0000e-005	1.4200e-003	4.0000e-004	4.0000e-005	4.4000e-004	0.0000	5.3239	5.3239	3.3000e-004	0.0000	5.3321
Worker	3.4400e-003	2.4500e-003	0.0283	9.0000e-005	9.6500e-003	7.0000e-005	9.7300e-003	2.5600e-003	6.0000e-005	2.6300e-003	0.0000	8.1083	8.1083	2.0000e-004	0.0000	8.1134
Total	4.0300e-003	0.0226	0.0333	1.4000e-004	0.0110	1.1000e-004	0.0112	2.9600e-003	1.0000e-004	3.0700e-003	0.0000	13.4322	13.4322	5.3000e-004	0.0000	13.4455

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3.7 Architectural Coating - Phase 1 - 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					
Archit. Coating	1.0744					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.5000e-003	0.0310	0.0399	7.0000e-005		1.8000e-003	1.8000e-003		1.8000e-003	1.8000e-003	0.0000	5.6172	5.6172	3.7000e-004	0.0000	5.6263
Total	1.0789	0.0310	0.0399	7.0000e-005		1.8000e-003	1.8000e-003		1.8000e-003	1.8000e-003	0.0000	5.6172	5.6172	3.7000e-004	0.0000	5.6263

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	1.1700e-003	0.0404	9.9800e-003	1.1000e-004	2.7700e-003	7.0000e-005	2.8500e-003	8.0000e-004	7.0000e-005	8.7000e-004	0.0000	10.6479	10.6479	6.5000e-004	0.0000	10.6642
Worker	6.8900e-003	4.9000e-003	0.0566	1.8000e-004	0.0193	1.4000e-004	0.0195	5.1300e-003	1.3000e-004	5.2600e-003	0.0000	16.2166	16.2166	4.1000e-004	0.0000	16.2268
Total	8.0600e-003	0.0453	0.0666	2.9000e-004	0.0221	2.1000e-004	0.0223	5.9300e-003	2.0000e-004	6.1300e-003	0.0000	26.8645	26.8645	1.0600e-003	0.0000	26.8910

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3.7 Architectural Coating - Phase 1 - 2022**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	1.0744					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.5000e-003	0.0310	0.0399	7.0000e-005		1.8000e-003	1.8000e-003		1.8000e-003	1.8000e-003	0.0000	5.6172	5.6172	3.7000e-004	0.0000	5.6263
Total	1.0789	0.0310	0.0399	7.0000e-005		1.8000e-003	1.8000e-003		1.8000e-003	1.8000e-003	0.0000	5.6172	5.6172	3.7000e-004	0.0000	5.6263

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	1.1700e-003	0.0404	9.9800e-003	1.1000e-004	2.7700e-003	7.0000e-005	2.8500e-003	8.0000e-004	7.0000e-005	8.7000e-004	0.0000	10.6479	10.6479	6.5000e-004	0.0000	10.6642
Worker	6.8900e-003	4.9000e-003	0.0566	1.8000e-004	0.0193	1.4000e-004	0.0195	5.1300e-003	1.3000e-004	5.2600e-003	0.0000	16.2166	16.2166	4.1000e-004	0.0000	16.2268
Total	8.0600e-003	0.0453	0.0666	2.9000e-004	0.0221	2.1000e-004	0.0223	5.9300e-003	2.0000e-004	6.1300e-003	0.0000	26.8645	26.8645	1.0600e-003	0.0000	26.8910

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3.8 Demolition - Phases 2 and 3 - 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					
Fugitive Dust					0.0440	0.0000	0.0440	6.6600e-003	0.0000	6.6600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0477	0.4512	0.4125	8.2000e-004		0.0210	0.0210		0.0195	0.0195	0.0000	71.3833	71.3833	0.0200	0.0000	71.8831
Total	0.0477	0.4512	0.4125	8.2000e-004	0.0440	0.0210	0.0649	6.6600e-003	0.0195	0.0262	0.0000	71.3833	71.3833	0.0200	0.0000	71.8831

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	9.4000e-004	0.0314	0.0100	1.5000e-004	3.4900e-003	6.0000e-005	3.5500e-003	9.6000e-004	6.0000e-005	1.0100e-003	0.0000	14.3849	14.3849	9.3000e-004	0.0000	14.4082
Vendor	1.6700e-003	0.0580	0.0170	2.0000e-004	5.2900e-003	7.0000e-005	5.3600e-003	1.5300e-003	6.0000e-005	1.5900e-003	0.0000	19.7150	19.7150	1.0900e-003	0.0000	19.7421
Worker	7.7400e-003	5.2900e-003	0.0623	2.1000e-004	0.0230	1.6000e-004	0.0232	6.1200e-003	1.5000e-004	6.2700e-003	0.0000	18.6277	18.6277	4.4000e-004	0.0000	18.6387
Total	0.0104	0.0947	0.0894	5.6000e-004	0.0318	2.9000e-004	0.0321	8.6100e-003	2.7000e-004	8.8700e-003	0.0000	52.7276	52.7276	2.4600e-003	0.0000	52.7890

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3.8 Demolition - Phases 2 and 3 - 2023**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					0.0440	0.0000	0.0440	6.6600e-003	0.0000	6.6600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0477	0.4512	0.4125	8.2000e-004		0.0210	0.0210		0.0195	0.0195	0.0000	71.3833	71.3833	0.0200	0.0000	71.8830
Total	0.0477	0.4512	0.4125	8.2000e-004	0.0440	0.0210	0.0649	6.6600e-003	0.0195	0.0262	0.0000	71.3833	71.3833	0.0200	0.0000	71.8830

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	9.4000e-004	0.0314	0.0100	1.5000e-004	3.4900e-003	6.0000e-005	3.5500e-003	9.6000e-004	6.0000e-005	1.0100e-003	0.0000	14.3849	14.3849	9.3000e-004	0.0000	14.4082
Vendor	1.6700e-003	0.0580	0.0170	2.0000e-004	5.2900e-003	7.0000e-005	5.3600e-003	1.5300e-003	6.0000e-005	1.5900e-003	0.0000	19.7150	19.7150	1.0900e-003	0.0000	19.7421
Worker	7.7400e-003	5.2900e-003	0.0623	2.1000e-004	0.0230	1.6000e-004	0.0232	6.1200e-003	1.5000e-004	6.2700e-003	0.0000	18.6277	18.6277	4.4000e-004	0.0000	18.6387
Total	0.0104	0.0947	0.0894	5.6000e-004	0.0318	2.9000e-004	0.0321	8.6100e-003	2.7000e-004	8.8700e-003	0.0000	52.7276	52.7276	2.4600e-003	0.0000	52.7890

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3.9 Site Preparation - Phases 2 and 3 - 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					
Fugitive Dust					0.1987	0.0000	0.1987	0.1092	0.0000	0.1092	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0293	0.3028	0.2007	4.2000e-004		0.0139	0.0139		0.0128	0.0128	0.0000	36.7958	36.7958	0.0119	0.0000	37.0933
Total	0.0293	0.3028	0.2007	4.2000e-004	0.1987	0.0139	0.2127	0.1092	0.0128	0.1221	0.0000	36.7958	36.7958	0.0119	0.0000	37.0933

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	4.4000e-004	0.0152	4.4600e-003	5.0000e-005	1.3900e-003	2.0000e-005	1.4000e-003	4.0000e-004	2.0000e-005	4.2000e-004	0.0000	5.1635	5.1635	2.8000e-004	0.0000	5.1706
Worker	4.8600e-003	3.3200e-003	0.0392	1.3000e-004	0.0145	1.0000e-004	0.0146	3.8500e-003	9.0000e-005	3.9400e-003	0.0000	11.7089	11.7089	2.8000e-004	0.0000	11.7157
Total	5.3000e-003	0.0185	0.0436	1.8000e-004	0.0159	1.2000e-004	0.0160	4.2500e-003	1.1000e-004	4.3600e-003	0.0000	16.8723	16.8723	5.6000e-004	0.0000	16.8863

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3.9 Site Preparation - Phases 2 and 3 - 2023**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					0.1987	0.0000	0.1987	0.1092	0.0000	0.1092	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0293	0.3028	0.2007	4.2000e-004		0.0139	0.0139		0.0128	0.0128	0.0000	36.7957	36.7957	0.0119	0.0000	37.0932
Total	0.0293	0.3028	0.2007	4.2000e-004	0.1987	0.0139	0.2127	0.1092	0.0128	0.1221	0.0000	36.7957	36.7957	0.0119	0.0000	37.0932

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	4.4000e-004	0.0152	4.4600e-003	5.0000e-005	1.3900e-003	2.0000e-005	1.4000e-003	4.0000e-004	2.0000e-005	4.2000e-004	0.0000	5.1635	5.1635	2.8000e-004	0.0000	5.1706
Worker	4.8600e-003	3.3200e-003	0.0392	1.3000e-004	0.0145	1.0000e-004	0.0146	3.8500e-003	9.0000e-005	3.9400e-003	0.0000	11.7089	11.7089	2.8000e-004	0.0000	11.7157
Total	5.3000e-003	0.0185	0.0436	1.8000e-004	0.0159	1.2000e-004	0.0160	4.2500e-003	1.1000e-004	4.3600e-003	0.0000	16.8723	16.8723	5.6000e-004	0.0000	16.8863

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3.10 Grading - Phases 2 and 3 - 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					
Fugitive Dust					0.1386	0.0000	0.1386	0.0709	0.0000	0.0709	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0359	0.3767	0.3098	6.2000e-004		0.0163	0.0163		0.0150	0.0150	0.0000	54.7273	54.7273	0.0177	0.0000	55.1698
Total	0.0359	0.3767	0.3098	6.2000e-004	0.1386	0.0163	0.1548	0.0709	0.0150	0.0858	0.0000	54.7273	54.7273	0.0177	0.0000	55.1698

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	4.9000e-003	0.1642	0.0524	7.6000e-004	0.0183	3.0000e-004	0.0186	5.0100e-003	2.9000e-004	5.3000e-003	0.0000	75.2902	75.2902	4.8900e-003	0.0000	75.4125
Vendor	8.4000e-004	0.0290	8.5100e-003	1.0000e-004	2.6500e-003	3.0000e-005	2.6800e-003	7.6000e-004	3.0000e-005	8.0000e-004	0.0000	9.8575	9.8575	5.4000e-004	0.0000	9.8711
Worker	0.0124	8.4600e-003	0.0997	3.3000e-004	0.0369	2.6000e-004	0.0371	9.7900e-003	2.4000e-004	0.0100	0.0000	29.8044	29.8044	7.0000e-004	0.0000	29.8219
Total	0.0181	0.2017	0.1606	1.1900e-003	0.0578	5.9000e-004	0.0584	0.0156	5.6000e-004	0.0161	0.0000	114.9521	114.9521	6.1300e-003	0.0000	115.1055

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3.10 Grading - Phases 2 and 3 - 2023**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					0.1386	0.0000	0.1386	0.0709	0.0000	0.0709	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0359	0.3767	0.3098	6.2000e-004		0.0163	0.0163		0.0150	0.0150	0.0000	54.7272	54.7272	0.0177	0.0000	55.1697
Total	0.0359	0.3767	0.3098	6.2000e-004	0.1386	0.0163	0.1548	0.0709	0.0150	0.0858	0.0000	54.7272	54.7272	0.0177	0.0000	55.1697

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	4.9000e-003	0.1642	0.0524	7.6000e-004	0.0183	3.0000e-004	0.0186	5.0100e-003	2.9000e-004	5.3000e-003	0.0000	75.2902	75.2902	4.8900e-003	0.0000	75.4125
Vendor	8.4000e-004	0.0290	8.5100e-003	1.0000e-004	2.6500e-003	3.0000e-005	2.6800e-003	7.6000e-004	3.0000e-005	8.0000e-004	0.0000	9.8575	9.8575	5.4000e-004	0.0000	9.8711
Worker	0.0124	8.4600e-003	0.0997	3.3000e-004	0.0369	2.6000e-004	0.0371	9.7900e-003	2.4000e-004	0.0100	0.0000	29.8044	29.8044	7.0000e-004	0.0000	29.8219
Total	0.0181	0.2017	0.1606	1.1900e-003	0.0578	5.9000e-004	0.0584	0.0156	5.6000e-004	0.0161	0.0000	114.9521	114.9521	6.1300e-003	0.0000	115.1055

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3.11 Building Construction - Phases 2 and 3 - 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	0.1195	1.0933	1.2345	2.0500e-003		0.0532	0.0532		0.0500	0.0500	0.0000	176.1716	176.1716	0.0419	0.0000	177.2193
Total	0.1195	1.0933	1.2345	2.0500e-003		0.0532	0.0532		0.0500	0.0500	0.0000	176.1716	176.1716	0.0419	0.0000	177.2193

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	9.0800e-003	0.3148	0.0924	1.1000e-003	0.0287	3.6000e-004	0.0291	8.2900e-003	3.4000e-004	8.6400e-003	0.0000	107.0244	107.0244	5.8900e-003	0.0000	107.1716
Worker	0.0840	0.0574	0.6764	2.2400e-003	0.2502	1.7700e-003	0.2519	0.0664	1.6300e-003	0.0681	0.0000	202.2438	202.2438	4.7600e-003	0.0000	202.3627
Total	0.0931	0.3722	0.7689	3.3400e-003	0.2789	2.1300e-003	0.2810	0.0747	1.9700e-003	0.0767	0.0000	309.2681	309.2681	0.0107	0.0000	309.5343

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3.11 Building Construction - Phases 2 and 3 - 2023**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	0.1195	1.0933	1.2345	2.0500e-003		0.0532	0.0532		0.0500	0.0500	0.0000	176.1714	176.1714	0.0419	0.0000	177.2191
Total	0.1195	1.0933	1.2345	2.0500e-003		0.0532	0.0532		0.0500	0.0500	0.0000	176.1714	176.1714	0.0419	0.0000	177.2191

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	9.0800e-003	0.3148	0.0924	1.1000e-003	0.0287	3.6000e-004	0.0291	8.2900e-003	3.4000e-004	8.6400e-003	0.0000	107.0244	107.0244	5.8900e-003	0.0000	107.1716
Worker	0.0840	0.0574	0.6764	2.2400e-003	0.2502	1.7700e-003	0.2519	0.0664	1.6300e-003	0.0681	0.0000	202.2438	202.2438	4.7600e-003	0.0000	202.3627
Total	0.0931	0.3722	0.7689	3.3400e-003	0.2789	2.1300e-003	0.2810	0.0747	1.9700e-003	0.0767	0.0000	309.2681	309.2681	0.0107	0.0000	309.5343

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3.11 Building Construction - Phases 2 and 3 - 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	0.0809	0.7394	0.8892	1.4800e-003		0.0337	0.0337		0.0317	0.0317	0.0000	127.5170	127.5170	0.0302	0.0000	128.2709
Total	0.0809	0.7394	0.8892	1.4800e-003		0.0337	0.0337		0.0317	0.0317	0.0000	127.5170	127.5170	0.0302	0.0000	128.2709

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	6.4300e-003	0.2273	0.0650	7.9000e-004	0.0208	2.6000e-004	0.0211	6.0000e-003	2.4000e-004	6.2500e-003	0.0000	77.1782	77.1782	4.1900e-003	0.0000	77.2831
Worker	0.0576	0.0378	0.4566	1.5600e-003	0.1810	1.2700e-003	0.1823	0.0481	1.1700e-003	0.0492	0.0000	141.5441	141.5441	3.1500e-003	0.0000	141.6229
Total	0.0641	0.2651	0.5216	2.3500e-003	0.2018	1.5300e-003	0.2034	0.0541	1.4100e-003	0.0555	0.0000	218.7223	218.7223	7.3400e-003	0.0000	218.9060

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3.11 Building Construction - Phases 2 and 3 - 2024**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	0.0809	0.7394	0.8892	1.4800e-003		0.0337	0.0337		0.0317	0.0317	0.0000	127.5169	127.5169	0.0302	0.0000	128.2707
Total	0.0809	0.7394	0.8892	1.4800e-003		0.0337	0.0337		0.0317	0.0317	0.0000	127.5169	127.5169	0.0302	0.0000	128.2707

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	6.4300e-003	0.2273	0.0650	7.9000e-004	0.0208	2.6000e-004	0.0211	6.0000e-003	2.4000e-004	6.2500e-003	0.0000	77.1782	77.1782	4.1900e-003	0.0000	77.2831
Worker	0.0576	0.0378	0.4566	1.5600e-003	0.1810	1.2700e-003	0.1823	0.0481	1.1700e-003	0.0492	0.0000	141.5441	141.5441	3.1500e-003	0.0000	141.6229
Total	0.0641	0.2651	0.5216	2.3500e-003	0.2018	1.5300e-003	0.2034	0.0541	1.4100e-003	0.0555	0.0000	218.7223	218.7223	7.3400e-003	0.0000	218.9060

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3.12 Paving - Phases 2 and 3 - 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	0.0213	0.2048	0.3145	4.9000e-004		0.0101	0.0101		9.2700e-003	9.2700e-003	0.0000	43.0570	43.0570	0.0139	0.0000	43.4052
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0213	0.2048	0.3145	4.9000e-004		0.0101	0.0101		9.2700e-003	9.2700e-003	0.0000	43.0570	43.0570	0.0139	0.0000	43.4052

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	8.4000e-004	0.0296	8.4600e-003	1.0000e-004	2.7100e-003	3.0000e-005	2.7400e-003	7.8000e-004	3.0000e-005	8.1000e-004	0.0000	10.0566	10.0566	5.5000e-004	0.0000	10.0702
Worker	6.0100e-003	3.9400e-003	0.0476	1.6000e-004	0.0189	1.3000e-004	0.0190	5.0100e-003	1.2000e-004	5.1300e-003	0.0000	14.7549	14.7549	3.3000e-004	0.0000	14.7631
Total	6.8500e-003	0.0336	0.0561	2.6000e-004	0.0216	1.6000e-004	0.0217	5.7900e-003	1.5000e-004	5.9400e-003	0.0000	24.8115	24.8115	8.8000e-004	0.0000	24.8333

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3.12 Paving - Phases 2 and 3 - 2024**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	0.0213	0.2048	0.3145	4.9000e-004		0.0101	0.0101		9.2700e-003	9.2700e-003	0.0000	43.0570	43.0570	0.0139	0.0000	43.4051
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0213	0.2048	0.3145	4.9000e-004		0.0101	0.0101		9.2700e-003	9.2700e-003	0.0000	43.0570	43.0570	0.0139	0.0000	43.4051

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	8.4000e-004	0.0296	8.4600e-003	1.0000e-004	2.7100e-003	3.0000e-005	2.7400e-003	7.8000e-004	3.0000e-005	8.1000e-004	0.0000	10.0566	10.0566	5.5000e-004	0.0000	10.0702
Worker	6.0100e-003	3.9400e-003	0.0476	1.6000e-004	0.0189	1.3000e-004	0.0190	5.0100e-003	1.2000e-004	5.1300e-003	0.0000	14.7549	14.7549	3.3000e-004	0.0000	14.7631
Total	6.8500e-003	0.0336	0.0561	2.6000e-004	0.0216	1.6000e-004	0.0217	5.7900e-003	1.5000e-004	5.9400e-003	0.0000	24.8115	24.8115	8.8000e-004	0.0000	24.8333

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3.13 Architectural Coating - Phases 2 and 3 - 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	1.0744					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8900e-003	0.0262	0.0389	6.0000e-005		1.3100e-003	1.3100e-003		1.3100e-003	1.3100e-003	0.0000	5.4895	5.4895	3.1000e-004	0.0000	5.4972
Total	1.0783	0.0262	0.0389	6.0000e-005		1.3100e-003	1.3100e-003		1.3100e-003	1.3100e-003	0.0000	5.4895	5.4895	3.1000e-004	0.0000	5.4972

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	1.6800e-003	0.0592	0.0169	2.1000e-004	5.4200e-003	7.0000e-005	5.4900e-003	1.5600e-003	6.0000e-005	1.6300e-003	0.0000	20.1131	20.1131	1.0900e-003	0.0000	20.1404
Worker	0.0180	0.0118	0.1428	4.9000e-004	0.0566	4.0000e-004	0.0570	0.0150	3.6000e-004	0.0154	0.0000	44.2647	44.2647	9.9000e-004	0.0000	44.2894
Total	0.0197	0.0711	0.1597	7.0000e-004	0.0620	4.7000e-004	0.0625	0.0166	4.2000e-004	0.0170	0.0000	64.3778	64.3778	2.0800e-003	0.0000	64.4298

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3.13 Architectural Coating - Phases 2 and 3 - 2024**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	1.0744					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8900e-003	0.0262	0.0389	6.0000e-005		1.3100e-003	1.3100e-003		1.3100e-003	1.3100e-003	0.0000	5.4895	5.4895	3.1000e-004	0.0000	5.4972
Total	1.0783	0.0262	0.0389	6.0000e-005		1.3100e-003	1.3100e-003		1.3100e-003	1.3100e-003	0.0000	5.4895	5.4895	3.1000e-004	0.0000	5.4972

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	1.6800e-003	0.0592	0.0169	2.1000e-004	5.4200e-003	7.0000e-005	5.4900e-003	1.5600e-003	6.0000e-005	1.6300e-003	0.0000	20.1131	20.1131	1.0900e-003	0.0000	20.1404
Worker	0.0180	0.0118	0.1428	4.9000e-004	0.0566	4.0000e-004	0.0570	0.0150	3.6000e-004	0.0154	0.0000	44.2647	44.2647	9.9000e-004	0.0000	44.2894
Total	0.0197	0.0711	0.1597	7.0000e-004	0.0620	4.7000e-004	0.0625	0.0166	4.2000e-004	0.0170	0.0000	64.3778	64.3778	2.0800e-003	0.0000	64.4298

4.0 Operational Detail - Mobile

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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	0.5540	2.7968	6.6649	0.0275	2.4727	0.0200	2.4927	0.6625	0.0186	0.6810	0.0000	2,550.3837	2,550.3837	0.1146	0.0000	2,553.2478
Unmitigated	0.5540	2.7968	6.6649	0.0275	2.4727	0.0200	2.4927	0.6625	0.0186	0.6810	0.0000	2,550.3837	2,550.3837	0.1146	0.0000	2,553.2478

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,362.34	1,304.48	1325.52	4,601,434	4,601,434
Enclosed Parking with Elevator	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	890.51	1,478.02	1018.86	1,352,980	1,352,980
Other Asphalt Surfaces	0.00	0.00	0.00		
Regional Shopping Center	263.17	306.60	171.62	554,321	554,321
Total	2,516.01	3,089.10	2,516.00	6,508,735	6,508,735

4.3 Trip Type Information

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	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	40.00	19.40	40.60	86	11	3
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
High Turnover (Sit Down	16.60	8.40	6.90	8.50	72.50	19.00	37	20	43
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Enclosed Parking with Elevator	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
High Turnover (Sit Down Restaurant)	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Other Asphalt Surfaces	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Regional Shopping Center	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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	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	797.4761	797.4761	0.0284	7.1000e-003	800.3011
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	797.4761	797.4761	0.0284	7.1000e-003	800.3011
NaturalGas Mitigated	0.0218	0.1894	0.1017	1.1900e-003		0.0151	0.0151		0.0151	0.0151	0.0000	215.8489	215.8489	4.1400e-003	3.9600e-003	217.1315
NaturalGas Unmitigated	0.0218	0.1894	0.1017	1.1900e-003		0.0151	0.0151		0.0151	0.0151	0.0000	215.8489	215.8489	4.1400e-003	3.9600e-003	217.1315

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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	3.00542e+006	0.0162	0.1385	0.0589	8.8000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	160.3808	160.3808	3.0700e-003	2.9400e-003	161.3338
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
High Turnover (Sit Down Restaurant)	1.02483e+006	5.5300e-003	0.0502	0.0422	3.0000e-004		3.8200e-003	3.8200e-003		3.8200e-003	3.8200e-003	0.0000	54.6890	54.6890	1.0500e-003	1.0000e-003	55.0140
Other Asphalt Surfaces	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
Regional Shopping Center	14600	8.0000e-005	7.2000e-004	6.0000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7791	0.7791	1.0000e-005	1.0000e-005	0.7837
Total		0.0218	0.1895	0.1017	1.1800e-003		0.0151	0.0151		0.0151	0.0151	0.0000	215.8488	215.8488	4.1300e-003	3.9500e-003	217.1315

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5.2 Energy by Land Use - NaturalGas**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	3.00542e+006	0.0162	0.1385	0.0589	8.8000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	160.3808	160.3808	3.0700e-003	2.9400e-003	161.3338
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
High Turnover (Sit Down Restaurant)	1.02483e+006	5.5300e-003	0.0502	0.0422	3.0000e-004		3.8200e-003	3.8200e-003		3.8200e-003	3.8200e-003	0.0000	54.6890	54.6890	1.0500e-003	1.0000e-003	55.0140
Other Asphalt Surfaces	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
Regional Shopping Center	14600	8.0000e-005	7.2000e-004	6.0000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7791	0.7791	1.0000e-005	1.0000e-005	0.7837
Total		0.0218	0.1895	0.1017	1.1800e-003		0.0151	0.0151		0.0151	0.0151	0.0000	215.8488	215.8488	4.1300e-003	3.9500e-003	217.1315

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5.3 Energy by Land Use - Electricity**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.0455e+006	266.4096	9.4800e-003	2.3700e-003	267.3534
Enclosed Parking with Elevator	1.85645e+006	473.0500	0.0168	4.2100e-003	474.7258
High Turnover (Sit Down Restaurant)	144169	36.7364	1.3100e-003	3.3000e-004	36.8665
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	83512	21.2801	7.6000e-004	1.9000e-004	21.3555
Total		797.4761	0.0284	7.1000e-003	800.3011

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5.3 Energy by Land Use - Electricity**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.0455e+006	266.4096	9.4800e-003	2.3700e-003	267.3534
Enclosed Parking with Elevator	1.85645e+006	473.0500	0.0168	4.2100e-003	474.7258
High Turnover (Sit Down Restaurant)	144169	36.7364	1.3100e-003	3.3000e-004	36.8665
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	83512	21.2801	7.6000e-004	1.9000e-004	21.3555
Total		797.4761	0.0284	7.1000e-003	800.3011

6.0 Area Detail**6.1 Mitigation Measures Area**

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	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	1.4385	0.0313	2.7201	1.4000e-004		0.0151	0.0151		0.0151	0.0151	0.0000	4.4507	4.4507	4.3000e-003	0.0000	4.5580
Unmitigated	1.4385	0.0313	2.7201	1.4000e-004		0.0151	0.0151		0.0151	0.0151	0.0000	4.4507	4.4507	4.3000e-003	0.0000	4.5580

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	0.1126					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2437					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	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
Landscaping	0.0823	0.0313	2.7201	1.4000e-004		0.0151	0.0151		0.0151	0.0151	0.0000	4.4507	4.4507	4.3000e-003	0.0000	4.5580
Total	1.4385	0.0313	2.7201	1.4000e-004		0.0151	0.0151		0.0151	0.0151	0.0000	4.4507	4.4507	4.3000e-003	0.0000	4.5580

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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	0.1126					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2437					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	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
Landscaping	0.0823	0.0313	2.7201	1.4000e-004		0.0151	0.0151		0.0151	0.0151	0.0000	4.4507	4.4507	4.3000e-003	0.0000	4.5580
Total	1.4385	0.0313	2.7201	1.4000e-004		0.0151	0.0151		0.0151	0.0151	0.0000	4.4507	4.4507	4.3000e-003	0.0000	4.5580

7.0 Water Detail**7.1 Mitigation Measures Water**

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	101.5108	0.6283	0.0156	121.8697
Unmitigated	101.5108	0.6283	0.0156	121.8697

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	17.1355 / 10.8028	92.8736	0.5615	0.0140	111.0712
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	1.50249 / 0.0959037	5.7334	0.0492	1.2000e-003	7.3204
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.540729 / 0.331415	2.9039	0.0177	4.4000e-004	3.4780
Total		101.5108	0.6283	0.0156	121.8697

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7.2 Water by Land Use**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	17.1355 / 10.8028	92.8736	0.5615	0.0140	111.0712
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	1.50249 / 0.0959037	5.7334	0.0492	1.2000e-003	7.3204
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.540729 / 0.331415	2.9039	0.0177	4.4000e-004	3.4780
Total		101.5108	0.6283	0.0156	121.8697

8.0 Waste Detail**8.1 Mitigation Measures Waste**

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Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	38.0730	2.2501	0.0000	94.3242
Unmitigated	38.0730	2.2501	0.0000	94.3242

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	120.98	24.5579	1.4513	0.0000	60.8410
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	58.91	11.9582	0.7067	0.0000	29.6259
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	7.67	1.5569	0.0920	0.0000	3.8573
Total		38.0730	2.2501	0.0000	94.3242

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8.2 Waste by Land Use**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	120.98	24.5579	1.4513	0.0000	60.8410
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	58.91	11.9582	0.7067	0.0000	29.6259
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	7.67	1.5569	0.0920	0.0000	3.8573
Total		38.0730	2.2501	0.0000	94.3242

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

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User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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South Coast AQMD Air District, Summer

1.0 Project Characteristics**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	792.00	Space	0.00	316,800.00	0
Other Asphalt Surfaces	12.65	1000sqft	0.00	12,650.00	0
High Turnover (Sit Down Restaurant)	4.95	1000sqft	0.00	3,952.00	0
Apartments Mid Rise	263.00	Dwelling Unit	0.00	327,021.00	752
Regional Shopping Center	7.30	1000sqft	5.35	7,300.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	8			Operational Year	2025
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	561.77	CH4 Intensity (lb/MW hr)	0.02	N2O Intensity (lb/MW hr)	0.005

1.3 User Entered Comments & Non-Default Data

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Project Characteristics - Consistent with the DEIR's model.

Land Use - See SWAPE comment regarding underestimated land use sizes.

Construction Phase - Consistent with the DEIR's model.

Trips and VMT - See SWAPE comment regarding hauling trips. Worker and vendor trips consistent with the DEIR's model.

On-road Fugitive Dust -

Demolition - See SWAPE comment regarding demolition.

Grading - See SWAPE comment regarding acres of grading values, material moisture content, and material silt content. Material export consistent with the DEIR's model.

Architectural Coating - Architectural coating EFs consistent with the DEIR's model. See SWAPE comment regarding architectural coating areas.

Vehicle Trips - See SWAPE comment regarding operational vehicle trip rates.

Woodstoves - Consistent with the DEIR's model.

Area Coating - See SWAPE comment regarding area coating areas.

Energy Use -

Water And Wastewater - See SWAPE comment regarding wastewater treatment percentages.

Construction Off-road Equipment Mitigation - See SWAPE comment regarding construction-related mitigation measures.

Mobile Land Use Mitigation - See SWAPE comment regarding operational mitigation measures.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblConstructionPhase	NumDays	20.00	43.00
tblConstructionPhase	NumDays	20.00	44.00
tblConstructionPhase	NumDays	230.00	262.00

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tblConstructionPhase	NumDays	230.00	195.00
tblConstructionPhase	NumDays	20.00	21.00
tblConstructionPhase	NumDays	20.00	42.00
tblConstructionPhase	NumDays	20.00	44.00
tblConstructionPhase	NumDays	20.00	42.00
tblConstructionPhase	NumDays	20.00	43.00
tblConstructionPhase	NumDays	20.00	44.00
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	NumDays	10.00	22.00
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	223.55	237.00
tblFireplaces	NumberNoFireplace	26.30	26.00
tblFireplaces	NumberWood	13.15	0.00
tblGrading	MaterialExported	0.00	17,000.00
tblLandUse	LandUseSquareFeet	4,950.00	3,952.00
tblLandUse	LandUseSquareFeet	263,000.00	327,021.00
tblLandUse	LotAcreage	7.13	0.00
tblLandUse	LotAcreage	0.29	0.00
tblLandUse	LotAcreage	0.11	0.00
tblLandUse	LotAcreage	6.92	0.00
tblLandUse	LotAcreage	0.17	5.35
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.02
tblProjectCharacteristics	CO2IntensityFactor	702.44	561.77
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	84.00	60.00

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tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	84.00	30.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	WorkerTripNumber	15.00	80.00
tblTripsAndVMT	WorkerTripNumber	332.00	300.00
tblTripsAndVMT	WorkerTripNumber	15.00	80.00
tblTripsAndVMT	WorkerTripNumber	66.00	240.00
tblTripsAndVMT	WorkerTripNumber	18.00	50.00
tblTripsAndVMT	WorkerTripNumber	15.00	80.00
tblTripsAndVMT	WorkerTripNumber	332.00	120.00
tblTripsAndVMT	WorkerTripNumber	15.00	40.00
tblTripsAndVMT	WorkerTripNumber	66.00	80.00
tblTripsAndVMT	WorkerTripNumber	15.00	100.00
tblTripsAndVMT	WorkerTripNumber	18.00	120.00
tblTripsAndVMT	WorkerTripNumber	15.00	160.00
tblVehicleTrips	HS_TTP	19.20	19.40
tblVehicleTrips	HW_TTP	40.20	40.00
tblVehicleTrips	ST_TR	6.39	4.96
tblVehicleTrips	ST_TR	158.37	298.59
tblVehicleTrips	ST_TR	49.97	42.00

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tblVehicleTrips	SU_TR	5.86	5.04
tblVehicleTrips	SU_TR	131.84	205.83
tblVehicleTrips	SU_TR	25.24	23.51
tblVehicleTrips	WD_TR	6.65	5.18
tblVehicleTrips	WD_TR	127.15	179.90
tblVehicleTrips	WD_TR	42.70	36.05
tblWoodstoves	WoodstoveDayYear	25.00	0.00
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					
2021	4.1271	41.5877	26.0668	0.0676	18.6891	2.0505	20.7396	10.0973	1.8865	11.9839	0.0000	6,782.5210	6,782.5210	1.2234	0.0000	6,812.9879
2022	50.6983	21.9583	21.2160	0.0474	7.5106	0.9489	8.4595	3.6231	0.8731	4.4961	0.0000	4,645.7797	4,645.7797	0.9663	0.0000	4,663.0756
2023	3.1451	29.1616	27.0512	0.0877	19.5356	1.2769	20.8125	10.3233	1.1748	11.4981	0.0000	9,024.1619	9,024.1619	1.2494	0.0000	9,055.3777
2024	52.3840	18.1519	27.1750	0.0723	3.9608	0.6409	4.5194	1.0592	0.6025	1.6023	0.0000	7,235.9735	7,235.9735	0.8828	0.0000	7,258.0419
Maximum	52.3840	41.5877	27.1750	0.0877	19.5356	2.0505	20.8125	10.3233	1.8865	11.9839	0.0000	9,024.1619	9,024.1619	1.2494	0.0000	9,055.3777

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

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					
2021	4.1271	41.5877	26.0668	0.0676	18.6891	2.0505	20.7396	10.0973	1.8865	11.9839	0.0000	6,782.5210	6,782.5210	1.2234	0.0000	6,812.9879
2022	50.6983	21.9583	21.2160	0.0474	7.5106	0.9489	8.4595	3.6231	0.8731	4.4961	0.0000	4,645.7797	4,645.7797	0.9663	0.0000	4,663.0756
2023	3.1451	29.1616	27.0512	0.0877	19.5356	1.2769	20.8125	10.3233	1.1748	11.4981	0.0000	9,024.1619	9,024.1619	1.2494	0.0000	9,055.3777
2024	52.3840	18.1519	27.1750	0.0723	3.9608	0.6409	4.5194	1.0592	0.6025	1.6023	0.0000	7,235.9735	7,235.9735	0.8828	0.0000	7,258.0419
Maximum	52.3840	41.5877	27.1750	0.0877	19.5356	2.0505	20.8125	10.3233	1.8865	11.9839	0.0000	9,024.1619	9,024.1619	1.2494	0.0000	9,055.3777

[illegible]

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

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	8.5499	4.1819	23.4334	0.0263		0.4384	0.4384		0.4384	0.4384	0.0000	5,058.0716	5,058.0716	0.1341	0.0920	5,088.8429
Energy	0.1195	1.0380	0.5574	6.5200e-003		0.0826	0.0826		0.0826	0.0826		1,303.7404	1,303.7404	0.0250	0.0239	1,311.4879
Mobile	3.9048	17.6168	43.6820	0.1781	15.5725	0.1246	15.6971	4.1658	0.1157	4.2815		18,192.4041	18,192.4041	0.7958		18,212.3001
Total	12.5742	22.8367	67.6728	0.2109	15.5725	0.6456	16.2181	4.1658	0.6367	4.8025	0.0000	24,554.2161	24,554.2161	0.9549	0.1159	24,612.6309

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	8.5499	4.1819	23.4334	0.0263		0.4384	0.4384		0.4384	0.4384	0.0000	5,058.0716	5,058.0716	0.1341	0.0920	5,088.8429
Energy	0.1195	1.0380	0.5574	6.5200e-003		0.0826	0.0826		0.0826	0.0826		1,303.7404	1,303.7404	0.0250	0.0239	1,311.4879
Mobile	3.9048	17.6168	43.6820	0.1781	15.5725	0.1246	15.6971	4.1658	0.1157	4.2815		18,192.4041	18,192.4041	0.7958		18,212.3001
Total	12.5742	22.8367	67.6728	0.2109	15.5725	0.6456	16.2181	4.1658	0.6367	4.8025	0.0000	24,554.2161	24,554.2161	0.9549	0.1159	24,612.6309

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	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
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 - Phase 1	Demolition	10/1/2021	10/31/2021	5	21	
2	Site Preparation - Phase 1	Site Preparation	11/1/2021	11/30/2021	5	22	
3	Grading - Phase 1	Grading	12/1/2021	1/31/2022	5	44	
4	Building Construction - Phase 1	Building Construction	2/1/2022	10/31/2022	5	195	
5	Paving - Phase 1	Paving	11/1/2022	12/31/2022	5	44	
6	Architectural Coating - Phase 1	Architectural Coating	11/1/2022	12/31/2022	5	44	
7	Demolition - Phases 2 and 3	Demolition	1/1/2023	2/28/2023	5	42	
8	Site Preparation - Phases 2 and 3	Site Preparation	3/1/2023	3/30/2023	5	22	
9	Grading - Phases 2 and 3	Grading	4/1/2023	5/30/2023	5	42	
10	Building Construction - Phases 2 and 3	Building Construction	6/1/2023	5/31/2024	5	262	
11	Paving - Phases 2 and 3	Paving	6/1/2024	7/31/2024	5	43	
12	Architectural Coating - Phases 2 and 3	Architectural Coating	6/1/2024	7/31/2024	5	43	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 662,218; Residential Outdoor: 220,739; Non-Residential Indoor: 18,378; Non-Residential Outdoor: 6,126; Striped Parking Area: 19,767 (Architectural Coating – sqft)

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OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition - Phase 1	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition - Phase 1	Excavators	3	8.00	158	0.38
Demolition - Phase 1	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation - Phase 1	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation - Phase 1	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading - Phase 1	Excavators	1	8.00	158	0.38
Grading - Phase 1	Graders	1	8.00	187	0.41
Grading - Phase 1	Rubber Tired Dozers	1	8.00	247	0.40
Grading - Phase 1	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction - Phase 1	Cranes	1	7.00	231	0.29
Building Construction - Phase 1	Forklifts	3	8.00	89	0.20
Building Construction - Phase 1	Generator Sets	1	8.00	84	0.74
Building Construction - Phase 1	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction - Phase 1	Welders	1	8.00	46	0.45
Paving - Phase 1	Pavers	2	8.00	130	0.42
Paving - Phase 1	Paving Equipment	2	8.00	132	0.36
Paving - Phase 1	Rollers	2	8.00	80	0.38
Architectural Coating - Phase 1	Air Compressors	1	6.00	78	0.48
Demolition - Phases 2 and 3	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition - Phases 2 and 3	Excavators	3	8.00	158	0.38
Demolition - Phases 2 and 3	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation - Phases 2 and 3	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation - Phases 2 and 3	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading - Phases 2 and 3	Excavators	1	8.00	158	0.38
Grading - Phases 2 and 3	Graders	1	8.00	187	0.41

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Grading - Phases 2 and 3	Rubber Tired Dozers	1	8.00	247	0.40
Grading - Phases 2 and 3	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction - Phases 2 and 3	Cranes	1	7.00	231	0.29
Building Construction - Phases 2 and 3	Forklifts	3	8.00	89	0.20
Building Construction - Phases 2 and 3	Generator Sets	1	8.00	84	0.74
Building Construction - Phases 2 and 3	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction - Phases 2 and 3	Welders	1	8.00	46	0.45
Paving - Phases 2 and 3	Pavers	2	8.00	130	0.42
Paving - Phases 2 and 3	Paving Equipment	2	8.00	132	0.36
Paving - Phases 2 and 3	Rollers	2	8.00	80	0.38
Architectural Coating - Phases 2 and 3	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 - Phase 1	6	80.00	20.00	406.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation - Phase 1	7	50.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading - Phase 1	6	80.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction - Phase 1	9	120.00	30.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving - Phase 1	6	40.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating - Phase 1	1	80.00	20.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition - Phases 2 and 3	6	100.00	40.00	406.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation - Phases 2 and 3	7	120.00	20.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading - Phases 2 and 3	6	160.00	20.00	2,125.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction - Phases 2 and 3	9	300.00	60.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving - Phases 2 and 3	6	80.00	20.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating - Phases 2 and 3	1	240.00	40.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

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3.1 Mitigation Measures Construction**3.2 Demolition - Phase 1 - 2021****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					4.1873	0.0000	4.1873	0.6340	0.0000	0.6340			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411		3,747.944 9	3,747.944 9	1.0549		3,774.317 4
Total	3.1651	31.4407	21.5650	0.0388	4.1873	1.5513	5.7386	0.6340	1.4411	2.0751		3,747.944 9	3,747.944 9	1.0549		3,774.317 4

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.2 Demolition - Phase 1 - 2021**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	0.1403	4.8911	1.0354	0.0148	0.3378	0.0152	0.3530	0.0926	0.0145	0.1071		1,603.776 5	1,603.776 5	0.1070		1,606.451 4
Vendor	0.0557	1.9075	0.4527	5.1000e-003	0.1280	3.8400e-003	0.1318	0.0369	3.6700e-003	0.0405		544.8769	544.8769	0.0330		545.7009
Worker	0.3377	0.2190	3.0138	8.8900e-003	0.8942	6.5800e-003	0.9008	0.2372	6.0600e-003	0.2432		885.9227	885.9227	0.0238		886.5182
Total	0.5336	7.0176	4.5018	0.0288	1.3600	0.0256	1.3856	0.3666	0.0242	0.3908		3,034.576 1	3,034.576 1	0.1638		3,038.670 6

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					4.1873	0.0000	4.1873	0.6340	0.0000	0.6340			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411	0.0000	3,747.944 9	3,747.944 9	1.0549		3,774.317 4
Total	3.1651	31.4407	21.5650	0.0388	4.1873	1.5513	5.7386	0.6340	1.4411	2.0751	0.0000	3,747.944 9	3,747.944 9	1.0549		3,774.317 4

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.2 Demolition - Phase 1 - 2021**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	0.1403	4.8911	1.0354	0.0148	0.3378	0.0152	0.3530	0.0926	0.0145	0.1071		1,603.776 5	1,603.776 5	0.1070		1,606.451 4
Vendor	0.0557	1.9075	0.4527	5.1000e-003	0.1280	3.8400e-003	0.1318	0.0369	3.6700e-003	0.0405		544.8769	544.8769	0.0330		545.7009
Worker	0.3377	0.2190	3.0138	8.8900e-003	0.8942	6.5800e-003	0.9008	0.2372	6.0600e-003	0.2432		885.9227	885.9227	0.0238		886.5182
Total	0.5336	7.0176	4.5018	0.0288	1.3600	0.0256	1.3856	0.3666	0.0242	0.3908		3,034.576 1	3,034.576 1	0.1638		3,038.670 6

3.3 Site Preparation - Phase 1 - 2021**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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.656 9	3,685.656 9	1.1920		3,715.457 3
Total	3.8882	40.4971	21.1543	0.0380	18.0663	2.0445	20.1107	9.9307	1.8809	11.8116		3,685.656 9	3,685.656 9	1.1920		3,715.457 3

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.3 Site Preparation - Phase 1 - 2021**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	0.0278	0.9538	0.2263	2.5500e-003	0.0640	1.9200e-003	0.0659	0.0184	1.8400e-003	0.0203		272.4385	272.4385	0.0165		272.8505
Worker	0.2111	0.1369	1.8836	5.5600e-003	0.5589	4.1100e-003	0.5630	0.1482	3.7900e-003	0.1520		553.7017	553.7017	0.0149		554.0739
Total	0.2389	1.0906	2.1100	8.1100e-003	0.6229	6.0300e-003	0.6289	0.1667	5.6300e-003	0.1723		826.1401	826.1401	0.0314		826.9244

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573
Total	3.8882	40.4971	21.1543	0.0380	18.0663	2.0445	20.1107	9.9307	1.8809	11.8116	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.3 Site Preparation - Phase 1 - 2021**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	0.0278	0.9538	0.2263	2.5500e-003	0.0640	1.9200e-003	0.0659	0.0184	1.8400e-003	0.0203		272.4385	272.4385	0.0165		272.8505
Worker	0.2111	0.1369	1.8836	5.5600e-003	0.5589	4.1100e-003	0.5630	0.1482	3.7900e-003	0.1520		553.7017	553.7017	0.0149		554.0739
Total	0.2389	1.0906	2.1100	8.1100e-003	0.6229	6.0300e-003	0.6289	0.1667	5.6300e-003	0.1723		826.1401	826.1401	0.0314		826.9244

3.4 Grading - Phase 1 - 2021**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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.2903	24.7367	15.8575	0.0296		1.1599	1.1599		1.0671	1.0671		2,871.9285	2,871.9285	0.9288		2,895.1495
Total	2.2903	24.7367	15.8575	0.0296	6.5523	1.1599	7.7123	3.3675	1.0671	4.4346		2,871.9285	2,871.9285	0.9288		2,895.1495

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3.4 Grading - Phase 1 - 2021**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	0.0278	0.9538	0.2263	2.5500e-003	0.0640	1.9200e-003	0.0659	0.0184	1.8400e-003	0.0203		272.4385	272.4385	0.0165		272.8505
Worker	0.3377	0.2190	3.0138	8.8900e-003	0.8942	6.5800e-003	0.9008	0.2372	6.0600e-003	0.2432		885.9227	885.9227	0.0238		886.5182
Total	0.3655	1.1728	3.2401	0.0114	0.9582	8.5000e-003	0.9667	0.2556	7.9000e-003	0.2635		1,158.3611	1,158.3611	0.0403		1,159.3687

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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.2903	24.7367	15.8575	0.0296		1.1599	1.1599		1.0671	1.0671	0.0000	2,871.9285	2,871.9285	0.9288		2,895.1495
Total	2.2903	24.7367	15.8575	0.0296	6.5523	1.1599	7.7123	3.3675	1.0671	4.4346	0.0000	2,871.9285	2,871.9285	0.9288		2,895.1495

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3.4 Grading - Phase 1 - 2021**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	0.0278	0.9538	0.2263	2.5500e-003	0.0640	1.9200e-003	0.0659	0.0184	1.8400e-003	0.0203		272.4385	272.4385	0.0165		272.8505
Worker	0.3377	0.2190	3.0138	8.8900e-003	0.8942	6.5800e-003	0.9008	0.2372	6.0600e-003	0.2432		885.9227	885.9227	0.0238		886.5182
Total	0.3655	1.1728	3.2401	0.0114	0.9582	8.5000e-003	0.9667	0.2556	7.9000e-003	0.2635		1,158.3611	1,158.3611	0.0403		1,159.3687

3.4 Grading - Phase 1 - 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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656		2,872.0464	2,872.0464	0.9289		2,895.2684
Total	1.9486	20.8551	15.2727	0.0297	6.5523	0.9409	7.4932	3.3675	0.8656	4.2331		2,872.0464	2,872.0464	0.9289		2,895.2684

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3.4 Grading - Phase 1 - 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	0.0261	0.9053	0.2139	2.5300e-003	0.0640	1.6600e-003	0.0657	0.0184	1.5900e-003	0.0200		270.0591	270.0591	0.0159		270.4558
Worker	0.3168	0.1978	2.7868	8.5700e-003	0.8942	6.3900e-003	0.9006	0.2372	5.8900e-003	0.2430		854.1791	854.1791	0.0215		854.7174
Total	0.3429	1.1032	3.0007	0.0111	0.9582	8.0500e-003	0.9663	0.2556	7.4800e-003	0.2631		1,124.2383	1,124.2383	0.0374		1,125.1732

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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656	0.0000	2,872.0464	2,872.0464	0.9289		2,895.2684
Total	1.9486	20.8551	15.2727	0.0297	6.5523	0.9409	7.4932	3.3675	0.8656	4.2331	0.0000	2,872.0464	2,872.0464	0.9289		2,895.2684

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3.4 Grading - Phase 1 - 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	0.0261	0.9053	0.2139	2.5300e-003	0.0640	1.6600e-003	0.0657	0.0184	1.5900e-003	0.0200		270.0591	270.0591	0.0159		270.4558
Worker	0.3168	0.1978	2.7868	8.5700e-003	0.8942	6.3900e-003	0.9006	0.2372	5.8900e-003	0.2430		854.1791	854.1791	0.0215		854.7174
Total	0.3429	1.1032	3.0007	0.0111	0.9582	8.0500e-003	0.9663	0.2556	7.4800e-003	0.2631		1,124.2383	1,124.2383	0.0374		1,125.1732

3.5 Building Construction - Phase 1 - 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	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322

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3.5 Building Construction - Phase 1 - 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	0.0783	2.7160	0.6417	7.5800e-003	0.1920	4.9900e-003	0.1970	0.0553	4.7700e-003	0.0601		810.1774	810.1774	0.0476		811.3673
Worker	0.4751	0.2968	4.1802	0.0129	1.3413	9.5900e-003	1.3509	0.3557	8.8300e-003	0.3646		1,281.2687	1,281.2687	0.0323		1,282.0761
Total	0.5534	3.0128	4.8219	0.0204	1.5333	0.0146	1.5479	0.4110	0.0136	0.4246		2,091.4461	2,091.4461	0.0799		2,093.4434

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	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322

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3.5 Building Construction - Phase 1 - 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	0.0783	2.7160	0.6417	7.5800e-003	0.1920	4.9900e-003	0.1970	0.0553	4.7700e-003	0.0601		810.1774	810.1774	0.0476		811.3673
Worker	0.4751	0.2968	4.1802	0.0129	1.3413	9.5900e-003	1.3509	0.3557	8.8300e-003	0.3646		1,281.2687	1,281.2687	0.0323		1,282.0761
Total	0.5534	3.0128	4.8219	0.0204	1.5333	0.0146	1.5479	0.4110	0.0136	0.4246		2,091.4461	2,091.4461	0.0799		2,093.4434

3.6 Paving - Phase 1 - 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	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.6 Paving - Phase 1 - 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	0.0261	0.9053	0.2139	2.5300e-003	0.0640	1.6600e-003	0.0657	0.0184	1.5900e-003	0.0200		270.0591	270.0591	0.0159		270.4558
Worker	0.1584	0.0989	1.3934	4.2900e-003	0.4471	3.2000e-003	0.4503	0.1186	2.9400e-003	0.1215		427.0896	427.0896	0.0108		427.3587
Total	0.1845	1.0043	1.6073	6.8200e-003	0.5111	4.8600e-003	0.5160	0.1370	4.5300e-003	0.1415		697.1487	697.1487	0.0266		697.8145

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	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.6 Paving - Phase 1 - 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	0.0261	0.9053	0.2139	2.5300e-003	0.0640	1.6600e-003	0.0657	0.0184	1.5900e-003	0.0200		270.0591	270.0591	0.0159		270.4558
Worker	0.1584	0.0989	1.3934	4.2900e-003	0.4471	3.2000e-003	0.4503	0.1186	2.9400e-003	0.1215		427.0896	427.0896	0.0108		427.3587
Total	0.1845	1.0043	1.6073	6.8200e-003	0.5111	4.8600e-003	0.5160	0.1370	4.5300e-003	0.1415		697.1487	697.1487	0.0266		697.8145

3.7 Architectural Coating - Phase 1 - 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					
Archit. Coating	48.8375					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	49.0421	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.7 Architectural Coating - Phase 1 - 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	0.0522	1.8107	0.4278	5.0600e-003	0.1280	3.3300e-003	0.1313	0.0369	3.1800e-003	0.0400		540.1183	540.1183	0.0317		540.9115
Worker	0.3168	0.1978	2.7868	8.5700e-003	0.8942	6.3900e-003	0.9006	0.2372	5.8900e-003	0.2430		854.1791	854.1791	0.0215		854.7174
Total	0.3690	2.0085	3.2146	0.0136	1.0222	9.7200e-003	1.0319	0.2740	9.0700e-003	0.2831		1,394.2974	1,394.2974	0.0533		1,395.6289

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	48.8375					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	49.0421	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.7 Architectural Coating - Phase 1 - 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	0.0522	1.8107	0.4278	5.0600e-003	0.1280	3.3300e-003	0.1313	0.0369	3.1800e-003	0.0400		540.1183	540.1183	0.0317		540.9115
Worker	0.3168	0.1978	2.7868	8.5700e-003	0.8942	6.3900e-003	0.9006	0.2372	5.8900e-003	0.2430		854.1791	854.1791	0.0215		854.7174
Total	0.3690	2.0085	3.2146	0.0136	1.0222	9.7200e-003	1.0319	0.2740	9.0700e-003	0.2831		1,394.2974	1,394.2974	0.0533		1,395.6289

3.8 Demolition - Phases 2 and 3 - 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					
Fugitive Dust					2.0936	0.0000	2.0936	0.3170	0.0000	0.3170			0.0000			0.0000
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280		3,746.9840	3,746.9840	1.0494		3,773.2183
Total	2.2691	21.4844	19.6434	0.0388	2.0936	0.9975	3.0912	0.3170	0.9280	1.2450		3,746.9840	3,746.9840	1.0494		3,773.2183

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.8 Demolition - Phases 2 and 3 - 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	0.0441	1.4618	0.4663	7.0100e-003	0.1689	2.7100e-003	0.1716	0.0463	2.5900e-003	0.0489		760.9963	760.9963	0.0484		762.2050
Vendor	0.0779	2.7377	0.7709	9.7900e-003	0.2560	3.0800e-003	0.2591	0.0737	2.9400e-003	0.0766		1,047.4709	1,047.4709	0.0553		1,048.8543
Worker	0.3723	0.2238	3.2170	0.0103	1.1178	7.7800e-003	1.1256	0.2964	7.1700e-003	0.3036		1,027.9302	1,027.9302	0.0243		1,028.5370
Total	0.4942	4.4234	4.4541	0.0271	1.5427	0.0136	1.5563	0.4164	0.0127	0.4291		2,836.3974	2,836.3974	0.1280		2,839.5963

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					2.0936	0.0000	2.0936	0.3170	0.0000	0.3170			0.0000			0.0000
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280	0.0000	3,746.9840	3,746.9840	1.0494		3,773.2183
Total	2.2691	21.4844	19.6434	0.0388	2.0936	0.9975	3.0912	0.3170	0.9280	1.2450	0.0000	3,746.9840	3,746.9840	1.0494		3,773.2183

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.8 Demolition - Phases 2 and 3 - 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	0.0441	1.4618	0.4663	7.0100e-003	0.1689	2.7100e-003	0.1716	0.0463	2.5900e-003	0.0489		760.9963	760.9963	0.0484		762.2050
Vendor	0.0779	2.7377	0.7709	9.7900e-003	0.2560	3.0800e-003	0.2591	0.0737	2.9400e-003	0.0766		1,047.4709	1,047.4709	0.0553		1,048.8543
Worker	0.3723	0.2238	3.2170	0.0103	1.1178	7.7800e-003	1.1256	0.2964	7.1700e-003	0.3036		1,027.9302	1,027.9302	0.0243		1,028.5370
Total	0.4942	4.4234	4.4541	0.0271	1.5427	0.0136	1.5563	0.4164	0.0127	0.4291		2,836.3974	2,836.3974	0.1280		2,839.5963

3.9 Site Preparation - Phases 2 and 3 - 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					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647		3,687.3081	3,687.3081	1.1926		3,717.1219
Total	2.6595	27.5242	18.2443	0.0381	18.0663	1.2660	19.3323	9.9307	1.1647	11.0954		3,687.3081	3,687.3081	1.1926		3,717.1219

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3.9 Site Preparation - Phases 2 and 3 - 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	0.0389	1.3689	0.3854	4.9000e-003	0.1280	1.5400e-003	0.1295	0.0369	1.4700e-003	0.0383		523.7354	523.7354	0.0277		524.4272
Worker	0.4467	0.2685	3.8604	0.0124	1.3413	9.3400e-003	1.3507	0.3557	8.6000e-003	0.3643		1,233.5162	1,233.5162	0.0291		1,234.2444
Total	0.4857	1.6374	4.2458	0.0173	1.4693	0.0109	1.4802	0.3926	0.0101	0.4026		1,757.2516	1,757.2516	0.0568		1,758.6716

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647	0.0000	3,687.3081	3,687.3081	1.1926		3,717.1219
Total	2.6595	27.5242	18.2443	0.0381	18.0663	1.2660	19.3323	9.9307	1.1647	11.0954	0.0000	3,687.3081	3,687.3081	1.1926		3,717.1219

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.9 Site Preparation - Phases 2 and 3 - 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	0.0389	1.3689	0.3854	4.9000e-003	0.1280	1.5400e-003	0.1295	0.0369	1.4700e-003	0.0383		523.7354	523.7354	0.0277		524.4272
Worker	0.4467	0.2685	3.8604	0.0124	1.3413	9.3400e-003	1.3507	0.3557	8.6000e-003	0.3643		1,233.5162	1,233.5162	0.0291		1,234.2444
Total	0.4857	1.6374	4.2458	0.0173	1.4693	0.0109	1.4802	0.3926	0.0101	0.4026		1,757.2516	1,757.2516	0.0568		1,758.6716

3.10 Grading - Phases 2 and 3 - 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					
Fugitive Dust					6.5981	0.0000	6.5981	3.3744	0.0000	3.3744			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129		2,872.6910	2,872.6910	0.9291		2,895.9182
Total	1.7109	17.9359	14.7507	0.0297	6.5981	0.7749	7.3730	3.3744	0.7129	4.0873		2,872.6910	2,872.6910	0.9291		2,895.9182

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3.10 Grading - Phases 2 and 3 - 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	0.2306	7.6512	2.4404	0.0367	0.8841	0.0142	0.8983	0.2423	0.0136	0.2559		3,983.047 2	3,983.047 2	0.2530		3,989.373 2
Vendor	0.0389	1.3689	0.3854	4.9000e-003	0.1280	1.5400e-003	0.1295	0.0369	1.4700e-003	0.0383		523.7354	523.7354	0.0277		524.4272
Worker	0.5957	0.3580	5.1471	0.0165	1.7884	0.0125	1.8009	0.4743	0.0115	0.4858		1,644.688 3	1,644.688 3	0.0388		1,645.659 2
Total	0.8652	9.3781	7.9729	0.0581	2.8005	0.0282	2.8287	0.7534	0.0265	0.7799		6,151.470 9	6,151.470 9	0.3196		6,159.459 6

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					6.5981	0.0000	6.5981	3.3744	0.0000	3.3744			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129	0.0000	2,872.691 0	2,872.691 0	0.9291		2,895.918 2
Total	1.7109	17.9359	14.7507	0.0297	6.5981	0.7749	7.3730	3.3744	0.7129	4.0873	0.0000	2,872.691 0	2,872.691 0	0.9291		2,895.918 2

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.10 Grading - Phases 2 and 3 - 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	0.2306	7.6512	2.4404	0.0367	0.8841	0.0142	0.8983	0.2423	0.0136	0.2559		3,983.047 2	3,983.047 2	0.2530		3,989.373 2
Vendor	0.0389	1.3689	0.3854	4.9000e-003	0.1280	1.5400e-003	0.1295	0.0369	1.4700e-003	0.0383		523.7354	523.7354	0.0277		524.4272
Worker	0.5957	0.3580	5.1471	0.0165	1.7884	0.0125	1.8009	0.4743	0.0115	0.4858		1,644.688 3	1,644.688 3	0.0388		1,645.659 2
Total	0.8652	9.3781	7.9729	0.0581	2.8005	0.0282	2.8287	0.7534	0.0265	0.7799		6,151.470 9	6,151.470 9	0.3196		6,159.459 6

3.11 Building Construction - Phases 2 and 3 - 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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.209 9	2,555.209 9	0.6079		2,570.406 1
Total	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.209 9	2,555.209 9	0.6079		2,570.406 1

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.11 Building Construction - Phases 2 and 3 - 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	0.1168	4.1066	1.1563	0.0147	0.3840	4.6200e-003	0.3886	0.1106	4.4100e-003	0.1150		1,571.2063	1,571.2063	0.0830		1,573.2815
Worker	1.1169	0.6713	9.6509	0.0309	3.3533	0.0234	3.3767	0.8893	0.0215	0.9108		3,083.7905	3,083.7905	0.0728		3,085.6110
Total	1.2337	4.7779	10.8072	0.0456	3.7373	0.0280	3.7653	0.9999	0.0259	1.0258		4,654.9968	4,654.9968	0.1558		4,658.8925

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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.11 Building Construction - Phases 2 and 3 - 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	0.1168	4.1066	1.1563	0.0147	0.3840	4.6200e-003	0.3886	0.1106	4.4100e-003	0.1150		1,571.2063	1,571.2063	0.0830		1,573.2815
Worker	1.1169	0.6713	9.6509	0.0309	3.3533	0.0234	3.3767	0.8893	0.0215	0.9108		3,083.7905	3,083.7905	0.0728		3,085.6110
Total	1.2337	4.7779	10.8072	0.0456	3.7373	0.0280	3.7653	0.9999	0.0259	1.0258		4,654.9968	4,654.9968	0.1558		4,658.8925

3.11 Building Construction - Phases 2 and 3 - 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	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.11 Building Construction - Phases 2 and 3 - 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	0.1144	4.0964	1.1230	0.0146	0.3840	4.5700e-003	0.3886	0.1106	4.3700e-003	0.1149		1,565.5097	1,565.5097	0.0817		1,567.5526
Worker	1.0570	0.6118	9.0151	0.0299	3.3533	0.0230	3.3763	0.8893	0.0212	0.9105		2,982.6268	2,982.6268	0.0668		2,984.2957
Total	1.1714	4.7082	10.1382	0.0445	3.7373	0.0276	3.7649	0.9999	0.0256	1.0254		4,548.1365	4,548.1365	0.1485		4,551.8483

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	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.11 Building Construction - Phases 2 and 3 - 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	0.1144	4.0964	1.1230	0.0146	0.3840	4.5700e-003	0.3886	0.1106	4.3700e-003	0.1149		1,565.5097	1,565.5097	0.0817		1,567.5526
Worker	1.0570	0.6118	9.0151	0.0299	3.3533	0.0230	3.3763	0.8893	0.0212	0.9105		2,982.6268	2,982.6268	0.0668		2,984.2957
Total	1.1714	4.7082	10.1382	0.0445	3.7373	0.0276	3.7649	0.9999	0.0256	1.0254		4,548.1365	4,548.1365	0.1485		4,551.8483

3.12 Paving - Phases 2 and 3 - 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	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.5472	2,207.5472	0.7140		2,225.3963

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.12 Paving - Phases 2 and 3 - 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	0.0381	1.3655	0.3743	4.8700e-003	0.1280	1.5200e-003	0.1295	0.0369	1.4600e-003	0.0383		521.8366	521.8366	0.0272		522.5175
Worker	0.2819	0.1631	2.4040	7.9800e-003	0.8942	6.1500e-003	0.9004	0.2372	5.6600e-003	0.2428		795.3672	795.3672	0.0178		795.8122
Total	0.3200	1.5286	2.7784	0.0129	1.0222	7.6700e-003	1.0299	0.2740	7.1200e-003	0.2811		1,317.2037	1,317.2037	0.0450		1,318.3297

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	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310	0.0000	2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310	0.0000	2,207.5472	2,207.5472	0.7140		2,225.3963

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.12 Paving - Phases 2 and 3 - 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	0.0381	1.3655	0.3743	4.8700e-003	0.1280	1.5200e-003	0.1295	0.0369	1.4600e-003	0.0383		521.8366	521.8366	0.0272		522.5175
Worker	0.2819	0.1631	2.4040	7.9800e-003	0.8942	6.1500e-003	0.9004	0.2372	5.6600e-003	0.2428		795.3672	795.3672	0.0178		795.8122
Total	0.3200	1.5286	2.7784	0.0129	1.0222	7.6700e-003	1.0299	0.2740	7.1200e-003	0.2811		1,317.2037	1,317.2037	0.0450		1,318.3297

3.13 Architectural Coating - Phases 2 and 3 - 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	49.9733					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	50.1540	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.13 Architectural Coating - Phases 2 and 3 - 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	0.0762	2.7310	0.7487	9.7500e-003	0.2560	3.0500e-003	0.2591	0.0737	2.9100e-003	0.0766		1,043.6731	1,043.6731	0.0545		1,045.0350
Worker	0.8456	0.4894	7.2121	0.0239	2.6826	0.0184	2.7011	0.7115	0.0170	0.7284		2,386.1015	2,386.1015	0.0534		2,387.4366
Total	0.9218	3.2204	7.9608	0.0337	2.9386	0.0215	2.9601	0.7852	0.0199	0.8050		3,429.7746	3,429.7746	0.1079		3,432.4716

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	49.9733					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	50.1540	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

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.13 Architectural Coating - Phases 2 and 3 - 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	0.0762	2.7310	0.7487	9.7500e-003	0.2560	3.0500e-003	0.2591	0.0737	2.9100e-003	0.0766		1,043.6731	1,043.6731	0.0545		1,045.0350
Worker	0.8456	0.4894	7.2121	0.0239	2.6826	0.0184	2.7011	0.7115	0.0170	0.7284		2,386.1015	2,386.1015	0.0534		2,387.4366
Total	0.9218	3.2204	7.9608	0.0337	2.9386	0.0215	2.9601	0.7852	0.0199	0.8050		3,429.7746	3,429.7746	0.1079		3,432.4716

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

	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	3.9048	17.6168	43.6820	0.1781	15.5725	0.1246	15.6971	4.1658	0.1157	4.2815		18,192.40 41	18,192.40 41	0.7958		18,212.30 01
Unmitigated	3.9048	17.6168	43.6820	0.1781	15.5725	0.1246	15.6971	4.1658	0.1157	4.2815		18,192.40 41	18,192.40 41	0.7958		18,212.30 01

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartment Mid Rise	1,362.34	1,304.48	1325.52	4,601,434	4,601,434
Enclosed Parking with Elevator	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	890.51	1,478.02	1018.86	1,352,980	1,352,980
Other Asphalt Surfaces	0.00	0.00	0.00		
Regional Shopping Center	263.17	306.60	171.62	554,321	554,321
Total	2,516.01	3,089.10	2,516.00	6,508,735	6,508,735

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
Apartment Mid Rise	14.70	5.90	8.70	40.00	19.40	40.60	86	11	3
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
High Turnover (Sit Down)	16.60	8.40	6.90	8.50	72.50	19.00	37	20	43
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Enclosed Parking with Elevator	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
High Turnover (Sit Down Restaurant)	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Other Asphalt Surfaces	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Regional Shopping Center	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825

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	0.1195	1.0380	0.5574	6.5200e-003		0.0826	0.0826		0.0826	0.0826		1,303.7404	1,303.7404	0.0250	0.0239	1,311.4879
NaturalGas Unmitigated	0.1195	1.0380	0.5574	6.5200e-003		0.0826	0.0826		0.0826	0.0826		1,303.7404	1,303.7404	0.0250	0.0239	1,311.4879

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

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	8234.03	0.0888	0.7588	0.3229	4.8400e-003		0.0614	0.0614		0.0614	0.0614		968.7097	968.7097	0.0186	0.0178	974.4663
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
High Turnover (Sit Down Restaurant)	2807.76	0.0303	0.2753	0.2312	1.6500e-003		0.0209	0.0209		0.0209	0.0209		330.3248	330.3248	6.3300e-003	6.0600e-003	332.2877
Other Asphalt Surfaces	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
Regional Shopping Center	40	4.3000e-004	3.9200e-003	3.2900e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		4.7059	4.7059	9.0000e-005	9.0000e-005	4.7339
Total		0.1195	1.0380	0.5574	6.5100e-003		0.0826	0.0826		0.0826	0.0826		1,303.7404	1,303.7404	0.0250	0.0239	1,311.4879

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

5.2 Energy by Land Use - NaturalGas**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	8.23403	0.0888	0.7588	0.3229	4.8400e-003		0.0614	0.0614		0.0614	0.0614		968.7097	968.7097	0.0186	0.0178	974.4663
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
High Turnover (Sit Down Restaurant)	2.80776	0.0303	0.2753	0.2312	1.6500e-003		0.0209	0.0209		0.0209	0.0209		330.3248	330.3248	6.3300e-003	6.0600e-003	332.2877
Other Asphalt Surfaces	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
Regional Shopping Center	0.04	4.3000e-004	3.9200e-003	3.2900e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		4.7059	4.7059	9.0000e-005	9.0000e-005	4.7339
Total		0.1195	1.0380	0.5574	6.5100e-003		0.0826	0.0826		0.0826	0.0826		1,303.7404	1,303.7404	0.0250	0.0239	1,311.4879

6.0 Area Detail**6.1 Mitigation Measures Area**

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

	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	8.5499	4.1819	23.4334	0.0263		0.4384	0.4384		0.4384	0.4384	0.0000	5,058.0716	5,058.0716	0.1341	0.0920	5,088.8429
Unmitigated	8.5499	4.1819	23.4334	0.0263		0.4384	0.4384		0.4384	0.4384	0.0000	5,058.0716	5,058.0716	0.1341	0.0920	5,088.8429

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	0.6168					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.8145					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4601	3.9314	1.6729	0.0251		0.3179	0.3179		0.3179	0.3179	0.0000	5,018.8235	5,018.8235	0.0962	0.0920	5,048.6479
Landscaping	0.6585	0.2505	21.7605	1.1500e-003		0.1206	0.1206		0.1206	0.1206		39.2480	39.2480	0.0379		40.1950
Total	8.5499	4.1819	23.4334	0.0262		0.4384	0.4384		0.4384	0.4384	0.0000	5,058.0716	5,058.0716	0.1341	0.0920	5,088.8429

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

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	0.6168					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.8145					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4601	3.9314	1.6729	0.0251		0.3179	0.3179		0.3179	0.3179	0.0000	5,018.8235	5,018.8235	0.0962	0.0920	5,048.6479
Landscaping	0.6585	0.2505	21.7605	1.1500e-003		0.1206	0.1206		0.1206	0.1206		39.2480	39.2480	0.0379		40.1950
Total	8.5499	4.1819	23.4334	0.0262		0.4384	0.4384		0.4384	0.4384	0.0000	5,058.0716	5,058.0716	0.1341	0.0920	5,088.8429

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

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

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

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

Pacific Coast Commons Specific Plan Project
South Coast AQMD Air District, Winter

1.0 Project Characteristics**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	792.00	Space	0.00	316,800.00	0
Other Asphalt Surfaces	12.65	1000sqft	0.00	12,650.00	0
High Turnover (Sit Down Restaurant)	4.95	1000sqft	0.00	3,952.00	0
Apartments Mid Rise	263.00	Dwelling Unit	0.00	327,021.00	752
Regional Shopping Center	7.30	1000sqft	5.35	7,300.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	8			Operational Year	2025
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	561.77	CH4 Intensity (lb/MW hr)	0.02	N2O Intensity (lb/MW hr)	0.005

1.3 User Entered Comments & Non-Default Data

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

Project Characteristics - Consistent with the DEIR's model.

Land Use - See SWAPE comment regarding underestimated land use sizes.

Construction Phase - Consistent with the DEIR's model.

Trips and VMT - See SWAPE comment regarding hauling trips. Worker and vendor trips consistent with the DEIR's model.

On-road Fugitive Dust -

Demolition - See SWAPE comment regarding demolition.

Grading - See SWAPE comment regarding acres of grading values, material moisture content, and material silt content. Material export consistent with the DEIR's model.

Architectural Coating - Architectural coating EFs consistent with the DEIR's model. See SWAPE comment regarding architectural coating areas.

Vehicle Trips - See SWAPE comment regarding operational vehicle trip rates.

Woodstoves - Consistent with the DEIR's model.

Area Coating - See SWAPE comment regarding area coating areas.

Energy Use -

Water And Wastewater - See SWAPE comment regarding wastewater treatment percentages.

Construction Off-road Equipment Mitigation - See SWAPE comment regarding construction-related mitigation measures.

Mobile Land Use Mitigation - See SWAPE comment regarding operational mitigation measures.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblConstructionPhase	NumDays	20.00	43.00
tblConstructionPhase	NumDays	20.00	44.00
tblConstructionPhase	NumDays	230.00	262.00

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tblConstructionPhase	NumDays	230.00	195.00
tblConstructionPhase	NumDays	20.00	21.00
tblConstructionPhase	NumDays	20.00	42.00
tblConstructionPhase	NumDays	20.00	44.00
tblConstructionPhase	NumDays	20.00	42.00
tblConstructionPhase	NumDays	20.00	43.00
tblConstructionPhase	NumDays	20.00	44.00
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	NumDays	10.00	22.00
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	223.55	237.00
tblFireplaces	NumberNoFireplace	26.30	26.00
tblFireplaces	NumberWood	13.15	0.00
tblGrading	MaterialExported	0.00	17,000.00
tblLandUse	LandUseSquareFeet	4,950.00	3,952.00
tblLandUse	LandUseSquareFeet	263,000.00	327,021.00
tblLandUse	LotAcreage	7.13	0.00
tblLandUse	LotAcreage	0.29	0.00
tblLandUse	LotAcreage	0.11	0.00
tblLandUse	LotAcreage	6.92	0.00
tblLandUse	LotAcreage	0.17	5.35
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.02
tblProjectCharacteristics	CO2IntensityFactor	702.44	561.77
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	84.00	60.00

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tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	84.00	30.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	WorkerTripNumber	15.00	80.00
tblTripsAndVMT	WorkerTripNumber	332.00	300.00
tblTripsAndVMT	WorkerTripNumber	15.00	80.00
tblTripsAndVMT	WorkerTripNumber	66.00	240.00
tblTripsAndVMT	WorkerTripNumber	18.00	50.00
tblTripsAndVMT	WorkerTripNumber	15.00	80.00
tblTripsAndVMT	WorkerTripNumber	332.00	120.00
tblTripsAndVMT	WorkerTripNumber	15.00	40.00
tblTripsAndVMT	WorkerTripNumber	66.00	80.00
tblTripsAndVMT	WorkerTripNumber	15.00	100.00
tblTripsAndVMT	WorkerTripNumber	18.00	120.00
tblTripsAndVMT	WorkerTripNumber	15.00	160.00
tblVehicleTrips	HS_TTP	19.20	19.40
tblVehicleTrips	HW_TTP	40.20	40.00
tblVehicleTrips	ST_TR	6.39	4.96
tblVehicleTrips	ST_TR	158.37	298.59
tblVehicleTrips	ST_TR	49.97	42.00

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tblVehicleTrips	SU_TR	5.86	5.04
tblVehicleTrips	SU_TR	131.84	205.83
tblVehicleTrips	SU_TR	25.24	23.51
tblVehicleTrips	WD_TR	6.65	5.18
tblVehicleTrips	WD_TR	127.15	179.90
tblVehicleTrips	WD_TR	42.70	36.05
tblWoodstoves	WoodstoveDayYear	25.00	0.00
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					
2021	4.1481	41.5977	25.8913	0.0666	18.6891	2.0506	20.7397	10.0973	1.8866	11.9839	0.0000	6,679.6906	6,679.6906	1.2240	0.0000	6,710.2910
2022	50.7478	21.9734	20.8622	0.0463	7.5106	0.9490	8.4595	3.6231	0.8731	4.4962	0.0000	4,539.1601	4,539.1601	0.9660	0.0000	4,556.4878
2023	3.1913	29.1780	26.1545	0.0859	19.5356	1.2770	20.8126	10.3233	1.1749	11.4981	0.0000	8,828.7568	8,828.7568	1.2565	0.0000	8,860.1679
2024	52.5051	18.1841	26.2624	0.0698	3.9608	0.6411	4.5196	1.0592	0.6027	1.6025	0.0000	6,984.7665	6,984.7665	0.8830	0.0000	7,006.8408
Maximum	52.5051	41.5977	26.2624	0.0859	19.5356	2.0506	20.8126	10.3233	1.8866	11.9839	0.0000	8,828.7568	8,828.7568	1.2565	0.0000	8,860.1679

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

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					
2021	4.1481	41.5977	25.8913	0.0666	18.6891	2.0506	20.7397	10.0973	1.8866	11.9839	0.0000	6,679.6906	6,679.6906	1.2240	0.0000	6,710.2910
2022	50.7478	21.9734	20.8622	0.0463	7.5106	0.9490	8.4595	3.6231	0.8731	4.4962	0.0000	4,539.1601	4,539.1601	0.9660	0.0000	4,556.4878
2023	3.1913	29.1780	26.1545	0.0859	19.5356	1.2770	20.8126	10.3233	1.1749	11.4981	0.0000	8,828.7568	8,828.7568	1.2565	0.0000	8,860.1679
2024	52.5051	18.1841	26.2624	0.0698	3.9608	0.6411	4.5196	1.0592	0.6027	1.6025	0.0000	6,984.7665	6,984.7665	0.8830	0.0000	7,006.8408
Maximum	52.5051	41.5977	26.2624	0.0859	19.5356	2.0506	20.8126	10.3233	1.8866	11.9839	0.0000	8,828.7568	8,828.7568	1.2565	0.0000	8,860.1679

[illegible]

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

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	8.5499	4.1819	23.4334	0.0263		0.4384	0.4384		0.4384	0.4384	0.0000	5,058.0716	5,058.0716	0.1341	0.0920	5,088.8429
Energy	0.1195	1.0380	0.5574	6.5200e-003		0.0826	0.0826		0.0826	0.0826		1,303.7404	1,303.7404	0.0250	0.0239	1,311.4879
Mobile	3.6801	17.7865	41.3513	0.1685	15.5725	0.1253	15.6978	4.1658	0.1163	4.2821		17,222.0226	17,222.0226	0.8030		17,242.0977
Total	12.3496	23.0063	65.3421	0.2013	15.5725	0.6463	16.2188	4.1658	0.6374	4.8031	0.0000	23,583.8345	23,583.8345	0.9621	0.1159	23,642.4285

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	8.5499	4.1819	23.4334	0.0263		0.4384	0.4384		0.4384	0.4384	0.0000	5,058.0716	5,058.0716	0.1341	0.0920	5,088.8429
Energy	0.1195	1.0380	0.5574	6.5200e-003		0.0826	0.0826		0.0826	0.0826		1,303.7404	1,303.7404	0.0250	0.0239	1,311.4879
Mobile	3.6801	17.7865	41.3513	0.1685	15.5725	0.1253	15.6978	4.1658	0.1163	4.2821		17,222.0226	17,222.0226	0.8030		17,242.0977
Total	12.3496	23.0063	65.3421	0.2013	15.5725	0.6463	16.2188	4.1658	0.6374	4.8031	0.0000	23,583.8345	23,583.8345	0.9621	0.1159	23,642.4285

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

	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
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 - Phase 1	Demolition	10/1/2021	10/31/2021	5	21	
2	Site Preparation - Phase 1	Site Preparation	11/1/2021	11/30/2021	5	22	
3	Grading - Phase 1	Grading	12/1/2021	1/31/2022	5	44	
4	Building Construction - Phase 1	Building Construction	2/1/2022	10/31/2022	5	195	
5	Paving - Phase 1	Paving	11/1/2022	12/31/2022	5	44	
6	Architectural Coating - Phase 1	Architectural Coating	11/1/2022	12/31/2022	5	44	
7	Demolition - Phases 2 and 3	Demolition	1/1/2023	2/28/2023	5	42	
8	Site Preparation - Phases 2 and 3	Site Preparation	3/1/2023	3/30/2023	5	22	
9	Grading - Phases 2 and 3	Grading	4/1/2023	5/30/2023	5	42	
10	Building Construction - Phases 2 and 3	Building Construction	6/1/2023	5/31/2024	5	262	
11	Paving - Phases 2 and 3	Paving	6/1/2024	7/31/2024	5	43	
12	Architectural Coating - Phases 2 and 3	Architectural Coating	6/1/2024	7/31/2024	5	43	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 662,218; Residential Outdoor: 220,739; Non-Residential Indoor: 18,378; Non-Residential Outdoor: 6,126; Striped Parking Area: 19,767 (Architectural Coating – sqft)

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition - Phase 1	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition - Phase 1	Excavators	3	8.00	158	0.38
Demolition - Phase 1	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation - Phase 1	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation - Phase 1	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading - Phase 1	Excavators	1	8.00	158	0.38
Grading - Phase 1	Graders	1	8.00	187	0.41
Grading - Phase 1	Rubber Tired Dozers	1	8.00	247	0.40
Grading - Phase 1	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction - Phase 1	Cranes	1	7.00	231	0.29
Building Construction - Phase 1	Forklifts	3	8.00	89	0.20
Building Construction - Phase 1	Generator Sets	1	8.00	84	0.74
Building Construction - Phase 1	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction - Phase 1	Welders	1	8.00	46	0.45
Paving - Phase 1	Pavers	2	8.00	130	0.42
Paving - Phase 1	Paving Equipment	2	8.00	132	0.36
Paving - Phase 1	Rollers	2	8.00	80	0.38
Architectural Coating - Phase 1	Air Compressors	1	6.00	78	0.48
Demolition - Phases 2 and 3	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition - Phases 2 and 3	Excavators	3	8.00	158	0.38
Demolition - Phases 2 and 3	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation - Phases 2 and 3	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation - Phases 2 and 3	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading - Phases 2 and 3	Excavators	1	8.00	158	0.38
Grading - Phases 2 and 3	Graders	1	8.00	187	0.41

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Grading - Phases 2 and 3	Rubber Tired Dozers	1	8.00	247	0.40
Grading - Phases 2 and 3	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction - Phases 2 and 3	Cranes	1	7.00	231	0.29
Building Construction - Phases 2 and 3	Forklifts	3	8.00	89	0.20
Building Construction - Phases 2 and 3	Generator Sets	1	8.00	84	0.74
Building Construction - Phases 2 and 3	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction - Phases 2 and 3	Welders	1	8.00	46	0.45
Paving - Phases 2 and 3	Pavers	2	8.00	130	0.42
Paving - Phases 2 and 3	Paving Equipment	2	8.00	132	0.36
Paving - Phases 2 and 3	Rollers	2	8.00	80	0.38
Architectural Coating - Phases 2 and 3	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 - Phase 1	6	80.00	20.00	406.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation - Phase 1	7	50.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading - Phase 1	6	80.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction - Phase 1	9	120.00	30.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving - Phase 1	6	40.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating - Phase 1	1	80.00	20.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition - Phases 2 and 3	6	100.00	40.00	406.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation - Phases 2 and 3	7	120.00	20.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading - Phases 2 and 3	6	160.00	20.00	2,125.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction - Phases 2 and 3	9	300.00	60.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving - Phases 2 and 3	6	80.00	20.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating - Phases 2 and 3	1	240.00	40.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

3.1 Mitigation Measures Construction**3.2 Demolition - Phase 1 - 2021****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					4.1873	0.0000	4.1873	0.6340	0.0000	0.6340			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411		3,747.944 9	3,747.944 9	1.0549		3,774.317 4
Total	3.1651	31.4407	21.5650	0.0388	4.1873	1.5513	5.7386	0.6340	1.4411	2.0751		3,747.944 9	3,747.944 9	1.0549		3,774.317 4

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

3.2 Demolition - Phase 1 - 2021**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	0.1443	4.9493	1.1115	0.0145	0.3378	0.0154	0.3532	0.0926	0.0147	0.1073		1,574.1110	1,574.1110	0.1115		1,576.8988
Vendor	0.0586	1.9015	0.5065	4.9600e-003	0.1280	3.9600e-003	0.1320	0.0369	3.7900e-003	0.0406		529.1004	529.1004	0.0354		529.9854
Worker	0.3690	0.2398	2.7083	8.3100e-003	0.8942	6.5800e-003	0.9008	0.2372	6.0600e-003	0.2432		828.5343	828.5343	0.0222		829.0894
Total	0.5718	7.0905	4.3263	0.0278	1.3600	0.0259	1.3860	0.3666	0.0246	0.3912		2,931.7456	2,931.7456	0.1691		2,935.9736

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					4.1873	0.0000	4.1873	0.6340	0.0000	0.6340			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411	0.0000	3,747.9449	3,747.9449	1.0549		3,774.3174
Total	3.1651	31.4407	21.5650	0.0388	4.1873	1.5513	5.7386	0.6340	1.4411	2.0751	0.0000	3,747.9449	3,747.9449	1.0549		3,774.3174

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

3.2 Demolition - Phase 1 - 2021**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	0.1443	4.9493	1.1115	0.0145	0.3378	0.0154	0.3532	0.0926	0.0147	0.1073		1,574.1110	1,574.1110	0.1115		1,576.8988
Vendor	0.0586	1.9015	0.5065	4.9600e-003	0.1280	3.9600e-003	0.1320	0.0369	3.7900e-003	0.0406		529.1004	529.1004	0.0354		529.9854
Worker	0.3690	0.2398	2.7083	8.3100e-003	0.8942	6.5800e-003	0.9008	0.2372	6.0600e-003	0.2432		828.5343	828.5343	0.0222		829.0894
Total	0.5718	7.0905	4.3263	0.0278	1.3600	0.0259	1.3860	0.3666	0.0246	0.3912		2,931.7456	2,931.7456	0.1691		2,935.9736

3.3 Site Preparation - Phase 1 - 2021**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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.6569	3,685.6569	1.1920		3,715.4573
Total	3.8882	40.4971	21.1543	0.0380	18.0663	2.0445	20.1107	9.9307	1.8809	11.8116		3,685.6569	3,685.6569	1.1920		3,715.4573

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

3.3 Site Preparation - Phase 1 - 2021**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	0.0293	0.9507	0.2533	2.4800e-003	0.0640	1.9800e-003	0.0660	0.0184	1.9000e-003	0.0203		264.5502	264.5502	0.0177		264.9927
Worker	0.2306	0.1498	1.6927	5.2000e-003	0.5589	4.1100e-003	0.5630	0.1482	3.7900e-003	0.1520		517.8339	517.8339	0.0139		518.1809
Total	0.2599	1.1006	1.9460	7.6800e-003	0.6229	6.0900e-003	0.6290	0.1667	5.6900e-003	0.1723		782.3841	782.3841	0.0316		783.1736

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809	0.0000	3,685.6569	3,685.6569	1.1920		3,715,4573
Total	3.8882	40.4971	21.1543	0.0380	18.0663	2.0445	20.1107	9.9307	1.8809	11.8116	0.0000	3,685.6569	3,685.6569	1.1920		3,715,4573

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

3.3 Site Preparation - Phase 1 - 2021**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	0.0293	0.9507	0.2533	2.4800e-003	0.0640	1.9800e-003	0.0660	0.0184	1.9000e-003	0.0203		264.5502	264.5502	0.0177		264.9927
Worker	0.2306	0.1498	1.6927	5.2000e-003	0.5589	4.1100e-003	0.5630	0.1482	3.7900e-003	0.1520		517.8339	517.8339	0.0139		518.1809
Total	0.2599	1.1006	1.9460	7.6800e-003	0.6229	6.0900e-003	0.6290	0.1667	5.6900e-003	0.1723		782.3841	782.3841	0.0316		783.1736

3.4 Grading - Phase 1 - 2021**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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.2903	24.7367	15.8575	0.0296		1.1599	1.1599		1.0671	1.0671		2,871.9285	2,871.9285	0.9288		2,895.1495
Total	2.2903	24.7367	15.8575	0.0296	6.5523	1.1599	7.7123	3.3675	1.0671	4.4346		2,871.9285	2,871.9285	0.9288		2,895.1495

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

3.4 Grading - Phase 1 - 2021**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	0.0293	0.9507	0.2533	2.4800e-003	0.0640	1.9800e-003	0.0660	0.0184	1.9000e-003	0.0203		264.5502	264.5502	0.0177		264.9927
Worker	0.3690	0.2398	2.7083	8.3100e-003	0.8942	6.5800e-003	0.9008	0.2372	6.0600e-003	0.2432		828.5343	828.5343	0.0222		829.0894
Total	0.3982	1.1905	2.9616	0.0108	0.9582	8.5600e-003	0.9668	0.2556	7.9600e-003	0.2635		1,093.0845	1,093.0845	0.0399		1,094.0821

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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.2903	24.7367	15.8575	0.0296		1.1599	1.1599		1.0671	1.0671	0.0000	2,871.9285	2,871.9285	0.9288		2,895.1495
Total	2.2903	24.7367	15.8575	0.0296	6.5523	1.1599	7.7123	3.3675	1.0671	4.4346	0.0000	2,871.9285	2,871.9285	0.9288		2,895.1495

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

3.4 Grading - Phase 1 - 2021**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	0.0293	0.9507	0.2533	2.4800e-003	0.0640	1.9800e-003	0.0660	0.0184	1.9000e-003	0.0203		264.5502	264.5502	0.0177		264.9927
Worker	0.3690	0.2398	2.7083	8.3100e-003	0.8942	6.5800e-003	0.9008	0.2372	6.0600e-003	0.2432		828.5343	828.5343	0.0222		829.0894
Total	0.3982	1.1905	2.9616	0.0108	0.9582	8.5600e-003	0.9668	0.2556	7.9600e-003	0.2635		1,093.0845	1,093.0845	0.0399		1,094.0821

3.4 Grading - Phase 1 - 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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656		2,872.0464	2,872.0464	0.9289		2,895.2684
Total	1.9486	20.8551	15.2727	0.0297	6.5523	0.9409	7.4932	3.3675	0.8656	4.2331		2,872.0464	2,872.0464	0.9289		2,895.2684

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

3.4 Grading - Phase 1 - 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	0.0275	0.9017	0.2395	2.4500e-003	0.0640	1.7200e-003	0.0657	0.0184	1.6400e-003	0.0201		262.1942	262.1942	0.0170		262.6199
Worker	0.3470	0.2165	2.4998	8.0100e-003	0.8942	6.3900e-003	0.9006	0.2372	5.8900e-003	0.2430		798.8292	798.8292	0.0201		799.3305
Total	0.3745	1.1182	2.7393	0.0105	0.9582	8.1100e-003	0.9663	0.2556	7.5300e-003	0.2631		1,061.0234	1,061.0234	0.0371		1,061.9504

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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656	0.0000	2,872.0464	2,872.0464	0.9289		2,895.2684
Total	1.9486	20.8551	15.2727	0.0297	6.5523	0.9409	7.4932	3.3675	0.8656	4.2331	0.0000	2,872.0464	2,872.0464	0.9289		2,895.2684

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

3.4 Grading - Phase 1 - 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	0.0275	0.9017	0.2395	2.4500e-003	0.0640	1.7200e-003	0.0657	0.0184	1.6400e-003	0.0201		262.1942	262.1942	0.0170		262.6199
Worker	0.3470	0.2165	2.4998	8.0100e-003	0.8942	6.3900e-003	0.9006	0.2372	5.8900e-003	0.2430		798.8292	798.8292	0.0201		799.3305
Total	0.3745	1.1182	2.7393	0.0105	0.9582	8.1100e-003	0.9663	0.2556	7.5300e-003	0.2631		1,061.0234	1,061.0234	0.0371		1,061.9504

3.5 Building Construction - Phase 1 - 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	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

3.5 Building Construction - Phase 1 - 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	0.0824	2.7052	0.7185	7.3600e-003	0.1920	5.1600e-003	0.1972	0.0553	4.9300e-003	0.0602		786.5827	786.5827	0.0511		787.8598
Worker	0.5205	0.3248	3.7497	0.0120	1.3413	9.5900e-003	1.3509	0.3557	8.8300e-003	0.3646		1,198.2438	1,198.2438	0.0301		1,198.9958
Total	0.6029	3.0299	4.4682	0.0194	1.5333	0.0148	1.5481	0.4110	0.0138	0.4248		1,984.8265	1,984.8265	0.0812		1,986.8556

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	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

3.5 Building Construction - Phase 1 - 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	0.0824	2.7052	0.7185	7.3600e-003	0.1920	5.1600e-003	0.1972	0.0553	4.9300e-003	0.0602		786.5827	786.5827	0.0511		787.8598
Worker	0.5205	0.3248	3.7497	0.0120	1.3413	9.5900e-003	1.3509	0.3557	8.8300e-003	0.3646		1,198.2438	1,198.2438	0.0301		1,198.9958
Total	0.6029	3.0299	4.4682	0.0194	1.5333	0.0148	1.5481	0.4110	0.0138	0.4248		1,984.8265	1,984.8265	0.0812		1,986.8556

3.6 Paving - Phase 1 - 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	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

3.6 Paving - Phase 1 - 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	0.0275	0.9017	0.2395	2.4500e-003	0.0640	1.7200e-003	0.0657	0.0184	1.6400e-003	0.0201		262.1942	262.1942	0.0170		262.6199
Worker	0.1735	0.1083	1.2499	4.0100e-003	0.4471	3.2000e-003	0.4503	0.1186	2.9400e-003	0.1215		399.4146	399.4146	0.0100		399.6653
Total	0.2010	1.0100	1.4894	6.4600e-003	0.5111	4.9200e-003	0.5160	0.1370	4.5800e-003	0.1416		661.6088	661.6088	0.0271		662.2852

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	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104

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3.6 Paving - Phase 1 - 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	0.0275	0.9017	0.2395	2.4500e-003	0.0640	1.7200e-003	0.0657	0.0184	1.6400e-003	0.0201		262.1942	262.1942	0.0170		262.6199
Worker	0.1735	0.1083	1.2499	4.0100e-003	0.4471	3.2000e-003	0.4503	0.1186	2.9400e-003	0.1215		399.4146	399.4146	0.0100		399.6653
Total	0.2010	1.0100	1.4894	6.4600e-003	0.5111	4.9200e-003	0.5160	0.1370	4.5800e-003	0.1416		661.6088	661.6088	0.0271		662.2852

3.7 Architectural Coating - Phase 1 - 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					
Archit. Coating	48.8375					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	49.0421	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

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3.7 Architectural Coating - Phase 1 - 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	0.0550	1.8034	0.4790	4.9100e-003	0.1280	3.4400e-003	0.1314	0.0369	3.2900e-003	0.0401		524.3885	524.3885	0.0341		525.2399
Worker	0.3470	0.2165	2.4998	8.0100e-003	0.8942	6.3900e-003	0.9006	0.2372	5.8900e-003	0.2430		798.8292	798.8292	0.0201		799.3305
Total	0.4019	2.0199	2.9788	0.0129	1.0222	9.8300e-003	1.0321	0.2740	9.1800e-003	0.2832		1,323.2177	1,323.2177	0.0541		1,324.5704

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	48.8375					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	49.0421	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

3.7 Architectural Coating - Phase 1 - 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	0.0550	1.8034	0.4790	4.9100e-003	0.1280	3.4400e-003	0.1314	0.0369	3.2900e-003	0.0401		524.3885	524.3885	0.0341		525.2399
Worker	0.3470	0.2165	2.4998	8.0100e-003	0.8942	6.3900e-003	0.9006	0.2372	5.8900e-003	0.2430		798.8292	798.8292	0.0201		799.3305
Total	0.4019	2.0199	2.9788	0.0129	1.0222	9.8300e-003	1.0321	0.2740	9.1800e-003	0.2832		1,323.2177	1,323.2177	0.0541		1,324.5704

3.8 Demolition - Phases 2 and 3 - 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					
Fugitive Dust					2.0936	0.0000	2.0936	0.3170	0.0000	0.3170			0.0000			0.0000
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280		3,746.9840	3,746.9840	1.0494		3,773.2183
Total	2.2691	21.4844	19.6434	0.0388	2.0936	0.9975	3.0912	0.3170	0.9280	1.2450		3,746.9840	3,746.9840	1.0494		3,773.2183

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3.8 Demolition - Phases 2 and 3 - 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	0.0454	1.4687	0.4906	6.8800e-003	0.1689	2.7800e-003	0.1717	0.0463	2.6600e-003	0.0490		746.9002	746.9002	0.0500		748.1504
Vendor	0.0820	2.7202	0.8471	9.5100e-003	0.2560	3.2300e-003	0.2592	0.0737	3.0900e-003	0.0768		1,017.4466	1,017.4466	0.0590		1,018.9209
Worker	0.4091	0.2448	2.8799	9.6400e-003	1.1178	7.7800e-003	1.1256	0.2964	7.1700e-003	0.3036		961.2964	961.2964	0.0226		961.8610
Total	0.5365	4.4337	4.2176	0.0260	1.5427	0.0138	1.5565	0.4164	0.0129	0.4293		2,725.6432	2,725.6432	0.1316		2,728.9323

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					2.0936	0.0000	2.0936	0.3170	0.0000	0.3170			0.0000			0.0000
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280	0.0000	3,746.9840	3,746.9840	1.0494		3,773.2183
Total	2.2691	21.4844	19.6434	0.0388	2.0936	0.9975	3.0912	0.3170	0.9280	1.2450	0.0000	3,746.9840	3,746.9840	1.0494		3,773.2183

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

3.8 Demolition - Phases 2 and 3 - 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	0.0454	1.4687	0.4906	6.8800e-003	0.1689	2.7800e-003	0.1717	0.0463	2.6600e-003	0.0490		746.9002	746.9002	0.0500		748.1504
Vendor	0.0820	2.7202	0.8471	9.5100e-003	0.2560	3.2300e-003	0.2592	0.0737	3.0900e-003	0.0768		1,017.4466	1,017.4466	0.0590		1,018.9209
Worker	0.4091	0.2448	2.8799	9.6400e-003	1.1178	7.7800e-003	1.1256	0.2964	7.1700e-003	0.3036		961.2964	961.2964	0.0226		961.8610
Total	0.5365	4.4337	4.2176	0.0260	1.5427	0.0138	1.5565	0.4164	0.0129	0.4293		2,725.6432	2,725.6432	0.1316		2,728.9323

3.9 Site Preparation - Phases 2 and 3 - 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					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647		3,687.3081	3,687.3081	1.1926		3,717.1219
Total	2.6595	27.5242	18.2443	0.0381	18.0663	1.2660	19.3323	9.9307	1.1647	11.0954		3,687.3081	3,687.3081	1.1926		3,717.1219

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3.9 Site Preparation - Phases 2 and 3 - 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	0.0410	1.3601	0.4235	4.7600e-003	0.1280	1.6100e-003	0.1296	0.0369	1.5400e-003	0.0384		508.7233	508.7233	0.0295		509.4604
Worker	0.4909	0.2938	3.4559	0.0116	1.3413	9.3400e-003	1.3507	0.3557	8.6000e-003	0.3643		1,153.5557	1,153.5557	0.0271		1,154.2332
Total	0.5319	1.6538	3.8795	0.0163	1.4693	0.0110	1.4803	0.3926	0.0101	0.4027		1,662.2790	1,662.2790	0.0566		1,663.6936

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647	0.0000	3,687.3081	3,687.3081	1.1926		3,717.1219
Total	2.6595	27.5242	18.2443	0.0381	18.0663	1.2660	19.3323	9.9307	1.1647	11.0954	0.0000	3,687.3081	3,687.3081	1.1926		3,717.1219

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3.9 Site Preparation - Phases 2 and 3 - 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	0.0410	1.3601	0.4235	4.7600e-003	0.1280	1.6100e-003	0.1296	0.0369	1.5400e-003	0.0384		508.7233	508.7233	0.0295		509.4604
Worker	0.4909	0.2938	3.4559	0.0116	1.3413	9.3400e-003	1.3507	0.3557	8.6000e-003	0.3643		1,153.5557	1,153.5557	0.0271		1,154.2332
Total	0.5319	1.6538	3.8795	0.0163	1.4693	0.0110	1.4803	0.3926	0.0101	0.4027		1,662.2790	1,662.2790	0.0566		1,663.6936

3.10 Grading - Phases 2 and 3 - 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					
Fugitive Dust					6.5981	0.0000	6.5981	3.3744	0.0000	3.3744			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129		2,872.6910	2,872.6910	0.9291		2,895.9182
Total	1.7109	17.9359	14.7507	0.0297	6.5981	0.7749	7.3730	3.3744	0.7129	4.0873		2,872.6910	2,872.6910	0.9291		2,895.9182

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3.10 Grading - Phases 2 and 3 - 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	0.2374	7.6871	2.5678	0.0360	0.8841	0.0146	0.8986	0.2423	0.0139	0.2562		3,909.268 2	3,909.268 2	0.2617		3,915.811 7
Vendor	0.0410	1.3601	0.4235	4.7600e-003	0.1280	1.6100e-003	0.1296	0.0369	1.5400e-003	0.0384		508.7233	508.7233	0.0295		509.4604
Worker	0.6545	0.3917	4.6079	0.0154	1.7884	0.0125	1.8009	0.4743	0.0115	0.4858		1,538.074 3	1,538.074 3	0.0361		1,538.977 6
Total	0.9329	9.4389	7.5992	0.0562	2.8005	0.0286	2.8291	0.7534	0.0269	0.7804		5,956.065 8	5,956.065 8	0.3274		5,964.249 7

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					6.5981	0.0000	6.5981	3.3744	0.0000	3.3744			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129	0.0000	2,872.691 0	2,872.691 0	0.9291		2,895.918 2
Total	1.7109	17.9359	14.7507	0.0297	6.5981	0.7749	7.3730	3.3744	0.7129	4.0873	0.0000	2,872.691 0	2,872.691 0	0.9291		2,895.918 2

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3.10 Grading - Phases 2 and 3 - 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	0.2374	7.6871	2.5678	0.0360	0.8841	0.0146	0.8986	0.2423	0.0139	0.2562		3,909.268 2	3,909.268 2	0.2617		3,915.811 7
Vendor	0.0410	1.3601	0.4235	4.7600e-003	0.1280	1.6100e-003	0.1296	0.0369	1.5400e-003	0.0384		508.7233	508.7233	0.0295		509.4604
Worker	0.6545	0.3917	4.6079	0.0154	1.7884	0.0125	1.8009	0.4743	0.0115	0.4858		1,538.074 3	1,538.074 3	0.0361		1,538.977 6
Total	0.9329	9.4389	7.5992	0.0562	2.8005	0.0286	2.8291	0.7534	0.0269	0.7804		5,956.065 8	5,956.065 8	0.3274		5,964.249 7

3.11 Building Construction - Phases 2 and 3 - 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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.209 9	2,555.209 9	0.6079		2,570.406 1
Total	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.209 9	2,555.209 9	0.6079		2,570.406 1

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3.11 Building Construction - Phases 2 and 3 - 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	0.1231	4.0803	1.2706	0.0143	0.3840	4.8400e-003	0.3889	0.1106	4.6300e-003	0.1152		1,526.1699	1,526.1699	0.0885		1,528.3813
Worker	1.2272	0.7344	8.6398	0.0289	3.3533	0.0234	3.3767	0.8893	0.0215	0.9108		2,883.8893	2,883.8893	0.0678		2,885.5830
Total	1.3502	4.8146	9.9105	0.0432	3.7373	0.0282	3.7655	0.9999	0.0261	1.0260		4,410.0592	4,410.0592	0.1562		4,413.9643

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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061

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3.11 Building Construction - Phases 2 and 3 - 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	0.1231	4.0803	1.2706	0.0143	0.3840	4.8400e-003	0.3889	0.1106	4.6300e-003	0.1152		1,526.1699	1,526.1699	0.0885		1,528.3813
Worker	1.2272	0.7344	8.6398	0.0289	3.3533	0.0234	3.3767	0.8893	0.0215	0.9108		2,883.8893	2,883.8893	0.0678		2,885.5830
Total	1.3502	4.8146	9.9105	0.0432	3.7373	0.0282	3.7655	0.9999	0.0261	1.0260		4,410.0592	4,410.0592	0.1562		4,413.9643

3.11 Building Construction - Phases 2 and 3 - 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	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077

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3.11 Building Construction - Phases 2 and 3 - 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	0.1204	4.0714	1.2342	0.0142	0.3840	4.7700e-003	0.3888	0.1106	4.5600e-003	0.1151		1,520.9792	1,520.9792	0.0870		1,523.1541
Worker	1.1649	0.6690	8.0553	0.0280	3.3533	0.0230	3.3763	0.8893	0.0212	0.9105		2,788.8676	2,788.8676	0.0620		2,790.4183
Total	1.2853	4.7403	9.2895	0.0422	3.7373	0.0278	3.7651	0.9999	0.0258	1.0256		4,309.8468	4,309.8468	0.1490		4,313.5724

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	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

3.11 Building Construction - Phases 2 and 3 - 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	0.1204	4.0714	1.2342	0.0142	0.3840	4.7700e-003	0.3888	0.1106	4.5600e-003	0.1151		1,520.979 2	1,520.979 2	0.0870		1,523.154 1
Worker	1.1649	0.6690	8.0553	0.0280	3.3533	0.0230	3.3763	0.8893	0.0212	0.9105		2,788.867 6	2,788.867 6	0.0620		2,790.418 3
Total	1.2853	4.7403	9.2895	0.0422	3.7373	0.0278	3.7651	0.9999	0.0258	1.0256		4,309.846 8	4,309.846 8	0.1490		4,313.572 4

3.12 Paving - Phases 2 and 3 - 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	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.547 2	2,207.547 2	0.7140		2,225.396 3
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.547 2	2,207.547 2	0.7140		2,225.396 3

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

3.12 Paving - Phases 2 and 3 - 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	0.0401	1.3571	0.4114	4.7400e-003	0.1280	1.5900e-003	0.1296	0.0369	1.5200e-003	0.0384		506.9931	506.9931	0.0290		507.7180
Worker	0.3106	0.1784	2.1481	7.4600e-003	0.8942	6.1500e-003	0.9004	0.2372	5.6600e-003	0.2428		743.6980	743.6980	0.0165		744.1115
Total	0.3508	1.5355	2.5595	0.0122	1.0222	7.7400e-003	1.0300	0.2740	7.1800e-003	0.2812		1,250.6911	1,250.6911	0.0455		1,251.8296

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	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310	0.0000	2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310	0.0000	2,207.5472	2,207.5472	0.7140		2,225.3963

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

3.12 Paving - Phases 2 and 3 - 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	0.0401	1.3571	0.4114	4.7400e-003	0.1280	1.5900e-003	0.1296	0.0369	1.5200e-003	0.0384		506.9931	506.9931	0.0290		507.7180
Worker	0.3106	0.1784	2.1481	7.4600e-003	0.8942	6.1500e-003	0.9004	0.2372	5.6600e-003	0.2428		743.6980	743.6980	0.0165		744.1115
Total	0.3508	1.5355	2.5595	0.0122	1.0222	7.7400e-003	1.0300	0.2740	7.1800e-003	0.2812		1,250.6911	1,250.6911	0.0455		1,251.8296

3.13 Architectural Coating - Phases 2 and 3 - 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	49.9733					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	50.1540	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

3.13 Architectural Coating - Phases 2 and 3 - 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	0.0803	2.7142	0.8228	9.4800e-003	0.2560	3.1800e-003	0.2592	0.0737	3.0400e-003	0.0767		1,013.986 1	1,013.986 1	0.0580		1,015.436 1
Worker	0.9319	0.5352	6.4443	0.0224	2.6826	0.0184	2.7011	0.7115	0.0170	0.7284		2,231.094 1	2,231.094 1	0.0496		2,232.334 6
Total	1.0122	3.2494	7.2671	0.0319	2.9386	0.0216	2.9603	0.7852	0.0200	0.8052		3,245.080 2	3,245.080 2	0.1076		3,247.770 7

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	49.9733					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	50.1540	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

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

3.13 Architectural Coating - Phases 2 and 3 - 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	0.0803	2.7142	0.8228	9.4800e-003	0.2560	3.1800e-003	0.2592	0.0737	3.0400e-003	0.0767		1,013.9861	1,013.9861	0.0580		1,015.4361
Worker	0.9319	0.5352	6.4443	0.0224	2.6826	0.0184	2.7011	0.7115	0.0170	0.7284		2,231.0941	2,231.0941	0.0496		2,232.3346
Total	1.0122	3.2494	7.2671	0.0319	2.9386	0.0216	2.9603	0.7852	0.0200	0.8052		3,245.0802	3,245.0802	0.1076		3,247.7707

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

	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	3.6801	17.7865	41.3513	0.1685	15.5725	0.1253	15.6978	4.1658	0.1163	4.2821		17,222.02 26	17,222.02 26	0.8030		17,242.09 77
Unmitigated	3.6801	17.7865	41.3513	0.1685	15.5725	0.1253	15.6978	4.1658	0.1163	4.2821		17,222.02 26	17,222.02 26	0.8030		17,242.09 77

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,362.34	1,304.48	1325.52	4,601,434	4,601,434
Enclosed Parking with Elevator	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	890.51	1,478.02	1018.86	1,352,980	1,352,980
Other Asphalt Surfaces	0.00	0.00	0.00		
Regional Shopping Center	263.17	306.60	171.62	554,321	554,321
Total	2,516.01	3,089.10	2,516.00	6,508,735	6,508,735

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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	40.00	19.40	40.60	86	11	3
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
High Turnover (Sit Down)	16.60	8.40	6.90	8.50	72.50	19.00	37	20	43
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11

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4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Enclosed Parking with Elevator	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
High Turnover (Sit Down Restaurant)	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Other Asphalt Surfaces	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Regional Shopping Center	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825

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	0.1195	1.0380	0.5574	6.5200e-003		0.0826	0.0826		0.0826	0.0826		1,303.7404	1,303.7404	0.0250	0.0239	1,311.4879
NaturalGas Unmitigated	0.1195	1.0380	0.5574	6.5200e-003		0.0826	0.0826		0.0826	0.0826		1,303.7404	1,303.7404	0.0250	0.0239	1,311.4879

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

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	8234.03	0.0888	0.7588	0.3229	4.8400e-003		0.0614	0.0614		0.0614	0.0614		968.7097	968.7097	0.0186	0.0178	974.4663
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
High Turnover (Sit Down Restaurant)	2807.76	0.0303	0.2753	0.2312	1.6500e-003		0.0209	0.0209		0.0209	0.0209		330.3248	330.3248	6.3300e-003	6.0600e-003	332.2877
Other Asphalt Surfaces	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
Regional Shopping Center	40	4.3000e-004	3.9200e-003	3.2900e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		4.7059	4.7059	9.0000e-005	9.0000e-005	4.7339
Total		0.1195	1.0380	0.5574	6.5100e-003		0.0826	0.0826		0.0826	0.0826		1,303.7404	1,303.7404	0.0250	0.0239	1,311.4879

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

5.2 Energy by Land Use - NaturalGas**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	8.23403	0.0888	0.7588	0.3229	4.8400e-003		0.0614	0.0614		0.0614	0.0614		968.7097	968.7097	0.0186	0.0178	974.4663
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
High Turnover (Sit Down Restaurant)	2.80776	0.0303	0.2753	0.2312	1.6500e-003		0.0209	0.0209		0.0209	0.0209		330.3248	330.3248	6.3300e-003	6.0600e-003	332.2877
Other Asphalt Surfaces	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
Regional Shopping Center	0.04	4.3000e-004	3.9200e-003	3.2900e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		4.7059	4.7059	9.0000e-005	9.0000e-005	4.7339
Total		0.1195	1.0380	0.5574	6.5100e-003		0.0826	0.0826		0.0826	0.0826		1,303.7404	1,303.7404	0.0250	0.0239	1,311.4879

6.0 Area Detail**6.1 Mitigation Measures Area**

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

	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	8.5499	4.1819	23.4334	0.0263		0.4384	0.4384		0.4384	0.4384	0.0000	5,058.0716	5,058.0716	0.1341	0.0920	5,088.8429
Unmitigated	8.5499	4.1819	23.4334	0.0263		0.4384	0.4384		0.4384	0.4384	0.0000	5,058.0716	5,058.0716	0.1341	0.0920	5,088.8429

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	0.6168					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.8145					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4601	3.9314	1.6729	0.0251		0.3179	0.3179		0.3179	0.3179	0.0000	5,018.8235	5,018.8235	0.0962	0.0920	5,048.6479
Landscaping	0.6585	0.2505	21.7605	1.1500e-003		0.1206	0.1206		0.1206	0.1206		39.2480	39.2480	0.0379		40.1950
Total	8.5499	4.1819	23.4334	0.0262		0.4384	0.4384		0.4384	0.4384	0.0000	5,058.0716	5,058.0716	0.1341	0.0920	5,088.8429

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

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	0.6168					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.8145					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4601	3.9314	1.6729	0.0251		0.3179	0.3179		0.3179	0.3179	0.0000	5,018.8235	5,018.8235	0.0962	0.0920	5,048.6479
Landscaping	0.6585	0.2505	21.7605	1.1500e-003		0.1206	0.1206		0.1206	0.1206		39.2480	39.2480	0.0379		40.1950
Total	8.5499	4.1819	23.4334	0.0262		0.4384	0.4384		0.4384	0.4384	0.0000	5,058.0716	5,058.0716	0.1341	0.0920	5,088.8429

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

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

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

Attachment D

Start date and time 04/05/21 10:13:47

AERSCREEN 16216

Pacific Coast Commons Operation

Pacific Coast Commons Operation

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

METRIC

ENGLISH

** AREADATA **

Emission Rate: 0.126E-02 g/s 0.998E-02 lb/hr

Area Height: 3.00 meters 9.84 feet

Area Source Length: 256.00 meters 839.90 feet

Area Source Width: 101.00 meters 331.36 feet

Vertical Dimension: 1.50 meters 4.92 feet

Model Mode: URBAN

Population: 16731

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:

2021.04.05_PacificCoastCommons_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 04/05/21 10:15:50

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 *****

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 5

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 10

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 15

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 20

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 6

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 25

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

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 *****

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 5

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 10

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

CO W320	36	URBOPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP		

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 15

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

CO W320	36	URBOPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP		

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 20

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

CO W320	36	URBOPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP		

Processing wind flow sector 6

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 25

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

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 *****

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 5

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 10

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 15

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 20

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 6

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 25

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

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 *****

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 5

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 10

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 15

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 20

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 6

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 25

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

FLOWSECTOR ended 04/05/21 10:16:08

REFINE started 04/05/21 10:16:08

AERMOD Finishes Successfully for REFINE stage 3 Winter sector 0

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

REFINE ended 04/05/21 10:16:11

AERSCREEN Finished Successfully

But with Warnings

Check log file for details

Ending date and time 04/05/21 10:16:14

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											
	0.14967E+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												
	0.16113E+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												
	0.17120E+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												
	0.17982E+01		75.00	0.00	0.0			Winter		0-360	10011001		
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0												
	0.18752E+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												
	0.19374E+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												
*	0.19469E+01		129.00	0.00	0.0			Winter		0-360	10011001		
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0												
	0.15401E+01		150.00	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												
	0.12075E+01		175.00	0.00	0.0			Winter		0-360	10011001		
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0												
	0.99699E+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												
	0.85889E+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												
	0.75015E+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												
	0.66363E+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												
	0.59258E+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												
	0.53380E+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												
	0.48434E+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										
	0.44244E+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										
	0.40624E+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										
	0.37520E+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										
	0.34763E+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										
	0.32366E+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										
	0.30234E+00	500.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.28334E+00	525.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.26642E+00	550.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.25111E+00	575.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.23713E+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										
	0.22452E+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										
	0.21308E+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										
	0.20267E+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										
	0.19310E+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										
	0.18421E+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										
	0.17597E+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										
	0.16836E+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										
	0.16133E+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										
	0.15481E+00		825.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.14875E+00		850.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.14310E+00		875.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.13775E+00		900.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.13275E+00		925.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.12807E+00		950.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.12367E+00		975.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.11953E+00		1000.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.11564E+00		1025.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.11194E+00		1050.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.10844E+00		1075.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.10513E+00		1100.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.10199E+00		1125.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.99015E-01		1150.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043										

0.93475E-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						
0.90891E-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						
0.88430E-01	1250.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.86084E-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						
0.83846E-01	1300.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.81708E-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						
0.79664E-01	1350.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.77708E-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						
0.75836E-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						
0.74042E-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						
0.72321E-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						
0.70669E-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						
0.69083E-01	1500.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.67558E-01	1525.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.66092E-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						
0.64681E-01	1575.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.63317E-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											
	0.62000E-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											
	0.60731E-01	1650.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.59506E-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											
	0.58324E-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											
	0.57182E-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											
	0.56075E-01	1750.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.55001E-01	1775.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.53963E-01	1800.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.52958E-01	1825.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.51986E-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											
	0.51045E-01	1875.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.50132E-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											
	0.49248E-01	1925.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.48906E-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											
	0.48060E-01	1975.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.47239E-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											
	0.46442E-01	2025.00	0.00	0.0		Winter	0-360	10011001				

-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.45668E-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										
	0.44916E-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										
	0.44186E-01		2100.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.43475E-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										
	0.42784E-01		2150.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.42112E-01		2175.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.41458E-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										
	0.40822E-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										
	0.40202E-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										
	0.39598E-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										
	0.39010E-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										
	0.38437E-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										
	0.37878E-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										
	0.37334E-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										
	0.36802E-01		2400.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0										

0.35778E-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						
0.35284E-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						
0.34802E-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						
0.34331E-01	2525.00	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						
0.33871E-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						
0.33422E-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						
0.32983E-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						
0.32554E-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						
0.32134E-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						
0.31723E-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						
0.31322E-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						
0.30930E-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						
0.30545E-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						
0.30169E-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						
0.29801E-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						
0.29441E-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						
0.29088E-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											
	0.28742E-01	2875.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.28404E-01	2900.00	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											
	0.28072E-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											
	0.27747E-01	2950.00	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											
	0.27429E-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											
	0.27116E-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											
	0.26810E-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											
	0.26510E-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											
	0.26215E-01	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											
	0.25927E-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											
	0.25643E-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											
	0.25365E-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											
	0.25092E-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											
	0.24824E-01	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											
	0.24561E-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											
	0.24303E-01	3250.00	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											
	0.24050E-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										
	0.23801E-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										
	0.23556E-01		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										
	0.23316E-01		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										
	0.23080E-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										
	0.22848E-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										
	0.22620E-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										
	0.22396E-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										
	0.22176E-01		3475.00		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										
	0.21960E-01		3500.00		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										
	0.21747E-01		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										
	0.21538E-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										
	0.21332E-01		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										
	0.21130E-01		3600.00		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										
	0.20931E-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										
	0.20735E-01		3650.00		0.00	0.0		Winter	0-360	10011001	
-1.30											

0.20352E-01	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						
0.20166E-01	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						
0.19982E-01	3750.00	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						
0.19801E-01	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						
0.19623E-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						
0.19448E-01	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						
0.19276E-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						
0.19106E-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						
0.18938E-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						
0.18774E-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						
0.18611E-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						
0.18451E-01	3975.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.18294E-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						
0.18138E-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						
0.17986E-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						
0.17835E-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						
0.17686E-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											
	0.17540E-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											
	0.17396E-01		4149.99		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											
	0.17253E-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											
	0.17113E-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											
	0.16974E-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											
	0.16838E-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											
	0.16703E-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											
	0.16571E-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											
	0.16440E-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											
	0.16311E-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											
	0.16184E-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											
	0.16058E-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											
	0.15934E-01		4425.00		0.00	0.0		Winter		0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0											
	0.15812E-01		4450.00		0.00	0.0		Winter		0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0											
	0.15691E-01		4475.00		0.00							

-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.15338E-01		4550.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.15224E-01		4575.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.15111E-01		4600.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.14999E-01		4625.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.14889E-01		4650.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.14780E-01		4675.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.14673E-01		4700.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.14567E-01		4725.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.14462E-01		4750.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.14359E-01		4775.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.14256E-01		4800.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.14156E-01		4825.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.14056E-01		4850.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.13957E-01		4875.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.13860E-01		4900.00		0.00	5.0		Winter	0-360	10011001	
-1.30	0										

0.13669E-01	4950.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.13575E-01	4975.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.13482E-01	5000.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						



Technical Consultation, Data Analysis and
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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 unconventional oil drilling operations, oil spills, landfills, boilers and incinerators, process stacks, storage tanks, confined animal feeding operations, and many other industrial and agricultural sources. 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 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, 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 dozens of sites and has testified as an expert witness on more than ten cases involving exposure to air contaminants from industrial 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 H₂O 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

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

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

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

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

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

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

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

Rosenfeld, P. E. (October 15-18, 2007). The Repeated Trespass of Tritium-Contaminated Water Into A Surrounding Community Form Repeated Waste Spills From A Nuclear Power Plant. *The 23rd Annual International Conferences on Soils Sediment and Water*. Platform lecture conducted from University of Massachusetts, Amherst MA.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Teaching Experience:

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

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

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

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

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

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

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

Academic Grants Awarded:

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

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

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

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

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

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

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

Deposition and/or Trial Testimony:

In the United States District Court For The Southern District of Illinois

Duarte et al, *Plaintiffs*, vs. United States Metals Refining Company et. al. *Defendant*.

Case No.: 3:19-cv-00302-SMY-GCS

Rosenfeld Deposition. 2-19-2020

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 Agrosiences, 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 Iowa District Court For Wapello County
Jerry Dovico, et al., Plaintiffs vs. Valley View Sine LLC, et al., Defendants
Law No.: LALA105144 - Division A
Rosenfeld Deposition, August 2015

In The Iowa District Court For Wapello County
Doug Pauls, et al., et al., Plaintiffs vs. Richard Warren, et al., Defendants
Law No.: LALA105144 - Division A
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 Third Judicial District County of Dona Ana, New Mexico
Betty Gonzalez, et al. Plaintiffs vs. Del Oro Dairy, Del Oro Real Estate LLC, Jerry Settles and Deward
DeRuyter, Defendants
Rosenfeld Deposition: July 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



Technical Consultation, Data Analysis and
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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 – 2014, 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 150 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, Colorado.

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 representatives, 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.

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Other Experience:

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

EXHIBIT B



MITCHELL M. TSAI
ATTORNEY AT LAW

Mitchell Tsai <mitch@mitchtsailaw.com>

COMMENT LETTER: Pacific Coast Commons Specific Plan Project [SCH No.: 2020050508]

Leon Ramsey, Jr. <leon@mitchtsailaw.com>

Mon, Apr 12, 2021 at 6:27 PM

To: psamaras@elsegundo.org

Cc: Mitchell Tsai <mitch@mitchtsailaw.com>, Greg Sonstein <greg@mitchtsailaw.com>

Good evening,

Please see attached regarding the above-referenced project and confirm receipt of this email and its attachment.

Thank you,

Leon Ramsey Jr.

Paralegal

Mitchell M. Tsai, Attorney At Law

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Via Email

December 9, 2021

Chair Ryan Baldino and
Honorable Members of the Planning
Commission
City of El Segundo
Development Services Department
350 Main Street
El Segundo, CA 90245

Paul Samaras, AICP
City of El Segundo
Development Services Department
350 Main Street
El Segundo, CA 90245
psamaras@elsegundo.org

**Re: Comment on Final Environmental Impact Report, Pacific Coast
Commons Specific Plan (SCH# 2020050508)**

Dear Chair Baldino, Honorable Members of the Planning Commission, and Mr. Samaras:

I am writing on behalf of Supporters Alliance For Environmental Responsibility ("SAFER") regarding the Final Environmental Impact Report ("FEIR") prepared for the Project known as Pacific Coast Commons Specific Plan, aka SCH# 2020050508, including all actions related or referring to the proposed demolition of existing surface parking lots and construction of a new mixed use development located at 401-575 N. Pacific Coast Highway (PCH) and the parking lot on 600-block of PCH in the City of El Segundo ("Project").

After reviewing the FEIR, we conclude that the FEIR fails as an informational document, fails to adequately analyze the Project's environmental impacts, and fails to impose all feasible mitigation measures to reduce the Project's impacts. SAFER requests that the Planning Division address these shortcomings in a revised environmental impact report ("REIR") and recirculate the REIR prior to considering approvals for the Project.

This comment has been prepared with the assistance of Certified Industrial Hygienist, Francis "Bud" Offermann, PE, CIH (Exhibit A). Mr. Offermann's comments are incorporated herein by reference.

I. PROJECT DESCRIPTION

The Specific Plan area for this Project consists of eight parcels which total 6.385 gross acres. Current developments onsite include the Fairfield Inn and Suites Hotel and the

Aloft Hotel, as well as surface parking lots. The Project would redevelop existing surface parking lots and a portion of the Fairfield Inn and Suites Hotel and would create five new land use districts. The site is bounded by Los Angeles International Airport to the north and residential communities to the east and south.

The Specific Plan allows for the following: (1) the continued operation of the Fairfield Inn and Suites Hotel and Aloft Hotel, which contain 596 rooms within 288,767 square feet of hotel development; (2) 327,021 square feet of residential development for 263 new housing units, including 257 multi-family apartments and six condominium/townhomes; (3) 11,252 square feet of new commercial/retail uses; and (4) three new parking structures that would contain approximately 792 parking stalls. Construction activities would last approximately 34 months.

II. LEGAL BACKGROUND

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

CEQA has two primary purposes. First, CEQA is designed to inform decision makers and the public about the potential, significant environmental effects of a project. 14 Cal. Code Regs. (“CEQA Guidelines”) § 15002(a)(1). “Its purpose is to inform the public and its responsible officials of the environmental consequences of their decisions before they are made. Thus, the EIR ‘protects not only the environment but also informed self-government.’” *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564. The EIR has been described as “an environmental ‘alarm bell’ whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return.” *Berkeley Keep Jets Over the Bay v. Bd. of Port Comm’rs.* (2001) 91 Cal. App. 4th 1344, 1354 (“*Berkeley Jets*”); *County of Inyo v. Yorty* (1973) 32 Cal.App.3d 795, 810.

Second, CEQA requires public agencies to avoid or reduce environmental damage when “feasible” by requiring “environmentally superior” alternatives and all feasible mitigation measures. CEQA Guidelines § 15002(a)(2) and (3); *see also, Berkeley Jets*, 91 Cal.App.4th at pp. 1344, 1354; *Citizens of Goleta Valley*, 52 Cal.3d at 564. The EIR serves to provide agencies and the public with information about the environmental impacts of a proposed project and to “identify ways that environmental damage can be avoided or

significantly reduced.” CEQA Guidelines §15002(a)(2). If the project will have a significant effect on the environment, the agency may approve the project only if it finds that it has “eliminated or substantially lessened all significant effects on the environment where feasible” and that any unavoidable significant effects on the environment are “acceptable due to overriding concerns.” Pub. Res. Code § 21081; 14 Cal.Code Regs. § 15092(b)(2)(A) & (B). The lead agency may deem a particular impact to be insignificant only if it produces rigorous analysis and concrete substantial evidence justifying the finding. *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 732.

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

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

More recently, the California Supreme Court has emphasized that:

When reviewing whether a discussion is sufficient to satisfy CEQA, a court must be satisfied that the EIR (1) includes sufficient detail to enable those who did not participate in its preparation to understand and to consider meaningfully the issues the proposed project raises [citation omitted], and (2) makes a reasonable effort to substantively connect a project's air quality impacts to likely health consequences.

Sierra Club v. Cty. of Fresno (2018) 6 Cal.5th 502, 510 (2018), citing *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 405. “Whether or not the alleged inadequacy is the complete omission of a required discussion or a patently inadequate one-paragraph discussion devoid of analysis, the reviewing court must decide whether the EIR serves its purpose as an informational document.” *Sierra Club v. Cty. of Fresno*, 6 Cal.5th at 516. Although an agency has discretion to decide the manner of discussing potentially significant effects in an EIR, “a reviewing court must determine whether the discussion of a potentially significant effect is sufficient or insufficient, i.e., whether the EIR comports with its intended function of including ‘detail sufficient to enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project.’” 6 Cal.5th at 516, citing *Bakersfield Citizens for*

Local Control v. City of Bakersfield (2004) 124 Cal.App.4th 1184, 1197. “The determination whether a discussion is sufficient is not solely a matter of discerning whether there is substantial evidence to support the agency’s factual conclusions.” 6 Cal.5th at 516. Whether a discussion of a potential impact is sufficient “presents a mixed question of law and fact. As such, it is generally subject to independent review. However, underlying factual determinations—including, for example, an agency’s decision as to which methodologies to employ for analyzing an environmental effect—may warrant deference.” *Sierra Club v. Cty. of Fresno*, 6 Cal.5th at 516. As the Court emphasized:

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

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

III. DISCUSSION

A. There is Substantial Evidence that the Project Will Have a Significant Health Risk Impact from its Indoor Air Quality Impacts.

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

Mr. Offermann explains that many composite wood products used in building materials and furnishings commonly found in offices, warehouses, residences, and hotels contain formaldehyde-based glues which off-gas formaldehyde over a very long time period. He states, “[t]he primary source of formaldehyde indoors is composite wood products manufactured with urea-formaldehyde resins, such as plywood, medium density fiberboard, and particleboard. These materials are commonly used in building construction for flooring, cabinetry, baseboards, window shades, interior doors, and window and door trims.” Ex. A, 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, assuming all materials are compliant with the California Air Resources Board's formaldehyde airborne toxics control measure. *Id.* at 4. As for commercial employees, he estimates an exposure level of 17.7 in one million. *Id.* at 5. These 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 these significant environmental impacts should be analyzed in the EIR and mitigation measures should be imposed to reduce the risk of formaldehyde exposure. *Id.* Mr. Offermann identifies mitigation measures that are available to reduce these significant health risks, including the installation of air filters and a requirement that the applicant use only composite wood materials (e.g. hardwood plywood, medium density fiberboard, particleboard) for all interior finish systems that are made with CARB approved no-added formaldehyde (NAF) resins or ultra-low emitting formaldehyde (ULEF) resins in the buildings' interiors. *Id.* at 12.

Mr. Offermann also notes that because of the Project's close proximity to roads with moderate to high traffic and to air traffic from the nearby Los Angeles International Airport, the project is sound impacted. It will therefore require a "mechanical supply of outdoor air ventilation to allow for a habitable interior environment with closed windows and doors," so as to allow occupants the discretion to control exterior noise. *Id.* at 11.

The City has a duty to investigate issues relating to a project's potential environmental impacts, especially those issues raised by an expert's comments. *See Cty. Sanitation Dist. No. 2 v. Cty. of Kern*, (2005) 127 Cal.App.4th 1544, 1597–98 ("under CEQA, the lead agency bears a burden to investigate potential environmental impacts"). In addition to assessing the Project's potential health impacts to residents and employees, Mr. Offermann identifies the investigatory path that the City should be following in developing an EIR to more precisely evaluate the Project's future formaldehyde emissions and establishing mitigation measures that reduce the cancer risk below the SCAQMD level. Such an analysis would be similar in form to the air quality modeling and traffic modeling typically conducted as part of a CEQA review.

The failure to address the project's formaldehyde emissions is contrary to the California Supreme Court's decision in *California Building Industry Ass'n v. Bay Area Air Quality Mgmt. Dist.* (2015) 62 Cal.4th 369, 386 ("CBLA"). At issue in CBLA was whether the Air District could enact CEQA guidelines that advised lead agencies that they must analyze the impacts of adjacent environmental conditions on a project. The Supreme Court held that CEQA does not generally require lead agencies to consider the environment's effects on a project. CBLA, 62 Cal.4th at 800-801. However, to the extent a project may exacerbate existing adverse environmental conditions at or near a project site, those would still have to be considered pursuant to CEQA. *Id.* at 801 ("CEQA calls upon an agency to evaluate

existing conditions in order to assess whether a project could exacerbate hazards that are already present”). In so holding, the Court expressly held that CEQA’s statutory language required lead agencies to disclose and analyze “impacts on *a project’s users or residents* that arise *from the project’s effects* on the environment.” *Id.* at 800 (emphasis added).

The carcinogenic formaldehyde emissions identified by Mr. Offermann are not an existing environmental condition. Those emissions to the air will be from the Project. Residents and commercial employees will be users of the Project. Rather than excusing the City from addressing the impacts of carcinogens emitted into the indoor air from the project, the Supreme Court in *CBLA* expressly finds that this type of effect by the project on the environment and a “project’s users” must be addressed in the CEQA process.

The Supreme Court’s reasoning is well-grounded in CEQA’s statutory language. CEQA expressly includes a project’s effects on human beings as an effect on the environment that must be addressed in an environmental review. “Section 21083(b)(3)’s express language, for example, requires a finding of a ‘significant effect on the environment’ (§ 21083(b)) whenever the ‘environmental effects of a project will cause substantial adverse effects *on human beings*, either directly or indirectly.’” *CBLA*, 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 residents and workers is as important to CEQA’s safeguards as that of other nearby residents currently living near the project site.

The City’s EIR must disclose and mitigate the potential environmental impacts to future users of the building.

B. There is Substantial Evidence that the Project will have Significant Adverse Air Quality, Health Risk, and Greenhouse Gas Impacts

1. The DEIR Relied on Unsubstantiated Input Parameters to Estimate Project Emissions and Thus the Project May Result in Significant Air Quality Impacts.

The Southwest Regional Council of Carpenters submitted a public comment on April 12, 2021 which was supported by the comments of expert environmental consulting firm SWAPE. (Exhibit B). Matt Hagemann, P.G., C.Hg., and Dr. Paul E. Rosenfeld, Ph.D., of the environmental consulting firm SWAPE reviewed the DEIR’s analysis of the Project’s impacts on air quality, health risk, and greenhouse gases. SAFER joins the Carpenters’ comment and SWAPE’s comment, the latter of which is incorporated by reference herein.

SWAPE found that the DEIR 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. The DEIR relies on emissions calculated from the California Emissions Estimator Version CalEEMod.2016.3.2 ("CalEEMod"). DEIR, p. 4.2-1. 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. SWAPE comment, p. 1. CEQA requires any changes to the default values to be justified by substantial evidence. *Id.* at 1-2.

SWAPE reviewed the DEIR's CalEEMod output files and found that the values input into the model were inconsistent with information provided in the DEIR. *Id.* at 2. As a result, the DEIR's air quality analysis cannot be relied upon to determine the Project's emissions.

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

1. Underestimated Land Use Sizes. SWAPE comment, p. 2.
2. Failure to Model All Required Demolition. *Id.* at p. 3-4.
3. Unsubstantiated Changes to Acres of Grading Values. *Id.* at 4-5.
4. Unsubstantiated Changes to Material Moisture Content Bulldozing Values. *Id.* at 5-6.
5. Unsubstantiated Changes to Material Silt Content Values. *Id.* at 6-7.
6. Unsubstantiated Changes to Hauling Trip Numbers. *Id.* at 7-8.
7. Unsubstantiated Changes to Architectural and Area Coating Areas. *Id.* at 8-9.
8. Underestimated Operational Vehicle Trip Rates. *Id.* at 10-11.
9. Unsubstantiated Changes to Energy Use Values. *Id.* at 11.
10. Unsubstantiated Changes to Wastewater Treatment System Percentages. *Id.* at 12.
11. Incorrect Application of Construction-Related Mitigation Measures. *Id.* at 13-14.
12. Incorrect Application of Mobile-Related Operational Mitigation Measures. *Id.* at 14-15.

As a result of these errors in the DEIR, the Project's construction and operational emissions were underestimated and cannot be relied upon to determine the significance of the Project's air quality impacts.

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

One of the primary emissions of concern regarding health effects for land development projects is diesel particulate matter ("DPM"), which can be released during Project construction and operation. DPM consists of fine particles with a diameter less than 2.5 micrometers including a subgroup of ultrafine particles (with a diameter less than 0.1

micrometers). Diesel exhaust also contains a variety of harmful gases and cancer-causing substances. Exposure to DPM is a recognized health hazard, particularly to children whose lungs are still developing and the elderly who may have other serious health problems. According to the California Air Resources Board (“CARB”), DPM exposure may lead to the following adverse health effects: aggravated asthma; chronic bronchitis; increased respiratory and cardiovascular hospitalizations; decreased lung function in children; lung cancer; and premature deaths for those with heart or lung disease.¹

The DEIR concluded that the mitigated excess cancer risk posed by the Project to nearby sensitive receptors would not exceed the SCAQMD significance threshold of 10 in one million, and that the Project would result in a less-than-significant operational health risk impact. SWAPE comment, p. 15; DEIR, p. 4.2-38. SWAPE identifies four main reasons for why the DEIR’s evaluation of health risk impacts and less-than-significant conclusion is incorrect.

First, the DEIR’s construction HRA is incorrect due to its reliance on an exhaust PM₁₀ estimate from a flawed air model. SWAPE comment, p. 16. The DEIR’s HRA uses an underestimated DPM concentration, and therefore underestimates the Project’s cancer risk and cannot be relied upon to determine impacts of the Project. *Id.*

Second, the DEIR did not evaluate the Project’s toxic air contaminants (TACs) and associated health risk impacts. *Id.* The Traffic Impact Analysis indicates the generation of an estimated 2,517 average daily vehicle trips, but the DEIR fails to discuss potential TACs associated with Project operation or indicate the levels at which pollutants would trigger adverse health effects. *Id.* In failing to connect TAC emissions to potential health risks to nearby receptors, the Project fails to meet the CEQA requirement that projects correlate increases in project-generated emissions to adverse impacts on human health caused by those emissions. *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*: http://oehha.ca.gov/air/hot_spots/hotspots2015.html. The OEHHA document recommends that if a project is expected to last over 6 months, the exposure should be evaluated throughout the project using a 30-year exposure duration to estimate individual cancer risks. SWAPE letter, p. 16. Based on its extensive experience, SWAPE reasonably assumes that the

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

Project will last at least 30 years, and therefore recommends that health risk impacts from the project be evaluated. *Id.* A Revised EIR is therefore required to analyze these impacts.

Fourth, the FEIR fails to evaluate the “*cumulative* lifetime cancer risk to nearby, existing receptors as a result of Project *construction and operation together*.” SWAPE comment, p. 17 (emphasis in original). A Revised EIR should be prepared to quantify the cumulative excess cancer risk posed by the Project’s construction and operation to nearby, existing receptors, and compare it to the SCAQMD threshold of 10 in one million. *Id.*

SWAPE prepared a screening-level HRA to evaluate potential impacts from Project construction using AERSCREEN, a screening-level air quality dispersion model. SWAPE comment, p. 17. SWAPE applied a sensitive receptor distance of 125 meters and analyzed impacts to individuals at different stages of life based on OEHHA and SCAQMD guidance utilizing age sensitivity factors. *Id.* at 17-19. SWAPE found that the excess cancer risks at a sensitive receptor located approximately 125 meters away over the course of Project construction and operation is **approximately 79 in one million**. *Id.* at 19. This risk appreciably exceeds SCAQMD’s threshold of 10 in one million.

SWAPE’s analysis constitutes substantial evidence that the Project may have a significant health impact as a result of diesel particulate emissions. SWAPE recommends that an updated EIR be prepared which includes “a quantified air pollution model as well as an updated, quantified refined health risk assessment which adequately and accurately evaluates health risk impacts associated with both Project construction and operation.” *Id.*

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

The DEIR estimates that the Project would generate net annual GHG emissions of 2,920.96 metric tons of carbon dioxide equivalent per year (“MT CO₂e/year”). The DEIR also relies on the Project’s consistency with the City of El Segundo Climate Action Plan, SCAG’s 2020-2045 *RTP/SCS*, CALGreen, CARB’s *Scoping Plan*, and the General Plan’s Air Quality Element, as well as EO S-3-05 and SB 32 to conclude the Project would have less-than-significant GHG impacts. SWAPE comment, p. 20; DEIR, p. 4.6-29 – 4.6-48. However, SWAPE states that the DEIR’s conclusion about a less-than-significant greenhouse gas impact is incorrect for several reasons:

1. The DEIR’s quantitative GHG analysis relies upon an incorrect and unsubstantiated air model;
2. The DEIR’s quantitative GHG analysis relies upon an outdated threshold;
3. The DEIR’s unsubstantiated air model indicates a potentially significant impact;
4. The DEIR fails to consider the performance-based standards under CARB’s *Scoping Plan*; and

5. The DEIR fails to consider the performance-based standards under SCAG's *RTP/SCS*.

SWAPE comment, p. 20-27. SWAPE's analysis demonstrates potentially significant health risk and GHG impacts from the project that necessitate mitigation, and it proposes several feasible mitigation measures from CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures* to reduce these impacts. *Id.* at 27. In addition to implementing these measures, the Revised EIR should include an updated air quality, health risk, and GHG analysis.

I. CONCLUSION

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

Sincerely,



Rebecca Davis

EXHIBIT A



INDOOR ENVIRONMENTAL ENGINEERING



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Date: November 12, 2021

To: Rebecca Davis
Lozeau | Drury LLP
1939 Harrison Street, Suite 150
Oakland, California 94612

From: Francis J. Offermann PE CIH

Subject: Indoor Air Quality: Pacific Coast Commons Project, El Segundo, CA
(IEE File Reference: P-4516)

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 $\mu\text{g}/\text{day}$. The NSRL concentration of formaldehyde that represents a daily dose of 40 μg is 2 $\mu\text{g}/\text{m}^3$, 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 $\mu\text{g}/\text{m}^3$. The median indoor formaldehyde concentration was 36 $\mu\text{g}/\text{m}^3$, and ranged from 4.8 to 136 $\mu\text{g}/\text{m}^3$, which corresponds to a median exceedance of the 2 $\mu\text{g}/\text{m}^3$ 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 $\mu\text{g}/\text{m}^3$, 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 $\mu\text{g}/\text{m}^3$ to 28% for the Acute REL of 55 $\mu\text{g}/\text{m}^3$.

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 $22.4 \mu\text{g}/\text{m}^3$ (18.2 ppb) as compared to a median of $36 \mu\text{g}/\text{m}^3$ 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 $24.1 \mu\text{g}/\text{m}^3$, which is 33% lower than the $36 \mu\text{g}/\text{m}^3$ 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 Pacific Coast Commons Project, El Segundo, 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 $\mu\text{g}/\text{m}^3$ (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 $\mu\text{g}/\text{day}$ 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 $\mu\text{g}/\text{m}^3$ (Singer et. al., 2020)

Assuming that the employees of commercial spaces work 8 hours per day and inhale 20 m³ 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 that 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., m² of material/m² floor area, units of furnishings/m² 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 ($\mu\text{g}/\text{h}$) from the product of the area-specific formaldehyde emission rate ($\mu\text{g}/\text{m}^2\text{-h}$) 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 ($\mu\text{g}/\text{unit-h}$) and the number of units in the IAQ Zone.

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

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

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

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

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

5.) Calculate the Indoor Formaldehyde Concentration. For each IAQ Zone, calculate the indoor formaldehyde concentration ($\mu\text{g/m}^3$) from Equation 1 by dividing the total formaldehyde emission rates (i.e. $\mu\text{g/h}$) 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 ($\mu\text{g/m}^3$)

E_{total} = total formaldehyde emission rate ($\mu\text{g/h}$) 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.

The Pacific Coast Commons Project is close to roads with moderate to high traffic (e.g., Pacific Coast Highway, E. Mariposa Avenue, E. Holly Avenue, Indiana Street, etc.) as well as air traffic from Los Angeles International Airport, and thus the Project site is a sound impacted site.

According to the Pacific Coast Commons Specific Plan - Draft Environmental Impact Report (Dudek, 2021), The future plus project traffic noise levels reported in Table 4.10-6 range from 55.4 dBA to 70.2 dBA CNEL.

As a result of the anticipated 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 Pacific Coast Commons Specific Plan - Draft Environmental Impact Report (Dudek, 2021), 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 µg/m³, or the National 24-hour average exceedence concentration of 35 µg/m³, 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/ft² of floor area. Following installation of the system conduct testing and balancing to insure that required amount of outdoor air is entering each habitable room and provide a written report documenting the outdoor airflow rates. Do not use exhaust only mechanical outdoor air systems, use only balanced outdoor air supply and exhaust systems or outdoor air supply only systems. Provide a manual for the occupants or maintenance personnel, that describes the purpose of the mechanical outdoor air system and the operation and maintenance requirements of the system.

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

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APPENDIX A

INDOOR FORMALDEHYDE CONCENTRATIONS AND THE CARB FORMALDEHYDE ATCM

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

Just how much protection do the CARB ATCM regulations provide building occupants from the formaldehyde emissions generated by composite wood products? Definitely some, but certainly the regulations do not “*assure healthful indoor air quality*” when CARB Phase 2 products are utilized. As shown in the Chan 2019 study of new California homes, the median indoor formaldehyde concentration was of $22.4 \mu\text{g}/\text{m}^3$ (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 ft²), 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,

For the outdoor air ventilation rate I used the 2019 Title 24 code required mechanical ventilation rate (ASHRAE 62.2) of 106 cfm (180 m³/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 ft² (0.7% of the floor area), or
Particle Board – 30 ft² (1.3% of the floor area), or
Hardwood Plywood – 54 ft² (2.4% of the floor area), or
Thin MDF – 46 ft² (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 that 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.

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

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

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

PEER-REVIEWED PUBLICATIONS :

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

OTHER REPORTS:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

PRESENTATIONS :

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

“Closing Session Summary: ‘Building Investigations’ and ‘Building Design & Construction’”, Healthy Buildings 2000, Espoo, Finland, August 2000.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

“Energy Conservation and Health in Buildings”, Berkeley High School Green 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 B

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VIA E-MAIL

April 12, 2021

Paul Samaras
City of El Segundo
350 Main Street
El Segundo, CA 90245
Em: psamaras@elsegundo.org

RE: Pacific Coast Commons Specific Plan Project

Dear Mr. Samaras,

On behalf of the Southwest Regional Council of Carpenters (“**Commenter**” or “**Carpenter**”), my Office is submitting these comments on the City of El Segundo’s (“**City**” or “**Lead Agency**”) Draft Environmental Impact Report (“**DEIR**”) (SCH No. 2020050508) for the Pacific Coast Commons Specific Plan Project which would demolish existing structures, including a former restaurant with meeting/ballroom space, a rental car tenant, and the existing surface parking lots of the Fairfield Inn & Suites by Marriott and Aloft Hotel properties, and would allow for the development of up to 263 new housing units and approximately 11,250 gross square feet of new commercial/retail uses, and associated parking. (“**Project**”).

The Southwest Carpenters is a labor union representing 50,000 union carpenters in six states and has a strong interest in well ordered land use planning and addressing the environmental impacts of development projects.

Individual members of the Southwest Carpenters live, work and recreate in the City and surrounding communities and would be directly affected by the Project’s environmental impacts.

Commenters expressly reserves the right to supplement these comments at or prior to hearings on the Project, and at any later hearings and proceedings related to this Project. Cal. Gov. Code § 65009(b); Cal. Pub. Res. Code § 21177(a); *Bakersfield Citizens for Local Control v. Bakersfield* (2004) 124 Cal. App. 4th 1184, 1199-1203; see *Galante Vineyards v. Monterey Water Dist.* (1997) 60 Cal. App. 4th 1109, 1121.

Commenters expressly reserves the right to supplement these comments at or prior to hearings on the Project, and at any later hearings and proceedings related to this Project. Cal. Gov. Code § 65009(b); Cal. Pub. Res. Code § 21177(a); *Bakersfield Citizens for Local Control v. Bakersfield* (2004) 124 Cal. App. 4th 1184, 1199-1203; see *Galante Vineyards v. Monterey Water Dist.* (1997) 60 Cal. App. 4th 1109, 1121.

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

Moreover, Commenter requests that the Lead Agency provide notice for any and all notices referring or related to the Project issued under the California Environmental Quality Act (“**CEQA**”), Cal Public Resources Code (“**PRC**”) § 21000 *et seq*, and the California Planning and Zoning Law (“**Planning and Zoning Law**”), Cal. Gov’t Code §§ 65000–65010. California Public Resources Code Sections 21092.2, and 21167(f) and Government Code Section 65092 require agencies to mail such notices to any person who has filed a written request for them with the clerk of the agency’s governing body.

The City should require the Applicant provide additional community benefits such as requiring local hire and use of a skilled and trained workforce to build the Project. The City should require the use of workers who have graduated from a Joint Labor Management apprenticeship training program approved by the State of California, or have at least as many hours of on-the-job experience in the applicable craft which would be required to graduate from such a state approved apprenticeship training program or who are registered apprentices in an apprenticeship training program approved by the State of California.

Community benefits such as local hire and skilled and trained workforce requirements can also be helpful to reduce environmental impacts and improve the positive economic impact of the Project. Local hire provisions requiring that a certain percentage of workers reside within 10 miles or less of the Project Site can reduce the length of vendor trips, reduce greenhouse gas emissions and providing localized economic benefits. Local hire provisions requiring that a certain percentage of workers reside within 10 miles or less of the Project Site can reduce the length of vendor trips,

reduce greenhouse gas emissions and providing localized economic benefits. As environmental consultants Matt Hagemann and Paul E. Rosenfeld note:

[A]ny local hire requirement that results in a decreased worker trip length from the default value has the potential to result in a reduction of construction-related GHG emissions, though the significance of the reduction would vary based on the location and urbanization level of the project site.

March 8, 2021 SWAPE Letter to Mitchell M. Tsai re Local Hire Requirements and Considerations for Greenhouse Gas Modeling.

Skilled and trained workforce requirements promote the development of skilled trades that yield sustainable economic development. As the California Workforce Development Board and the UC Berkeley Center for Labor Research and Education concluded:

. . . labor should be considered an investment rather than a cost – and investments in growing, diversifying, and upskilling California’s workforce can positively affect returns on climate mitigation efforts. In other words, well trained workers are key to delivering emissions reductions and moving California closer to its climate targets.¹

The City should also require the Project to be built to standards exceeding the current 2019 California Green Building Code to mitigate the Project’s environmental impacts and to advance progress towards the State of California’s environmental goals.

I. EXPERTS

This comment letter includes comments from air quality and greenhouse gas experts Matt Hagemann, P.G., C.Hg. and Paul Rosenfeld, Ph.D. concerning the DEIR. Their comments, attachments, and Curriculum Vitae (“CV”) are attached hereto and are incorporated herein by reference.

Matt Hagemann, P.G., C.Hg. (“Mr. Hagemann”) has over 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

¹ California Workforce Development Board (2020) Putting California on the High Road: A Jobs and Climate Action Plan for 2030 at p. ii, available at <https://laborcenter.berkeley.edu/wp-content/uploads/2020/09/Putting-California-on-the-High-Road.pdf>

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, Mr. Hagemann also served as Senior Hydrogeologist in the oversight of the assessment of seven major military facilities undergoing base closer. 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, Mr. Hagemann has worked as a founding partner with SWAPE (Soil/Water/Air Protection Enterprise). At SWAPE, Mr. Hagemann 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.

Mr. Hagemann has a Bachelor of Arts degree in geology from Humboldt State University in California and a Masters in Science degree from California State University Los Angeles in California.

Paul Rosenfeld, Ph.D. ("Dr. Rosenfeld") is a principal environmental chemist at SWAPE. Dr. Rosenfeld has over 25 years' experience conducting environmental investigations and risk assessments for evaluating impacts on human health, property, and ecological receptors. His expertise focuses on the fate and transport of environmental contaminants, human health risks, exposure assessment, and ecological restoration. Dr. Rosenfeld has evaluated and modeled emissions from unconventional oil drilling operations, oil spills, landfills, boilers and incinerators, process stacks, storage tanks, confined animal feeding operations, and many other industrial and agricultural sources. 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 investigated and designed remediation programs and risk assessments for contaminated sites containing lead, heavy metals, mold, bacteria, particular matter, petroleum hydrocarbons, chlorinated solvents, pesticides, radioactive waste, dioxins and furans, semi- and volatile organic compounds, PCBs, PAHs, 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 dozens of sites and has testified as an expert witness on more than ten cases involving exposure to air contaminants from industrial sources.

Dr. Rosenfeld has a Ph.D. in soil chemistry from the University of Washington, M.S. in environmental science from U.C. Berkeley, and B.A. in environmental studies from U.C. Santa Barbara.

II. **THE PROJECT WOULD BE APPROVED IN VIOLATION OF THE CALIFORNIA ENVIRONMENTAL QUALITY ACT**

A. Background Concerning the California Environmental Quality Act

CEQA has two basic purposes. First, CEQA is designed to inform decision makers and the public about the potential, significant environmental effects of a project. 14 California Code of Regulations (“**CCR**” or “**CEQA Guidelines**”) § 15002(a)(1).² “Its purpose is to inform the public and its responsible officials of the environmental consequences of their decisions *before* they are made. Thus, the EIR ‘protects not only the environment but also informed self-government.’ [Citation.]” *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal. 3d 553, 564. The EIR has been described as “an environmental ‘alarm bell’ whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return.” *Berkeley Keep Jets Over the Bay v. Bd. of Port Comm’rs.* (2001) 91 Cal. App. 4th 1344, 1354 (“*Berkeley Jets*”); *County of Inyo v. Yorty* (1973) 32 Cal. App. 3d 795, 810.

Second, CEQA directs public agencies to avoid or reduce environmental damage when possible by requiring alternatives or mitigation measures. CEQA Guidelines § 15002(a)(2) and (3). *See also, Berkeley Jets*, 91 Cal. App. 4th 1344, 1354; *Citizens of Goleta*

² The CEQA Guidelines, codified in Title 14 of the California Code of Regulations, section 15000 *et seq.*, are regulatory guidelines promulgated by the state Natural Resources Agency for the implementation of CEQA. (Cal. Pub. Res. Code § 21083.) The CEQA Guidelines are given “great weight in interpreting CEQA except when . . . clearly unauthorized or erroneous.” *Center for Biological Diversity v. Department of Fish & Wildlife* (2015) 62 Cal. 4th 204, 217.

Valley v. Board of Supervisors (1990) 52 Cal.3d 553; *Laurel Heights Improvement Ass’n v. Regents of the University of California* (1988) 47 Cal. 3d 376, 400. The EIR serves to provide public agencies and the public in general with information about the effect that a proposed project is likely to have on the environment and to “identify ways that environmental damage can be avoided or significantly reduced.” CEQA Guidelines § 15002(a)(2). If the project has a significant effect on the environment, the agency may approve the project only upon finding that it has “eliminated or substantially lessened all significant effects on the environment where feasible” and that any unavoidable significant effects on the environment are “acceptable due to overriding concerns” specified in CEQA section 21081. CEQA Guidelines § 15092(b)(2)(A–B).

While the courts review an EIR using an “abuse of discretion” standard, “the reviewing court is not to ‘uncritically rely on every study or analysis presented by a project proponent in support of its position.’ A ‘clearly inadequate or unsupported study is entitled to no judicial deference.’” *Berkeley Jets*, 91 Cal.App.4th 1344, 1355 (emphasis added) (quoting *Laurel Heights*, 47 Cal.3d at 391, 409 fn. 12). Drawing this line and determining whether the EIR complies with CEQA’s information disclosure requirements presents a question of law subject to independent review by the courts. *Sierra Club v. Cnty. of Fresno* (2018) 6 Cal. 5th 502, 515; *Madera Oversight Coalition, Inc. v. County of Madera* (2011) 199 Cal. App. 4th 48, 102, 131. As the court stated in *Berkeley Jets*, 91 Cal. App. 4th at 1355:

A prejudicial abuse of discretion occurs “if the failure to include relevant information precludes informed decision-making and informed public participation, thereby thwarting the statutory goals of the EIR process.

The preparation and circulation of an EIR is more than a set of technical hurdles for agencies and developers to overcome. The EIR’s function is to ensure that government officials who decide to build or approve a project do so with a full understanding of the environmental consequences and, equally important, that the public is assured those consequences have been considered. For the EIR to serve these goals it must present information so that the foreseeable impacts of pursuing the project can be understood and weighed, and the public must be given an adequate opportunity to comment on that presentation before the decision to go forward is made. *Communities for a Better Environment v. Richmond* (2010) 184 Cal. App. 4th 70, 80 (quoting *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 449–450).

B. CEQA Requires Revision and Recirculation of an Environmental Impact Report When Substantial Changes or New Information Comes to Light

Section 21092.1 of the California Public Resources Code requires that “[w]hen significant new information is added to an environmental impact report after notice has been given pursuant to Section 21092 ... but prior to certification, the public agency shall give notice again pursuant to Section 21092, and consult again pursuant to Sections 21104 and 21153 before certifying the environmental impact report” in order to give the public a chance to review and comment upon the information. CEQA Guidelines § 15088.5.

Significant new information includes “changes in the project or environmental setting as well as additional data or other information” that “deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative).” CEQA Guidelines § 15088.5(a). Examples of significant new information requiring recirculation include “new significant environmental impacts from the project or from a new mitigation measure,” “substantial increase in the severity of an environmental impact,” “feasible project alternative or mitigation measure considerably different from others previously analyzed” as well as when “the draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.” *Id.*

An agency has an obligation to recirculate an environmental impact report for public notice and comment due to “significant new information” regardless of whether the agency opts to include it in a project’s environmental impact report. *Cadiz Land Co. v. Rail Cycle* (2000) 83 Cal.App.4th 74, 95 [finding that in light of a new expert report disclosing potentially significant impacts to groundwater supply “the EIR should have been revised and recirculated for purposes of informing the public and governmental agencies of the volume of groundwater at risk and to allow the public and governmental agencies to respond to such information.”]. If significant new information was brought to the attention of an agency prior to certification, an agency is required to revise and recirculate that information as part of the environmental impact report.

C. Due to the COVID-19 Crisis, the City Must Adopt a Mandatory Finding of Significance that the Project May Cause a Substantial Adverse Effect on Human Beings and Mitigate COVID-19 Impacts

CEQA requires that an agency make a finding of significance when a Project may cause a significant adverse effect on human beings. PRC § 21083(b)(3); CEQA Guidelines § 15065(a)(4).

Public health risks related to construction work requires a mandatory finding of significance under CEQA. Construction work has been defined as a Lower to High-risk activity for COVID-19 spread by the Occupations Safety and Health Administration. Recently, several construction sites have been identified as sources of community spread of COVID-19.³

SWRCC recommends that the Lead Agency adopt additional CEQA mitigation measures to mitigate public health risks from the Project's construction activities. SWRCC requests that the Lead Agency require safe on-site construction work practices as well as training and certification for any construction workers on the Project Site.

In particular, based upon SWRCC's experience with safe construction site work practices, SWRCC recommends that the Lead Agency require that while construction activities are being conducted at the Project Site:

Construction Site Design:

- The Project Site will be limited to two controlled entry points.
- Entry points will have temperature screening technicians taking temperature readings when the entry point is open.
- The Temperature Screening Site Plan shows details regarding access to the Project Site and Project Site logistics for conducting temperature screening.
- A 48-hour advance notice will be provided to all trades prior to the first day of temperature screening.

³ Santa Clara County Public Health (June 12, 2020) COVID-19 CASES AT CONSTRUCTION SITES HIGHLIGHT NEED FOR CONTINUED VIGILANCE IN SECTORS THAT HAVE REOPENED, available at <https://www.sccgov.org/sites/covid19/Pages/press-release-06-12-2020-cases-at-construction-sites.aspx>.

- The perimeter fence directly adjacent to the entry points will be clearly marked indicating the appropriate 6-foot social distancing position for when you approach the screening area. Please reference the Apex temperature screening site map for additional details.
- There will be clear signage posted at the project site directing you through temperature screening.
- Provide hand washing stations throughout the construction site.

Testing Procedures:

- The temperature screening being used are non-contact devices.
- Temperature readings will not be recorded.
- Personnel will be screened upon entering the testing center and should only take 1-2 seconds per individual.
- Hard hats, head coverings, sweat, dirt, sunscreen or any other cosmetics must be removed on the forehead before temperature screening.
- Anyone who refuses to submit to a temperature screening or does not answer the health screening questions will be refused access to the Project Site.
- Screening will be performed at both entrances from 5:30 am to 7:30 am.; main gate [ZONE 1] and personnel gate [ZONE 2]
- After 7:30 am only the main gate entrance [ZONE 1] will continue to be used for temperature testing for anybody gaining entry to the project site such as returning personnel, deliveries, and visitors.
- If the digital thermometer displays a temperature reading above 100.0 degrees Fahrenheit, a second reading will be taken to verify an accurate reading.

- If the second reading confirms an elevated temperature, DHS will instruct the individual that he/she will not be allowed to enter the Project Site. DHS will also instruct the individual to promptly notify his/her supervisor and his/her human resources (HR) representative and provide them with a copy of Annex A.

Planning

- Require the development of an Infectious Disease Preparedness and Response Plan that will include basic infection prevention measures (requiring the use of personal protection equipment), policies and procedures for prompt identification and isolation of sick individuals, social distancing (prohibiting gatherings of no more than 10 people including all-hands meetings and all-hands lunches) communication and training and workplace controls that meet standards that may be promulgated by the Center for Disease Control, Occupational Safety and Health Administration, Cal/OSHA, California Department of Public Health or applicable local public health agencies.⁴

The United Brotherhood of Carpenters and Carpenters International Training Fund has developed COVID-19 Training and Certification to ensure that Carpenter union members and apprentices conduct safe work practices. The Agency should require that all construction workers undergo COVID-19 Training and Certification before being allowed to conduct construction activities at the Project Site.

D. The DEIR's Mitigation Measures are Impermissibly Vague and Defer Critical Details

The DEIR improperly defers critical details of mitigation measures. Feasible mitigation measures for significant environmental effects must be set forth in an EIR for

⁴ See also The Center for Construction Research and Training, North America's Building Trades Unions (April 27 2020) NABTU and CPWR COVID-19 Standards for U.S. Construction Sites, available at https://www.cpwr.com/sites/default/files/NABTU_CPWR_Standards_COVID-19.pdf; Los Angeles County Department of Public Works (2020) Guidelines for Construction Sites During COVID-19 Pandemic, available at https://dpw.lacounty.gov/building-and-safety/docs/pw_guidelines-construction-sites.pdf.

consideration by the lead agency's decision makers and the public before certification of the EIR and approval of a project. The formulation of mitigation measures generally cannot be deferred until after certification of the EIR and approval of a project. CEQA Guidelines § 15126.4(a)(1)(B) ("...[f]ormulation of mitigation measures should not be deferred until some future time.").

Deferring critical details of mitigation measures undermines CEQA's purpose as a public information and decision-making statute. "[R]eliance on tentative plans for future mitigation after completion of the CEQA process significantly undermines CEQA's goals of full disclosure and informed decisionmaking; and[,] consequently, these mitigation plans have been overturned on judicial review as constituting improper deferral of environmental assessment." *Communities for a Better Environment v. City of Richmond* (2010) 184 Cal. App. 4th 70, 92 ("*Communities*"). As the Court noted in *Sundstrom v. County of Mendocino* (1988) 202 Cal.App.3d 296, 307, "[a] study conducted after approval of a project will inevitably have a diminished influence on decision-making. Even if the study is subject to administrative approval, it is analogous to the sort of post hoc rationalization of agency actions that has been repeatedly condemned in decisions construing CEQA."

A lead agency's adoption of an EIR's proposed mitigation measure for a significant environmental effect that merely states a "generalized goal" to mitigate a significant effect without committing to any specific criteria or standard of performance violates CEQA by improperly deferring the formulation and adoption of enforceable mitigation measures. *San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal.App.4th 645, 670; *Communities*, 184 Cal.App.4th at 93 ("EIR merely proposes a generalized goal of no net increase in greenhouse gas emissions and then sets out a handful of cursorily described mitigation measures for future consideration that might serve to mitigate the [project's significant environmental effects.]); cf. *Sacramento Old City Assn. v. City Council* (1991) 229 Cal.App.3d 1011, 1028-1029 (upheld EIR that set forth a range of mitigation measures to offset significant traffic impacts where performance criteria would have to be met, even though further study was needed and EIR did not specify which measures had to be adopted by city).].

The following Project mitigation measures are impermissibly vague and defer critical details:

- MM-CUL-1: Calls for development, but does not include details, of a Worker Environmental

Awareness Program (WEAP) in order to address impacts to archeological resources;

- MM-GEO-1: Calls for a paleontologist to prepare a Paleontological Resources Impact Mitigation Program (PRIMP) to mitigate unique paleontological resources but does not include any details of the PRIMP for review;
- MM-HAZ-1: Calls for incorporation of “abatement procedures” to remove asbestos, lead, etc. but does not include any specific performance standards for removal and does not include any plan in the DEIR for review; and
- MM-HAZ-2: Calls for development of a Hazardous Materials Contingency Plan (HMCP) to address potential impacts relating to soil and vapor intrusion with the 76 gas station adjacent to PCC-North, but again, fails to include any plan or any performance standards by which soil vapor would be mitigated to less than significant levels.

(DEIR, ES-10~16.)

E. The DEIR Fails to Support Its Findings with Substantial Evidence

When new information is brought to light showing that an impact previously discussed in the DEIR but found to be insignificant with or without mitigation in the DEIR’s analysis has the potential for a significant environmental impact supported by substantial evidence, the EIR must consider and resolve the conflict in the evidence. See *Visalia Retail, L.P. v. City of Visalia* (2018) 20 Cal. App. 5th 1, 13, 17; see also *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal. App. 4th 1099, 1109. While a lead agency has discretion to formulate standards for determining significance and the need for mitigation measures—the choice of any standards or thresholds of significance must be “based to the extent possible on scientific and factual data and an exercise of reasoned judgment based on substantial evidence. CEQA Guidelines § 15064(b); *Cleveland Nat’l Forest Found. v. San Diego Ass’n of Gov’ts* (2017) 3 Cal. App. 5th 497, 515; *Mission Bay Alliance v. Office of Community Inv. & Infrastructure* (2016) 6 Cal. App. 5th 160, 206. And when there is evidence that an

impact could be significant, an EIR cannot adopt a contrary finding without providing an adequate explanation along with supporting evidence. *East Sacramento Partnership for a Livable City v. City of Sacramento* (2016) 5 Cal. App. 5th 281, 302.

In addition, a determination that regulatory compliance will be sufficient to prevent significant adverse impacts must be based on a project-specific analysis of potential impacts and the effect of regulatory compliance. In *Californians for Alternatives to Toxics v. Department of Food & Agric.* (2005) 136 Cal. App. 4th 1, the court set aside an EIR for a statewide crop disease control plan because it did not include an evaluation of the risks to the environment and human health from the proposed program but simply presumed that no adverse impacts would occur from use of pesticides in accordance with the registration and labeling program of the California Department of Pesticide Regulation. *See also Ebbetts Pass Forest Watch v Department of Forestry & Fire Protection* (2008) 43 Cal. App. 4th 936, 956 (fact that Department of Pesticide Regulation had assessed environmental effects of certain herbicides in general did not excuse failure to assess effects of their use for specific timber harvesting project).

1. *The DEIR Fails to Support its Findings on Greenhouse Gas Impacts with Substantial Evidence.*

CEQA Guidelines § 15064.4 allow a lead agency to determine the significance of a project's GHG impact via a qualitative analysis (e.g., extent to which a project complies with regulations or requirements of state/regional/local GHG plans), and/or a quantitative analysis (e.g., using model or methodology to estimate project emissions and compare it to a numeric threshold). So too, CEQA Guidelines allow lead agencies to select what model or methodology to estimate GHG emissions so long as the selection is supported with substantial evidence, and the lead agency "should explain the limitations of the particular model or methodology selected for use." CEQA Guidelines § 15064.4(c).

CEQA Guidelines sections 15064.4(b)(3) and 15183.5(b) allow a lead agency to consider a project's consistency with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

CEQA Guidelines §§ 15064.4(b)(3) and 15183.5(b)(1) make clear qualified GHG reduction plans or CAPs should include the following features:

- (1) **Inventory:** Quantify GHG emissions, both existing and projected over a specified time period, resulting from activities (e.g., projects) within a defined geographic area (e.g., lead agency jurisdiction);
- (2) **Establish GHG Reduction Goal:** Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable;
- (3) **Analyze Project Types:** Identify and analyze the GHG emissions resulting from specific actions or categories of actions anticipated within the geographic area;
- (4) **Craft Performance Based Mitigation Measures:** Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;
- (5) **Monitoring:** Establish a mechanism to monitor the CAP progress toward achieving said level and to require amendment if the plan is not achieving specified levels;

Collectively, the above-listed CAP features tie qualitative measures to quantitative results, which in turn become binding via proper monitoring and enforcement by the jurisdiction—all resulting in real GHG reductions for the jurisdiction as a whole, and the substantial evidence that the incremental contribution of an individual project is not cumulatively considerable.

Here, the DEIR's analysis of greenhouse gas emissions impacts is not supported by substantial evidence for all of the reasons outlined in SWAPE's April 12, 2021 letter regarding their review of the DEIR⁵:

- The DEIR utilized an incorrect and unsubstantiated quantitative analysis of emissions;
- The DEIR incorrectly relied upon an outdated quantitative GHG threshold;

⁵ April 12, 2021 SWAPE Letter to Greg Sonstein re Comments on Pacific Coast Commons Specific Plan Project. Attached hereto as Exhibit D.

- The DEIR failed to identify a potentially significant GHG impact; and
- The DEIR failed to consider performance-based standards under CARB's 2017 Scoping Plan, and failed to consider performance-based standards under SCAG's RTP/SCS plan.

(Exhibit D, 20-27.)

Additionally, the DEIR needs to consider and incorporate all of the feasible mitigation measures to reduce identified GHG impacts proposed by SWAPE. (Exhibit D, 27-34.)

2. *The DEIR Fails to Support its Findings on Air Quality Impacts with Substantial Evidence.*

Second, the DEIR's Air Quality analysis is fundamentally flawed and not supported by substantial evidence for all the reasons outlined in SWAPE's comments, including:

- Use of unsubstantiated input parameters to estimate project emissions,
 - Underestimated land use sizes;
 - Failure to model all required demolition;
 - Unsubstantiated changed to acres of grading values;
 - Unsubstantiated changes to material silt content values;
 - Unsubstantiated change to hauling trip numbers;
 - Unsubstantiated changes to architectural and area coating areas;
 - Underestimated operational vehicle trip rates;
 - Unsubstantiated changes to energy use values;
 - Unsubstantiated changes to wastewater treatment system percentages;
 - Incorrect application of construction-related mitigation measures;
 - Incorrect application of mobile-related operational mitigation measures;
 - and
 - Failing to adequately analyze diesel particulate matter health risk emissions and identify a potentially significant health risk impact.

(Exhibit D, 1-19.)

Additionally, as noted above, the DEIR fails to consider or include many feasible mitigation measures proposed by SWAPE to reduce significant air quality impacts.

(DEIR, 27-34.) The DEIR needs to be revised and recirculated with a substantiated air quality analysis that includes all feasible mitigation measures to reduce impacts.

3. *The DEIR Fails to Support its Findings on Transportation Impacts with Substantial Evidence.*

CEQA Guidelines § 15064.3(b) requires analysis of a Project's vehicle miles traveled (VMT) impacts as part of the environmental document's transportation impacts analysis. According to the DEIR, the OPR technical guidance suggests that projects which have a VMT per capita of 15% or more below existing conditions may indicate a less than significant transportation impact relating to VMT. (DEIR, 4.13-21~2.) Assuming then this is the proper methodology, the DEIR concludes that the Project would have a less than significant VMT impact because the project is predicted to exhibit more than a 15% reduction in VMT over VMT per capita for the City as a whole, and the region. (DEIR, 4.13-22.)

The DEIR estimates a VMT per capita of 10.9 based upon the project site's location within TAZ (transportation analysis zone) 21125100—yet, it is not clear that this VMT estimate accounts for trips other than home-based VMT which is traced back to residences.⁶ Home-based VMT excludes work trips and other trips not originating from residences in the Project area. Thus, the TAZ estimate is not an accurate reflection of actual (or total) VMT per capita for the TAZ cannot be relied upon to determine VMT impact significance. A home-based VMT analysis is even less supported in the case of a project that includes mixed-use development, as here, such as a hotel and retail uses where home-based VMT estimates will not accurately reflect total VMT.

The DEIR should be revised and recirculated with a transportation analysis that includes total VMT estimates.

4. *The DEIR Fails to Support its Findings on Hazards and Hazardous Materials Impacts with Substantial Evidence.*

Appendix F of the DEIR (Phase I ESA) identifies numerous potentially hazardous waste sites in and around the Project site. Though some of these sites have received regulatory closure, the DEIR identifies at least one site “which could impact the

⁶ See, e.g., *Transportation Analysis Updates in Santa Clarita* (May 19, 2020), prepared for City of Santa Clarita by Fehr & Peers, p. 15. Available at <https://www.santa-clarita.com/Home/ShowDocument?id=18536>.

Project site.” (DEIR, 4.7-4.) The DEIR also identifies at least three other hazardous material release sites but postulates they would “not likely impact the environmental condition of the Project site. (*Id.*) Additionally, numerous UST violations were identified near the Project site; a gas station has been under ongoing operations since the 1930s which also includes environmental hazard violations for releases of petroleum products; and other multiple sources of PCE and TCE contamination were identified in the Project site area relating to manufacturing operations. (DEIR, 4.7-5.)

Despite all this evidence of potential hazardous substances release and a Phase I ESA of the site or area, the DEIR concludes that there would be no long-term operational impacts involving the release of hazardous materials. (DEIR, 4.7-21.) The City simply cannot rule out a risk to future Project site occupants from release of hazardous materials from all of these known sources without a Phase II ESA. The DEIR admits that ongoing operations of the former 76 gas station indicate a potential for release of hazardous substances, and many sources of PCE and TCE are present in the area that may require mitigation that have not been characterized at the site. This information does not support a conclusion of a less than significant impact without further studies. The DEIR should be revised and recirculated to include a Phase II ESA of the Project site that includes the surrounding area to adequately analyze whether there are potential impacts that may require mitigation.

F. The Project Objectives are Unduly Narrow

Project objectives should not be so narrowly defined that they preclude consideration of reasonable alternatives for achieving the project's underlying purpose. *North Coast Rivers Alliance v Kawamura* (2015) 243 Cal. App. 4th 647, 668. Inconsistency with only some project objectives may not be an appropriate basis to eliminate impact-reducing project alternatives from analysis in an EIR. See CEQA Guidelines § 15126.6(c), (f). The fact that a proposed alternative does not meet all of the Project Objectives is not an appropriate basis to eliminate impact-reducing alternatives from analysis in an EIR. CEQA Guidelines § 15126.6(c), (f). Objectives should be based on the underlying purpose of the project, rather than the specific nature of the proposed project. *Habitat & Watershed Caretakers v City of Santa Cruz* (2013) 213 Cal. App. 4th 1277, 1299 (holding that the project objective of implementing a settlement agreement relating to expansion of a University of California campus was too narrow and too focused on the nature of the Project).

Here, the EIR provides extremely narrow and specific objectives that essentially only describe the proposed Project, rather than the purpose of the project:

- Objective 1 calls for maintaining existing hotel uses; and
- Objective 5 calls for increasing the efficient use of land by eliminating surface parking lots and providing parking garages that allow for sharing among hotel commercial, and residential land uses.

(DEIR, 3-18.)

Effectively, the above Project objectives so narrowly define the scope of the Project that it curtails any meaningful analysis or consideration of Project alternatives that could substantially reduce the Project’s environmental impacts. A revised and recirculated DEIR should include amended Project objectives that do not circumscribe the EIR’s Alternatives’ analysis.

III. THE PROJECT VIOLATES THE STATE PLANNING AND ZONING LAW AS WELL AS THE CITY’S GENERAL PLAN

A. Background Regarding the State Planning and Zoning Law

Each California city and county must adopt a comprehensive, long-term general plan governing development. *Napa Citizens for Honest Gov. v. Napa County Bd. of Supervisors* (2001) 91 Cal. App.4th 342, 352, citing Gov. Code §§ 65030, 65300. The general plan sits at the top of the land use planning hierarchy (See *DeVita v. County of Napa* (1995) 9 Cal. App. 4th 763, 773), and serves as a “constitution” or “charter” for all future development. *Lesher Communications, Inc. v. City of Walnut Creek* (1990) 52 Cal. App. 3d 531, 540.

General plan consistency is “the linchpin of California’s land use and development laws; it is the principle which infused the concept of planned growth with the force of law.” See *Debottari v. Norco City Council* (1985) 171 Cal. App. 3d 1204, 1213.

State law mandates two levels of consistency. First, a general plan must be internally or “horizontally” consistent: its elements must “comprise an integrated, internally consistent and compatible statement of policies for the adopting agency.” (See Gov. Code § 65300.5; *Sierra Club v. Bd. of Supervisors* (1981) 126 Cal. App. 3d 698, 704.) A general plan amendment thus may not be internally inconsistent, nor may it cause the general plan as a whole to become internally inconsistent. See *DeVita*, 9 Cal. App. 4th at 796 fn. 12.

Second, state law requires “vertical” consistency, meaning that zoning ordinances and other land use decisions also must be consistent with the general plan. (See Gov. Code § 65860(a)(2) [land uses authorized by zoning ordinance must be “compatible with the objectives, policies, general land uses, and programs specified in the [general] plan.”]; see also *Neighborhood Action Group v. County of Calaveras* (1984) 156 Cal. App. 3d 1176, 1184.) A zoning ordinance that conflicts with the general plan or impedes achievement of its policies is invalid and cannot be given effect. See *Lesher*, 52 Cal. App. 3d at 544.

State law requires that all subordinate land use decisions, including conditional use permits, be consistent with the general plan. See Gov. Code § 65860(a)(2); *Neighborhood Action Group*, 156 Cal. App. 3d at 1184.

A project cannot be found consistent with a general plan if it conflicts with a general plan policy that is “fundamental, mandatory, and clear,” regardless of whether it is consistent with other general plan policies. See *Endangered Habitats League v. County of Orange* (2005) 131 Cal. App. 4th 777, 782-83; *Families Unafraid to Uphold Rural El Dorado County v. Bd. of Supervisors* (1998) 62 Cal. App. 4th 1332, 1341-42 (“FUTURE”).

Moreover, even in the absence of such a direct conflict, an ordinance or development project may not be approved if it interferes with or frustrates the general plan’s policies and objectives. See *Napa Citizens*, 91 Cal. App. 4th at 378-79; see also *Lesher*, 52 Cal. App. 3d at 544 (zoning ordinance restricting development conflicted with growth-oriented policies of general plan).

B. The DEIR Fails to Demonstrate Consistency with SCAG’s RTP/SCS Plan

Senate Bill No. 375 requires regional planning agencies to include a sustainable communities strategy in their regional transportation plans. Gov. Code § 65080, sub.(b)(2)(B). CEQA Guidelines § 15125(d) provides that an EIR “shall discuss any inconsistencies between the proposed project and...regional plans. Such regional plans include...regional transportation plans.” Thus, CEQA requires analysis of any inconsistencies between the Project and the relevant RTP/SCS plan.

In September 2008, SB 375 (Gov. Code § 65080(b) et seq.) was instituted to help achieve AB 32 goals through strategies including requiring regional agencies to prepare a Sustainable Communities Strategy (“SCS”) to be incorporated into their Regional Transportation Plan (“RTP”). The RTP links land use planning with the regional

transportation system so that the region can grow smartly and sustainably, while also demonstrating how the region will meet targets set by CARB that reduce the per capita GHG emission from passenger vehicles in the region.

According to SWAPE’s comments, the DEIR failed to consider performance-based standards under the RTP/SCS plan. The DEIR failed to evaluate whether the Project is consistent with per capita GHG emission targets, or daily vehicle miles traveled. (Ex. D, 24.) And according to SWAPE’s analysis and conclusion, the Project exceeds both per capita GHG emissions targets and daily VMT per capita—thus, the Project is not consistent with SCAG’s RTP/SCS Plan.

C. The DEIR Fails to Demonstrate Consistency with the State Housing Law’s Regional Housing Needs Assessment Requirements and the City’s Obligations to Fulfill those Requirements in its Housing Element

State law requires that jurisdictions provide their fair share of regional housing needs and adopt a general plan for future growth (California Government Code Section 65300). The California Department of Housing and Community Development (HCD) is mandated to determine state-wide housing needs by income category for each Council of Governments (COG) throughout the state. The housing need is determined based on four broad household income categories: very low (households making less than 50 percent of median family income), low (50 to 80 percent of median family income), moderate (80 to 120 percent of median family income), and above moderate (more than 120 percent of median family income). The intent of the future needs allocation by income groups is to relieve the undue concentration of very low and low-income households in a single jurisdiction and to help allocate resources in a fair and equitable manner.

CEQA requires the DEIR analyze the Project’s consistency with the State’s housing goals. CEQA Guidelines section 15125(d) requires that an environmental impact report “discuss any inconsistencies between the proposed project and applicable general plans, specific plans and regional plans. *See also Golden Door Properties, LLC v. County of San Diego* (2020) 50 Cal. App. 5th 467, 543.

A Court “[w]hen reviewing whether a discussion is sufficient to satisfy CEQA, . . . the EIR (1) includes sufficient detail to enable those who did not participate in its preparation to understand and to consider meaningfully the issues the proposed project raises [citation omitted], and (2) makes a reasonable effort to substantively

connect a project's air quality impacts to likely health consequences.” (*Sierra Club v. County of Fresno* (2018) 6 Cal. 5th 502, 510 [citing *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 405.]; see also PRC §§ 21002.1(e), 21003(b).) The Court may determine whether a CEQA environmental document sufficiently discloses information required by CEQA de novo as “noncompliance with the information disclosure provisions” of CEQA is a failure to proceed in a manner required by law. (PRC § 21005(a); see also *Sierra Club v. County of Fresno* (2018) 6 Cal. 5th 502, 515.)

SCAG is the COG for Los Angeles County and has determined that the City’s RHNA for the 6th Cycle allocation period is 189 units for very low income residents, 88 units for low income residents, 84 units for moderate income residents, and 131 unit for above moderate income residents for a total of 492 housing units.⁷

First, the City fails to analyze consistency with the latest RHNA allocation in the DEIR. (DEIR, 4.11-6.) Second, the Project fails to include *any* affordable housing units as part of the Project for residents with income below above moderate. The City is required to meet the housing needs of all of city residents under the state housing law. While the DEIR calls for a provision in a future development agreement to include some affordable housing units, at this stage of the Project, none are included and no development agreement has been drafted.

The DEIR should be revised and recirculated with an affordable housing component.

IV. **CONCLUSION**

Commenters request that the City deny the Project’s proposed Site Plan Review and any other discretionary approvals the City finds necessary and order the revision and recirculation of the Project’s environmental impact report to address the aforementioned concerns.

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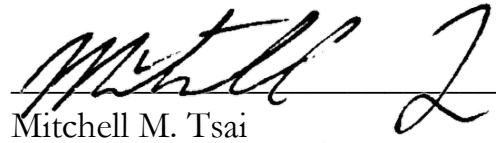
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⁷ SCAG Regional Housing Needs Assessment Final Allocation, 6th Cycle Final RHNA Allocation Plan. Available at <https://scag.ca.gov/rhna>.

Please contact my Office if you have any questions or concerns.

Sincerely,

A handwritten signature in black ink, appearing to read "Mitchell M. Tsai", is written over a horizontal line. The signature is stylized and cursive.

Mitchell M. Tsai
Attorneys for Southwest Regional
Council of Carpenters

Attached:

March 8, 2021 SWAPE Letter to Mitchell M. Tsai re Local Hire Requirements and Considerations for Greenhouse Gas Modeling (Exhibit A);

Air Quality and GHG Expert Paul Rosenfeld CV (Exhibit B);

Air Quality and GHG Expert Matt Hagemann CV (Exhibit C); and

April 12, 2021 SWAPE Letter to Greg Sonstein re Comments on the Pacific Coast Commons Specific Plan Project (Exhibit D).

EXHIBIT A



Technical Consultation, Data Analysis and
Litigation Support for the Environment

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March 8, 2021

Mitchell M. Tsai
155 South El Molino, Suite 104
Pasadena, CA 91101

Subject: Local Hire Requirements and Considerations for Greenhouse Gas Modeling

Dear Mr. Tsai,

Soil Water Air Protection Enterprise ("SWAPE") is pleased to provide the following draft technical report explaining the significance of worker trips required for construction of land use development projects with respect to the estimation of greenhouse gas ("GHG") emissions. The report will also discuss the potential for local hire requirements to reduce the length of worker trips, and consequently, reduced or mitigate the potential GHG impacts.

Worker Trips and Greenhouse Gas Calculations

The California Emissions Estimator Model ("CalEEMod") is a "statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects."¹ CalEEMod quantifies construction-related emissions associated with land use projects resulting from off-road construction equipment; on-road mobile equipment associated with workers, vendors, and hauling; fugitive dust associated with grading, demolition, truck loading, and on-road vehicles traveling along paved and unpaved roads; and architectural coating activities; and paving.²

The number, length, and vehicle class of worker trips are utilized by CalEEMod to calculate emissions associated with the on-road vehicle trips required to transport workers to and from the Project site during construction.³

¹ "California Emissions Estimator Model." CAPCOA, 2017, available at: <http://www.aqmd.gov/caleemod/home>.

² "California Emissions Estimator Model." CAPCOA, 2017, available at: <http://www.aqmd.gov/caleemod/home>.

³ "CalEEMod User's Guide." CAPCOA, November 2017, available at: http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 34.

Specifically, the number and length of vehicle trips is utilized to estimate the vehicle miles travelled (“VMT”) associated with construction. Then, utilizing vehicle-class specific EMFAC 2014 emission factors, CalEEMod calculates the vehicle exhaust, evaporative, and dust emissions resulting from construction-related VMT, including personal vehicles for worker commuting.⁴

Specifically, in order to calculate VMT, CalEEMod multiplies the average daily trip rate by the average overall trip length (see excerpt below):

$$\text{“VMT}_d = \Sigma(\text{Average Daily Trip Rate}_i * \text{Average Overall Trip Length}_i) _n$$

Where:

n = Number of land uses being modeled.”⁵

Furthermore, to calculate the on-road emissions associated with worker trips, CalEEMod utilizes the following equation (see excerpt below):

$$\text{“Emissions}_{\text{pollutant}} = \text{VMT} * \text{EF}_{\text{running,pollutant}}$$

Where:

$\text{Emissions}_{\text{pollutant}}$ = emissions from vehicle running for each pollutant

VMT = vehicle miles traveled

$\text{EF}_{\text{running,pollutant}}$ = emission factor for running emissions.”⁶

Thus, there is a direct relationship between trip length and VMT, as well as a direct relationship between VMT and vehicle running emissions. In other words, when the trip length is increased, the VMT and vehicle running emissions increase as a result. Thus, vehicle running emissions can be reduced by decreasing the average overall trip length, by way of a local hire requirement or otherwise.

Default Worker Trip Parameters and Potential Local Hire Requirements

As previously discussed, the number, length, and vehicle class of worker trips are utilized by CalEEMod to calculate emissions associated with the on-road vehicle trips required to transport workers to and from the Project site during construction.⁷ In order to understand how local hire requirements and associated worker trip length reductions impact GHG emissions calculations, it is important to consider the CalEEMod default worker trip parameters. CalEEMod provides recommended default values based on site-specific information, such as land use type, meteorological data, total lot acreage, project type and typical equipment associated with project type. If more specific project information is known, the user can change the default values and input project-specific values, but the California Environmental Quality Act (“CEQA”) requires that such changes be justified by substantial evidence.⁸ The default number of construction-related worker trips is calculated by multiplying the

⁴ “Appendix A Calculation Details for CalEEMod.” CAPCOA, October 2017, available at: http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 14-15.

⁵ “Appendix A Calculation Details for CalEEMod.” CAPCOA, October 2017, available at: http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 23.

⁶ “Appendix A Calculation Details for CalEEMod.” CAPCOA, October 2017, available at: http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 15.

⁷ “CalEEMod User’s Guide.” CAPCOA, November 2017, available at: http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 34.

⁸ CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 1, 9.

number of pieces of equipment for all phases by 1.25, with the exception of worker trips required for the building construction and architectural coating phases.⁹ Furthermore, the worker trip vehicle class is a 50/25/25 percent mix of light duty autos, light duty truck class 1 and light duty truck class 2, respectively.”¹⁰ Finally, the default worker trip length is consistent with the length of the operational home-to-work vehicle trips.¹¹ The operational home-to-work vehicle trip lengths are:

“[B]ased on the location and urbanization selected on the project characteristic screen. These values were supplied by the air districts or use a default average for the state. Each district (or county) also assigns trip lengths for urban and rural settings” (emphasis added).¹²

Thus, the default worker trip length is based on the location and urbanization level selected by the User when modeling emissions. The below table shows the CalEEMod default rural and urban worker trip lengths by air basin (see excerpt below and Attachment A).¹³

Worker Trip Length by Air Basin		
Air Basin	Rural (miles)	Urban (miles)
Great Basin Valleys	16.8	10.8
Lake County	16.8	10.8
Lake Tahoe	16.8	10.8
Mojave Desert	16.8	10.8
Mountain Counties	16.8	10.8
North Central Coast	17.1	12.3
North Coast	16.8	10.8
Northeast Plateau	16.8	10.8
Sacramento Valley	16.8	10.8
Salton Sea	14.6	11
San Diego	16.8	10.8
San Francisco Bay Area	10.8	10.8
San Joaquin Valley	16.8	10.8
South Central Coast	16.8	10.8
South Coast	19.8	14.7
Average	16.47	11.17
Minimum	10.80	10.80
Maximum	19.80	14.70
Range	9.00	3.90

⁹ “CalEEMod User’s Guide.” CAPCOA, November 2017, available at: http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 34.

¹⁰ “Appendix A Calculation Details for CalEEMod.” CAPCOA, October 2017, available at: http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 15.

¹¹ “Appendix A Calculation Details for CalEEMod.” CAPCOA, October 2017, available at: http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 14.

¹² “Appendix A Calculation Details for CalEEMod.” CAPCOA, October 2017, available at: http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 21.

¹³ “Appendix D Default Data Tables.” CAPCOA, October 2017, available at: http://www.aqmd.gov/docs/default-source/caleemod/05_appendix-d2016-3-2.pdf?sfvrsn=4, p. D-84 – D-86.

As demonstrated above, default rural worker trip lengths for air basins in California vary from 10.8- to 19.8- miles, with an average of 16.47 miles. Furthermore, default urban worker trip lengths vary from 10.8- to 14.7- miles, with an average of 11.17 miles. Thus, while default worker trip lengths vary by location, default urban worker trip lengths tend to be shorter in length. Based on these trends evident in the CalEEMod default worker trip lengths, we can reasonably assume that the efficacy of a local hire requirement is especially dependent upon the urbanization of the project site, as well as the project location.

Practical Application of a Local Hire Requirement and Associated Impact

To provide an example of the potential impact of a local hire provision on construction-related GHG emissions, we estimated the significance of a local hire provision for the Village South Specific Plan (“Project”) located in the City of Claremont (“City”). The Project proposed to construct 1,000 residential units, 100,000-SF of retail space, 45,000-SF of office space, as well as a 50-room hotel, on the 24-acre site. The Project location is classified as Urban and lies within the Los Angeles-South Coast County. As a result, the Project has a default worker trip length of 14.7 miles.¹⁴ In an effort to evaluate the potential for a local hire provision to reduce the Project’s construction-related GHG emissions, we prepared an updated model, reducing all worker trip lengths to 10 miles (see Attachment B). Our analysis estimates that if a local hire provision with a 10-mile radius were to be implemented, the GHG emissions associated with Project construction would decrease by approximately 17% (see table below and Attachment C).

Local Hire Provision Net Change	
Without Local Hire Provision	
Total Construction GHG Emissions (MT CO ₂ e)	3,623
Amortized Construction GHG Emissions (MT CO ₂ e/year)	120.77
With Local Hire Provision	
Total Construction GHG Emissions (MT CO ₂ e)	3,024
Amortized Construction GHG Emissions (MT CO ₂ e/year)	100.80
% Decrease in Construction-related GHG Emissions	17%

As demonstrated above, by implementing a local hire provision requiring 10 mile worker trip lengths, the Project could reduce potential GHG emissions associated with construction worker trips. More broadly, any local hire requirement that results in a decreased worker trip length from the default value has the potential to result in a reduction of construction-related GHG emissions, though the significance of the reduction would vary based on the location and urbanization level of the project site.

This serves as an example of the potential impacts of local hire requirements on estimated project-level GHG emissions, though it does not indicate that local hire requirements would result in reduced construction-related GHG emission for all projects. As previously described, the significance of a local hire requirement depends on the worker trip length enforced and the default worker trip length for the project’s urbanization level and location.

¹⁴ “Appendix D Default Data Tables.” CAPCOA, October 2017, available at: http://www.aqmd.gov/docs/default-source/caleemod/05_appendix-d2016-3-2.pdf?sfvrsn=4, p. D-85.

Disclaimer

SWAPE has received limited discovery. 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,

A handwritten signature in blue ink, appearing to read "Matt Hagemann".

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

A handwritten signature in blue ink, appearing to read "Paul Rosenfeld".

Paul E. Rosenfeld, Ph.D.

EXHIBIT B



Paul Rosenfeld, Ph.D.

Principal Environmental Chemist

Chemical Fate and Transport & Air Dispersion Modeling

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 unconventional oil drilling operations, oil spills, landfills, boilers and incinerators, process stacks, storage tanks, confined animal feeding operations, and many other industrial and agricultural sources. 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 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, 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 dozens of sites and has testified as an expert witness on more than ten cases involving exposure to air contaminants from industrial 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 H₂O 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.

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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.

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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.

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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., Sellev, 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.

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

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

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

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

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

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

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

Rosenfeld, P. E. (October 15-18, 2007). The Repeated Trespass of Tritium-Contaminated Water Into A Surrounding Community Form Repeated Waste Spills From A Nuclear Power Plant. *The 23rd Annual International Conferences on Soils Sediment and Water*. Platform lecture conducted from University of Massachusetts, Amherst MA.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Teaching Experience:

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

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

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

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

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

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

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

Academic Grants Awarded:

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

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

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

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

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

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

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

Deposition and/or Trial Testimony:

In the 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 Agrosiences, 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 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 Iowa District Court For Wapello County
Jerry Dovico, et al., Plaintiffs vs. Valley View Sine LLC, et al., Defendants
Law No.: LALA105144 - Division A
Rosenfeld Deposition, August 2015

In The Iowa District Court For Wapello County
Doug Pauls, et al., et al., Plaintiffs vs. Richard Warren, et al., Defendants
Law No.: LALA105144 - Division A
Rosenfeld Deposition, August 2015

In The Circuit Court of Ohio County, West Virginia
Robert Andrews, et al. v. Antero, et al.
Civil Action NO. 14-C-30000
Rosenfeld Deposition, June 2015

In The Third Judicial District County of Dona Ana, New Mexico
Betty Gonzalez, et al. Plaintiffs vs. Del Oro Dairy, Del Oro Real Estate LLC, Jerry Settles and Deward
DeRuyter, Defendants
Rosenfeld Deposition: July 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 United States District Court Western District of Oklahoma
Tommy McCarty, et al., Plaintiffs, v. Oklahoma City Landfill, LLC d/b/a Southeast Oklahoma City
Landfill, et al. Defendants.
Case No. 5:12-cv-01152-C
Rosenfeld Deposition: July 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 of Southern District of Texas Galveston Division

Kyle Cannon, Eugene Donovan, Genaro Ramirez, Carol Sassler, and Harvey Walton, each Individually and on behalf of those similarly situated, *Plaintiffs*, vs. BP Products North America, Inc., *Defendant*.

Case 3:10-cv-00622

Rosenfeld Deposition: February 2012

Rosenfeld Trial: April 2013

In the Circuit Court of Baltimore County Maryland

Philip E. Cvach, II et al., *Plaintiffs* vs. Two Farms, Inc. d/b/a Royal Farms, Defendants

Case Number: 03-C-12-012487 OT

Rosenfeld Deposition: September 2013

EXHIBIT C



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
Industrial Stormwater Compliance
Investigation and Remediation Strategies
Litigation Support and Testifying Expert
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 25 years of experience in environmental policy, assessment and remediation. 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) while also working with permit holders to improve hydrogeologic characterization and water quality monitoring.

Matt has worked closely with U.S. EPA legal counsel and the technical staff of several states in the application and enforcement of RCRA, Safe Drinking Water Act and Clean Water Act regulations. Matt has trained the technical staff in the States of California, Hawaii, Nevada, Arizona and the Territory of Guam in the conduct of investigations, groundwater fundamentals, and sampling techniques.

Positions Matt has held include:

- Founding Partner, Soil/Water/Air Protection Enterprise (SWAPE) (2003 – present);
- Geology Instructor, Golden West College, 2010 – 2014;
- 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 100 environmental impact reports since 2003 under CEQA that identify significant issues with regard to hazardous waste, water resources, water quality, air quality, Valley Fever, 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 industrial facilities.
- Manager of a project to provide technical assistance to a community adjacent to a former Naval shipyard under a grant from the U.S. EPA.
- 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.
- Expert witness on two cases involving MTBE litigation.
- Expert witness and litigation support on the impact of air toxins and hazards at a school.
- Expert witness in litigation at a former plywood plant.

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 taught physical geology (lecture and lab and introductory geology at Golden West College in Huntington Beach, California from 2010 to 2014.

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, Colorado.

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 representatives, 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 examination, 2009-2011.

EXHIBIT D



Technical Consultation, Data Analysis and
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April 12, 2021

Greg Sonstein, Esq.
Mitchell M. Tsai, Attorney at Law
155 South El Molino Avenue Suite 104
Pasadena, CA 91101

Subject: Comments on the Pacific Coast Commons Specific Plan (SCH No. 2020050508)

Dear Mr. Sonstein,

We have reviewed the February 2021 Draft Environmental Impact Report ("DEIR") for the Pacific Coast Commons Specific Plan ("Project") located in the City of El Segundo ("City"). The Project proposes to the adoption of a Specific Plan that would allow for the continued operation of 596 hotel rooms and construction of 263 housing units, 11,252-SF of commercial/retail uses, and 792 parking stalls on the 6.385-acre site.

Our review concludes that the DEIR fails to adequately evaluate the Project's air quality, health risk, and greenhouse gas impacts. As a result, emissions and health risk impacts associated with construction and operation of the proposed Project are underestimated and inadequately addressed. An updated EIR should be prepared to adequately assess and mitigate the potential air quality, health risk, and greenhouse gas impacts that the project may have on the surrounding environment.

Air Quality

Unsubstantiated Input Parameters Used to Estimate Project Emissions

The DEIR's air quality analysis relies on emissions calculated with CalEEMod.2016.3.2 (p. 4.2-1).¹ CalEEMod provides recommended default values based on site-specific information, such as land use type, meteorological data, total lot acreage, project type and typical equipment associated with project type. If more specific project information is known, the user can change the default values and input project-specific values, but the California Environmental Quality Act ("CEQA") requires that such changes

¹ CAPCOA (November 2017) CalEEMod User's Guide, http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4.

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 Appendix C-1, "CalEEMod Outputs," and Appendix C-2, "Health Risk Assessment Report," to the DEIR, we found that several model inputs were not consistent with information disclosed in the DEIR. As a result, the Project's construction and operational emissions are underestimated. As a result, an updated 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 Sizes

According to the DEIR, the Project proposes to construct 327,021-SF of residential development, 11,252-SF of commercial/retail uses, and 792 parking spaces (p. 3-2). However, review of the CalEEMod output files demonstrates that the "Pacific Coast Commons Specific Plan Project" and "Pacific Coast Commons Specific Plan Project Mit" models include only 314,659-SF of residential space, 11,000-SF of commercial/retail space, and 763 parking spaces (see excerpt below) (Appendix C-1, pp. 3, 51, 95; Appendix C-2, pp. 33).

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area
Enclosed Parking with Elevator	763.00	Space	0.00	305,200.00
Other Asphalt Surfaces	12.65	1000sqft	0.00	12,650.00
High Turnover (Sit Down Restaurant)	3.70	1000sqft	0.00	3,700.00
Apartments Mid Rise	263.00	Dwelling Unit	0.00	314,659.00
Regional Shopping Center	7.30	1000sqft	5.35	7,300.00

As you can see in the excerpt above, the proposed residential, commercial/retail, and parking land uses are underestimated by 12,362-SF, 252-SF, and 29 spaces, respectively. These underestimations present an issue, as the land use type and size features are used throughout CalEEMod to determine default variable and emission factors that go into the model's calculations.² For example, 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). Thus, by underestimating the sizes of the proposed residential, commercial/retail, and parking land uses, the models underestimate the Project's emissions and should not be relied upon to determine Project significance.

² "CalEEMod User's Guide." CAPCOA, November 2017, available at: http://www.aqmd.gov/docs/default-source/caleemod/upgrades/2016.3/01_user-39-s-guide2016-3-1.pdf?sfvrsn=2, p. 17

Failure to Model All Required Demolition

According to the CalEEMod User's Guide, "[h]aul trips are based on the amount of material that is demolished, imported or exported assuming a truck can handle 16 cubic yards of material."³ Therefore, the air model calculates a default number of hauling trips based upon the amount of demolition material inputted into the model. According to the DEIR:

"During Phase 1, it was assumed that 41,660-SF of buildings and 6,000-SF of pavement would require demolition. For Phases 2 and 3, it was assumed that a total of 131,000 square feet of pavement would require demolition" (p. 4.2-25).

As such, the models should have included at least 178,660-SF of demolition.⁴ When correctly inputting 178,660-SF of building demolition, the model calculates a default demolition hauling trip number of 812 trips. However, review of the CalEEMod output files demonstrates that the "Pacific Coast Commons Specific Plan Project" and the "Pacific Coast Commons Specific Plan Project Mit" models include only 381 total default hauling trips, which were artificially increased to 400 hauling trips (see excerpts below) (Appendix C-1, pp. 13, 61, 105; Appendix C-2, pp. 42).

Table Name	Column Name	Default Value	New Value
tblTripsAndVMT	HaulingTripNumber	189.00	200.00
tblTripsAndVMT	HaulingTripNumber	192.00	200.00

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number
Demolition - Phase 1	6	80.00	20.00	200.00
Site Preparation - Phase 1	7	50.00	10.00	0.00
Grading - Phase 1	6	80.00	10.00	0.00
Building Construction - Phase 1	9	120.00	30.00	0.00
Paving - Phase 1	6	40.00	10.00	0.00
Architectural Coating - Phase 1	1	80.00	20.00	0.00
Demolition - Phases 2 and 3	6	100.00	40.00	200.00
Site Preparation - Phases 2 and 3	7	120.00	20.00	0.00
Grading - Phases 2 and 3	6	160.00	20.00	1,720.00
Building Construction - Phases 2 and 3	9	300.00	60.00	0.00
Paving - Phases 2 and 3	6	80.00	20.00	0.00
Architectural Coating - Phases 2 and 3	1	240.00	40.00	0.00

³ http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 14

⁴ Calculated: (41,660-SF of buildings demolition) + (6,000-SF of pavement demolition) + (131,000-SF of pavement demolition) = 178,660-SF of demolition.

As you can see in the excerpts above, the default number of demolition hauling trips was underestimated by 431 trips.⁵ As such, the models fail to include the total amount of demolition required for the Project.

This underestimation presents an issue, as the total amount of demolition material is used by CalEEMod to determine emissions associated with this phase of construction; the three primary operations that generate dust emission during the demolition phase are mechanical or explosive dismemberment, site removal of debris, and on-site truck traffic on paved and unpaved road.⁶ By failing to include the total amount of required demolition, the models underestimate emissions associated with fugitive dust, site removal, as well as exhaust from hauling trucks traveling to and from the site, and should not be relied upon to determine the significance of the Project's air quality impacts.

Unsubstantiated Changes to Acres of Grading Values

Review of the CalEEMod output files demonstrates that the "Pacific Coast Commons Specific Plan Project" and the "Pacific Coast Commons Specific Plan Project Mit" models include reductions to the default acres of grading values (see excerpt below) (Appendix C-1, pp. 6, 54, 98; Appendix C-2, pp. 36).

Table Name	Column Name	Default Value	New Value
tblGrading	AcresOfGrading	21.50	0.74
tblGrading	AcresOfGrading	21.00	3.14

As you can see in the excerpt above, the acres of grading values were reduced by approximately 97%, from the default value of 21.5- to 0.74-acres, and 85%, from the default value of 21- to 3.14-acres. As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.⁷ According to the "User Entered Comments & Non-Default Data" table, the justification provided for these changes is: "17,000 CY of soil export during Phase 2" (Appendix C-1, pp. 4, 52, 96; Appendix C-2, pp. 34). Furthermore, regarding the acres of grading value, the DEIR states:

"During grading activities, fugitive dust can be generated from the movement of dirt on the Project site. CalEEMod estimates dust from dozers moving dirt around, dust from graders or scrapers leveling the land, and loading or unloading dirt into haul trucks. Each of those activities is calculated differently in CalEEMod, based on the number of acres traversed by the grading equipment" (emphasis) (p. 4.2-23).

However, these reductions remain unsupported for two reasons. First, the justification provided by the "User Entered Comments & Non-Default Data" table fails to address the revised acres of grading value. Second, according to the CalEEMod User's Guide:

"[T]he dimensions (e.g., length and width) of the grading site have no impact on the calculation, only the total area to be graded. In order to properly grade a piece of land multiple passes with

⁵ Calculated: (812 demolition hauling trips) – (381 trips demolition hauling trips) = 431 demolition hauling trips.

⁶ CalEEMod User Guide, Appendix A, p. 11, available at: <http://www.caleemod.com/>

⁷ CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 2, 9

equipment may be required. The acres is based on the equipment list and days in grading or site preparation phase according to the anticipated maximum number of acres a given piece of equipment can pass over in an 8-hour workday.”⁸

Thus, as the dimensions of the Project site have no impact on the acres of grading value, and the DEIR fails to substantiate this change, we cannot verify the revised acres of grading values.

These unsubstantiated reductions present an issue, as CalEEMod uses the acres of grading value to estimate the dust emissions associated with grading.⁹ Thus, by including unsubstantiated reductions to the default acres of grading values, the models may underestimate the Project’s construction-related emissions and should not be relied upon to determine Project significance.

Unsubstantiated Changes to Material Moisture Content Bulldozing Values

Review of the CalEEMod output files demonstrates that the “Pacific Coast Commons Specific Plan Project” and the “Pacific Coast Commons Specific Plan Project Mit” models include several changes to the default material moisture content bulldozing values (see excerpt below) (Appendix C-1, pp. 6, 54, 98; Appendix C-2, pp. 36).

Table Name	Column Name	Default Value	New Value
tblGrading	MaterialMoistureContentBulldozing	7.90	17.00
tblGrading	MaterialMoistureContentBulldozing	7.90	17.00
tblGrading	MaterialMoistureContentBulldozing	7.90	17.00

As you can see in the excerpt above, the material moisture content bulldozing values were increased from the default value of 7.9% to 17%. As previously mentioned, the CalEEMod User’s Guide requires any changes to model defaults be justified.¹⁰ According to the “User Entered Comments & Non-Default Data” table, the justification provided for these changes is: “17,000 CY of soil export during Phase 2” (Appendix C-1, pp. 4, 52, 96; Appendix C-2, pp. 34).

However, this change remains unsupported for two reasons. First, the justification provided by the “User Entered Comments & Non-Default Data” table fails to address the revised material moisture content bulldozing values. Second, the DEIR and associated documents fail to mention or justify these changes whatsoever.

⁸ “Appendix A Calculation Details for CalEEMod.” available at: http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 9.

⁹ “Appendix A Calculation Details for CalEEMod.” available at: http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 9.

¹⁰ CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 2, 9

These unsubstantiated changes present an issue, as CalEEMod uses the material moisture content bulldozing values to calculate the dust emission factor associated with bulldozing.¹¹ Specifically, CalEEMod utilizes the following equations:¹²

$$EF_{TSP} = \frac{C_{TSP} \times S^{1.2}}{M^{1.3}}, \text{ and } EF_{PM_{2.5}} = EF_{TSP} \times F_{PM_{2.5}}$$

$$EF_{PM_{15}} = \frac{C_{PM_{15}} \times S^{1.5}}{M^{1.4}}, \text{ and } EF_{PM_{10}} = EF_{PM_{15}} \times F_{PM_{10}}$$

Where:

EF = emission factor (lb/hr)
 C = arbitrary coefficient used by AP-42
 M = material moisture content (%)
 S = material silt content (%)
 F = scaling factor

As demonstrated above, there is an inverse relationship between material moisture content and dust emission factors. In other words, when the material moisture content percentage increases, the dust emission factor decreases. As such, by including unsubstantiated increases to the material moisture content values, the models may underestimate the emissions associated with bulldozing. Thus, the models may underestimate the Project's construction-related emissions and should not be relied upon to determine Project significance.

Unsubstantiated Changes to Material Silt Content Values

Review of the CalEEMod output files demonstrates that the "Pacific Coast Commons Specific Plan Project" and the "Pacific Coast Commons Specific Plan Project Mit" models include several reductions to the default material silt content values (see excerpt below) (Appendix C-1, pp. 6, 54, 98; Appendix C-2, pp. 36).

Table Name	Column Name	Default Value	New Value
tblGrading	MaterialSiltContent	6.90	3.30
tblGrading	MaterialSiltContent	6.90	3.30
tblGrading	MaterialSiltContent	6.90	3.30
tblGrading	MaterialSiltContent	6.90	3.30

As you can see in the excerpt above, the material silt content values were increased from the default value to 6.9% to 3.3%. As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.¹³ According to the "User Entered Comments & Non-Default Data" table, the

¹¹ "Appendix A Calculation Details for CalEEMod." available at: http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 10.

¹² "Appendix A Calculation Details for CalEEMod." available at: http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 10.

¹³ CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 2, 9

justification provided for these changes is: “17,000 CY of soil export during Phase 2” (Appendix C-1, pp. 4, 52, 96; Appendix C-2, pp. 34).

However, this change remains unsupported for two reasons. First, the justification provided by the “User Entered Comments & Non-Default Data” table fails to address the revised material silt content values. Second, the DEIR and associated documents fail to mention or justify these changes whatsoever.

These unsubstantiated changes present an issue, because CalEEMod uses the material silt content values to calculate the dust emission factor associated with bulldozing.¹⁴ Specifically, CalEEMod utilizes the following equations:¹⁵

$$EF_{TSP} = \frac{C_{TSP} \times s^{1.2}}{M^{1.3}}, \text{ and } EF_{PM2.5} = EF_{TSP} \times F_{PM2.5}$$

$$EF_{PM15} = \frac{C_{PM15} \times s^{1.5}}{M^{1.4}}, \text{ and } EF_{PM10} = EF_{PM15} \times F_{PM10}$$

Where:

EF = emission factor (lb/hr)
 C = arbitrary coefficient used by AP-42
 M = material moisture content (%)
 S = material silt content (%)
 F = scaling factor

As demonstrated above, there is a direct relationship between material silt content and dust emission factors. In other words, when the material silt content percentage decreases, the dust emission factor decreases as well. As such, by including unsubstantiated increases to the material silt content values, the models may underestimate the emissions associated with bulldozing. Thus, the models may underestimate the Project’s construction-related emissions and should not be relied upon to determine Project significance.

Unsubstantiated Changes to Hauling Trip Numbers

Review of the CalEEMod output files demonstrates that the “Pacific Coast Commons Specific Plan Project” model includes several changes to the default hauling trip numbers (see excerpt below) (Appendix C-1, pp. 6-7, 54, 98).

¹⁴ “Appendix A Calculation Details for CalEEMod.” available at: http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 10.

¹⁵ “Appendix A Calculation Details for CalEEMod.” available at: http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 10.

Table Name	Column Name	Default Value	New Value
tblTripsAndVMT	HaulingTripNumber	189.00	200.00
tblTripsAndVMT	HaulingTripNumber	192.00	200.00
tblTripsAndVMT	HaulingTripNumber	2,125.00	1,720.00

As you can see in the excerpt above, the number of hauling trips was collectively reduced by 386 trips, from the cumulative default value of 2,506 trips to 2,120 trips.¹⁶ As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.¹⁷ According to the "User Entered Comments and Non-Default Data" table, the justification provided for these changes is: "Updated per applicant" (Appendix C-1, pp. 4, 52, 96). Furthermore, the DEIR states:

"Haul truck trips during the demolition and grading phases were based on demolition and earthwork quantities provided" (p. 4.2-25).

However, these justifications are insufficient, as the DEIR and associated documents fail to provide the calculations or explain how the revised hauling trip numbers were derived "based on demolition and earthwork quantities." As such, we cannot verify the revised hauling trip numbers.

These unsubstantiated changes present an issue, as CalEEMod uses number of hauling trips to estimate the construction-related emissions associated with on-road vehicles.¹⁸ Thus, by including unsubstantiated changes to the default hauling trip numbers, the model may underestimate the Project's mobile-source construction-related emissions and should not be relied upon to determine Project significance.

Unsubstantiated Changes to Architectural and Area Coating Areas

Review of the CalEEMod output files demonstrates that the "Pacific Coast Commons Specific Plan Project" and "Pacific Coast Commons Specific Plan Project Mit" models include several reductions to the default architectural and area coating areas (see excerpt below) (Appendix C-1, pp. 5, 52-53, 96-97; Appendix C-2, pp. 34-35).

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Residential_Exterior	212,395.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	212,395.00	212,213.00
tblArchitecturalCoating	ConstArea_Residential_Interior	637,184.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	637,184.00	636,338.00
tblAreaCoating	Area_Parking	19071	1959

¹⁶ Calculated: (189 + 192 + 2,125 default hauling trips) – (200 + 200 + 1,720 revised hauling trips) = 386 net decrease in hauling trips.

¹⁷ CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 2, 9

¹⁸ CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 34.

As you can see in the excerpt above, the architectural coating areas were reduced by 850,607-SF, from the cumulative default value of 1,699,158- to 848,551-SF;¹⁹ and the area coating area for the proposed parking land use was reduced by 17,112-SF, from the default value of 19,701- to 1,959-SF.²⁰ As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.²¹ According to the "User Entered Comments and Non-Default Data" table, the justification provided for these changes is: "Updated SF per phase" (Appendix C-1, pp. 4, 52, 96; Appendix C-2, pp. 34). However, these reductions remain unsupported for two reasons.

First, the DEIR and associated documents fail to mention or justify the changes to the construction-related architectural coating areas whatsoever. As such, we cannot verify the revised architectural coating areas.

Second, regarding the operational area coating areas, the DEIR states:

"Consistent with CalEEMod defaults, it is assumed that the residential surface area for painting equals 2.7 times the floor square footage, with 75% assumed for interior coating and 25% assumed for exterior surface coating. For nonresidential land uses (e.g., retail, community, and commercial areas), it is assumed that the surface area for painting equals 2.0 times the floor square footage, with 75% assumed for interior coating and 25% assumed for exterior surface coating. For the parking garage, the architectural coating area is assumed to be 6% of the total square footage, consistent with the supporting CalEEMod studies provided as an appendix to the CalEEMod User's Guide" (emphasis added) (p. 4.2-28).

As demonstrated above, the DEIR claims that the Project's area coating areas are consistent with CalEEMod defaults. Thus, as the area coating area was reduced from the default value, the change is unsubstantiated and inconsistent with the information provided in the DEIR. As such, we cannot verify the revised area coating area.

These unsubstantiated reductions present an issue, as CalEEMod uses architectural and area coating areas to calculate ROG emissions associated with painting and reapplication.²² Thus, by including unsubstantiated reductions to the default architectural and area coating areas, the models may underestimate the Project's area-source emissions and should not be relied upon to determine Project significance.

¹⁹ Calculated: (212,395-SF + 212,395-SF + 637,184-SF + 637,184-SF default architectural coating areas) – (212,213-SF + 636,338-SF revised architectural coating areas) = 850,607-SF net decrease in architectural coating areas.

²⁰ 19,70-SF default area coating area – 1,959-SF revised area coating area = 17,112-SF net decrease in area coating area.

²¹ CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 2, 9

²² CalEEMod User Guide, available at: http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 35, 42.

Underestimated Operational Vehicle Trip Rates

According to the Traffic Impact Analysis (“TIA”), provided in Appendix J-1 to the DEIR, the Project is expected to generate approximately 2,517 average daily vehicle trips (see excerpt below) (p. 30, Table 4).

Land Use	ITE Land Use Code	Size	Trip Generation Rates [a]							Daily
			Daily	AM Peak Hour			PM Peak Hour			
				Rate	In%	Out%	Rate	In%	Out%	
PROPOSED PROJECT										
Pacific Coast Commons North										
Residential Units [b]	221	143 DU	Equation	Equation	24%	76%	Equation	61%	39%	778
Less: Transit/Walk/Bike			5%	5%			5%			(39)
Total Driveway Trips										739
Retail	820	2.223 ksf	37.75	0.94	62%	38%	3.81	48%	52%	84
Less: Transit/Walk/Bike			5%	5%			5%			(4)
Total Driveway Trips										80
Fairfield Parking										
Retail	820	3.273 ksf	37.75	0.94	62%	38%	3.81	48%	52%	124
Less: Transit/Walk/Bike			5%	5%			5%			(6)
Total Driveway Trips										118
Pacific Coast Commons South										
Residential Units [b]	221	120 DU	Equation	Equation	24%	76%	Equation	61%	39%	652
Less: Transit/Walk/Bike			5%	5%			5%			(33)
Total Driveway Trips										619
Retail	820	2.056 ksf	37.75	0.94	62%	38%	3.81	48%	52%	78
Less: Transit/Walk/Bike			5%	5%			5%			(4)
Total Driveway Trips										74
Fast Casual Restaurant [c]	930	3.700 ksf	315.17	14.13	55%	45%	14.13	55%	45%	1,166
Less: Transit/Walk/Bike			5%	5%			5%			(58)
Total Driveway Trips										1,108
Less: Pass-by [d]			20%	20%			20%			(221)
Net External Vehicle Trips										887
TOTAL PROJECT EXTERNAL VEHICLE TRIPS										2,517

As such, the models should have included trip rates that reflect the number of average daily operational vehicle trips estimated by the TIA. However, review of the CalEEMod output files demonstrates that the “Pacific Coast Commons Specific Plan Project” model includes only 2,506.08 weekday and 2,271.19 Saturday vehicle trips (see excerpt below) (Appendix C-1, pp. 42, 90, 134).

Land Use	Average Daily Trip Rate		
	Weekday	Saturday	Sunday
Apartments Mid Rise	1,357.08	1,304.48	1196.65
Enclosed Parking with Elevator	0.00	0.00	0.00
High Turnover (Sit Down Restaurant)	887.00	1,104.78	919.71
Other Asphalt Surfaces	0.00	0.00	0.00
Regional Shopping Center	262.00	306.60	154.83
Total	2,506.08	2,715.86	2,271.19

As you can see in the excerpt above, the weekday and Sunday trip numbers are underestimated by approximately 11- and 246-trips, respectively. As such, the trip rates inputted into the proposed land use models are underestimated and inconsistent with the information provided by the TIA.

These inconsistencies present an issue, as CalEEMod uses the operational vehicle trip rates to calculate the emissions associated with the Project’s operational on-road vehicles.²³ Thus, by including underestimated operational vehicle trip rates, the model underestimates the Project’s mobile-source operational emissions and should not be relied upon to determine Project significance.

Unsubstantiated Changes to Energy Use Values

Review of the CalEEMod output files demonstrates that the “Pacific Coast Commons Specific Plan Project” model includes several reductions to the default energy use values (see excerpt below) (Appendix C-1, pp. 5-6, 53, 97).

Table Name	Column Name	Default Value	New Value
tblEnergyUse	T24E	179.76	176.16
tblEnergyUse	T24E	3.92	3.50
tblEnergyUse	T24E	8.71	7.78
tblEnergyUse	T24E	2.93	2.62
tblEnergyUse	T24NG	5,911.46	5,615.89
tblEnergyUse	T24NG	78.56	77.77
tblEnergyUse	T24NG	0.95	0.94

As previously mentioned, the CalEEMod User’s Guide requires any changes to model defaults be justified.²⁴ According to the “User Entered Comments and Non-Default Data” table, the justification provided for these changes is: “Assume compliance with 2019 Title 24 Standards” (Appendix C-1, pp. 4, 52, 96). Furthermore, regarding 2019 Title 24 Standards, the DEIR states:

“CalEEMod assumes compliance with the 2016 Title 24 Building Energy Efficiency Standards. The default values were updated to reflect the more stringent 2019 Title 24 Building Energy Efficiency Standards, which became effective on January 1, 2020” (p. 4.2-28).

However, these justifications are insufficient. Simply because the 2019 Title 24 standards expect a reduction in building energy consumption does not guarantee that these reductions would be implemented locally on the Project site. Absent additional information demonstrating that these reductions would be achieved through the implementation, monitoring, and enforcement of energy-related mitigation measures, we are unable to verify the revised energy use values inputted into the model.

These unsubstantiated reductions present an issue, as CalEEMod uses the energy use values to calculate the Project’s emissions associated with building electricity and non-hearth natural gas usage.²⁵ By including unsubstantiated changes to the default energy use values, the model may underestimate the Project’s energy-source operational emissions and should not be relied upon to determine Project significance.

²³ “CalEEMod User Guide.” CAPCOA, November 2017, available at: <http://www.caleemod.com/>, p. 35.

²⁴ CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 2, 9

²⁵ CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 43

Unsubstantiated Changes to Wastewater Treatment System Percentages

Review of the CalEEMod output files demonstrates that the “Pacific Coast Commons Specific Plan Project” model includes several manual changes to the default wastewater system percentages (see excerpt below) (Appendix C-1, pp. 8, 55-56, 99-100).

Table Name	Column Name	Default Value	New Value
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00

As you can see in the excerpt above, the model assumes that the Project’s wastewater would be treated 100% aerobically. As previously mentioned, the CalEEMod User’s Guide requires any changes to model defaults be justified.²⁶ According to the “User Entered Comments and Non-Default Data” table, the justification provided for these changes is: “Assume 100% aerobic” (Appendix C-1, pp. 4, 52, 96). However, these changes remain unsupported. According to the DEIR:

“Water consumption estimates for both indoor and outdoor water use and associated electricity consumption from water use and wastewater generation were estimated using default values in CalEEMod” (p. 4.6-27).

As demonstrated above, the DEIR claims that the electricity consumption from wastewater generation was estimated using the CalEEMod default values. Thus, the changes to the wastewater treatment system percentages are unsubstantiated and inconsistent with the information provided in the DEIR. As such, we cannot verify the revised values.

These inconsistencies present an issue, as each type of wastewater treatment system is associated with different GHG emission factors, which are used by CalEEMod to calculate the Project’s total GHG emissions.²⁷ Thus, by including unsubstantiated changes to the default wastewater treatment system percentages, the model may underestimate the Project’s GHG emissions and should not be relied upon to determine Project significance.

²⁶ CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 2, 9

²⁷ CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 45.

Incorrect Application of Construction-Related Mitigation Measures

Review of the CalEEMod output files demonstrates that the “Pacific Coast Commons Specific Plan Project” model includes the following construction-related mitigation measures (see excerpt below) (Appendix C-1, pp. 14, 62, 106):

3.1 Mitigation Measures Construction

Replace Ground Cover
Water Exposed Area

Furthermore, review of the CalEEMod output files demonstrates that the “Pacific Coast Commons Specific Plan Project Mit” model includes the following construction-related mitigation measure (see excerpt below) (Appendix C-2, pp. 43):

3.1 Mitigation Measures Construction

Water Exposed Area

As previously mentioned, the CalEEMod User’s Guide requires any changes to model defaults be justified.²⁸ According to the “User Entered Comments and Non-Default Data” table for the “Pacific Coast Commons Specific Plan Project” model, the justification provided for the inclusion of these measures is: “Water three times daily and replace ground cover” (Appendix C-1, pp. 4, 52, 96). However, no justification was provided by the “User Entered Comments and Non-Default Data” table for the “Pacific Coast Commons Specific Plan Project Mit” model. Furthermore, the DEIR states:

“The proposed Project would be required to comply with SCAQMD Rule 403 to control dust emissions generated during the grading activities. Standard construction practices that would be employed to reduce fugitive dust emissions include watering of the active sites three times per day depending on weather conditions” (p. 4.2-34).

However, the inclusion of the above-mentioned construction-related mitigation measures remains unsupported. Simply because the DEIR states that the Project would comply with SCAQMD Rule 403 does not justify the inclusion of the above-mentioned construction-related mitigation measures in the models. 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

²⁸ CalEEMod User Guide, available at: http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 2, 9.

project has undergone environmental review and are above-and-beyond existing laws, regulations, and requirements that would reduce environmental impacts” (emphasis added).²⁹

As you can see in the excerpt 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 the Project’s compliance with SCAQMD Rule 403, is unsubstantiated. By including construction-related mitigation measures without properly committing to their implementation, the models may underestimate the Project’s construction-related emissions and should not be relied upon to determine Project significance.

Incorrect Application of Mobile-Related Operational Mitigation Measures

Review of the CalEEMod output files demonstrates that the “Pacific Coast Commons Specific Plan Project” model includes the following mobile-, water-, and waste-related operational mitigation measures (see excerpt below) (Appendix C-1, pp. 42, 47, 49, 90, 134):

Mobile-Related:

4.1 Mitigation Measures Mobile

Improve Destination Accessibility
Increase Transit Accessibility
Improve Pedestrian Network

Water-Related:

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Waste-Related:

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

As previously mentioned, the CalEEMod User’s Guide requires any changes to model defaults be justified.³⁰ According to the “User Entered Comments and Non-Default Data” table, the justifications provided for the inclusion of the mobile-, water-, and waste-related measures are: “Increase transit accessibility (0.2 miles) and improve pedestrian network,” “Reduce water consumption by 20% per CalGreen,” and “Assume 50% waste disposed per AB 939” (Appendix C-1, pp. 4, 52, 96). However, the inclusion of these operational mitigation measures remains unsupported for three reasons.

²⁹ “CEQA Portal Topic Paper Mitigation Measures.” AEP, February 2020, available at: <https://ceqaportal.org/tp/CEQA%20Mitigation%202020.pdf>, p. 5.

³⁰ CalEEMod User Guide, available at: http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 2, 9.

First, the DEIR fails to mention or justify the inclusion of the above-mentioned operational mitigation measures.

Second, the inclusion of these operational mitigation measures, based on the Project's compliance with existing policies and regulations, is unsupported. As previously stated, according to the 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" (emphasis added).*³¹

As you can see in the excerpt 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 the Project's compliance with existing policies and regulations, is unsubstantiated.

Third, AEP guidance states:

*"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" (emphasis added).*³²

As you can see in the excerpts above, design features that are not formally included as mitigation measures may be eliminated from the Project's design altogether. Thus, as the above-mentioned mobile-, water-, and waste-related operational measures are not formally included as mitigation measures, we cannot guarantee that they would be implemented, monitored, and enforced on the Project site. As a result, the inclusion of the above-mentioned operational mitigation measures in the model is incorrect. By including several operational mitigation measures without properly committing to their implementation, the model may underestimate the Project's operational emissions and should not be relied upon to determine Project significance.

Diesel Particulate Matter Health Risk Emissions Inadequately Evaluated

The DEIR concludes that the proposed Project would result in a less-than-significant health risk impact based on a quantified construction health risk analysis ("HRA"). Specifically, the DEIR estimates that

³¹ "CEQA Portal Topic Paper Mitigation Measures." AEP, February 2020, available at: <https://cegaportal.org/tp/CEQA%20Mitigation%202020.pdf>, p. 5.

³² "CEQA Portal Topic Paper Mitigation Measures." AEP, February 2020, available at: <https://cegaportal.org/tp/CEQA%20Mitigation%202020.pdf>, p. 6.

Project construction would result in a mitigated excess cancer risk of 4.23 in one million, which would not exceed the threshold of 10 in one million (see excerpt below) (p. 4.2-38, Table 4.2-13).

Table 4.2-13. Summary of Maximum Cancer and Chronic Health Risks - Mitigated

Impact Analysis	Impact Parameter	Units	Project Impact	CEQA Threshold	Level of Significance
<i>Maximally Exposed Individual Resident</i>					
Construction HRA	Cancer Risk	Per Million	4.23	10	Less than Significant
	Chronic Hazard Index	Index Value	0.002	1.0	Less than Significant

Source: See Appendix C-2 for complete results.

Notes: CEQA = California Environmental Quality Act; HRA = Health Risk Assessment

However, the DEIR's evaluation of the Project's potential health risk impacts, as well as the less-than-significant impact conclusion, is incorrect for three reasons.

First, the DEIR's construction HRA is incorrect, as it relies upon an exhaust PM₁₀ estimate from a flawed air model (Appendix C-2, p. 9). As previously discussed, when we reviewed the Project's CalEEMod output files, provided in the CalEEMod Outputs as Appendix C-1 and the HRA Report as Appendix C-2 to the DEIR, we found that several of the values inputted into the model are not consistent with information disclosed in the DEIR and associated documents. As a result, the construction HRA utilizes an underestimated diesel particulate matter ("DPM") concentration to calculate the cancer risk associated with Project construction. As such, the DEIR underestimates the Project's construction-related cancer risk and should not be relied upon to determine Project significance.

Second, the DEIR fails to evaluate the Project's operational toxic air contaminants ("TACs") and associated health risk impacts. This is incorrect, as the TIA indicates that the proposed land uses are expected to generate approximately 2,517 average daily vehicle trips, which will generate additional exhaust emissions and continue to expose nearby sensitive receptors to DPM emissions (p. 30, Table 4). The DEIR fails to discuss the potential TACs associated with Project operation or indicate the concentrations at which such pollutants would trigger adverse health effects. Without making a reasonable effort to connect the Project's operational TAC emissions to the potential health risks posed to nearby receptors, the DEIR is inconsistent with CEQA's requirement to correlate the increase in emissions generated by the Project with the potential adverse impacts on human health.

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, as referenced by HRA Report (Appendix C-2, p. 7).³³ The OEHHA document recommends that exposure from projects lasting more than 6 months be evaluated for the duration of the project and recommends that an exposure duration of 30 years be used to estimate individual cancer risk for the maximally exposed individual resident ("MEIR").³⁴ Even though we were not provided with the expected lifetime of

³³ "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, available at: http://oehha.ca.gov/air/hot_spots/hotspots2015.html

³⁴ "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, available at: http://oehha.ca.gov/air/hot_spots/2015/2015GuidanceManual.pdf, p. 8-6, 8-15

the Project, we can reasonably assume that the Project will operate for at least 30 years, if not more. Therefore, we recommend that health risk impacts from Project operation also be evaluated, as a 30-year exposure duration vastly exceeds the 6-month requirement set forth by OEHHA. This recommendation reflects the most recent state health risk policies, and as such, we recommend that an analysis of health risk impacts posed to nearby sensitive receptors from Project operation be included in an updated EIR for the Project.

Fourth, while the DEIR includes an HRA evaluating the potential health risk impacts posed by Project construction to nearby, existing receptors, the HRA fails to evaluate the cumulative lifetime cancer risk to nearby, existing receptors as a result of all phases of Project construction and operation together. According to OEHHA guidance, as referenced by the HRA Report, “the excess cancer risk is calculated separately for each age grouping and then summed to yield cancer risk at the receptor location” (Appendix C-2, p. 7).³⁵ However, the DEIR’s HRA fails to sum each age bin to evaluate the total cancer risk over the course of Project construction and operation. This is incorrect and, thus, an updated EIR should be prepared to quantify the cumulative excess cancer risk posed by Project construction and operation to nearby, existing receptors, and compare it to the SCAQMD threshold of 10 in one million.

Screening-Level Assessment Indicates a Potentially Significant Health Risk Impact

In order to conduct our screening-level risk assessment we relied upon AERSCREEN, which is a screening level air quality dispersion model.³⁶ The model replaced SCREEN3, and AERSCREEN is included in the OEHHA³⁷ and the California Air Pollution Control Officers Associated (CAPCOA)³⁸ guidance as the appropriate air dispersion model for Level 2 health risk screening assessments (“HRSAs”). A Level 2 HRSA utilizes a limited amount of site-specific information to generate maximum reasonable downwind concentrations of air contaminants to which nearby sensitive receptors may be exposed. If an unacceptable air quality hazard is determined to be possible using AERSCREEN, a more refined modeling approach is required prior to approval of the Project.

We prepared a preliminary HRA of the Project’s operational health risk impact to sensitive receptors using the annual PM₁₀ exhaust estimates from the DEIR’s annual CalEEMod output files, consistent with the HRA Report’s methodology (Appendix C-2, p. 9). Consistent with recommendations set forth by OEHHA, we used a residential exposure duration of 30 years, starting from the 3rd trimester stage of life. Subtracting the 1,034-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 27.17 years, approximately. The DEIR’s CalEEMod model indicates that operational activities will generate approximately 87 pounds of DPM per year of operation. The AERSCREEN model relies on a continuous average emission rate to simulate maximum downward

³⁵ “Guidance Manual for preparation of Health Risk Assessments.” OEHHA, February 2015, *available at*: <https://oehha.ca.gov/media/downloads/crn/2015guidancemanual.pdf> p. 8-4

³⁶ U.S. EPA (April 2011) AERSCREEN Released as the EPA Recommended Screening Model, http://www.epa.gov/ttn/scram/guidance/clarification/20110411_AERSCREEN_Release_Memo.pdf

³⁷ Supra, fn 20.

³⁸ CAPCOA (July 2009) Health Risk Assessments for Proposed Land Use Projects, http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA_HRA_LU_Guidelines_8-6-09.pdf.

concentrations from point, area, and volume emission sources. To account for the variability in equipment usage and truck trips over Project operation, we calculated an average DPM emission rate by the following equation.

$$\text{Emission Rate } \left(\frac{\text{grams}}{\text{second}} \right) = \frac{87.4 \text{ lbs}}{365 \text{ days}} \times \frac{453.6 \text{ grams}}{\text{lbs}} \times \frac{1 \text{ day}}{24 \text{ hours}} \times \frac{1 \text{ hour}}{3,600 \text{ seconds}} = \mathbf{0.00126 \text{ g/s}}$$

Using this equation, we estimated an operational emission rate of 0.00126 g/s. Operation was simulated as a 6.39-acre rectangular area source in AERSCREEN, with dimensions of 256 meters by 101 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 AERSCREEN model generates maximum reasonable estimates of single-hour DPM concentrations from the Project Site. EPA guidance suggests that in screening procedures, the annualized average concentration of an air pollutant to be estimated by multiplying the single-hour concentration by 10%.³⁹ According to the HRA Report, the closest residential receptors are located 25 feet west of the Project site (Appendix C-2, p. 1). However, review of the AERSCREEN output files demonstrates that the *maximally* exposed receptor is located approximately 125 meters from the Project site. Thus, for Project operation, the single-hour concentration at the MEIR estimated by AERSCREEN is approximately 1.937 µg/m³ DPM at approximately 125 meters downwind. Multiplying this single-hour concentration by 10%, we get an annualized average concentration of 0.1937 µg/m³ for Project operation at the MEIR.

We calculated the excess cancer risk to the MEIR using applicable HRA methodologies prescribed by OEHHA. Consistent with the construction period of 1,034 days inputted into the DEIR's CalEEMod model, the annualized average concentration for Project operation was used for the remaining 13.42 years of the child stage of life (2 - 16 years) and the entire adult stage of life (16 – 30 years).

Consistent with the HRA Report's methodology, we used Age Sensitivity Factors ("ASFs") to account for the heightened susceptibility of young children to the carcinogenic toxicity of air pollution (Appendix C-2, p. 7). When applying ASFs, the quantified cancer risk should be multiplied by a factor of ten during the third trimester of pregnancy and during the first two years of life (infant), as well as multiplied by a factor of three during the child stage of life (2 – 16 years). Furthermore, in accordance with the guidance set forth by OEHHA, we used the 95th percentile breathing rates for infants.⁴⁰ Finally, according to SCAQMD guidance, we used a Fraction of Time At Home ("FAH") Value of 1 for the 3rd trimester and

³⁹ U.S. EPA (October 1992) Screening Procedures for Estimating the Air Quality Impact of Stationary Sources Revised, http://www.epa.gov/ttn/scram/guidance/guide/EPA-454R-92-019_OCR.pdf.

⁴⁰ "Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics 'Hot Spots' Information and Assessment Act," July 2018, available at: <http://www.aqmd.gov/docs/default-source/planning/risk-assessment/ab2588supplementalguidelines.pdf>, p. 16.

"Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, available at: <https://oehha.ca.gov/media/downloads/cnr/2015guidancemanual.pdf>

infant receptors.⁴¹ We used a cancer potency factor of $1.1 \text{ (mg/kg-day)}^{-1}$ and an averaging time of 25,550 days. The results of our calculations are shown below.

The Maximum Exposed Individual at an Existing Residential Receptor (MEIR)					
Activity	Duration (years)	Concentration (ug/m3)	Breathing Rate (L/kg-day)	ASF	Cancer Risk with ASFs*
Total Construction	2.83				4.2E-06
Operation	13.42	0.1937	572	3	6.7E-05
Child Exposure Duration	13.42			Child Exposure	6.7E-05
Operation	14.00	0.1937	261	1	7.8E-06
Adult Exposure Duration	14.00			Adult Exposure	7.8E-06
Lifetime Exposure Duration	30.25			Lifetime Exposure	7.9E-05

As demonstrated in the table above, the excess cancer risk to adults and children at the MEIR located approximately 125 meters away, over the course of Project operation, utilizing ASFs, are approximately 7.8 and 67 in one million, respectively. When summing the Project's estimated operational cancer risks, as estimated by SWAPE, with the DEIR's purported construction-related cancer risk of 4.23 in one million, we estimate a lifetime excess cancer risk of approximately 79 in one million (p. 18). Thus, the child and lifetime cancer risks exceed the SCAQMD threshold of 10 in one million, resulting in a potentially significant impact not previously addressed or identified by the DEIR.

An agency must include an analysis of health risks that connects the Project's air emissions with the health risk posed by those emissions. 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 construction and operational HRA shown above is to demonstrate the link between the proposed Project's emissions and the potential health risk. Our screening-level HRA demonstrates that construction and operation of the Project could result in a potentially significant health risk impact, when correct exposure assumptions and up-to-date, applicable guidance are used. Therefore, since our screening-level construction HRA indicates a potentially significant impact, an updated EIR should include a reasonable effort to connect the Project's air quality emissions and the potential health risks posed to nearby receptors. Thus, an updated EIR should include a quantified air pollution model as well as an updated, quantified refined health risk assessment which adequately and accurately evaluates health risk impacts associated with both Project construction and operation.

⁴¹ "Risk Assessment Procedures for Rules 1401, 1401.1, and 212." SCAQMD, August 2017, available at: http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1401/riskassessmentprocedures_2017_080717.pdf, p. 7.

Greenhouse Gas

Failure to Adequately Evaluate Greenhouse Gas Emissions

The DEIR estimates that the Project would generate net annual greenhouse gas (“GHG”) emissions of 2,920.96 metric tons of carbon dioxide equivalents per year (“MT CO₂e/year”), which would not exceed the SCAQMD bright-line threshold of 3,000 MT CO₂e/year (p. 4.6-28 – 4.6-29, Table 4.6-4).

Table 4.6-4. Estimated Operational Greenhouse Gas Emissions

	CO ₂	CH ₄	N ₂ O	CO ₂ e
Emission Source	Metric Tons per Year			
Area	4.45	<0.01 ^a	0.00	4.56
Energy (natural gas and electricity)	951.51	0.03	0.01	955.38
Mobile	1,764.82	0.08	0.00	1,766.93
Solid waste	17.53	1.04	0.00	43.42
Water supply and wastewater	80.60	0.02	0.01	84.77
Construction (amortized over 30 years)	—	—	—	65.90
Total Emissions				2,920.96
SCAQMD GHG Threshold				3,000
Exceeds thresholds?				No

Notes: CO₂ = carbon dioxide; CH₄ = methane; N₂O = nitrogen dioxide; CO₂e = carbon dioxide equivalent.

See Appendix C-1 for complete results.

Proposed Project GHG emissions are based on the “mitigated” CalEEMod outputs, which includes reduction in indoor and outdoor water consumption, consistent with CALGreen and compliance with the AB 939 waste reduction goal.

^a <0.01 = value less than reported 0.01 metric tons per year.

Furthermore, the DEIR relies upon the Project’s consistency with the City of El Segundo Climate Action Plan (“CAP”), SCAG’s 2020-2045 RTP/SCS, CALGreen, CARB’s *Scoping Plan*, and the General Plan’s Air Quality Element, as well as EO S-3-05 and SB 32, in order to conclude that the Project would result in a less-than-significant GHG impact (p. 4.6-29 - 4.6-48). However, the DEIR’s GHG analysis, as well as the subsequent less-than-significant impact conclusion, is incorrect for five reasons.

- (1) The DEIR’s quantitative GHG analysis relies upon an incorrect and unsubstantiated air model;
- (2) The DEIR’s quantitative GHG analysis relies upon an outdated threshold;
- (3) The DEIR’s unsubstantiated air model indicates a potentially significant impact;
- (4) The DEIR fails to consider the performance-based standards under CARB’s *Scoping Plan*; and
- (5) The DEIR fails to consider the performance-based standards under SCAG’s RTP/SCS.

1) *Incorrect and Unsubstantiated Quantitative Analysis of Emissions*

As previously stated, the DEIR estimates that the Project would generate net annual GHG emissions of 2,920.96 MT CO₂e/year (p. 4.6-28 – 4.6-29, Table 4.6-4). However, the DEIR’s quantitative GHG analysis is unsubstantiated. As previously discussed, when we reviewed the CalEEMod Outputs, provided as Appendix C-1 to the DEIR, we found that several of the values inputted into the model are not consistent with information disclosed in the DEIR. As a result, the model underestimates the Project’s emissions, and the DEIR’s quantitative GHG analysis should not be relied upon to determine Project significance. An updated EIR should be prepared that adequately assesses the potential GHG impacts that construction and operation of the proposed Project may have on the surrounding environment.

2) *Incorrect Reliance on an Outdated Quantitative GHG Threshold*

As previously discussed, the DEIR estimates that the Project would generate net annual GHG emissions 2,920.96 MT CO₂e/year, which would not exceed the SCAQMD bright-line threshold of 3,000 MT CO₂e/year (p. 4.6-28 – 4.6-29, Table 4.6-4). However, the guidance that provided the 3,000 MTCO₂/year threshold, the SCAQMD's 2008 *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules, and Plans* report, was developed when the Global Warming Solutions Act of 2006, commonly known as "AB 32", was the governing statute for GHG reductions in California. AB 32 requires California to reduce GHG emissions to 1990 levels by 2020.⁴² As it is already April 2021, thresholds for 2020 are not applicable to the proposed Project. As such, the SCAQMD bright-line threshold of 3,000 MT CO₂e/year is outdated and inapplicable to the proposed Project, and the DEIR's less-than-significant GHG impact conclusion should not be relied upon.

Instead, we recommend that the Project apply the widely-used 2030 "Substantial Progress" threshold of 660 MT CO₂e/year⁴³ and AEP's "2030 Land Use Efficiency Threshold" of 2.6 metric tons of CO₂ equivalents per service population per year ("MT CO₂e/SP/year").⁴⁴ In support of thresholds for projects with a horizon year beyond 2020, AEP's guidance *states*:

"Once the state has a full plan for 2030 (which is expected in 2017), and then a project with a horizon between 2021 and 2030 should be evaluated based on a threshold using the 2030 target. A more conservative approach would be to apply a 2030 threshold based on SB 32 for any project with a horizon between 2021 and 2030 regardless of the status of the Scoping Plan Update" (emphasis added).⁴⁵

As the California Air Resources Board ("CARB") adopted *California's 2017 Climate Change Scoping Plan* in November of 2017, the proposed Project "should be evaluated based on a threshold using the 2030 target," according to the relevant guidance referenced above. We recommend the preparation of an updated EIR to compare the Project's estimated GHG emissions, as estimated in an updated air model,

⁴² HEALTH & SAFETY CODE 38550, *available at*:

https://leginfo.ca.gov/faces/codes_displaySection.xhtml?lawCode=HSC&sectionNum=38550.

⁴³ See: "JEFFERSON UNION HIGH SCHOOL DISTRICT FACULTY & STAFF HOUSING PROJECT AIR QUALITY & GREENHOUSE GAS ASSESSMENT." City of Daly City, June 2019, *available at*:

https://files.ceqanet.opr.ca.gov/257215-2/attachment/k-aC8VdC7LV3xz75yuUmtGiiExH-Y7HEPQ-dU-YlxuhNp95Dx9bK_TbVP3sWar00-Zx87dh7ji80vbRH0, p. 7; "TO 20-01 PAPÉ MACHINERY AIR QUALITY & GREENHOUSE GAS EMISSIONS ASSESSMENT." City of Fremont, February 2020, *available at*: "SOLAR4AMERICA ICE FACILITY EXPANSION AIR QUALITY AND GREENHOUSE GAS EMISSION ASSESSMENT." City of San Jose, September 2019, *available at*: https://www.fremont.gov/DocumentCenter/View/44974/4_Appendix-1_Air-Quality-GHG-Assessment, p. 18; and <https://www.sanjoseca.gov/Home/ShowDocument?id=45200>, p. 6.

⁴⁴ "Beyond Newhall and 2020: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California." Association of Environmental Professionals (AEP), October 2016, *available at*: https://califaep.org/docs/AEP-2016_Final_White_Paper.pdf, p. 40.

⁴⁵ "Beyond Newhall and 2020: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California." Association of Environmental Professionals (AEP), October 2016, *available at*: https://califaep.org/docs/AEP-2016_Final_White_Paper.pdf, p. 40.

to the widely-used 2030 “Substantial Progress” threshold of 660 MT CO₂e/year⁴⁶ and AEP’s “2030 Land Use Efficiency Threshold” of 2.6 MT CO₂e/SP/year.

3) *Failure to Identify a Potentially Significant GHG Impact*

When applying the widely-used 2030 “Substantial Progress” threshold of 660 MT CO₂e/year⁴⁷ and AEP “2030 Land Use Efficiency Threshold” of 2.6 MT CO₂e/SP/year,⁴⁸ the DEIR’s incorrect and unsubstantiated air model indicates a potentially significant GHG impact.⁴⁹ As previously stated, the DEIR estimates that the Project would generate net annual GHG emissions of 2,920.96 MT CO₂e/year (p. 4.6-28 – 4.6-29, Table 4.6-4). Furthermore, according to CAPCOA’s *CEQA & Climate Change* report, service population is defined as “the sum of the number of residents and the number of jobs supported by the project.”⁵⁰ The DEIR estimates that the Project would house and employ approximately 618 residents and 56 employees, respectively, resulting in a service population of 674 people (p. IV.G-17, Table IV.G-4; IV.G-19, Table IV.G-5).⁵¹ When dividing the Project’s GHG emissions, as estimated by the DEIR, by a service population of 674 people, we find that the Project would emit approximately 4.3 MT CO₂e/SP/year (see table below).⁵²

⁴⁶ See: “JEFFERSON UNION HIGH SCHOOL DISTRICT FACULTY & STAFF HOUSING PROJECT AIR QUALITY & GREENHOUSE GAS ASSESSMENT.” City of Daly City, June 2019, *available at*: https://files.ceqanet.opr.ca.gov/257215-2/attachment/k-aC8VdC7LV3xz75yuUmtGiiExH-Y7HEPQ-dU-YlxuhNp95Dx9bK_TbVP3sWar00-Zx87dh7ji80vbRH0, p. 7; “TO 20-01 PAPÉ MACHINERY AIR QUALITY & GREENHOUSE GAS EMISSIONS ASSESSMENT.” City of Fremont, February 2020, *available at*: “SOLAR4AMERICA ICE FACILITY EXPANSION AIR QUALITY AND GREENHOUSE GAS EMISSION ASSESSMENT.” City of San Jose, September 2019, *available at*: https://www.fremont.gov/DocumentCenter/View/44974/4_Appendix-1_Air-Quality-GHG-Assessment, p. 18; and <https://www.sanjoseca.gov/Home/ShowDocument?id=45200>, p. 6.

⁴⁷ See: “JEFFERSON UNION HIGH SCHOOL DISTRICT FACULTY & STAFF HOUSING PROJECT AIR QUALITY & GREENHOUSE GAS ASSESSMENT.” City of Daly City, June 2019, *available at*: https://files.ceqanet.opr.ca.gov/257215-2/attachment/k-aC8VdC7LV3xz75yuUmtGiiExH-Y7HEPQ-dU-YlxuhNp95Dx9bK_TbVP3sWar00-Zx87dh7ji80vbRH0, p. 7; “TO 20-01 PAPÉ MACHINERY AIR QUALITY & GREENHOUSE GAS EMISSIONS ASSESSMENT.” City of Fremont, February 2020, *available at*: “SOLAR4AMERICA ICE FACILITY EXPANSION AIR QUALITY AND GREENHOUSE GAS EMISSION ASSESSMENT.” City of San Jose, September 2019, *available at*: https://www.fremont.gov/DocumentCenter/View/44974/4_Appendix-1_Air-Quality-GHG-Assessment, p. 18; and <https://www.sanjoseca.gov/Home/ShowDocument?id=45200>, p. 6.

⁴⁸ “Beyond Newhall and 2020: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California.” Association of Environmental Professionals (AEP), October 2016, *available at*: https://califaep.org/docs/AEP-2016_Final_White_Paper.pdf, p. 40.

⁴⁹ “Beyond Newhall and 2020: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California.” Association of Environmental Professionals (AEP), October 2016, *available at*: https://califaep.org/docs/AEP-2016_Final_White_Paper.pdf, p. 40.

⁵⁰ CAPCOA (Jan. 2008) *CEQA & Climate Change*, p. 71-72, <http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA-White-Paper.pdf>.

⁵¹ Calculated: 618 residents + 56 employees = 674 service population.

⁵² Calculated: (2,920.96 MT CO₂e/year) / (674 service population) = (4.3 MT CO₂e/SP/year).

DEIR Modeling Greenhouse Gas Emissions	
Project Phase	Proposed Project (MT CO ₂ e/year)
Net Annual GHG Emissions	2,921
Threshold	660
Exceed?	Yes
Service Population	674
Service Population Efficiency	4.3
Threshold	2.6
Exceed?	Yes

As demonstrated above, the Project's net annual GHG emissions and service population efficiency, as estimated by the DEIR, exceed the 2030 "Substantial Progress" threshold of 660 MT CO₂e/SP/year and AEP's "2030 Land Use Efficiency Threshold" of 2.6 MT CO₂e/SP/year, respectively. As a result, the DEIR's less-than-significant GHG impact conclusion should not be relied upon. An updated EIR should be prepared for the Project and mitigation measures should be implemented to reduce the Project's GHG emissions to less-than-significant levels.

4) Failure to Consider Performance-based Standards Under CARB's 2017 Scoping Plan

As previously discussed, the DEIR relies upon the Project's consistency with CARB's 2017 *Scoping Plan* to determine Project GHG significance (p. 4.6-41 – 4.6-45). However, this is incorrect, as the DEIR fails to consider performance-based measures proposed by CARB.

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

In reaching the State's long-term GHG emission reduction goals, CARB's 2017 *Scoping Plan* explicitly cites to SB 375 and the VMT reductions anticipated under the implementation of Sustainable Community Strategies.⁵³ CARB has identified the population and daily VMT from passenger autos and light-duty vehicles at the state and county level for each year between 2010 to 2050 under a "baseline scenario" that includes "current projections of VMT included in the existing Regional Transportation Plans/Sustainable Communities Strategies (RTP/SCSs) adopted by the State's 18 Metropolitan Planning Organizations (MPOs) pursuant to SB 375 as of 2015."⁵⁴ By dividing the projected daily VMT by the population, we calculated the daily VMT per capita for each year at the state and county level for 2010 (baseline year), 2025 (Project operational year), and 2030 (target years under SB 32) (see table below and Attachment B).

⁵³ "California's 2017 Climate Change Scoping Plan." CARB, November 2017, *available at*: https://ww3.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf, p. 25, 98, 101-103.

⁵⁴ "Supporting Calculations for 2017 Scoping Plan-Identified VMT Reductions," Excel Sheet "Readme." CARB, January 2019, *available at*: https://ww2.arb.ca.gov/sites/default/files/2019-01/sp_mss_vmt_calculations_jan19_0.xlsx.

2017 Scoping Plan Daily VMT Per Capita						
	Los Angeles County			State		
Year	Population	LDV VMT Baseline	VMT Per Capita	Population	LDV VMT Baseline	VMT Per Capita
2010	9,838,771	216,979,221.64	22.05	37,335,085	836,463,980.46	22.40
2025	10,671,800	217,340,094.90	20.37	42,326,397	929,443,512.65	21.96
2030	10,868,614	215,539,586.12	19.83	43,939,250	957,178,153.19	21.78

The below table compares the 2017 *Scoping Plan* daily VMT per capita values against the daily VMT per capita values for the Project based on SWAPE's updated modeling (see table below and Attachment B).

Daily VMT Per Capita from Passenger & Light-Duty Trucks, Exceedances under 2017 Scoping Plan Performance-Based SB 375 Benchmarks	
Sources	Project
	SWAPE Modeling
Annual VMT from Auto & Light-Duty Vehicles	5,937,594
Daily VMT from Auto & Light-Duty Vehicles	16,267
Service Population	674
Daily VMT Per Capita	24.14
2017 Scoping Plan Benchmarks, Statewide	
22.40 VMT (2010 Baseline) Exceed?	Yes
21.96 VMT (2025 Projected) Exceed?	Yes
21.78 VMT (2030 Projected) Exceed?	Yes
2017 Scoping Plan Benchmarks, Los Angeles County Specific	
22.05 VMT (2010 Baseline) Exceed?	Yes
20.37 VMT (2025 Projected) Exceed?	Yes
19.83 VMT (2030 Projected) Exceed?	Yes

As shown above, SWAPE's updated modeling shows that the Project exceeds the CARB 2017 *Scoping Plan* projections for 2010, 2025, and 2030. Because the exceeds the CARB 2017 *Scoping Plan* performance-based daily VMT per capita projections, the Project conflicts with the CARB 2017 *Scoping Plan* and SB 375. As such, the DEIR's claim that the proposed Project would not conflict with the CARB 2017 *Scoping Plan* is unsupported. Project-specific EIR should be prepared for the proposed Project to provide additional information and analysis to conclude less-than-significant GHG impacts.

5) Failure to Consider Performance-based Standards under SCAG's RTP/SCS

Here, as discussed above, the DEIR concludes that the Project would be consistent with SCAG's RTP/SCS (p. 4.6-34 – 4.6-37). However, the DEIR fails to consider whether or not the Project meets any of the specific performance-based goals underlying SCAG's RTP/SCS and SB 375, such as: i) per capita GHG emission targets, or ii) daily vehicles miles traveled ("VMT") per capita benchmarks.

i. SB 375 Per Capita GHG Emission Goals

SB 375 was signed into law in September 2008 to enhance the state’s ability to reach AB 32 goals by directing CARB to develop regional 2020 and 2035 GHG emission reduction targets for passenger vehicles (autos and light-duty trucks). In March 2018, CARB adopted updated regional targets requiring a 19 percent decrease in VMT for the SCAG region by 2035. This goal is reflected in SCAG’s 2020 RTP/SCS Program Environmental Impact Report (“PEIR”),⁵⁵ in which the 2020 RTP/SCS PEIR updates the per capita emissions to 18.8 lbs/day in 2035 (see excerpt below).⁵⁶

**Table 3.8-10
SB 375 Analysis**

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

Note:

/a/ Based on EMFAC2007

/b/ Based on EMFAC2014 and SCAG modeling, 2019.

/c/ Includes off-model adjustments for 2035 and 2045

Source: SCAG modeling, 2019.

<http://www.scag.ca.gov/committees/CommitteeDocLibrary/jointRCPC110515fullagn.pdf>

In order to evaluate consistency with this SB 375 objective and SCAG’s RTP/SCS performance-based goal, SWAPE calculated the Project’s per-capita CO₂ emissions from passenger and light duty vehicles (calculations attached hereto as Attachment B). First, total annual GHG mobile emissions were multiplied by the percentage of auto and light-duty truck fleet mix, then converted into total pounds per day, then divided by the estimated service population of 674. The below table shows the per capita emissions for the Project based on SWAPE’s updated modeling (see table below and Attachment B).

⁵⁵ “Connect SoCal Certified Final Program Environmental Impact Report.” SCAG, May 2020, *available at:* https://scag.ca.gov/sites/main/files/file-attachments/fpeir_connectsocal_complete.pdf?1607981618.

⁵⁶ “Connect SoCal Certified Final Program Environmental Impact Report.” SCAG, May 2020, *available at:* https://scag.ca.gov/sites/main/files/file-attachments/fpeir_connectsocal_complete.pdf?1607981618, p. 3.8-74.

CO ₂ e Per Capita Emissions from Passenger & Light-Duty Trucks,	
Exceedances under RTP/SCS Performance-Based SB 375 Goals	
Sources	Project
	SWAPE Modeling
Annual Mobile Emissions (MT CO ₂ e/year)	2,553.25
Passenger & Light-Duty Fleet Mix (%)	91.23%
Daily CO ₂ e Emissions (lbs/day)	14,068.52
Service Population	674
Per Capita Emissions (lbs/day)	20.87
18.8 lbs/day/SP (2045 Target) Exceeded?	Yes

As shown in the above table, when utilizing the DEIR's modeling, the Project would result in 20.87 pounds per day per service population ("lbs/day/SP") emissions. This exceeds SCAG's 2035 target of 18.8-lbs/day/SP, indicating that the Project is inconsistent with SB 375 and SCAG's RTP/SCS.

i. SB 375 RTP/SCS Daily VMT Per Capita Target

Under the SCAG's 2020 RTP/SCS, daily VMT per capita in the SCAG region should decrease from 23.2 VMT in 2016 to 20.7 VMT by 2045.⁵⁷ Daily VMT per capita in Los Angeles County should decrease from 22.2 to 19.2 VMT during that same period.⁵⁸

Here, however, the DEIR fails to consider any of the above-mentioned performance-based VMT targets. In order to evaluate consistency with the RTP/SCS's performance-based VMT reduction targets, SWAPE calculated the Project's VMT from passenger and light duty vehicles (calculations attached hereto as Attachment B). First, annual VMTs from passenger automobile and light-duty vehicle were calculated based on the CalEEMod default fleet mix, converted into daily VMT, and divided by the estimated service population of 674. The below table shows the daily VMT per capita for the Project based on SWAPE's updated modeling (see table below and Attachment B).

⁵⁷ "Connect SoCal." SCAG, September 2020, available at: https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocial-plan_0.pdf?1606001176, pp. 138.

⁵⁸ "Connect SoCal." SCAG, September 2020, available at: https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocial-plan_0.pdf?1606001176, pp. 138.

Daily VMT Per Capita from Passenger & Light-Duty Trucks, Exceedances under RTP/SCS Performance-Based SB 375 Target	
Sources	Project
	SWAPE Modeling
Annual VMT from Auto & Light-Duty Vehicles	5,937,594
Daily VMT from Auto & Light-Duty Vehicles	16,267
Service Population	674
Daily VMT Per Capita	24.14
2020 RTP/SCS Benchmarks, SCAG-Wide	
23.2 VMT (2016 Baseline) Exceed?	Yes
20.7 VMT (2045 Target) Exceed?	Yes
2020 RTP/SCS Benchmarks, Los Angeles County	
22.2 VMT (2016 Baseline) Exceed?	Yes
19.2 VMT (2045 Target) Exceed?	Yes

As shown in the above table, based on a service population of 674, the Project would result in 24.14 VMT per capita from passenger auto and light-duty truck vehicles. This exceeds all SCAG-wide and Los Angeles County-specific benchmarks and targets under SCAG's 2020 RTP/SCS. Thus, based on SWAPE's updated modeling, the Project would exceed the 2016 baseline and 2045 target VMT per capita values for both Los Angeles County and the SCAG region as a whole, indicating that the Project conflicts with the SCAG's RTP/SCS and SB 375.

Feasible Mitigation Measures Available to Reduce Emissions

Our analysis demonstrates that the Project would result in potentially significant health risk and GHG impacts that should be mitigated further. In an effort to reduce the Project's emissions, we identified several mitigation measures that are applicable to the proposed Project. Feasible mitigation measures can be found in CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures*.⁵⁹ Therefore, to reduce the Project's emissions, consideration of the following measures should be made:

CAPCOA's <i>Quantifying Greenhouse Gas Mitigation Measures</i> ⁶⁰	
Measures – Energy	
Building Energy Use	
Install Programmable Thermostat Timers	
Obtain Third-party HVAC Commissioning and Verification of Energy Savings	

⁵⁹ <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>

⁶⁰ "Quantifying Greenhouse Gas Mitigation Measures." California Air Pollution Control Officers Association (CAPCOA), August 2010, available at: <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>, p.

Install Energy Efficient Appliances
Install Energy Efficient Boilers
<i>Lighting</i>
Install Higher Efficacy Public Street and Area Lighting
Limit Outdoor Lighting Requirements
Replace Traffic Lights with LED Traffic Lights
<i>Alternative Energy Generation</i>
Establish Onsite Renewable or Carbon-Neutral Energy Systems
Establish Onsite Renewable Energy System – Solar Power
Utilize a Combined Heat and Power System
Measures – Transportation
<i>Land Use/Location</i>
Increase Density
Increase Destination Accessibility
Integrate Affordable and Below Market Rate Housing
<i>Neighborhood/Site Enhancements</i>
Provide Pedestrian Network Improvements, such as: • Compact, mixed-use communities • Interconnected street network • Narrower roadways and shorter block lengths • Sidewalks • Accessibility to transit and transit shelters • Traffic calming measures and street trees • Parks and public spaces • Minimize pedestrian barriers
Provide Traffic Calming Measures, such as: • Marked crosswalks • Count-down signal timers • Curb extensions • Speed tables • Raised crosswalks • Raised intersections • Median islands • Tight corner radii • Roundabouts or mini-circles • On-street parking • Planter strips with trees • Chicanes/chokers
Implement a Neighborhood Electric Vehicle (NEV) Network.
Create Urban Non-Motorized Zones

Dedicate Land for Bike Trails
<i>Parking Policy/Pricing</i>
Limit Parking Supply through: • Elimination (or reduction) of minimum parking requirements • Creation of maximum parking requirements • Provision of shared parking
Unbundle Parking Costs from Property Cost
Implement Market Price Public Parking (On-Street)
Require Residential Area Parking Permits
<i>Commute Trip Reduction Programs</i>
Implement Commute Trip Reduction (CTR) Program – Voluntary • Carpooling encouragement • Ride-matching assistance • Preferential carpool parking • Flexible work schedules for carpools • Half time transportation coordinator • Vanpool assistance • Bicycle end-trip facilities (parking, showers and lockers) • New employee orientation of trip reduction and alternative mode options • Event promotions and publications • Flexible work schedule for employees • Transit subsidies • Parking cash-out or priced parking • Shuttles • Emergency ride home
Implement Commute Trip Reduction (CTR) Program – Required Implementation/Monitoring • Established performance standards (e.g. trip reduction requirements) • Required implementation • Regular monitoring and reporting
Provide Ride-Sharing Programs • Designate a certain percentage of parking spaces for ride sharing vehicles • Designating adequate passenger loading and unloading and waiting areas for ride-sharing vehicles • Providing a web site or messaging board for coordinating rides • Permanent transportation management association membership and funding requirement.
Implement Subsidized or Discounted Transit Program
Provide End of Trip Facilities, including: • Showers • Secure bicycle lockers • Changing spaces
Encourage Telecommuting and Alternative Work Schedules, such as: • Staggered starting times • Flexible schedules

Compressed work weeks
Implement Commute Trip Reduction Marketing, such as: - New employee orientation of trip reduction and alternative mode options - Event promotions - Publications
Implement Preferential Parking Permit Program
Implement Car-Sharing Program
Provide Employer-Sponsored Vanpool/Shuttle
Implement Bike-Sharing Programs
Price Workplace Parking, such as: - Explicitly charging for parking for its employees; - Implementing above market rate pricing; - Validating parking only for invited guests; - Not providing employee parking and transportation allowances; and - Educating employees about available alternatives.
Implement Employee Parking “Cash-Out”
<i>Transit System Improvements</i>
Transit System Improvements, including: - Grade-separated right-of-way, including bus only lanes (for buses, emergency vehicles, and sometimes taxis), and other Transit Priority measures. Some systems use guideways which automatically steer the bus on portions of the route. - Frequent, high-capacity service - High-quality vehicles that are easy to board, quiet, clean, and comfortable to ride. - Pre-paid fare collection to minimize boarding delays. - Integrated fare systems, allowing free or discounted transfers between routes and modes. - Convenient user information and marketing programs. - High quality bus stations with Transit Oriented Development in nearby areas. - Modal integration, with BRT service coordinated with walking and cycling facilities, taxi services, intercity bus, rail transit, and other transportation services.
Implement Transit Access Improvements, such as: - Sidewalk/crosswalk safety enhancements - Bus shelter improvements
Expand Transit Network
Increase Transit Service Frequency/Speed
Provide Local Shuttles
<i>Road Pricing/Management</i>
Implement Area or Cordon Pricing
Improve Traffic Flow, such as: - Signalization improvements to reduce delay; - Incident management to increase response time to breakdowns and collisions;

• Intelligent Transportation Systems (ITS) to provide real-time information regarding road conditions and directions; and • Speed management to reduce high free-flow speeds.
Required Project Contributions to Transportation Infrastructure Improvement Projects
Install Park-and-Ride Lots
<i>Vehicles</i>
Utilize Alternative Fueled Vehicles, such as: • Biodiesel (B20) • Liquefied Natural Gas (LNG) • Compressed Natural Gas (CNG)
Utilize Electric or Hybrid Vehicles
Measures – Water
<i>Water Supply</i>
Use Reclaimed Water
Use Gray Water
Use Locally Sourced Water Supply
<i>Water Use</i>
Install Low-Flow Water Fixtures
Adopt a Water Conservation strategy
Design Water-Efficient Landscapes (see California Department of Water Resources Model Water Efficient Landscape Ordinance), such as: • Reducing lawn sizes; • Planting vegetation with minimal water needs, such as native species; • Choosing vegetation appropriate for the climate of the project site; • Choosing complimentary plants with similar water needs or which can provide each other with shade and/or water.
Use Water-Efficient Landscape Irrigation Systems (“Smart” irrigation control systems)
Reduce Turf in Landscapes and Lawns
Measures – Area Landscaping
<i>Landscaping Equipment</i>
Prohibit Gas Powered Landscape Equipment
Electric Yard Equipment Compatibility
Measures – Solid Waste
<i>Solid Waste</i>
Recycle Demolished Construction Material
Measures – Vegetation
<i>Vegetation</i>
Urban Tree Planting

Create New Vegetated Open Space
Measures – Construction
Construction
Use Alternative Fuels for Construction Equipment
Urban Tree Planting
Use Electric and Hybrid Construction Equipment
Limit Construction Equipment Idling Beyond Regulation Requirements
Institute a Heavy-Duty Off-Road Vehicle Plan, including: • Construction vehicle inventory tracking system; • Requiring hour meters on equipment; • Document the serial number, horsepower, manufacture age, fuel, etc. of all onsite equipment; and • Daily logging of the operating hours of the equipment.
Implement a Construction Vehicle Inventory Tracking System
Measures – Miscellaneous
Miscellaneous
Establish a Carbon Sequestration Project, such as: • Geologic sequestration or carbon capture and storage techniques, in which CO₂ from point sources is captured and injected underground; • Terrestrial sequestration in which ecosystems are established or preserved to serve as CO₂ sinks; • Novel techniques involving advanced chemical or biological pathways; or • Technologies yet to be discovered.
Establish Off-Site Mitigation
Use Local and Sustainable Building Materials
Require Environmentally Responsible Purchasing, such as: • Purchasing products with sustainable packaging; • Purchasing post-consumer recycled copier paper, paper towels, and stationary; • Purchasing and stocking communal kitchens with reusable dishes and utensils; • Choosing sustainable cleaning supplies; • Leasing equipment from manufacturers who will recycle the components at their end of life; • Choosing ENERGY STAR appliances and Water Sense-certified water fixtures; • Choosing electronic appliances with built in sleep-mode timers; • Purchasing ‘green power’ (e.g. electricity generated from renewable or hydropower) from the utility; and • Choosing locally-made and distributed products.

Furthermore, in an effort to reduce the Project’s emissions, we identified several mitigation measures that are applicable to the proposed Project from NEDC’s *Diesel Emission Controls in Construction*

Projects.⁶¹ Therefore, to reduce the Project’s emissions, consideration of the following measures should be made:

NEDC’s Diesel Emission Controls in Construction Projects⁶²	
Measures – Diesel Emission Control Technology	
a.	Diesel Onroad Vehicles All diesel nonroad vehicles on site for more than 10 total days must have either (1) engines that meet EPA onroad emissions standards or (2) emission control technology verified by EPA or CARB to reduce PM emissions by a minimum of 85%.
b.	Diesel Generators All diesel generators on site for more than 10 total days must be equipped with emission control technology verified by EPA or CARB to reduce PM emissions by a minimum of 85%.
c.	Emission control technology shall be operated, maintained, and serviced as recommended by the emission control technology manufacturer.
Measures – Additional Diesel Requirements	
a.	Construction shall not proceed until the contractor submits a certified 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.
b.	If the contractor subsequently needs to bring on site equipment not on the list, the contractor shall submit written notification within 24 hours that attests the equipment complies with all contract conditions and provide information.
c.	All diesel equipment shall comply with all pertinent local, state, and federal regulations relative to exhaust emission controls and safety.
d.	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.
Reporting	
a.	For each onroad diesel vehicle, nonroad construction equipment, or generator, the contractor shall submit to the developer’s representative a report prior to bringing said equipment on site that includes: i. Equipment type, equipment manufacturer, equipment serial number, engine manufacturer, engine model year, engine certification (Tier rating), horsepower, and engine serial number.

⁶¹ “Diesel Emission Controls in Construction Projects.” Northeast Diesel Collaborative (NEDC), December 2010, available at: <https://www.epa.gov/sites/production/files/2015-09/documents/nedc-model-contract-sepcification.pdf>.

⁶² “Diesel Emission Controls in Construction Projects.” Northeast Diesel Collaborative (NEDC), December 2010, available at: <https://www.epa.gov/sites/production/files/2015-09/documents/nedc-model-contract-sepcification.pdf>.

ii.	The type of emission control technology installed, serial number, make, model, manufacturer, and EPA/CARB verification number/level.
iii.	The Certification Statement signed and printed on the contractor's letterhead.
b.	The contractor shall submit to the developer's representative a monthly report that, for each onroad 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. Quality of fuel, including sulfur content (percent by weight)

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 updated EIR should be prepared to include all feasible mitigation measures, as well as include an updated health risk and GHG analysis 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:	SWAPE Health Risk Calculations
Attachment B:	SWAPE GHG and VMT Calculations
Attachment C:	SWAPE Project CalEEMod Modeling
Attachment D:	SWAPE Project AERSCREEN Modeling
Attachment E:	Paul Rosenfeld CV
Attachment F:	Matt Hagemann CV

Operation	
Emission Rate	
Annual Emissions (tons/year)	0.0437
Daily Emissions (lbs/day)	0.239452055
Emission Rate (g/s)	0.00126
Release Height (meters)	3
Initial Vertical Dimension (meters)	1.5
Max Horizontal (meters)	256.0
Min Horizontal (meters)	101.0
Total Acreage	6.389151095
Setting	Urban
Population	16,731
Total Pounds of DPM	
Total DPM (lbs)	87.4

The Maximum Exposed Individual at an Existing Residential Receptor (MEIR)

Activity	Duration (years)	Concentration (ug/m3)	Breathing Rate (L/kg-day)	ASF	Cancer Risk with ASFs*
Total Construction	2.83				4.2E-06
Operation	13.42	0.1937	572	3	6.7E-05
<i>Child Exposure Duration</i>	13.42			<i>Child Exposure</i>	6.7E-05
Operation	14.00	0.1937	261	1	7.8E-06
<i>Adult Exposure Duration</i>	14.00			<i>Adult Exposure</i>	7.8E-06
Lifetime Exposure Duration	30.25			Lifetime Exposure	7.9E-05

Attachment B

GHG CALCULATIONS: SWAPE Modeling

Line (L)	Value	Unit
Total Emissions From Passenger and Light Duty Vehicles		
1	2,553.25	Mobile Emissions (MT CO ₂ e/year)
2	91.23%	Passenger and Light-Duty VMT Fleet Mix
3	2,329.20	Passenger and Light Duty Vehicle Emissions (MT CO ₂ e/year) [Calc: (L1*L2)]
4	14,068.52	Passenger and Light-Duty Vehicle Emissions (Total lbs CO ₂ e/day) [Calc: (L3 converted into lbs) / (365 days)]
5	674	Service Population [618 residents + 56 long-term jobs]
6	20.87	Per Service Population Emissions (lbs CO ₂ e/day/SP) [Calc: (L4/L5)]
Daily VMT Per Capita From Passenger and Light Duty Vehicles		
7	6,508,735	Project Total VMT (CalEEMod Annual Output, Tbl. 4.2 Trip Summary)
8	91.23%	Passenger and Light-Duty VMT Fleet Mix (see L2)
9	5,937,594	VMT from Passenger & Light-Duty Vehicles
10	16,267	Daily VMT from Passenger & Light-Duty Vehicles [Calc: (L9/365)]
11	674	Service Population [618 residents + 56 long-term jobs]
12	24.14	Daily VMT Per Capita [(Calc: L10/L11)]

CO ₂ e Per Capita Emissions from Passenger & Light-Duty Trucks,	
Exceedances under RTP/SCS Performance-Based SB 375 Goals	
Sources	Project
	SWAPE Modeling
Annual Mobile Emissions (MT CO ₂ e/year)	2,553.25
Passenger & Light-Duty Fleet Mix (%)	91.23%
Daily CO ₂ e Emissions (lbs/day)	14,068.52
Service Population	674
Per Capita Emissions (lbs/day)	20.87
18.8 lbs/day/SP (2035 Goal) Exceeded?	Yes

Daily VMT Per Capita from Passenger & Light-Duty Trucks,	
Exceedances under RTP/SCS Performance-Based SB 375 Target	
Sources	Project
	SWAPE Modeling
Annual VMT from Auto & Light-Duty Vehicles	5,937,594
Daily VMT from Auto & Light-Duty Vehicles	16,267
Service Population	674
Daily VMT Per Capita	24.14
2020 RTP/SCS Benchmarks, SCAG-Wide	
23.2 VMT (2016 Baseline) Exceed?	Yes
20.7 VMT (2045 Target) Exceed?	Yes
2020 RTP/SCS Benchmarks, Los Angeles County	
22.2 VMT (2016 Baseline) Exceed?	Yes
19.2 VMT (2045 Target) Exceed?	Yes

2017 Scoping Plan Daily VMT Per Capita						
	Los Angeles County			State		
Year	Population	LDV VMT Baseline	VMT Per Capita	Population	LDV VMT Baseline	VMT Per Capita
2010	9,838,771	216,979,221.64	22.05	37,335,085	836,463,980.46	22.40
2025	10,671,800	217,340,094.90	20.37	42,326,397	929,443,512.65	21.96
2030	10,868,614	215,539,586.12	19.83	43,939,250	957,178,153.19	21.78

Daily VMT Per Capita from Passenger & Light-Duty Trucks, Exceedances under 2017 Scoping Plan Performance-Based SB 375 Benchmarks	
Sources	Project
	SWAPE Modeling
Annual VMT from Auto & Light-Duty Vehicles	5,937,594
Daily VMT from Auto & Light-Duty Vehicles	16,267
Service Population	674
Daily VMT Per Capita	24.14
2017 Scoping Plan Benchmarks, Statewide	
22.40 VMT (2010 Baseline) Exceed?	Yes
21.96 VMT (2025 Projected) Exceed?	Yes
21.78 VMT (2030 Projected) Exceed?	Yes
2017 Scoping Plan Benchmarks, Los Angeles County Specific	
22.05 VMT (2010 Baseline) Exceed?	Yes
20.37 VMT (2025 Projected) Exceed?	Yes
19.83 VMT (2030 Projected) Exceed?	Yes

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Annual

Pacific Coast Commons Specific Plan Project
South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	792.00	Space	0.00	316,800.00	0
Other Asphalt Surfaces	12.65	1000sqft	0.00	12,650.00	0
High Turnover (Sit Down Restaurant)	4.95	1000sqft	0.00	3,952.00	0
Apartments Mid Rise	263.00	Dwelling Unit	0.00	327,021.00	752
Regional Shopping Center	7.30	1000sqft	5.35	7,300.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	8			Operational Year	2025
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	561.77	CH4 Intensity (lb/MW hr)	0.02	N2O Intensity (lb/MW hr)	0.005

1.3 User Entered Comments & Non-Default Data

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Annual

Project Characteristics - Consistent with the DEIR's model.

Land Use - See SWAPE comment regarding underestimated land use sizes.

Construction Phase - Consistent with the DEIR's model.

Trips and VMT - See SWAPE comment regarding hauling trips. Worker and vendor trips consistent with the DEIR's model.

On-road Fugitive Dust -

Demolition - See SWAPE comment regarding demolition.

Grading - See SWAPE comment regarding acres of grading values, material moisture content, and material silt content. Material export consistent with the DEIR's model.

Architectural Coating - Architectural coating EFs consistent with the DEIR's model. See SWAPE comment regarding architectural coating areas.

Vehicle Trips - See SWAPE comment regarding operational vehicle trip rates.

Woodstoves - Consistent with the DEIR's model.

Area Coating - See SWAPE comment regarding area coating areas.

Energy Use -

Water And Wastewater - See SWAPE comment regarding wastewater treatment percentages.

Construction Off-road Equipment Mitigation - See SWAPE comment regarding construction-related mitigation measures.

Mobile Land Use Mitigation - See SWAPE comment regarding operational mitigation measures.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblConstructionPhase	NumDays	20.00	43.00
tblConstructionPhase	NumDays	20.00	44.00
tblConstructionPhase	NumDays	230.00	262.00

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tblConstructionPhase	NumDays	230.00	195.00
tblConstructionPhase	NumDays	20.00	21.00
tblConstructionPhase	NumDays	20.00	42.00
tblConstructionPhase	NumDays	20.00	44.00
tblConstructionPhase	NumDays	20.00	42.00
tblConstructionPhase	NumDays	20.00	43.00
tblConstructionPhase	NumDays	20.00	44.00
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	NumDays	10.00	22.00
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	223.55	237.00
tblFireplaces	NumberNoFireplace	26.30	26.00
tblFireplaces	NumberWood	13.15	0.00
tblGrading	MaterialExported	0.00	17,000.00
tblLandUse	LandUseSquareFeet	4,950.00	3,952.00
tblLandUse	LandUseSquareFeet	263,000.00	327,021.00
tblLandUse	LotAcreage	7.13	0.00
tblLandUse	LotAcreage	0.29	0.00
tblLandUse	LotAcreage	0.11	0.00
tblLandUse	LotAcreage	6.92	0.00
tblLandUse	LotAcreage	0.17	5.35
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.02
tblProjectCharacteristics	CO2IntensityFactor	702.44	561.77
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	84.00	60.00

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Annual

tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	84.00	30.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	WorkerTripNumber	15.00	80.00
tblTripsAndVMT	WorkerTripNumber	332.00	300.00
tblTripsAndVMT	WorkerTripNumber	15.00	80.00
tblTripsAndVMT	WorkerTripNumber	66.00	240.00
tblTripsAndVMT	WorkerTripNumber	18.00	50.00
tblTripsAndVMT	WorkerTripNumber	15.00	80.00
tblTripsAndVMT	WorkerTripNumber	332.00	120.00
tblTripsAndVMT	WorkerTripNumber	15.00	40.00
tblTripsAndVMT	WorkerTripNumber	66.00	80.00
tblTripsAndVMT	WorkerTripNumber	15.00	100.00
tblTripsAndVMT	WorkerTripNumber	18.00	120.00
tblTripsAndVMT	WorkerTripNumber	15.00	160.00
tblVehicleTrips	HS_TTP	19.20	19.40
tblVehicleTrips	HW_TTP	40.20	40.00
tblVehicleTrips	ST_TR	6.39	4.96
tblVehicleTrips	ST_TR	158.37	298.59
tblVehicleTrips	ST_TR	49.97	42.00

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tblVehicleTrips	SU_TR	5.86	5.04
tblVehicleTrips	SU_TR	131.84	205.83
tblVehicleTrips	SU_TR	25.24	23.51
tblVehicleTrips	WD_TR	6.65	5.18
tblVehicleTrips	WD_TR	127.15	179.90
tblVehicleTrips	WD_TR	42.70	36.05
tblWoodstoves	WoodstoveDayYear	25.00	0.00
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					
2021	0.1147	1.1622	0.7437	1.6700e-003	0.3552	0.0526	0.4077	0.1637	0.0485	0.2122	0.0000	150.2960	150.2960	0.0339	0.0000	151.1444
2022	1.3593	2.3980	2.6886	5.9700e-003	0.2647	0.1049	0.3696	0.0870	0.0983	0.1853	0.0000	532.1323	532.1323	0.0866	0.0000	534.2970
2023	0.3592	2.9109	3.2200	9.1800e-003	0.7656	0.1075	0.8731	0.2899	0.1002	0.3901	0.0000	832.8981	832.8981	0.1113	0.0000	835.6806
2024	1.2711	1.3401	1.9799	5.3600e-003	0.2854	0.0473	0.3327	0.0765	0.0443	0.1208	0.0000	483.9751	483.9751	0.0547	0.0000	485.3423
Maximum	1.3593	2.9109	3.2200	9.1800e-003	0.7656	0.1075	0.8731	0.2899	0.1002	0.3901	0.0000	832.8981	832.8981	0.1113	0.0000	835.6806

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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					
2021	0.1147	1.1622	0.7436	1.6700e-003	0.3552	0.0526	0.4077	0.1637	0.0485	0.2122	0.0000	150.2959	150.2959	0.0339	0.0000	151.1442
2022	1.3593	2.3980	2.6886	5.9700e-003	0.2647	0.1049	0.3696	0.0870	0.0983	0.1853	0.0000	532.1320	532.1320	0.0866	0.0000	534.2966
2023	0.3592	2.9109	3.2200	9.1800e-003	0.7656	0.1075	0.8731	0.2899	0.1002	0.3901	0.0000	832.8977	832.8977	0.1113	0.0000	835.6802
2024	1.2711	1.3401	1.9799	5.3600e-003	0.2854	0.0473	0.3327	0.0765	0.0443	0.1208	0.0000	483.9749	483.9749	0.0547	0.0000	485.3421
Maximum	1.3593	2.9109	3.2200	9.1800e-003	0.7656	0.1075	0.8731	0.2899	0.1002	0.3901	0.0000	832.8977	832.8977	0.1113	0.0000	835.6802

	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
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	10-1-2021	12-31-2021	1.2749	1.2749
2	1-1-2022	3-31-2022	0.7105	0.7105
3	4-1-2022	6-30-2022	0.6789	0.6789
4	7-1-2022	9-30-2022	0.6863	0.6863
5	10-1-2022	12-31-2022	1.6766	1.6766
6	1-1-2023	3-31-2023	0.9521	0.9521
7	4-1-2023	6-30-2023	0.8759	0.8759
8	7-1-2023	9-30-2023	0.7218	0.7218

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9	10-1-2023	12-31-2023	0.7269	0.7269
10	1-1-2024	3-31-2024	0.6806	0.6806
11	4-1-2024	6-30-2024	1.1803	1.1803
12	7-1-2024	9-30-2024	0.7515	0.7515
		Highest	1.6766	1.6766

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	1.4385	0.0313	2.7201	1.4000e-004		0.0151	0.0151		0.0151	0.0151	0.0000	4.4507	4.4507	4.3000e-003	0.0000	4.5580
Energy	0.0218	0.1894	0.1017	1.1900e-003		0.0151	0.0151		0.0151	0.0151	0.0000	1,013.3250	1,013.3250	0.0325	0.0111	1,017.4326
Mobile	0.5540	2.7968	6.6649	0.0275	2.4727	0.0200	2.4927	0.6625	0.0186	0.6810	0.0000	2,550.3837	2,550.3837	0.1146	0.0000	2,553.2478
Waste						0.0000	0.0000		0.0000	0.0000	38.0730	0.0000	38.0730	2.2501	0.0000	94.3242
Water						0.0000	0.0000		0.0000	0.0000	6.0845	95.4263	101.5108	0.6283	0.0156	121.8697
Total	2.0143	3.0176	9.4867	0.0288	2.4727	0.0501	2.5228	0.6625	0.0487	0.7112	44.1575	3,663.5856	3,707.7431	3.0298	0.0267	3,791.4324

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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	1.4385	0.0313	2.7201	1.4000e-004		0.0151	0.0151		0.0151	0.0151	0.0000	4.4507	4.4507	4.3000e-003	0.0000	4.5580
Energy	0.0218	0.1894	0.1017	1.1900e-003		0.0151	0.0151		0.0151	0.0151	0.0000	1,013.3250	1,013.3250	0.0325	0.0111	1,017.4326
Mobile	0.5540	2.7968	6.6649	0.0275	2.4727	0.0200	2.4927	0.6625	0.0186	0.6810	0.0000	2,550.3837	2,550.3837	0.1146	0.0000	2,553.2478
Waste						0.0000	0.0000		0.0000	0.0000	38.0730	0.0000	38.0730	2.2501	0.0000	94.3242
Water						0.0000	0.0000		0.0000	0.0000	6.0845	95.4263	101.5108	0.6283	0.0156	121.8697
Total	2.0143	3.0176	9.4867	0.0288	2.4727	0.0501	2.5228	0.6625	0.0487	0.7112	44.1575	3,663.5856	3,707.7431	3.0298	0.0267	3,791.4324

	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
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**

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition - Phase 1	Demolition	10/1/2021	10/31/2021	5	21	
2	Site Preparation - Phase 1	Site Preparation	11/1/2021	11/30/2021	5	22	
3	Grading - Phase 1	Grading	12/1/2021	1/31/2022	5	44	
4	Building Construction - Phase 1	Building Construction	2/1/2022	10/31/2022	5	195	
5	Paving - Phase 1	Paving	11/1/2022	12/31/2022	5	44	
6	Architectural Coating - Phase 1	Architectural Coating	11/1/2022	12/31/2022	5	44	
7	Demolition - Phases 2 and 3	Demolition	1/1/2023	2/28/2023	5	42	
8	Site Preparation - Phases 2 and 3	Site Preparation	3/1/2023	3/30/2023	5	22	
9	Grading - Phases 2 and 3	Grading	4/1/2023	5/30/2023	5	42	
10	Building Construction - Phases 2 and 3	Building Construction	6/1/2023	5/31/2024	5	262	
11	Paving - Phases 2 and 3	Paving	6/1/2024	7/31/2024	5	43	
12	Architectural Coating - Phases 2 and 3	Architectural Coating	6/1/2024	7/31/2024	5	43	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 662,218; Residential Outdoor: 220,739; Non-Residential Indoor: 18,378; Non-Residential Outdoor: 6,126; Striped Parking Area: 19,767 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition - Phase 1	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition - Phase 1	Excavators	3	8.00	158	0.38
Demolition - Phase 1	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation - Phase 1	Rubber Tired Dozers	3	8.00	247	0.40

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Site Preparation - Phase 1	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading - Phase 1	Excavators	1	8.00	158	0.38
Grading - Phase 1	Graders	1	8.00	187	0.41
Grading - Phase 1	Rubber Tired Dozers	1	8.00	247	0.40
Grading - Phase 1	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction - Phase 1	Cranes	1	7.00	231	0.29
Building Construction - Phase 1	Forklifts	3	8.00	89	0.20
Building Construction - Phase 1	Generator Sets	1	8.00	84	0.74
Building Construction - Phase 1	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction - Phase 1	Welders	1	8.00	46	0.45
Paving - Phase 1	Pavers	2	8.00	130	0.42
Paving - Phase 1	Paving Equipment	2	8.00	132	0.36
Paving - Phase 1	Rollers	2	8.00	80	0.38
Architectural Coating - Phase 1	Air Compressors	1	6.00	78	0.48
Demolition - Phases 2 and 3	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition - Phases 2 and 3	Excavators	3	8.00	158	0.38
Demolition - Phases 2 and 3	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation - Phases 2 and 3	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation - Phases 2 and 3	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading - Phases 2 and 3	Excavators	1	8.00	158	0.38
Grading - Phases 2 and 3	Graders	1	8.00	187	0.41
Grading - Phases 2 and 3	Rubber Tired Dozers	1	8.00	247	0.40
Grading - Phases 2 and 3	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction - Phases 2 and 3	Cranes	1	7.00	231	0.29
Building Construction - Phases 2 and 3	Forklifts	3	8.00	89	0.20
Building Construction - Phases 2 and 3	Generator Sets	1	8.00	84	0.74
Building Construction - Phases 2 and 3	Tractors/Loaders/Backhoes	3	7.00	97	0.37

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Building Construction - Phases 2 and 3	Welders	1	8.00	46	0.45
Paving - Phases 2 and 3	Pavers	2	8.00	130	0.42
Paving - Phases 2 and 3	Paving Equipment	2	8.00	132	0.36
Paving - Phases 2 and 3	Rollers	2	8.00	80	0.38
Architectural Coating - Phases 2 and 3	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 - Phase 1	6	80.00	20.00	406.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation - Phase 1	7	50.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading - Phase 1	6	80.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction - Phase 1	9	120.00	30.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving - Phase 1	6	40.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating - Phase 1	1	80.00	20.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition - Phases 2 and 3	6	100.00	40.00	406.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation - Phases 2 and 3	7	120.00	20.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading - Phases 2 and 3	6	160.00	20.00	2,125.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction - Phases 2 and 3	9	300.00	60.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving - Phases 2 and 3	6	80.00	20.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating - Phases 2 and 3	1	240.00	40.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

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3.2 Demolition - Phase 1 - 2021**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					0.0440	0.0000	0.0440	6.6600e-003	0.0000	6.6600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0332	0.3301	0.2264	4.1000e-004		0.0163	0.0163		0.0151	0.0151	0.0000	35.7008	35.7008	0.0101	0.0000	35.9520
Total	0.0332	0.3301	0.2264	4.1000e-004	0.0440	0.0163	0.0603	6.6600e-003	0.0151	0.0218	0.0000	35.7008	35.7008	0.0101	0.0000	35.9520

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	1.4900e-003	0.0529	0.0112	1.5000e-004	3.4900e-003	1.6000e-004	3.6500e-003	9.6000e-004	1.5000e-004	1.1100e-003	0.0000	15.1580	15.1580	1.0400e-003	0.0000	15.1839
Vendor	6.0000e-004	0.0203	5.0400e-003	5.0000e-005	1.3200e-003	4.0000e-005	1.3600e-003	3.8000e-004	4.0000e-005	4.2000e-004	0.0000	5.1271	5.1271	3.2000e-004	0.0000	5.1352
Worker	3.5000e-003	2.5900e-003	0.0293	9.0000e-005	9.2200e-003	7.0000e-005	9.2900e-003	2.4500e-003	6.0000e-005	2.5100e-003	0.0000	8.0275	8.0275	2.2000e-004	0.0000	8.0329
Total	5.5900e-003	0.0758	0.0455	2.9000e-004	0.0140	2.7000e-004	0.0143	3.7900e-003	2.5000e-004	4.0400e-003	0.0000	28.3126	28.3126	1.5800e-003	0.0000	28.3521

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3.2 Demolition - Phase 1 - 2021**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					0.0440	0.0000	0.0440	6.6600e-003	0.0000	6.6600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0332	0.3301	0.2264	4.1000e-004		0.0163	0.0163		0.0151	0.0151	0.0000	35.7008	35.7008	0.0101	0.0000	35.9520
Total	0.0332	0.3301	0.2264	4.1000e-004	0.0440	0.0163	0.0603	6.6600e-003	0.0151	0.0218	0.0000	35.7008	35.7008	0.0101	0.0000	35.9520

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	1.4900e-003	0.0529	0.0112	1.5000e-004	3.4900e-003	1.6000e-004	3.6500e-003	9.6000e-004	1.5000e-004	1.1100e-003	0.0000	15.1580	15.1580	1.0400e-003	0.0000	15.1839
Vendor	6.0000e-004	0.0203	5.0400e-003	5.0000e-005	1.3200e-003	4.0000e-005	1.3600e-003	3.8000e-004	4.0000e-005	4.2000e-004	0.0000	5.1271	5.1271	3.2000e-004	0.0000	5.1352
Worker	3.5000e-003	2.5900e-003	0.0293	9.0000e-005	9.2200e-003	7.0000e-005	9.2900e-003	2.4500e-003	6.0000e-005	2.5100e-003	0.0000	8.0275	8.0275	2.2000e-004	0.0000	8.0329
Total	5.5900e-003	0.0758	0.0455	2.9000e-004	0.0140	2.7000e-004	0.0143	3.7900e-003	2.5000e-004	4.0400e-003	0.0000	28.3126	28.3126	1.5800e-003	0.0000	28.3521

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3.3 Site Preparation - Phase 1 - 2021**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					0.1987	0.0000	0.1987	0.1092	0.0000	0.1092	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0428	0.4455	0.2327	4.2000e-004		0.0225	0.0225		0.0207	0.0207	0.0000	36.7793	36.7793	0.0119	0.0000	37.0767
Total	0.0428	0.4455	0.2327	4.2000e-004	0.1987	0.0225	0.2212	0.1092	0.0207	0.1299	0.0000	36.7793	36.7793	0.0119	0.0000	37.0767

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	3.1000e-004	0.0106	2.6400e-003	3.0000e-005	6.9000e-004	2.0000e-005	7.1000e-004	2.0000e-004	2.0000e-005	2.2000e-004	0.0000	2.6856	2.6856	1.7000e-004	0.0000	2.6899
Worker	2.2900e-003	1.6900e-003	0.0192	6.0000e-005	6.0300e-003	5.0000e-005	6.0800e-003	1.6000e-003	4.0000e-005	1.6400e-003	0.0000	5.2561	5.2561	1.4000e-004	0.0000	5.2597
Total	2.6000e-003	0.0123	0.0218	9.0000e-005	6.7200e-003	7.0000e-005	6.7900e-003	1.8000e-003	6.0000e-005	1.8600e-003	0.0000	7.9417	7.9417	3.1000e-004	0.0000	7.9495

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3.3 Site Preparation - Phase 1 - 2021**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					0.1987	0.0000	0.1987	0.1092	0.0000	0.1092	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0428	0.4455	0.2327	4.2000e-004		0.0225	0.0225		0.0207	0.0207	0.0000	36.7792	36.7792	0.0119	0.0000	37.0766
Total	0.0428	0.4455	0.2327	4.2000e-004	0.1987	0.0225	0.2212	0.1092	0.0207	0.1299	0.0000	36.7792	36.7792	0.0119	0.0000	37.0766

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	3.1000e-004	0.0106	2.6400e-003	3.0000e-005	6.9000e-004	2.0000e-005	7.1000e-004	2.0000e-004	2.0000e-005	2.2000e-004	0.0000	2.6856	2.6856	1.7000e-004	0.0000	2.6899
Worker	2.2900e-003	1.6900e-003	0.0192	6.0000e-005	6.0300e-003	5.0000e-005	6.0800e-003	1.6000e-003	4.0000e-005	1.6400e-003	0.0000	5.2561	5.2561	1.4000e-004	0.0000	5.2597
Total	2.6000e-003	0.0123	0.0218	9.0000e-005	6.7200e-003	7.0000e-005	6.7900e-003	1.8000e-003	6.0000e-005	1.8600e-003	0.0000	7.9417	7.9417	3.1000e-004	0.0000	7.9495

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3.4 Grading - Phase 1 - 2021**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					0.0809	0.0000	0.0809	0.0393	0.0000	0.0393	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0263	0.2845	0.1824	3.4000e-004		0.0133	0.0133		0.0123	0.0123	0.0000	29.9618	29.9618	9.6900e-003	0.0000	30.2040
Total	0.0263	0.2845	0.1824	3.4000e-004	0.0809	0.0133	0.0943	0.0393	0.0123	0.0516	0.0000	29.9618	29.9618	9.6900e-003	0.0000	30.2040

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	3.3000e-004	0.0111	2.7600e-003	3.0000e-005	7.2000e-004	2.0000e-005	7.5000e-004	2.1000e-004	2.0000e-005	2.3000e-004	0.0000	2.8077	2.8077	1.8000e-004	0.0000	2.8121
Worker	3.8300e-003	2.8300e-003	0.0321	1.0000e-004	0.0101	8.0000e-005	0.0102	2.6800e-003	7.0000e-005	2.7500e-003	0.0000	8.7921	8.7921	2.4000e-004	0.0000	8.7980
Total	4.1600e-003	0.0140	0.0348	1.3000e-004	0.0108	1.0000e-004	0.0109	2.8900e-003	9.0000e-005	2.9800e-003	0.0000	11.5998	11.5998	4.2000e-004	0.0000	11.6101

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3.4 Grading - Phase 1 - 2021**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					0.0809	0.0000	0.0809	0.0393	0.0000	0.0393	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0263	0.2845	0.1824	3.4000e-004		0.0133	0.0133		0.0123	0.0123	0.0000	29.9617	29.9617	9.6900e-003	0.0000	30.2040
Total	0.0263	0.2845	0.1824	3.4000e-004	0.0809	0.0133	0.0943	0.0393	0.0123	0.0516	0.0000	29.9617	29.9617	9.6900e-003	0.0000	30.2040

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	3.3000e-004	0.0111	2.7600e-003	3.0000e-005	7.2000e-004	2.0000e-005	7.5000e-004	2.1000e-004	2.0000e-005	2.3000e-004	0.0000	2.8077	2.8077	1.8000e-004	0.0000	2.8121
Worker	3.8300e-003	2.8300e-003	0.0321	1.0000e-004	0.0101	8.0000e-005	0.0102	2.6800e-003	7.0000e-005	2.7500e-003	0.0000	8.7921	8.7921	2.4000e-004	0.0000	8.7980
Total	4.1600e-003	0.0140	0.0348	1.3000e-004	0.0108	1.0000e-004	0.0109	2.8900e-003	9.0000e-005	2.9800e-003	0.0000	11.5998	11.5998	4.2000e-004	0.0000	11.6101

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3.4 Grading - Phase 1 - 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					0.0749	0.0000	0.0749	0.0360	0.0000	0.0360	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0205	0.2190	0.1604	3.1000e-004		9.8800e-003	9.8800e-003		9.0900e-003	9.0900e-003	0.0000	27.3575	27.3575	8.8500e-003	0.0000	27.5787
Total	0.0205	0.2190	0.1604	3.1000e-004	0.0749	9.8800e-003	0.0848	0.0360	9.0900e-003	0.0451	0.0000	27.3575	27.3575	8.8500e-003	0.0000	27.5787

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	2.8000e-004	9.6300e-003	2.3800e-003	3.0000e-005	6.6000e-004	2.0000e-005	6.8000e-004	1.9000e-004	2.0000e-005	2.1000e-004	0.0000	2.5410	2.5410	1.6000e-004	0.0000	2.5449
Worker	3.2900e-003	2.3400e-003	0.0270	9.0000e-005	9.2200e-003	7.0000e-005	9.2800e-003	2.4500e-003	6.0000e-005	2.5100e-003	0.0000	7.7397	7.7397	1.9000e-004	0.0000	7.7446
Total	3.5700e-003	0.0120	0.0294	1.2000e-004	9.8800e-003	9.0000e-005	9.9600e-003	2.6400e-003	8.0000e-005	2.7200e-003	0.0000	10.2807	10.2807	3.5000e-004	0.0000	10.2895

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3.4 Grading - Phase 1 - 2022**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					0.0749	0.0000	0.0749	0.0360	0.0000	0.0360	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0205	0.2190	0.1604	3.1000e-004		9.8800e-003	9.8800e-003		9.0900e-003	9.0900e-003	0.0000	27.3575	27.3575	8.8500e-003	0.0000	27.5787
Total	0.0205	0.2190	0.1604	3.1000e-004	0.0749	9.8800e-003	0.0848	0.0360	9.0900e-003	0.0451	0.0000	27.3575	27.3575	8.8500e-003	0.0000	27.5787

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	2.8000e-004	9.6300e-003	2.3800e-003	3.0000e-005	6.6000e-004	2.0000e-005	6.8000e-004	1.9000e-004	2.0000e-005	2.1000e-004	0.0000	2.5410	2.5410	1.6000e-004	0.0000	2.5449
Worker	3.2900e-003	2.3400e-003	0.0270	9.0000e-005	9.2200e-003	7.0000e-005	9.2800e-003	2.4500e-003	6.0000e-005	2.5100e-003	0.0000	7.7397	7.7397	1.9000e-004	0.0000	7.7446
Total	3.5700e-003	0.0120	0.0294	1.2000e-004	9.8800e-003	9.0000e-005	9.9600e-003	2.6400e-003	8.0000e-005	2.7200e-003	0.0000	10.2807	10.2807	3.5000e-004	0.0000	10.2895

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3.5 Building Construction - Phase 1 - 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	0.1664	1.5225	1.5954	2.6300e-003		0.0789	0.0789		0.0742	0.0742	0.0000	225.9321	225.9321	0.0541	0.0000	227.2853
Total	0.1664	1.5225	1.5954	2.6300e-003		0.0789	0.0789		0.0742	0.0742	0.0000	225.9321	225.9321	0.0541	0.0000	227.2853

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	7.8000e-003	0.2684	0.0663	7.3000e-004	0.0184	4.9000e-004	0.0189	5.3200e-003	4.7000e-004	5.7900e-003	0.0000	70.7841	70.7841	4.3500e-003	0.0000	70.8928
Worker	0.0458	0.0326	0.3765	1.1900e-003	0.1284	9.4000e-004	0.1293	0.0341	8.6000e-004	0.0350	0.0000	107.8034	107.8034	2.7100e-003	0.0000	107.8712
Total	0.0536	0.3009	0.4428	1.9200e-003	0.1468	1.4300e-003	0.1482	0.0394	1.3300e-003	0.0407	0.0000	178.5875	178.5875	7.0600e-003	0.0000	178.7639

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3.5 Building Construction - Phase 1 - 2022**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	0.1664	1.5225	1.5954	2.6300e-003		0.0789	0.0789		0.0742	0.0742	0.0000	225.9318	225.9318	0.0541	0.0000	227.2850
Total	0.1664	1.5225	1.5954	2.6300e-003		0.0789	0.0789		0.0742	0.0742	0.0000	225.9318	225.9318	0.0541	0.0000	227.2850

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	7.8000e-003	0.2684	0.0663	7.3000e-004	0.0184	4.9000e-004	0.0189	5.3200e-003	4.7000e-004	5.7900e-003	0.0000	70.7841	70.7841	4.3500e-003	0.0000	70.8928
Worker	0.0458	0.0326	0.3765	1.1900e-003	0.1284	9.4000e-004	0.1293	0.0341	8.6000e-004	0.0350	0.0000	107.8034	107.8034	2.7100e-003	0.0000	107.8712
Total	0.0536	0.3009	0.4428	1.9200e-003	0.1468	1.4300e-003	0.1482	0.0394	1.3300e-003	0.0407	0.0000	178.5875	178.5875	7.0600e-003	0.0000	178.7639

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3.6 Paving - Phase 1 - 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	0.0243	0.2448	0.3208	5.0000e-004		0.0125	0.0125		0.0115	0.0115	0.0000	44.0606	44.0606	0.0143	0.0000	44.4169
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0243	0.2448	0.3208	5.0000e-004		0.0125	0.0125		0.0115	0.0115	0.0000	44.0606	44.0606	0.0143	0.0000	44.4169

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	5.9000e-004	0.0202	4.9900e-003	5.0000e-005	1.3900e-003	4.0000e-005	1.4200e-003	4.0000e-004	4.0000e-005	4.4000e-004	0.0000	5.3239	5.3239	3.3000e-004	0.0000	5.3321
Worker	3.4400e-003	2.4500e-003	0.0283	9.0000e-005	9.6500e-003	7.0000e-005	9.7300e-003	2.5600e-003	6.0000e-005	2.6300e-003	0.0000	8.1083	8.1083	2.0000e-004	0.0000	8.1134
Total	4.0300e-003	0.0226	0.0333	1.4000e-004	0.0110	1.1000e-004	0.0112	2.9600e-003	1.0000e-004	3.0700e-003	0.0000	13.4322	13.4322	5.3000e-004	0.0000	13.4455

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3.6 Paving - Phase 1 - 2022**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	0.0243	0.2448	0.3208	5.0000e-004		0.0125	0.0125		0.0115	0.0115	0.0000	44.0606	44.0606	0.0143	0.0000	44.4168
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0243	0.2448	0.3208	5.0000e-004		0.0125	0.0125		0.0115	0.0115	0.0000	44.0606	44.0606	0.0143	0.0000	44.4168

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	5.9000e-004	0.0202	4.9900e-003	5.0000e-005	1.3900e-003	4.0000e-005	1.4200e-003	4.0000e-004	4.0000e-005	4.4000e-004	0.0000	5.3239	5.3239	3.3000e-004	0.0000	5.3321
Worker	3.4400e-003	2.4500e-003	0.0283	9.0000e-005	9.6500e-003	7.0000e-005	9.7300e-003	2.5600e-003	6.0000e-005	2.6300e-003	0.0000	8.1083	8.1083	2.0000e-004	0.0000	8.1134
Total	4.0300e-003	0.0226	0.0333	1.4000e-004	0.0110	1.1000e-004	0.0112	2.9600e-003	1.0000e-004	3.0700e-003	0.0000	13.4322	13.4322	5.3000e-004	0.0000	13.4455

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3.7 Architectural Coating - Phase 1 - 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					
Archit. Coating	1.0744					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.5000e-003	0.0310	0.0399	7.0000e-005		1.8000e-003	1.8000e-003		1.8000e-003	1.8000e-003	0.0000	5.6172	5.6172	3.7000e-004	0.0000	5.6263
Total	1.0789	0.0310	0.0399	7.0000e-005		1.8000e-003	1.8000e-003		1.8000e-003	1.8000e-003	0.0000	5.6172	5.6172	3.7000e-004	0.0000	5.6263

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	1.1700e-003	0.0404	9.9800e-003	1.1000e-004	2.7700e-003	7.0000e-005	2.8500e-003	8.0000e-004	7.0000e-005	8.7000e-004	0.0000	10.6479	10.6479	6.5000e-004	0.0000	10.6642
Worker	6.8900e-003	4.9000e-003	0.0566	1.8000e-004	0.0193	1.4000e-004	0.0195	5.1300e-003	1.3000e-004	5.2600e-003	0.0000	16.2166	16.2166	4.1000e-004	0.0000	16.2268
Total	8.0600e-003	0.0453	0.0666	2.9000e-004	0.0221	2.1000e-004	0.0223	5.9300e-003	2.0000e-004	6.1300e-003	0.0000	26.8645	26.8645	1.0600e-003	0.0000	26.8910

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3.7 Architectural Coating - Phase 1 - 2022**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	1.0744					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.5000e-003	0.0310	0.0399	7.0000e-005		1.8000e-003	1.8000e-003		1.8000e-003	1.8000e-003	0.0000	5.6172	5.6172	3.7000e-004	0.0000	5.6263
Total	1.0789	0.0310	0.0399	7.0000e-005		1.8000e-003	1.8000e-003		1.8000e-003	1.8000e-003	0.0000	5.6172	5.6172	3.7000e-004	0.0000	5.6263

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	1.1700e-003	0.0404	9.9800e-003	1.1000e-004	2.7700e-003	7.0000e-005	2.8500e-003	8.0000e-004	7.0000e-005	8.7000e-004	0.0000	10.6479	10.6479	6.5000e-004	0.0000	10.6642
Worker	6.8900e-003	4.9000e-003	0.0566	1.8000e-004	0.0193	1.4000e-004	0.0195	5.1300e-003	1.3000e-004	5.2600e-003	0.0000	16.2166	16.2166	4.1000e-004	0.0000	16.2268
Total	8.0600e-003	0.0453	0.0666	2.9000e-004	0.0221	2.1000e-004	0.0223	5.9300e-003	2.0000e-004	6.1300e-003	0.0000	26.8645	26.8645	1.0600e-003	0.0000	26.8910

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3.8 Demolition - Phases 2 and 3 - 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					
Fugitive Dust					0.0440	0.0000	0.0440	6.6600e-003	0.0000	6.6600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0477	0.4512	0.4125	8.2000e-004		0.0210	0.0210		0.0195	0.0195	0.0000	71.3833	71.3833	0.0200	0.0000	71.8831
Total	0.0477	0.4512	0.4125	8.2000e-004	0.0440	0.0210	0.0649	6.6600e-003	0.0195	0.0262	0.0000	71.3833	71.3833	0.0200	0.0000	71.8831

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	9.4000e-004	0.0314	0.0100	1.5000e-004	3.4900e-003	6.0000e-005	3.5500e-003	9.6000e-004	6.0000e-005	1.0100e-003	0.0000	14.3849	14.3849	9.3000e-004	0.0000	14.4082
Vendor	1.6700e-003	0.0580	0.0170	2.0000e-004	5.2900e-003	7.0000e-005	5.3600e-003	1.5300e-003	6.0000e-005	1.5900e-003	0.0000	19.7150	19.7150	1.0900e-003	0.0000	19.7421
Worker	7.7400e-003	5.2900e-003	0.0623	2.1000e-004	0.0230	1.6000e-004	0.0232	6.1200e-003	1.5000e-004	6.2700e-003	0.0000	18.6277	18.6277	4.4000e-004	0.0000	18.6387
Total	0.0104	0.0947	0.0894	5.6000e-004	0.0318	2.9000e-004	0.0321	8.6100e-003	2.7000e-004	8.8700e-003	0.0000	52.7276	52.7276	2.4600e-003	0.0000	52.7890

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3.8 Demolition - Phases 2 and 3 - 2023**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					0.0440	0.0000	0.0440	6.6600e-003	0.0000	6.6600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0477	0.4512	0.4125	8.2000e-004		0.0210	0.0210		0.0195	0.0195	0.0000	71.3833	71.3833	0.0200	0.0000	71.8830
Total	0.0477	0.4512	0.4125	8.2000e-004	0.0440	0.0210	0.0649	6.6600e-003	0.0195	0.0262	0.0000	71.3833	71.3833	0.0200	0.0000	71.8830

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	9.4000e-004	0.0314	0.0100	1.5000e-004	3.4900e-003	6.0000e-005	3.5500e-003	9.6000e-004	6.0000e-005	1.0100e-003	0.0000	14.3849	14.3849	9.3000e-004	0.0000	14.4082
Vendor	1.6700e-003	0.0580	0.0170	2.0000e-004	5.2900e-003	7.0000e-005	5.3600e-003	1.5300e-003	6.0000e-005	1.5900e-003	0.0000	19.7150	19.7150	1.0900e-003	0.0000	19.7421
Worker	7.7400e-003	5.2900e-003	0.0623	2.1000e-004	0.0230	1.6000e-004	0.0232	6.1200e-003	1.5000e-004	6.2700e-003	0.0000	18.6277	18.6277	4.4000e-004	0.0000	18.6387
Total	0.0104	0.0947	0.0894	5.6000e-004	0.0318	2.9000e-004	0.0321	8.6100e-003	2.7000e-004	8.8700e-003	0.0000	52.7276	52.7276	2.4600e-003	0.0000	52.7890

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3.9 Site Preparation - Phases 2 and 3 - 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					
Fugitive Dust					0.1987	0.0000	0.1987	0.1092	0.0000	0.1092	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0293	0.3028	0.2007	4.2000e-004		0.0139	0.0139		0.0128	0.0128	0.0000	36.7958	36.7958	0.0119	0.0000	37.0933
Total	0.0293	0.3028	0.2007	4.2000e-004	0.1987	0.0139	0.2127	0.1092	0.0128	0.1221	0.0000	36.7958	36.7958	0.0119	0.0000	37.0933

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	4.4000e-004	0.0152	4.4600e-003	5.0000e-005	1.3900e-003	2.0000e-005	1.4000e-003	4.0000e-004	2.0000e-005	4.2000e-004	0.0000	5.1635	5.1635	2.8000e-004	0.0000	5.1706
Worker	4.8600e-003	3.3200e-003	0.0392	1.3000e-004	0.0145	1.0000e-004	0.0146	3.8500e-003	9.0000e-005	3.9400e-003	0.0000	11.7089	11.7089	2.8000e-004	0.0000	11.7157
Total	5.3000e-003	0.0185	0.0436	1.8000e-004	0.0159	1.2000e-004	0.0160	4.2500e-003	1.1000e-004	4.3600e-003	0.0000	16.8723	16.8723	5.6000e-004	0.0000	16.8863

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3.9 Site Preparation - Phases 2 and 3 - 2023**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					0.1987	0.0000	0.1987	0.1092	0.0000	0.1092	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0293	0.3028	0.2007	4.2000e-004		0.0139	0.0139		0.0128	0.0128	0.0000	36.7957	36.7957	0.0119	0.0000	37.0932
Total	0.0293	0.3028	0.2007	4.2000e-004	0.1987	0.0139	0.2127	0.1092	0.0128	0.1221	0.0000	36.7957	36.7957	0.0119	0.0000	37.0932

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	4.4000e-004	0.0152	4.4600e-003	5.0000e-005	1.3900e-003	2.0000e-005	1.4000e-003	4.0000e-004	2.0000e-005	4.2000e-004	0.0000	5.1635	5.1635	2.8000e-004	0.0000	5.1706
Worker	4.8600e-003	3.3200e-003	0.0392	1.3000e-004	0.0145	1.0000e-004	0.0146	3.8500e-003	9.0000e-005	3.9400e-003	0.0000	11.7089	11.7089	2.8000e-004	0.0000	11.7157
Total	5.3000e-003	0.0185	0.0436	1.8000e-004	0.0159	1.2000e-004	0.0160	4.2500e-003	1.1000e-004	4.3600e-003	0.0000	16.8723	16.8723	5.6000e-004	0.0000	16.8863

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3.10 Grading - Phases 2 and 3 - 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					
Fugitive Dust					0.1386	0.0000	0.1386	0.0709	0.0000	0.0709	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0359	0.3767	0.3098	6.2000e-004		0.0163	0.0163		0.0150	0.0150	0.0000	54.7273	54.7273	0.0177	0.0000	55.1698
Total	0.0359	0.3767	0.3098	6.2000e-004	0.1386	0.0163	0.1548	0.0709	0.0150	0.0858	0.0000	54.7273	54.7273	0.0177	0.0000	55.1698

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	4.9000e-003	0.1642	0.0524	7.6000e-004	0.0183	3.0000e-004	0.0186	5.0100e-003	2.9000e-004	5.3000e-003	0.0000	75.2902	75.2902	4.8900e-003	0.0000	75.4125
Vendor	8.4000e-004	0.0290	8.5100e-003	1.0000e-004	2.6500e-003	3.0000e-005	2.6800e-003	7.6000e-004	3.0000e-005	8.0000e-004	0.0000	9.8575	9.8575	5.4000e-004	0.0000	9.8711
Worker	0.0124	8.4600e-003	0.0997	3.3000e-004	0.0369	2.6000e-004	0.0371	9.7900e-003	2.4000e-004	0.0100	0.0000	29.8044	29.8044	7.0000e-004	0.0000	29.8219
Total	0.0181	0.2017	0.1606	1.1900e-003	0.0578	5.9000e-004	0.0584	0.0156	5.6000e-004	0.0161	0.0000	114.9521	114.9521	6.1300e-003	0.0000	115.1055

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3.10 Grading - Phases 2 and 3 - 2023**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					0.1386	0.0000	0.1386	0.0709	0.0000	0.0709	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0359	0.3767	0.3098	6.2000e-004		0.0163	0.0163		0.0150	0.0150	0.0000	54.7272	54.7272	0.0177	0.0000	55.1697
Total	0.0359	0.3767	0.3098	6.2000e-004	0.1386	0.0163	0.1548	0.0709	0.0150	0.0858	0.0000	54.7272	54.7272	0.0177	0.0000	55.1697

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	4.9000e-003	0.1642	0.0524	7.6000e-004	0.0183	3.0000e-004	0.0186	5.0100e-003	2.9000e-004	5.3000e-003	0.0000	75.2902	75.2902	4.8900e-003	0.0000	75.4125
Vendor	8.4000e-004	0.0290	8.5100e-003	1.0000e-004	2.6500e-003	3.0000e-005	2.6800e-003	7.6000e-004	3.0000e-005	8.0000e-004	0.0000	9.8575	9.8575	5.4000e-004	0.0000	9.8711
Worker	0.0124	8.4600e-003	0.0997	3.3000e-004	0.0369	2.6000e-004	0.0371	9.7900e-003	2.4000e-004	0.0100	0.0000	29.8044	29.8044	7.0000e-004	0.0000	29.8219
Total	0.0181	0.2017	0.1606	1.1900e-003	0.0578	5.9000e-004	0.0584	0.0156	5.6000e-004	0.0161	0.0000	114.9521	114.9521	6.1300e-003	0.0000	115.1055

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3.11 Building Construction - Phases 2 and 3 - 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	0.1195	1.0933	1.2345	2.0500e-003		0.0532	0.0532		0.0500	0.0500	0.0000	176.1716	176.1716	0.0419	0.0000	177.2193
Total	0.1195	1.0933	1.2345	2.0500e-003		0.0532	0.0532		0.0500	0.0500	0.0000	176.1716	176.1716	0.0419	0.0000	177.2193

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	9.0800e-003	0.3148	0.0924	1.1000e-003	0.0287	3.6000e-004	0.0291	8.2900e-003	3.4000e-004	8.6400e-003	0.0000	107.0244	107.0244	5.8900e-003	0.0000	107.1716
Worker	0.0840	0.0574	0.6764	2.2400e-003	0.2502	1.7700e-003	0.2519	0.0664	1.6300e-003	0.0681	0.0000	202.2438	202.2438	4.7600e-003	0.0000	202.3627
Total	0.0931	0.3722	0.7689	3.3400e-003	0.2789	2.1300e-003	0.2810	0.0747	1.9700e-003	0.0767	0.0000	309.2681	309.2681	0.0107	0.0000	309.5343

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3.11 Building Construction - Phases 2 and 3 - 2023**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	0.1195	1.0933	1.2345	2.0500e-003		0.0532	0.0532		0.0500	0.0500	0.0000	176.1714	176.1714	0.0419	0.0000	177.2191
Total	0.1195	1.0933	1.2345	2.0500e-003		0.0532	0.0532		0.0500	0.0500	0.0000	176.1714	176.1714	0.0419	0.0000	177.2191

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	9.0800e-003	0.3148	0.0924	1.1000e-003	0.0287	3.6000e-004	0.0291	8.2900e-003	3.4000e-004	8.6400e-003	0.0000	107.0244	107.0244	5.8900e-003	0.0000	107.1716
Worker	0.0840	0.0574	0.6764	2.2400e-003	0.2502	1.7700e-003	0.2519	0.0664	1.6300e-003	0.0681	0.0000	202.2438	202.2438	4.7600e-003	0.0000	202.3627
Total	0.0931	0.3722	0.7689	3.3400e-003	0.2789	2.1300e-003	0.2810	0.0747	1.9700e-003	0.0767	0.0000	309.2681	309.2681	0.0107	0.0000	309.5343

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3.11 Building Construction - Phases 2 and 3 - 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	0.0809	0.7394	0.8892	1.4800e-003		0.0337	0.0337		0.0317	0.0317	0.0000	127.5170	127.5170	0.0302	0.0000	128.2709
Total	0.0809	0.7394	0.8892	1.4800e-003		0.0337	0.0337		0.0317	0.0317	0.0000	127.5170	127.5170	0.0302	0.0000	128.2709

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	6.4300e-003	0.2273	0.0650	7.9000e-004	0.0208	2.6000e-004	0.0211	6.0000e-003	2.4000e-004	6.2500e-003	0.0000	77.1782	77.1782	4.1900e-003	0.0000	77.2831
Worker	0.0576	0.0378	0.4566	1.5600e-003	0.1810	1.2700e-003	0.1823	0.0481	1.1700e-003	0.0492	0.0000	141.5441	141.5441	3.1500e-003	0.0000	141.6229
Total	0.0641	0.2651	0.5216	2.3500e-003	0.2018	1.5300e-003	0.2034	0.0541	1.4100e-003	0.0555	0.0000	218.7223	218.7223	7.3400e-003	0.0000	218.9060

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3.11 Building Construction - Phases 2 and 3 - 2024**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	0.0809	0.7394	0.8892	1.4800e-003		0.0337	0.0337		0.0317	0.0317	0.0000	127.5169	127.5169	0.0302	0.0000	128.2707
Total	0.0809	0.7394	0.8892	1.4800e-003		0.0337	0.0337		0.0317	0.0317	0.0000	127.5169	127.5169	0.0302	0.0000	128.2707

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	6.4300e-003	0.2273	0.0650	7.9000e-004	0.0208	2.6000e-004	0.0211	6.0000e-003	2.4000e-004	6.2500e-003	0.0000	77.1782	77.1782	4.1900e-003	0.0000	77.2831
Worker	0.0576	0.0378	0.4566	1.5600e-003	0.1810	1.2700e-003	0.1823	0.0481	1.1700e-003	0.0492	0.0000	141.5441	141.5441	3.1500e-003	0.0000	141.6229
Total	0.0641	0.2651	0.5216	2.3500e-003	0.2018	1.5300e-003	0.2034	0.0541	1.4100e-003	0.0555	0.0000	218.7223	218.7223	7.3400e-003	0.0000	218.9060

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3.12 Paving - Phases 2 and 3 - 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	0.0213	0.2048	0.3145	4.9000e-004		0.0101	0.0101		9.2700e-003	9.2700e-003	0.0000	43.0570	43.0570	0.0139	0.0000	43.4052
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0213	0.2048	0.3145	4.9000e-004		0.0101	0.0101		9.2700e-003	9.2700e-003	0.0000	43.0570	43.0570	0.0139	0.0000	43.4052

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	8.4000e-004	0.0296	8.4600e-003	1.0000e-004	2.7100e-003	3.0000e-005	2.7400e-003	7.8000e-004	3.0000e-005	8.1000e-004	0.0000	10.0566	10.0566	5.5000e-004	0.0000	10.0702
Worker	6.0100e-003	3.9400e-003	0.0476	1.6000e-004	0.0189	1.3000e-004	0.0190	5.0100e-003	1.2000e-004	5.1300e-003	0.0000	14.7549	14.7549	3.3000e-004	0.0000	14.7631
Total	6.8500e-003	0.0336	0.0561	2.6000e-004	0.0216	1.6000e-004	0.0217	5.7900e-003	1.5000e-004	5.9400e-003	0.0000	24.8115	24.8115	8.8000e-004	0.0000	24.8333

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3.12 Paving - Phases 2 and 3 - 2024**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	0.0213	0.2048	0.3145	4.9000e-004		0.0101	0.0101		9.2700e-003	9.2700e-003	0.0000	43.0570	43.0570	0.0139	0.0000	43.4051
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0213	0.2048	0.3145	4.9000e-004		0.0101	0.0101		9.2700e-003	9.2700e-003	0.0000	43.0570	43.0570	0.0139	0.0000	43.4051

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	8.4000e-004	0.0296	8.4600e-003	1.0000e-004	2.7100e-003	3.0000e-005	2.7400e-003	7.8000e-004	3.0000e-005	8.1000e-004	0.0000	10.0566	10.0566	5.5000e-004	0.0000	10.0702
Worker	6.0100e-003	3.9400e-003	0.0476	1.6000e-004	0.0189	1.3000e-004	0.0190	5.0100e-003	1.2000e-004	5.1300e-003	0.0000	14.7549	14.7549	3.3000e-004	0.0000	14.7631
Total	6.8500e-003	0.0336	0.0561	2.6000e-004	0.0216	1.6000e-004	0.0217	5.7900e-003	1.5000e-004	5.9400e-003	0.0000	24.8115	24.8115	8.8000e-004	0.0000	24.8333

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3.13 Architectural Coating - Phases 2 and 3 - 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	1.0744					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8900e-003	0.0262	0.0389	6.0000e-005		1.3100e-003	1.3100e-003		1.3100e-003	1.3100e-003	0.0000	5.4895	5.4895	3.1000e-004	0.0000	5.4972
Total	1.0783	0.0262	0.0389	6.0000e-005		1.3100e-003	1.3100e-003		1.3100e-003	1.3100e-003	0.0000	5.4895	5.4895	3.1000e-004	0.0000	5.4972

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	1.6800e-003	0.0592	0.0169	2.1000e-004	5.4200e-003	7.0000e-005	5.4900e-003	1.5600e-003	6.0000e-005	1.6300e-003	0.0000	20.1131	20.1131	1.0900e-003	0.0000	20.1404
Worker	0.0180	0.0118	0.1428	4.9000e-004	0.0566	4.0000e-004	0.0570	0.0150	3.6000e-004	0.0154	0.0000	44.2647	44.2647	9.9000e-004	0.0000	44.2894
Total	0.0197	0.0711	0.1597	7.0000e-004	0.0620	4.7000e-004	0.0625	0.0166	4.2000e-004	0.0170	0.0000	64.3778	64.3778	2.0800e-003	0.0000	64.4298

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3.13 Architectural Coating - Phases 2 and 3 - 2024**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	1.0744					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8900e-003	0.0262	0.0389	6.0000e-005		1.3100e-003	1.3100e-003		1.3100e-003	1.3100e-003	0.0000	5.4895	5.4895	3.1000e-004	0.0000	5.4972
Total	1.0783	0.0262	0.0389	6.0000e-005		1.3100e-003	1.3100e-003		1.3100e-003	1.3100e-003	0.0000	5.4895	5.4895	3.1000e-004	0.0000	5.4972

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	1.6800e-003	0.0592	0.0169	2.1000e-004	5.4200e-003	7.0000e-005	5.4900e-003	1.5600e-003	6.0000e-005	1.6300e-003	0.0000	20.1131	20.1131	1.0900e-003	0.0000	20.1404
Worker	0.0180	0.0118	0.1428	4.9000e-004	0.0566	4.0000e-004	0.0570	0.0150	3.6000e-004	0.0154	0.0000	44.2647	44.2647	9.9000e-004	0.0000	44.2894
Total	0.0197	0.0711	0.1597	7.0000e-004	0.0620	4.7000e-004	0.0625	0.0166	4.2000e-004	0.0170	0.0000	64.3778	64.3778	2.0800e-003	0.0000	64.4298

4.0 Operational Detail - Mobile

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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	0.5540	2.7968	6.6649	0.0275	2.4727	0.0200	2.4927	0.6625	0.0186	0.6810	0.0000	2,550.3837	2,550.3837	0.1146	0.0000	2,553.2478
Unmitigated	0.5540	2.7968	6.6649	0.0275	2.4727	0.0200	2.4927	0.6625	0.0186	0.6810	0.0000	2,550.3837	2,550.3837	0.1146	0.0000	2,553.2478

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,362.34	1,304.48	1325.52	4,601,434	4,601,434
Enclosed Parking with Elevator	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	890.51	1,478.02	1018.86	1,352,980	1,352,980
Other Asphalt Surfaces	0.00	0.00	0.00		
Regional Shopping Center	263.17	306.60	171.62	554,321	554,321
Total	2,516.01	3,089.10	2,516.00	6,508,735	6,508,735

4.3 Trip Type Information

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	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	40.00	19.40	40.60	86	11	3
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
High Turnover (Sit Down	16.60	8.40	6.90	8.50	72.50	19.00	37	20	43
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Enclosed Parking with Elevator	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
High Turnover (Sit Down Restaurant)	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Other Asphalt Surfaces	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Regional Shopping Center	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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	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	797.4761	797.4761	0.0284	7.1000e-003	800.3011
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	797.4761	797.4761	0.0284	7.1000e-003	800.3011
NaturalGas Mitigated	0.0218	0.1894	0.1017	1.1900e-003		0.0151	0.0151		0.0151	0.0151	0.0000	215.8489	215.8489	4.1400e-003	3.9600e-003	217.1315
NaturalGas Unmitigated	0.0218	0.1894	0.1017	1.1900e-003		0.0151	0.0151		0.0151	0.0151	0.0000	215.8489	215.8489	4.1400e-003	3.9600e-003	217.1315

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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	3.00542e+006	0.0162	0.1385	0.0589	8.8000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	160.3808	160.3808	3.0700e-003	2.9400e-003	161.3338
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
High Turnover (Sit Down Restaurant)	1.02483e+006	5.5300e-003	0.0502	0.0422	3.0000e-004		3.8200e-003	3.8200e-003		3.8200e-003	3.8200e-003	0.0000	54.6890	54.6890	1.0500e-003	1.0000e-003	55.0140
Other Asphalt Surfaces	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
Regional Shopping Center	14600	8.0000e-005	7.2000e-004	6.0000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7791	0.7791	1.0000e-005	1.0000e-005	0.7837
Total		0.0218	0.1895	0.1017	1.1800e-003		0.0151	0.0151		0.0151	0.0151	0.0000	215.8488	215.8488	4.1300e-003	3.9500e-003	217.1315

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5.2 Energy by Land Use - NaturalGas**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	3.00542e+006	0.0162	0.1385	0.0589	8.8000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	160.3808	160.3808	3.0700e-003	2.9400e-003	161.3338
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
High Turnover (Sit Down Restaurant)	1.02483e+006	5.5300e-003	0.0502	0.0422	3.0000e-004		3.8200e-003	3.8200e-003		3.8200e-003	3.8200e-003	0.0000	54.6890	54.6890	1.0500e-003	1.0000e-003	55.0140
Other Asphalt Surfaces	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
Regional Shopping Center	14600	8.0000e-005	7.2000e-004	6.0000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7791	0.7791	1.0000e-005	1.0000e-005	0.7837
Total		0.0218	0.1895	0.1017	1.1800e-003		0.0151	0.0151		0.0151	0.0151	0.0000	215.8488	215.8488	4.1300e-003	3.9500e-003	217.1315

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5.3 Energy by Land Use - Electricity**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.0455e+006	266.4096	9.4800e-003	2.3700e-003	267.3534
Enclosed Parking with Elevator	1.85645e+006	473.0500	0.0168	4.2100e-003	474.7258
High Turnover (Sit Down Restaurant)	144169	36.7364	1.3100e-003	3.3000e-004	36.8665
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	83512	21.2801	7.6000e-004	1.9000e-004	21.3555
Total		797.4761	0.0284	7.1000e-003	800.3011

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5.3 Energy by Land Use - Electricity**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.0455e+006	266.4096	9.4800e-003	2.3700e-003	267.3534
Enclosed Parking with Elevator	1.85645e+006	473.0500	0.0168	4.2100e-003	474.7258
High Turnover (Sit Down Restaurant)	144169	36.7364	1.3100e-003	3.3000e-004	36.8665
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	83512	21.2801	7.6000e-004	1.9000e-004	21.3555
Total		797.4761	0.0284	7.1000e-003	800.3011

6.0 Area Detail**6.1 Mitigation Measures Area**

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	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	1.4385	0.0313	2.7201	1.4000e-004		0.0151	0.0151		0.0151	0.0151	0.0000	4.4507	4.4507	4.3000e-003	0.0000	4.5580
Unmitigated	1.4385	0.0313	2.7201	1.4000e-004		0.0151	0.0151		0.0151	0.0151	0.0000	4.4507	4.4507	4.3000e-003	0.0000	4.5580

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	0.1126					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2437					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	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
Landscaping	0.0823	0.0313	2.7201	1.4000e-004		0.0151	0.0151		0.0151	0.0151	0.0000	4.4507	4.4507	4.3000e-003	0.0000	4.5580
Total	1.4385	0.0313	2.7201	1.4000e-004		0.0151	0.0151		0.0151	0.0151	0.0000	4.4507	4.4507	4.3000e-003	0.0000	4.5580

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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	0.1126					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2437					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	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
Landscaping	0.0823	0.0313	2.7201	1.4000e-004		0.0151	0.0151		0.0151	0.0151	0.0000	4.4507	4.4507	4.3000e-003	0.0000	4.5580
Total	1.4385	0.0313	2.7201	1.4000e-004		0.0151	0.0151		0.0151	0.0151	0.0000	4.4507	4.4507	4.3000e-003	0.0000	4.5580

7.0 Water Detail**7.1 Mitigation Measures Water**

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	101.5108	0.6283	0.0156	121.8697
Unmitigated	101.5108	0.6283	0.0156	121.8697

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	17.1355 / 10.8028	92.8736	0.5615	0.0140	111.0712
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	1.50249 / 0.0959037	5.7334	0.0492	1.2000e-003	7.3204
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.540729 / 0.331415	2.9039	0.0177	4.4000e-004	3.4780
Total		101.5108	0.6283	0.0156	121.8697

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Annual

7.2 Water by Land Use**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	17.1355 / 10.8028	92.8736	0.5615	0.0140	111.0712
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	1.50249 / 0.0959037	5.7334	0.0492	1.2000e-003	7.3204
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.540729 / 0.331415	2.9039	0.0177	4.4000e-004	3.4780
Total		101.5108	0.6283	0.0156	121.8697

8.0 Waste Detail**8.1 Mitigation Measures Waste**

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Annual

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	38.0730	2.2501	0.0000	94.3242
Unmitigated	38.0730	2.2501	0.0000	94.3242

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	120.98	24.5579	1.4513	0.0000	60.8410
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	58.91	11.9582	0.7067	0.0000	29.6259
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	7.67	1.5569	0.0920	0.0000	3.8573
Total		38.0730	2.2501	0.0000	94.3242

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Annual

8.2 Waste by Land Use**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	120.98	24.5579	1.4513	0.0000	60.8410
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	58.91	11.9582	0.7067	0.0000	29.6259
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	7.67	1.5569	0.0920	0.0000	3.8573
Total		38.0730	2.2501	0.0000	94.3242

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

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User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

Pacific Coast Commons Specific Plan Project
South Coast AQMD Air District, Summer

1.0 Project Characteristics**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	792.00	Space	0.00	316,800.00	0
Other Asphalt Surfaces	12.65	1000sqft	0.00	12,650.00	0
High Turnover (Sit Down Restaurant)	4.95	1000sqft	0.00	3,952.00	0
Apartments Mid Rise	263.00	Dwelling Unit	0.00	327,021.00	752
Regional Shopping Center	7.30	1000sqft	5.35	7,300.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	8			Operational Year	2025
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	561.77	CH4 Intensity (lb/MW hr)	0.02	N2O Intensity (lb/MW hr)	0.005

1.3 User Entered Comments & Non-Default Data

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

Project Characteristics - Consistent with the DEIR's model.

Land Use - See SWAPE comment regarding underestimated land use sizes.

Construction Phase - Consistent with the DEIR's model.

Trips and VMT - See SWAPE comment regarding hauling trips. Worker and vendor trips consistent with the DEIR's model.

On-road Fugitive Dust -

Demolition - See SWAPE comment regarding demolition.

Grading - See SWAPE comment regarding acres of grading values, material moisture content, and material silt content. Material export consistent with the DEIR's model.

Architectural Coating - Architectural coating EFs consistent with the DEIR's model. See SWAPE comment regarding architectural coating areas.

Vehicle Trips - See SWAPE comment regarding operational vehicle trip rates.

Woodstoves - Consistent with the DEIR's model.

Area Coating - See SWAPE comment regarding area coating areas.

Energy Use -

Water And Wastewater - See SWAPE comment regarding wastewater treatment percentages.

Construction Off-road Equipment Mitigation - See SWAPE comment regarding construction-related mitigation measures.

Mobile Land Use Mitigation - See SWAPE comment regarding operational mitigation measures.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblConstructionPhase	NumDays	20.00	43.00
tblConstructionPhase	NumDays	20.00	44.00
tblConstructionPhase	NumDays	230.00	262.00

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tblConstructionPhase	NumDays	230.00	195.00
tblConstructionPhase	NumDays	20.00	21.00
tblConstructionPhase	NumDays	20.00	42.00
tblConstructionPhase	NumDays	20.00	44.00
tblConstructionPhase	NumDays	20.00	42.00
tblConstructionPhase	NumDays	20.00	43.00
tblConstructionPhase	NumDays	20.00	44.00
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	NumDays	10.00	22.00
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	223.55	237.00
tblFireplaces	NumberNoFireplace	26.30	26.00
tblFireplaces	NumberWood	13.15	0.00
tblGrading	MaterialExported	0.00	17,000.00
tblLandUse	LandUseSquareFeet	4,950.00	3,952.00
tblLandUse	LandUseSquareFeet	263,000.00	327,021.00
tblLandUse	LotAcreage	7.13	0.00
tblLandUse	LotAcreage	0.29	0.00
tblLandUse	LotAcreage	0.11	0.00
tblLandUse	LotAcreage	6.92	0.00
tblLandUse	LotAcreage	0.17	5.35
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.02
tblProjectCharacteristics	CO2IntensityFactor	702.44	561.77
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	84.00	60.00

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tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	84.00	30.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	WorkerTripNumber	15.00	80.00
tblTripsAndVMT	WorkerTripNumber	332.00	300.00
tblTripsAndVMT	WorkerTripNumber	15.00	80.00
tblTripsAndVMT	WorkerTripNumber	66.00	240.00
tblTripsAndVMT	WorkerTripNumber	18.00	50.00
tblTripsAndVMT	WorkerTripNumber	15.00	80.00
tblTripsAndVMT	WorkerTripNumber	332.00	120.00
tblTripsAndVMT	WorkerTripNumber	15.00	40.00
tblTripsAndVMT	WorkerTripNumber	66.00	80.00
tblTripsAndVMT	WorkerTripNumber	15.00	100.00
tblTripsAndVMT	WorkerTripNumber	18.00	120.00
tblTripsAndVMT	WorkerTripNumber	15.00	160.00
tblVehicleTrips	HS_TTP	19.20	19.40
tblVehicleTrips	HW_TTP	40.20	40.00
tblVehicleTrips	ST_TR	6.39	4.96
tblVehicleTrips	ST_TR	158.37	298.59
tblVehicleTrips	ST_TR	49.97	42.00

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tblVehicleTrips	SU_TR	5.86	5.04
tblVehicleTrips	SU_TR	131.84	205.83
tblVehicleTrips	SU_TR	25.24	23.51
tblVehicleTrips	WD_TR	6.65	5.18
tblVehicleTrips	WD_TR	127.15	179.90
tblVehicleTrips	WD_TR	42.70	36.05
tblWoodstoves	WoodstoveDayYear	25.00	0.00
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					
2021	4.1271	41.5877	26.0668	0.0676	18.6891	2.0505	20.7396	10.0973	1.8865	11.9839	0.0000	6,782.5210	6,782.5210	1.2234	0.0000	6,812.9879
2022	50.6983	21.9583	21.2160	0.0474	7.5106	0.9489	8.4595	3.6231	0.8731	4.4961	0.0000	4,645.7797	4,645.7797	0.9663	0.0000	4,663.0756
2023	3.1451	29.1616	27.0512	0.0877	19.5356	1.2769	20.8125	10.3233	1.1748	11.4981	0.0000	9,024.1619	9,024.1619	1.2494	0.0000	9,055.3777
2024	52.3840	18.1519	27.1750	0.0723	3.9608	0.6409	4.5194	1.0592	0.6025	1.6023	0.0000	7,235.9735	7,235.9735	0.8828	0.0000	7,258.0419
Maximum	52.3840	41.5877	27.1750	0.0877	19.5356	2.0505	20.8125	10.3233	1.8865	11.9839	0.0000	9,024.1619	9,024.1619	1.2494	0.0000	9,055.3777

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

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					
2021	4.1271	41.5877	26.0668	0.0676	18.6891	2.0505	20.7396	10.0973	1.8865	11.9839	0.0000	6,782.5210	6,782.5210	1.2234	0.0000	6,812.9879
2022	50.6983	21.9583	21.2160	0.0474	7.5106	0.9489	8.4595	3.6231	0.8731	4.4961	0.0000	4,645.7797	4,645.7797	0.9663	0.0000	4,663.0756
2023	3.1451	29.1616	27.0512	0.0877	19.5356	1.2769	20.8125	10.3233	1.1748	11.4981	0.0000	9,024.1619	9,024.1619	1.2494	0.0000	9,055.3777
2024	52.3840	18.1519	27.1750	0.0723	3.9608	0.6409	4.5194	1.0592	0.6025	1.6023	0.0000	7,235.9735	7,235.9735	0.8828	0.0000	7,258.0419
Maximum	52.3840	41.5877	27.1750	0.0877	19.5356	2.0505	20.8125	10.3233	1.8865	11.9839	0.0000	9,024.1619	9,024.1619	1.2494	0.0000	9,055.3777

[illegible]

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

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	8.5499	4.1819	23.4334	0.0263		0.4384	0.4384		0.4384	0.4384	0.0000	5,058.0716	5,058.0716	0.1341	0.0920	5,088.8429
Energy	0.1195	1.0380	0.5574	6.5200e-003		0.0826	0.0826		0.0826	0.0826		1,303.7404	1,303.7404	0.0250	0.0239	1,311.4879
Mobile	3.9048	17.6168	43.6820	0.1781	15.5725	0.1246	15.6971	4.1658	0.1157	4.2815		18,192.4041	18,192.4041	0.7958		18,212.3001
Total	12.5742	22.8367	67.6728	0.2109	15.5725	0.6456	16.2181	4.1658	0.6367	4.8025	0.0000	24,554.2161	24,554.2161	0.9549	0.1159	24,612.6309

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	8.5499	4.1819	23.4334	0.0263		0.4384	0.4384		0.4384	0.4384	0.0000	5,058.0716	5,058.0716	0.1341	0.0920	5,088.8429
Energy	0.1195	1.0380	0.5574	6.5200e-003		0.0826	0.0826		0.0826	0.0826		1,303.7404	1,303.7404	0.0250	0.0239	1,311.4879
Mobile	3.9048	17.6168	43.6820	0.1781	15.5725	0.1246	15.6971	4.1658	0.1157	4.2815		18,192.4041	18,192.4041	0.7958		18,212.3001
Total	12.5742	22.8367	67.6728	0.2109	15.5725	0.6456	16.2181	4.1658	0.6367	4.8025	0.0000	24,554.2161	24,554.2161	0.9549	0.1159	24,612.6309

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

	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
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 - Phase 1	Demolition	10/1/2021	10/31/2021	5	21	
2	Site Preparation - Phase 1	Site Preparation	11/1/2021	11/30/2021	5	22	
3	Grading - Phase 1	Grading	12/1/2021	1/31/2022	5	44	
4	Building Construction - Phase 1	Building Construction	2/1/2022	10/31/2022	5	195	
5	Paving - Phase 1	Paving	11/1/2022	12/31/2022	5	44	
6	Architectural Coating - Phase 1	Architectural Coating	11/1/2022	12/31/2022	5	44	
7	Demolition - Phases 2 and 3	Demolition	1/1/2023	2/28/2023	5	42	
8	Site Preparation - Phases 2 and 3	Site Preparation	3/1/2023	3/30/2023	5	22	
9	Grading - Phases 2 and 3	Grading	4/1/2023	5/30/2023	5	42	
10	Building Construction - Phases 2 and 3	Building Construction	6/1/2023	5/31/2024	5	262	
11	Paving - Phases 2 and 3	Paving	6/1/2024	7/31/2024	5	43	
12	Architectural Coating - Phases 2 and 3	Architectural Coating	6/1/2024	7/31/2024	5	43	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 662,218; Residential Outdoor: 220,739; Non-Residential Indoor: 18,378; Non-Residential Outdoor: 6,126; Striped Parking Area: 19,767 (Architectural Coating – sqft)

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition - Phase 1	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition - Phase 1	Excavators	3	8.00	158	0.38
Demolition - Phase 1	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation - Phase 1	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation - Phase 1	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading - Phase 1	Excavators	1	8.00	158	0.38
Grading - Phase 1	Graders	1	8.00	187	0.41
Grading - Phase 1	Rubber Tired Dozers	1	8.00	247	0.40
Grading - Phase 1	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction - Phase 1	Cranes	1	7.00	231	0.29
Building Construction - Phase 1	Forklifts	3	8.00	89	0.20
Building Construction - Phase 1	Generator Sets	1	8.00	84	0.74
Building Construction - Phase 1	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction - Phase 1	Welders	1	8.00	46	0.45
Paving - Phase 1	Pavers	2	8.00	130	0.42
Paving - Phase 1	Paving Equipment	2	8.00	132	0.36
Paving - Phase 1	Rollers	2	8.00	80	0.38
Architectural Coating - Phase 1	Air Compressors	1	6.00	78	0.48
Demolition - Phases 2 and 3	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition - Phases 2 and 3	Excavators	3	8.00	158	0.38
Demolition - Phases 2 and 3	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation - Phases 2 and 3	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation - Phases 2 and 3	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading - Phases 2 and 3	Excavators	1	8.00	158	0.38
Grading - Phases 2 and 3	Graders	1	8.00	187	0.41

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Grading - Phases 2 and 3	Rubber Tired Dozers	1	8.00	247	0.40
Grading - Phases 2 and 3	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction - Phases 2 and 3	Cranes	1	7.00	231	0.29
Building Construction - Phases 2 and 3	Forklifts	3	8.00	89	0.20
Building Construction - Phases 2 and 3	Generator Sets	1	8.00	84	0.74
Building Construction - Phases 2 and 3	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction - Phases 2 and 3	Welders	1	8.00	46	0.45
Paving - Phases 2 and 3	Pavers	2	8.00	130	0.42
Paving - Phases 2 and 3	Paving Equipment	2	8.00	132	0.36
Paving - Phases 2 and 3	Rollers	2	8.00	80	0.38
Architectural Coating - Phases 2 and 3	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 - Phase 1	6	80.00	20.00	406.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation - Phase 1	7	50.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading - Phase 1	6	80.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction - Phase 1	9	120.00	30.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving - Phase 1	6	40.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating - Phase 1	1	80.00	20.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition - Phases 2 and 3	6	100.00	40.00	406.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation - Phases 2 and 3	7	120.00	20.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading - Phases 2 and 3	6	160.00	20.00	2,125.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction - Phases 2 and 3	9	300.00	60.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving - Phases 2 and 3	6	80.00	20.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating - Phases 2 and 3	1	240.00	40.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.1 Mitigation Measures Construction**3.2 Demolition - Phase 1 - 2021****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					4.1873	0.0000	4.1873	0.6340	0.0000	0.6340			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411		3,747.9449	3,747.9449	1.0549		3,774.3174
Total	3.1651	31.4407	21.5650	0.0388	4.1873	1.5513	5.7386	0.6340	1.4411	2.0751		3,747.9449	3,747.9449	1.0549		3,774.3174

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.2 Demolition - Phase 1 - 2021**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	0.1403	4.8911	1.0354	0.0148	0.3378	0.0152	0.3530	0.0926	0.0145	0.1071		1,603.776 5	1,603.776 5	0.1070		1,606.451 4
Vendor	0.0557	1.9075	0.4527	5.1000e-003	0.1280	3.8400e-003	0.1318	0.0369	3.6700e-003	0.0405		544.8769	544.8769	0.0330		545.7009
Worker	0.3377	0.2190	3.0138	8.8900e-003	0.8942	6.5800e-003	0.9008	0.2372	6.0600e-003	0.2432		885.9227	885.9227	0.0238		886.5182
Total	0.5336	7.0176	4.5018	0.0288	1.3600	0.0256	1.3856	0.3666	0.0242	0.3908		3,034.576 1	3,034.576 1	0.1638		3,038.670 6

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					4.1873	0.0000	4.1873	0.6340	0.0000	0.6340			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411	0.0000	3,747.944 9	3,747.944 9	1.0549		3,774.317 4
Total	3.1651	31.4407	21.5650	0.0388	4.1873	1.5513	5.7386	0.6340	1.4411	2.0751	0.0000	3,747.944 9	3,747.944 9	1.0549		3,774.317 4

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.2 Demolition - Phase 1 - 2021**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	0.1403	4.8911	1.0354	0.0148	0.3378	0.0152	0.3530	0.0926	0.0145	0.1071		1,603.776 5	1,603.776 5	0.1070		1,606.451 4
Vendor	0.0557	1.9075	0.4527	5.1000e-003	0.1280	3.8400e-003	0.1318	0.0369	3.6700e-003	0.0405		544.8769	544.8769	0.0330		545.7009
Worker	0.3377	0.2190	3.0138	8.8900e-003	0.8942	6.5800e-003	0.9008	0.2372	6.0600e-003	0.2432		885.9227	885.9227	0.0238		886.5182
Total	0.5336	7.0176	4.5018	0.0288	1.3600	0.0256	1.3856	0.3666	0.0242	0.3908		3,034.576 1	3,034.576 1	0.1638		3,038.670 6

3.3 Site Preparation - Phase 1 - 2021**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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.656 9	3,685.656 9	1.1920		3,715.457 3
Total	3.8882	40.4971	21.1543	0.0380	18.0663	2.0445	20.1107	9.9307	1.8809	11.8116		3,685.656 9	3,685.656 9	1.1920		3,715.457 3

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.3 Site Preparation - Phase 1 - 2021**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	0.0278	0.9538	0.2263	2.5500e-003	0.0640	1.9200e-003	0.0659	0.0184	1.8400e-003	0.0203		272.4385	272.4385	0.0165		272.8505
Worker	0.2111	0.1369	1.8836	5.5600e-003	0.5589	4.1100e-003	0.5630	0.1482	3.7900e-003	0.1520		553.7017	553.7017	0.0149		554.0739
Total	0.2389	1.0906	2.1100	8.1100e-003	0.6229	6.0300e-003	0.6289	0.1667	5.6300e-003	0.1723		826.1401	826.1401	0.0314		826.9244

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809	0.0000	3,685.6569	3,685.6569	1.1920		3,715,4573
Total	3.8882	40.4971	21.1543	0.0380	18.0663	2.0445	20.1107	9.9307	1.8809	11.8116	0.0000	3,685.6569	3,685.6569	1.1920		3,715,4573

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.3 Site Preparation - Phase 1 - 2021**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	0.0278	0.9538	0.2263	2.5500e-003	0.0640	1.9200e-003	0.0659	0.0184	1.8400e-003	0.0203		272.4385	272.4385	0.0165		272.8505
Worker	0.2111	0.1369	1.8836	5.5600e-003	0.5589	4.1100e-003	0.5630	0.1482	3.7900e-003	0.1520		553.7017	553.7017	0.0149		554.0739
Total	0.2389	1.0906	2.1100	8.1100e-003	0.6229	6.0300e-003	0.6289	0.1667	5.6300e-003	0.1723		826.1401	826.1401	0.0314		826.9244

3.4 Grading - Phase 1 - 2021**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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.2903	24.7367	15.8575	0.0296		1.1599	1.1599		1.0671	1.0671		2,871.9285	2,871.9285	0.9288		2,895.1495
Total	2.2903	24.7367	15.8575	0.0296	6.5523	1.1599	7.7123	3.3675	1.0671	4.4346		2,871.9285	2,871.9285	0.9288		2,895.1495

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.4 Grading - Phase 1 - 2021**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	0.0278	0.9538	0.2263	2.5500e-003	0.0640	1.9200e-003	0.0659	0.0184	1.8400e-003	0.0203		272.4385	272.4385	0.0165		272.8505
Worker	0.3377	0.2190	3.0138	8.8900e-003	0.8942	6.5800e-003	0.9008	0.2372	6.0600e-003	0.2432		885.9227	885.9227	0.0238		886.5182
Total	0.3655	1.1728	3.2401	0.0114	0.9582	8.5000e-003	0.9667	0.2556	7.9000e-003	0.2635		1,158.3611	1,158.3611	0.0403		1,159.3687

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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.2903	24.7367	15.8575	0.0296		1.1599	1.1599		1.0671	1.0671	0.0000	2,871.9285	2,871.9285	0.9288		2,895.1495
Total	2.2903	24.7367	15.8575	0.0296	6.5523	1.1599	7.7123	3.3675	1.0671	4.4346	0.0000	2,871.9285	2,871.9285	0.9288		2,895.1495

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.4 Grading - Phase 1 - 2021**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	0.0278	0.9538	0.2263	2.5500e-003	0.0640	1.9200e-003	0.0659	0.0184	1.8400e-003	0.0203		272.4385	272.4385	0.0165		272.8505
Worker	0.3377	0.2190	3.0138	8.8900e-003	0.8942	6.5800e-003	0.9008	0.2372	6.0600e-003	0.2432		885.9227	885.9227	0.0238		886.5182
Total	0.3655	1.1728	3.2401	0.0114	0.9582	8.5000e-003	0.9667	0.2556	7.9000e-003	0.2635		1,158.3611	1,158.3611	0.0403		1,159.3687

3.4 Grading - Phase 1 - 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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656		2,872.0464	2,872.0464	0.9289		2,895.2684
Total	1.9486	20.8551	15.2727	0.0297	6.5523	0.9409	7.4932	3.3675	0.8656	4.2331		2,872.0464	2,872.0464	0.9289		2,895.2684

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.4 Grading - Phase 1 - 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	0.0261	0.9053	0.2139	2.5300e-003	0.0640	1.6600e-003	0.0657	0.0184	1.5900e-003	0.0200		270.0591	270.0591	0.0159		270.4558
Worker	0.3168	0.1978	2.7868	8.5700e-003	0.8942	6.3900e-003	0.9006	0.2372	5.8900e-003	0.2430		854.1791	854.1791	0.0215		854.7174
Total	0.3429	1.1032	3.0007	0.0111	0.9582	8.0500e-003	0.9663	0.2556	7.4800e-003	0.2631		1,124.2383	1,124.2383	0.0374		1,125.1732

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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656	0.0000	2,872.0464	2,872.0464	0.9289		2,895.2684
Total	1.9486	20.8551	15.2727	0.0297	6.5523	0.9409	7.4932	3.3675	0.8656	4.2331	0.0000	2,872.0464	2,872.0464	0.9289		2,895.2684

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.4 Grading - Phase 1 - 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	0.0261	0.9053	0.2139	2.5300e-003	0.0640	1.6600e-003	0.0657	0.0184	1.5900e-003	0.0200		270.0591	270.0591	0.0159		270.4558
Worker	0.3168	0.1978	2.7868	8.5700e-003	0.8942	6.3900e-003	0.9006	0.2372	5.8900e-003	0.2430		854.1791	854.1791	0.0215		854.7174
Total	0.3429	1.1032	3.0007	0.0111	0.9582	8.0500e-003	0.9663	0.2556	7.4800e-003	0.2631		1,124.2383	1,124.2383	0.0374		1,125.1732

3.5 Building Construction - Phase 1 - 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	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.5 Building Construction - Phase 1 - 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	0.0783	2.7160	0.6417	7.5800e-003	0.1920	4.9900e-003	0.1970	0.0553	4.7700e-003	0.0601		810.1774	810.1774	0.0476		811.3673
Worker	0.4751	0.2968	4.1802	0.0129	1.3413	9.5900e-003	1.3509	0.3557	8.8300e-003	0.3646		1,281.2687	1,281.2687	0.0323		1,282.0761
Total	0.5534	3.0128	4.8219	0.0204	1.5333	0.0146	1.5479	0.4110	0.0136	0.4246		2,091.4461	2,091.4461	0.0799		2,093.4434

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	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.5 Building Construction - Phase 1 - 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	0.0783	2.7160	0.6417	7.5800e-003	0.1920	4.9900e-003	0.1970	0.0553	4.7700e-003	0.0601		810.1774	810.1774	0.0476		811.3673
Worker	0.4751	0.2968	4.1802	0.0129	1.3413	9.5900e-003	1.3509	0.3557	8.8300e-003	0.3646		1,281.2687	1,281.2687	0.0323		1,282.0761
Total	0.5534	3.0128	4.8219	0.0204	1.5333	0.0146	1.5479	0.4110	0.0136	0.4246		2,091.4461	2,091.4461	0.0799		2,093.4434

3.6 Paving - Phase 1 - 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	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.6 Paving - Phase 1 - 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	0.0261	0.9053	0.2139	2.5300e-003	0.0640	1.6600e-003	0.0657	0.0184	1.5900e-003	0.0200		270.0591	270.0591	0.0159		270.4558
Worker	0.1584	0.0989	1.3934	4.2900e-003	0.4471	3.2000e-003	0.4503	0.1186	2.9400e-003	0.1215		427.0896	427.0896	0.0108		427.3587
Total	0.1845	1.0043	1.6073	6.8200e-003	0.5111	4.8600e-003	0.5160	0.1370	4.5300e-003	0.1415		697.1487	697.1487	0.0266		697.8145

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	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104

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3.6 Paving - Phase 1 - 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	0.0261	0.9053	0.2139	2.5300e-003	0.0640	1.6600e-003	0.0657	0.0184	1.5900e-003	0.0200		270.0591	270.0591	0.0159		270.4558
Worker	0.1584	0.0989	1.3934	4.2900e-003	0.4471	3.2000e-003	0.4503	0.1186	2.9400e-003	0.1215		427.0896	427.0896	0.0108		427.3587
Total	0.1845	1.0043	1.6073	6.8200e-003	0.5111	4.8600e-003	0.5160	0.1370	4.5300e-003	0.1415		697.1487	697.1487	0.0266		697.8145

3.7 Architectural Coating - Phase 1 - 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					
Archit. Coating	48.8375					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	49.0421	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

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3.7 Architectural Coating - Phase 1 - 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	0.0522	1.8107	0.4278	5.0600e-003	0.1280	3.3300e-003	0.1313	0.0369	3.1800e-003	0.0400		540.1183	540.1183	0.0317		540.9115
Worker	0.3168	0.1978	2.7868	8.5700e-003	0.8942	6.3900e-003	0.9006	0.2372	5.8900e-003	0.2430		854.1791	854.1791	0.0215		854.7174
Total	0.3690	2.0085	3.2146	0.0136	1.0222	9.7200e-003	1.0319	0.2740	9.0700e-003	0.2831		1,394.2974	1,394.2974	0.0533		1,395.6289

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	48.8375					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	49.0421	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.7 Architectural Coating - Phase 1 - 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	0.0522	1.8107	0.4278	5.0600e-003	0.1280	3.3300e-003	0.1313	0.0369	3.1800e-003	0.0400		540.1183	540.1183	0.0317		540.9115
Worker	0.3168	0.1978	2.7868	8.5700e-003	0.8942	6.3900e-003	0.9006	0.2372	5.8900e-003	0.2430		854.1791	854.1791	0.0215		854.7174
Total	0.3690	2.0085	3.2146	0.0136	1.0222	9.7200e-003	1.0319	0.2740	9.0700e-003	0.2831		1,394.2974	1,394.2974	0.0533		1,395.6289

3.8 Demolition - Phases 2 and 3 - 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					
Fugitive Dust					2.0936	0.0000	2.0936	0.3170	0.0000	0.3170			0.0000			0.0000
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280		3,746.9840	3,746.9840	1.0494		3,773.2183
Total	2.2691	21.4844	19.6434	0.0388	2.0936	0.9975	3.0912	0.3170	0.9280	1.2450		3,746.9840	3,746.9840	1.0494		3,773.2183

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3.8 Demolition - Phases 2 and 3 - 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	0.0441	1.4618	0.4663	7.0100e-003	0.1689	2.7100e-003	0.1716	0.0463	2.5900e-003	0.0489		760.9963	760.9963	0.0484		762.2050
Vendor	0.0779	2.7377	0.7709	9.7900e-003	0.2560	3.0800e-003	0.2591	0.0737	2.9400e-003	0.0766		1,047.4709	1,047.4709	0.0553		1,048.8543
Worker	0.3723	0.2238	3.2170	0.0103	1.1178	7.7800e-003	1.1256	0.2964	7.1700e-003	0.3036		1,027.9302	1,027.9302	0.0243		1,028.5370
Total	0.4942	4.4234	4.4541	0.0271	1.5427	0.0136	1.5563	0.4164	0.0127	0.4291		2,836.3974	2,836.3974	0.1280		2,839.5963

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					2.0936	0.0000	2.0936	0.3170	0.0000	0.3170			0.0000			0.0000
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280	0.0000	3,746.9840	3,746.9840	1.0494		3,773.2183
Total	2.2691	21.4844	19.6434	0.0388	2.0936	0.9975	3.0912	0.3170	0.9280	1.2450	0.0000	3,746.9840	3,746.9840	1.0494		3,773.2183

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.8 Demolition - Phases 2 and 3 - 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	0.0441	1.4618	0.4663	7.0100e-003	0.1689	2.7100e-003	0.1716	0.0463	2.5900e-003	0.0489		760.9963	760.9963	0.0484		762.2050
Vendor	0.0779	2.7377	0.7709	9.7900e-003	0.2560	3.0800e-003	0.2591	0.0737	2.9400e-003	0.0766		1,047.4709	1,047.4709	0.0553		1,048.8543
Worker	0.3723	0.2238	3.2170	0.0103	1.1178	7.7800e-003	1.1256	0.2964	7.1700e-003	0.3036		1,027.9302	1,027.9302	0.0243		1,028.5370
Total	0.4942	4.4234	4.4541	0.0271	1.5427	0.0136	1.5563	0.4164	0.0127	0.4291		2,836.3974	2,836.3974	0.1280		2,839.5963

3.9 Site Preparation - Phases 2 and 3 - 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					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647		3,687.3081	3,687.3081	1.1926		3,717.1219
Total	2.6595	27.5242	18.2443	0.0381	18.0663	1.2660	19.3323	9.9307	1.1647	11.0954		3,687.3081	3,687.3081	1.1926		3,717.1219

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3.9 Site Preparation - Phases 2 and 3 - 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	0.0389	1.3689	0.3854	4.9000e-003	0.1280	1.5400e-003	0.1295	0.0369	1.4700e-003	0.0383		523.7354	523.7354	0.0277		524.4272
Worker	0.4467	0.2685	3.8604	0.0124	1.3413	9.3400e-003	1.3507	0.3557	8.6000e-003	0.3643		1,233.5162	1,233.5162	0.0291		1,234.2444
Total	0.4857	1.6374	4.2458	0.0173	1.4693	0.0109	1.4802	0.3926	0.0101	0.4026		1,757.2516	1,757.2516	0.0568		1,758.6716

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647	0.0000	3,687.3081	3,687.3081	1.1926		3,717.1219
Total	2.6595	27.5242	18.2443	0.0381	18.0663	1.2660	19.3323	9.9307	1.1647	11.0954	0.0000	3,687.3081	3,687.3081	1.1926		3,717.1219

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.9 Site Preparation - Phases 2 and 3 - 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	0.0389	1.3689	0.3854	4.9000e-003	0.1280	1.5400e-003	0.1295	0.0369	1.4700e-003	0.0383		523.7354	523.7354	0.0277		524.4272
Worker	0.4467	0.2685	3.8604	0.0124	1.3413	9.3400e-003	1.3507	0.3557	8.6000e-003	0.3643		1,233.5162	1,233.5162	0.0291		1,234.2444
Total	0.4857	1.6374	4.2458	0.0173	1.4693	0.0109	1.4802	0.3926	0.0101	0.4026		1,757.2516	1,757.2516	0.0568		1,758.6716

3.10 Grading - Phases 2 and 3 - 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					
Fugitive Dust					6.5981	0.0000	6.5981	3.3744	0.0000	3.3744			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129		2,872.6910	2,872.6910	0.9291		2,895.9182
Total	1.7109	17.9359	14.7507	0.0297	6.5981	0.7749	7.3730	3.3744	0.7129	4.0873		2,872.6910	2,872.6910	0.9291		2,895.9182

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3.10 Grading - Phases 2 and 3 - 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	0.2306	7.6512	2.4404	0.0367	0.8841	0.0142	0.8983	0.2423	0.0136	0.2559		3,983.047 2	3,983.047 2	0.2530		3,989.373 2
Vendor	0.0389	1.3689	0.3854	4.9000e-003	0.1280	1.5400e-003	0.1295	0.0369	1.4700e-003	0.0383		523.7354	523.7354	0.0277		524.4272
Worker	0.5957	0.3580	5.1471	0.0165	1.7884	0.0125	1.8009	0.4743	0.0115	0.4858		1,644.688 3	1,644.688 3	0.0388		1,645.659 2
Total	0.8652	9.3781	7.9729	0.0581	2.8005	0.0282	2.8287	0.7534	0.0265	0.7799		6,151.470 9	6,151.470 9	0.3196		6,159.459 6

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					6.5981	0.0000	6.5981	3.3744	0.0000	3.3744			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129	0.0000	2,872.691 0	2,872.691 0	0.9291		2,895.918 2
Total	1.7109	17.9359	14.7507	0.0297	6.5981	0.7749	7.3730	3.3744	0.7129	4.0873	0.0000	2,872.691 0	2,872.691 0	0.9291		2,895.918 2

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3.10 Grading - Phases 2 and 3 - 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	0.2306	7.6512	2.4404	0.0367	0.8841	0.0142	0.8983	0.2423	0.0136	0.2559		3,983.047 2	3,983.047 2	0.2530		3,989.373 2
Vendor	0.0389	1.3689	0.3854	4.9000e-003	0.1280	1.5400e-003	0.1295	0.0369	1.4700e-003	0.0383		523.7354	523.7354	0.0277		524.4272
Worker	0.5957	0.3580	5.1471	0.0165	1.7884	0.0125	1.8009	0.4743	0.0115	0.4858		1,644.688 3	1,644.688 3	0.0388		1,645.659 2
Total	0.8652	9.3781	7.9729	0.0581	2.8005	0.0282	2.8287	0.7534	0.0265	0.7799		6,151.470 9	6,151.470 9	0.3196		6,159.459 6

3.11 Building Construction - Phases 2 and 3 - 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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.209 9	2,555.209 9	0.6079		2,570.406 1
Total	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.209 9	2,555.209 9	0.6079		2,570.406 1

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3.11 Building Construction - Phases 2 and 3 - 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	0.1168	4.1066	1.1563	0.0147	0.3840	4.6200e-003	0.3886	0.1106	4.4100e-003	0.1150		1,571.2063	1,571.2063	0.0830		1,573.2815
Worker	1.1169	0.6713	9.6509	0.0309	3.3533	0.0234	3.3767	0.8893	0.0215	0.9108		3,083.7905	3,083.7905	0.0728		3,085.6110
Total	1.2337	4.7779	10.8072	0.0456	3.7373	0.0280	3.7653	0.9999	0.0259	1.0258		4,654.9968	4,654.9968	0.1558		4,658.8925

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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061

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3.11 Building Construction - Phases 2 and 3 - 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	0.1168	4.1066	1.1563	0.0147	0.3840	4.6200e-003	0.3886	0.1106	4.4100e-003	0.1150		1,571.2063	1,571.2063	0.0830		1,573.2815
Worker	1.1169	0.6713	9.6509	0.0309	3.3533	0.0234	3.3767	0.8893	0.0215	0.9108		3,083.7905	3,083.7905	0.0728		3,085.6110
Total	1.2337	4.7779	10.8072	0.0456	3.7373	0.0280	3.7653	0.9999	0.0259	1.0258		4,654.9968	4,654.9968	0.1558		4,658.8925

3.11 Building Construction - Phases 2 and 3 - 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	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.11 Building Construction - Phases 2 and 3 - 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	0.1144	4.0964	1.1230	0.0146	0.3840	4.5700e-003	0.3886	0.1106	4.3700e-003	0.1149		1,565.5097	1,565.5097	0.0817		1,567.5526
Worker	1.0570	0.6118	9.0151	0.0299	3.3533	0.0230	3.3763	0.8893	0.0212	0.9105		2,982.6268	2,982.6268	0.0668		2,984.2957
Total	1.1714	4.7082	10.1382	0.0445	3.7373	0.0276	3.7649	0.9999	0.0256	1.0254		4,548.1365	4,548.1365	0.1485		4,551.8483

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	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.11 Building Construction - Phases 2 and 3 - 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	0.1144	4.0964	1.1230	0.0146	0.3840	4.5700e-003	0.3886	0.1106	4.3700e-003	0.1149		1,565.5097	1,565.5097	0.0817		1,567.5526
Worker	1.0570	0.6118	9.0151	0.0299	3.3533	0.0230	3.3763	0.8893	0.0212	0.9105		2,982.6268	2,982.6268	0.0668		2,984.2957
Total	1.1714	4.7082	10.1382	0.0445	3.7373	0.0276	3.7649	0.9999	0.0256	1.0254		4,548.1365	4,548.1365	0.1485		4,551.8483

3.12 Paving - Phases 2 and 3 - 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	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.5472	2,207.5472	0.7140		2,225.3963

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.12 Paving - Phases 2 and 3 - 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	0.0381	1.3655	0.3743	4.8700e-003	0.1280	1.5200e-003	0.1295	0.0369	1.4600e-003	0.0383		521.8366	521.8366	0.0272		522.5175
Worker	0.2819	0.1631	2.4040	7.9800e-003	0.8942	6.1500e-003	0.9004	0.2372	5.6600e-003	0.2428		795.3672	795.3672	0.0178		795.8122
Total	0.3200	1.5286	2.7784	0.0129	1.0222	7.6700e-003	1.0299	0.2740	7.1200e-003	0.2811		1,317.2037	1,317.2037	0.0450		1,318.3297

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	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310	0.0000	2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310	0.0000	2,207.5472	2,207.5472	0.7140		2,225.3963

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.12 Paving - Phases 2 and 3 - 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	0.0381	1.3655	0.3743	4.8700e-003	0.1280	1.5200e-003	0.1295	0.0369	1.4600e-003	0.0383		521.8366	521.8366	0.0272		522.5175
Worker	0.2819	0.1631	2.4040	7.9800e-003	0.8942	6.1500e-003	0.9004	0.2372	5.6600e-003	0.2428		795.3672	795.3672	0.0178		795.8122
Total	0.3200	1.5286	2.7784	0.0129	1.0222	7.6700e-003	1.0299	0.2740	7.1200e-003	0.2811		1,317.2037	1,317.2037	0.0450		1,318.3297

3.13 Architectural Coating - Phases 2 and 3 - 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	49.9733					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	50.1540	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.13 Architectural Coating - Phases 2 and 3 - 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	0.0762	2.7310	0.7487	9.7500e-003	0.2560	3.0500e-003	0.2591	0.0737	2.9100e-003	0.0766		1,043.6731	1,043.6731	0.0545		1,045.0350
Worker	0.8456	0.4894	7.2121	0.0239	2.6826	0.0184	2.7011	0.7115	0.0170	0.7284		2,386.1015	2,386.1015	0.0534		2,387.4366
Total	0.9218	3.2204	7.9608	0.0337	2.9386	0.0215	2.9601	0.7852	0.0199	0.8050		3,429.7746	3,429.7746	0.1079		3,432.4716

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	49.9733					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	50.1540	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

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

3.13 Architectural Coating - Phases 2 and 3 - 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	0.0762	2.7310	0.7487	9.7500e-003	0.2560	3.0500e-003	0.2591	0.0737	2.9100e-003	0.0766		1,043.6731	1,043.6731	0.0545		1,045.0350
Worker	0.8456	0.4894	7.2121	0.0239	2.6826	0.0184	2.7011	0.7115	0.0170	0.7284		2,386.1015	2,386.1015	0.0534		2,387.4366
Total	0.9218	3.2204	7.9608	0.0337	2.9386	0.0215	2.9601	0.7852	0.0199	0.8050		3,429.7746	3,429.7746	0.1079		3,432.4716

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

	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	3.9048	17.6168	43.6820	0.1781	15.5725	0.1246	15.6971	4.1658	0.1157	4.2815		18,192.40 41	18,192.40 41	0.7958		18,212.30 01
Unmitigated	3.9048	17.6168	43.6820	0.1781	15.5725	0.1246	15.6971	4.1658	0.1157	4.2815		18,192.40 41	18,192.40 41	0.7958		18,212.30 01

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,362.34	1,304.48	1325.52	4,601,434	4,601,434
Enclosed Parking with Elevator	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	890.51	1,478.02	1018.86	1,352,980	1,352,980
Other Asphalt Surfaces	0.00	0.00	0.00		
Regional Shopping Center	263.17	306.60	171.62	554,321	554,321
Total	2,516.01	3,089.10	2,516.00	6,508,735	6,508,735

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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	40.00	19.40	40.60	86	11	3
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
High Turnover (Sit Down)	16.60	8.40	6.90	8.50	72.50	19.00	37	20	43
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11

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4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Enclosed Parking with Elevator	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
High Turnover (Sit Down Restaurant)	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Other Asphalt Surfaces	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Regional Shopping Center	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825

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	0.1195	1.0380	0.5574	6.5200e-003		0.0826	0.0826		0.0826	0.0826		1,303.7404	1,303.7404	0.0250	0.0239	1,311.4879
NaturalGas Unmitigated	0.1195	1.0380	0.5574	6.5200e-003		0.0826	0.0826		0.0826	0.0826		1,303.7404	1,303.7404	0.0250	0.0239	1,311.4879

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

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	8234.03	0.0888	0.7588	0.3229	4.8400e-003		0.0614	0.0614		0.0614	0.0614		968.7097	968.7097	0.0186	0.0178	974.4663
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
High Turnover (Sit Down Restaurant)	2807.76	0.0303	0.2753	0.2312	1.6500e-003		0.0209	0.0209		0.0209	0.0209		330.3248	330.3248	6.3300e-003	6.0600e-003	332.2877
Other Asphalt Surfaces	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
Regional Shopping Center	40	4.3000e-004	3.9200e-003	3.2900e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		4.7059	4.7059	9.0000e-005	9.0000e-005	4.7339
Total		0.1195	1.0380	0.5574	6.5100e-003		0.0826	0.0826		0.0826	0.0826		1,303.7404	1,303.7404	0.0250	0.0239	1,311.4879

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

5.2 Energy by Land Use - NaturalGas**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	8.23403	0.0888	0.7588	0.3229	4.8400e-003		0.0614	0.0614		0.0614	0.0614		968.7097	968.7097	0.0186	0.0178	974.4663
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
High Turnover (Sit Down Restaurant)	2.80776	0.0303	0.2753	0.2312	1.6500e-003		0.0209	0.0209		0.0209	0.0209		330.3248	330.3248	6.3300e-003	6.0600e-003	332.2877
Other Asphalt Surfaces	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
Regional Shopping Center	0.04	4.3000e-004	3.9200e-003	3.2900e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		4.7059	4.7059	9.0000e-005	9.0000e-005	4.7339
Total		0.1195	1.0380	0.5574	6.5100e-003		0.0826	0.0826		0.0826	0.0826		1,303.7404	1,303.7404	0.0250	0.0239	1,311.4879

6.0 Area Detail**6.1 Mitigation Measures Area**

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

	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	8.5499	4.1819	23.4334	0.0263		0.4384	0.4384		0.4384	0.4384	0.0000	5,058.0716	5,058.0716	0.1341	0.0920	5,088.8429
Unmitigated	8.5499	4.1819	23.4334	0.0263		0.4384	0.4384		0.4384	0.4384	0.0000	5,058.0716	5,058.0716	0.1341	0.0920	5,088.8429

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	0.6168					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.8145					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4601	3.9314	1.6729	0.0251		0.3179	0.3179		0.3179	0.3179	0.0000	5,018.8235	5,018.8235	0.0962	0.0920	5,048.6479
Landscaping	0.6585	0.2505	21.7605	1.1500e-003		0.1206	0.1206		0.1206	0.1206		39.2480	39.2480	0.0379		40.1950
Total	8.5499	4.1819	23.4334	0.0262		0.4384	0.4384		0.4384	0.4384	0.0000	5,058.0716	5,058.0716	0.1341	0.0920	5,088.8429

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

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	0.6168					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.8145					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4601	3.9314	1.6729	0.0251		0.3179	0.3179		0.3179	0.3179	0.0000	5,018.8235	5,018.8235	0.0962	0.0920	5,048.6479
Landscaping	0.6585	0.2505	21.7605	1.1500e-003		0.1206	0.1206		0.1206	0.1206		39.2480	39.2480	0.0379		40.1950
Total	8.5499	4.1819	23.4334	0.0262		0.4384	0.4384		0.4384	0.4384	0.0000	5,058.0716	5,058.0716	0.1341	0.0920	5,088.8429

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

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Summer

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

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

Pacific Coast Commons Specific Plan Project
South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	792.00	Space	0.00	316,800.00	0
Other Asphalt Surfaces	12.65	1000sqft	0.00	12,650.00	0
High Turnover (Sit Down Restaurant)	4.95	1000sqft	0.00	3,952.00	0
Apartments Mid Rise	263.00	Dwelling Unit	0.00	327,021.00	752
Regional Shopping Center	7.30	1000sqft	5.35	7,300.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	8			Operational Year	2025
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	561.77	CH4 Intensity (lb/MW hr)	0.02	N2O Intensity (lb/MW hr)	0.005

1.3 User Entered Comments & Non-Default Data

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

Project Characteristics - Consistent with the DEIR's model.

Land Use - See SWAPE comment regarding underestimated land use sizes.

Construction Phase - Consistent with the DEIR's model.

Trips and VMT - See SWAPE comment regarding hauling trips. Worker and vendor trips consistent with the DEIR's model.

On-road Fugitive Dust -

Demolition - See SWAPE comment regarding demolition.

Grading - See SWAPE comment regarding acres of grading values, material moisture content, and material silt content. Material export consistent with the DEIR's model.

Architectural Coating - Architectural coating EFs consistent with the DEIR's model. See SWAPE comment regarding architectural coating areas.

Vehicle Trips - See SWAPE comment regarding operational vehicle trip rates.

Woodstoves - Consistent with the DEIR's model.

Area Coating - See SWAPE comment regarding area coating areas.

Energy Use -

Water And Wastewater - See SWAPE comment regarding wastewater treatment percentages.

Construction Off-road Equipment Mitigation - See SWAPE comment regarding construction-related mitigation measures.

Mobile Land Use Mitigation - See SWAPE comment regarding operational mitigation measures.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblConstructionPhase	NumDays	20.00	43.00
tblConstructionPhase	NumDays	20.00	44.00
tblConstructionPhase	NumDays	230.00	262.00

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

tblConstructionPhase	NumDays	230.00	195.00
tblConstructionPhase	NumDays	20.00	21.00
tblConstructionPhase	NumDays	20.00	42.00
tblConstructionPhase	NumDays	20.00	44.00
tblConstructionPhase	NumDays	20.00	42.00
tblConstructionPhase	NumDays	20.00	43.00
tblConstructionPhase	NumDays	20.00	44.00
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	NumDays	10.00	22.00
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	223.55	237.00
tblFireplaces	NumberNoFireplace	26.30	26.00
tblFireplaces	NumberWood	13.15	0.00
tblGrading	MaterialExported	0.00	17,000.00
tblLandUse	LandUseSquareFeet	4,950.00	3,952.00
tblLandUse	LandUseSquareFeet	263,000.00	327,021.00
tblLandUse	LotAcreage	7.13	0.00
tblLandUse	LotAcreage	0.29	0.00
tblLandUse	LotAcreage	0.11	0.00
tblLandUse	LotAcreage	6.92	0.00
tblLandUse	LotAcreage	0.17	5.35
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.02
tblProjectCharacteristics	CO2IntensityFactor	702.44	561.77
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	84.00	60.00

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tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	84.00	30.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	WorkerTripNumber	15.00	80.00
tblTripsAndVMT	WorkerTripNumber	332.00	300.00
tblTripsAndVMT	WorkerTripNumber	15.00	80.00
tblTripsAndVMT	WorkerTripNumber	66.00	240.00
tblTripsAndVMT	WorkerTripNumber	18.00	50.00
tblTripsAndVMT	WorkerTripNumber	15.00	80.00
tblTripsAndVMT	WorkerTripNumber	332.00	120.00
tblTripsAndVMT	WorkerTripNumber	15.00	40.00
tblTripsAndVMT	WorkerTripNumber	66.00	80.00
tblTripsAndVMT	WorkerTripNumber	15.00	100.00
tblTripsAndVMT	WorkerTripNumber	18.00	120.00
tblTripsAndVMT	WorkerTripNumber	15.00	160.00
tblVehicleTrips	HS_TTP	19.20	19.40
tblVehicleTrips	HW_TTP	40.20	40.00
tblVehicleTrips	ST_TR	6.39	4.96
tblVehicleTrips	ST_TR	158.37	298.59
tblVehicleTrips	ST_TR	49.97	42.00

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tblVehicleTrips	SU_TR	5.86	5.04
tblVehicleTrips	SU_TR	131.84	205.83
tblVehicleTrips	SU_TR	25.24	23.51
tblVehicleTrips	WD_TR	6.65	5.18
tblVehicleTrips	WD_TR	127.15	179.90
tblVehicleTrips	WD_TR	42.70	36.05
tblWoodstoves	WoodstoveDayYear	25.00	0.00
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					
2021	4.1481	41.5977	25.8913	0.0666	18.6891	2.0506	20.7397	10.0973	1.8866	11.9839	0.0000	6,679.6906	6,679.6906	1.2240	0.0000	6,710.2910
2022	50.7478	21.9734	20.8622	0.0463	7.5106	0.9490	8.4595	3.6231	0.8731	4.4962	0.0000	4,539.1601	4,539.1601	0.9660	0.0000	4,556.4878
2023	3.1913	29.1780	26.1545	0.0859	19.5356	1.2770	20.8126	10.3233	1.1749	11.4981	0.0000	8,828.7568	8,828.7568	1.2565	0.0000	8,860.1679
2024	52.5051	18.1841	26.2624	0.0698	3.9608	0.6411	4.5196	1.0592	0.6027	1.6025	0.0000	6,984.7665	6,984.7665	0.8830	0.0000	7,006.8408
Maximum	52.5051	41.5977	26.2624	0.0859	19.5356	2.0506	20.8126	10.3233	1.8866	11.9839	0.0000	8,828.7568	8,828.7568	1.2565	0.0000	8,860.1679

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

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					
2021	4.1481	41.5977	25.8913	0.0666	18.6891	2.0506	20.7397	10.0973	1.8866	11.9839	0.0000	6,679.6906	6,679.6906	1.2240	0.0000	6,710.2910
2022	50.7478	21.9734	20.8622	0.0463	7.5106	0.9490	8.4595	3.6231	0.8731	4.4962	0.0000	4,539.1601	4,539.1601	0.9660	0.0000	4,556.4878
2023	3.1913	29.1780	26.1545	0.0859	19.5356	1.2770	20.8126	10.3233	1.1749	11.4981	0.0000	8,828.7568	8,828.7568	1.2565	0.0000	8,860.1679
2024	52.5051	18.1841	26.2624	0.0698	3.9608	0.6411	4.5196	1.0592	0.6027	1.6025	0.0000	6,984.7665	6,984.7665	0.8830	0.0000	7,006.8408
Maximum	52.5051	41.5977	26.2624	0.0859	19.5356	2.0506	20.8126	10.3233	1.8866	11.9839	0.0000	8,828.7568	8,828.7568	1.2565	0.0000	8,860.1679

[illegible]

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

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	8.5499	4.1819	23.4334	0.0263		0.4384	0.4384		0.4384	0.4384	0.0000	5,058.0716	5,058.0716	0.1341	0.0920	5,088.8429
Energy	0.1195	1.0380	0.5574	6.5200e-003		0.0826	0.0826		0.0826	0.0826		1,303.7404	1,303.7404	0.0250	0.0239	1,311.4879
Mobile	3.6801	17.7865	41.3513	0.1685	15.5725	0.1253	15.6978	4.1658	0.1163	4.2821		17,222.0226	17,222.0226	0.8030		17,242.0977
Total	12.3496	23.0063	65.3421	0.2013	15.5725	0.6463	16.2188	4.1658	0.6374	4.8031	0.0000	23,583.8345	23,583.8345	0.9621	0.1159	23,642.4285

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	8.5499	4.1819	23.4334	0.0263		0.4384	0.4384		0.4384	0.4384	0.0000	5,058.0716	5,058.0716	0.1341	0.0920	5,088.8429
Energy	0.1195	1.0380	0.5574	6.5200e-003		0.0826	0.0826		0.0826	0.0826		1,303.7404	1,303.7404	0.0250	0.0239	1,311.4879
Mobile	3.6801	17.7865	41.3513	0.1685	15.5725	0.1253	15.6978	4.1658	0.1163	4.2821		17,222.0226	17,222.0226	0.8030		17,242.0977
Total	12.3496	23.0063	65.3421	0.2013	15.5725	0.6463	16.2188	4.1658	0.6374	4.8031	0.0000	23,583.8345	23,583.8345	0.9621	0.1159	23,642.4285

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

	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
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 - Phase 1	Demolition	10/1/2021	10/31/2021	5	21	
2	Site Preparation - Phase 1	Site Preparation	11/1/2021	11/30/2021	5	22	
3	Grading - Phase 1	Grading	12/1/2021	1/31/2022	5	44	
4	Building Construction - Phase 1	Building Construction	2/1/2022	10/31/2022	5	195	
5	Paving - Phase 1	Paving	11/1/2022	12/31/2022	5	44	
6	Architectural Coating - Phase 1	Architectural Coating	11/1/2022	12/31/2022	5	44	
7	Demolition - Phases 2 and 3	Demolition	1/1/2023	2/28/2023	5	42	
8	Site Preparation - Phases 2 and 3	Site Preparation	3/1/2023	3/30/2023	5	22	
9	Grading - Phases 2 and 3	Grading	4/1/2023	5/30/2023	5	42	
10	Building Construction - Phases 2 and 3	Building Construction	6/1/2023	5/31/2024	5	262	
11	Paving - Phases 2 and 3	Paving	6/1/2024	7/31/2024	5	43	
12	Architectural Coating - Phases 2 and 3	Architectural Coating	6/1/2024	7/31/2024	5	43	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 662,218; Residential Outdoor: 220,739; Non-Residential Indoor: 18,378; Non-Residential Outdoor: 6,126; Striped Parking Area: 19,767 (Architectural Coating – sqft)

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition - Phase 1	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition - Phase 1	Excavators	3	8.00	158	0.38
Demolition - Phase 1	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation - Phase 1	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation - Phase 1	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading - Phase 1	Excavators	1	8.00	158	0.38
Grading - Phase 1	Graders	1	8.00	187	0.41
Grading - Phase 1	Rubber Tired Dozers	1	8.00	247	0.40
Grading - Phase 1	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction - Phase 1	Cranes	1	7.00	231	0.29
Building Construction - Phase 1	Forklifts	3	8.00	89	0.20
Building Construction - Phase 1	Generator Sets	1	8.00	84	0.74
Building Construction - Phase 1	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction - Phase 1	Welders	1	8.00	46	0.45
Paving - Phase 1	Pavers	2	8.00	130	0.42
Paving - Phase 1	Paving Equipment	2	8.00	132	0.36
Paving - Phase 1	Rollers	2	8.00	80	0.38
Architectural Coating - Phase 1	Air Compressors	1	6.00	78	0.48
Demolition - Phases 2 and 3	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition - Phases 2 and 3	Excavators	3	8.00	158	0.38
Demolition - Phases 2 and 3	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation - Phases 2 and 3	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation - Phases 2 and 3	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading - Phases 2 and 3	Excavators	1	8.00	158	0.38
Grading - Phases 2 and 3	Graders	1	8.00	187	0.41

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Grading - Phases 2 and 3	Rubber Tired Dozers	1	8.00	247	0.40
Grading - Phases 2 and 3	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction - Phases 2 and 3	Cranes	1	7.00	231	0.29
Building Construction - Phases 2 and 3	Forklifts	3	8.00	89	0.20
Building Construction - Phases 2 and 3	Generator Sets	1	8.00	84	0.74
Building Construction - Phases 2 and 3	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction - Phases 2 and 3	Welders	1	8.00	46	0.45
Paving - Phases 2 and 3	Pavers	2	8.00	130	0.42
Paving - Phases 2 and 3	Paving Equipment	2	8.00	132	0.36
Paving - Phases 2 and 3	Rollers	2	8.00	80	0.38
Architectural Coating - Phases 2 and 3	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 - Phase 1	6	80.00	20.00	406.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation - Phase 1	7	50.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading - Phase 1	6	80.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction - Phase 1	9	120.00	30.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving - Phase 1	6	40.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating - Phase 1	1	80.00	20.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition - Phases 2 and 3	6	100.00	40.00	406.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation - Phases 2 and 3	7	120.00	20.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading - Phases 2 and 3	6	160.00	20.00	2,125.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction - Phases 2 and 3	9	300.00	60.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving - Phases 2 and 3	6	80.00	20.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating - Phases 2 and 3	1	240.00	40.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

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3.1 Mitigation Measures Construction**3.2 Demolition - Phase 1 - 2021****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					4.1873	0.0000	4.1873	0.6340	0.0000	0.6340			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411		3,747.944 9	3,747.944 9	1.0549		3,774.317 4
Total	3.1651	31.4407	21.5650	0.0388	4.1873	1.5513	5.7386	0.6340	1.4411	2.0751		3,747.944 9	3,747.944 9	1.0549		3,774.317 4

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

3.2 Demolition - Phase 1 - 2021**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	0.1443	4.9493	1.1115	0.0145	0.3378	0.0154	0.3532	0.0926	0.0147	0.1073		1,574.1110	1,574.1110	0.1115		1,576.8988
Vendor	0.0586	1.9015	0.5065	4.9600e-003	0.1280	3.9600e-003	0.1320	0.0369	3.7900e-003	0.0406		529.1004	529.1004	0.0354		529.9854
Worker	0.3690	0.2398	2.7083	8.3100e-003	0.8942	6.5800e-003	0.9008	0.2372	6.0600e-003	0.2432		828.5343	828.5343	0.0222		829.0894
Total	0.5718	7.0905	4.3263	0.0278	1.3600	0.0259	1.3860	0.3666	0.0246	0.3912		2,931.7456	2,931.7456	0.1691		2,935.9736

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					4.1873	0.0000	4.1873	0.6340	0.0000	0.6340			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411	0.0000	3,747.9449	3,747.9449	1.0549		3,774.3174
Total	3.1651	31.4407	21.5650	0.0388	4.1873	1.5513	5.7386	0.6340	1.4411	2.0751	0.0000	3,747.9449	3,747.9449	1.0549		3,774.3174

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3.2 Demolition - Phase 1 - 2021**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	0.1443	4.9493	1.1115	0.0145	0.3378	0.0154	0.3532	0.0926	0.0147	0.1073		1,574.1110	1,574.1110	0.1115		1,576.8988
Vendor	0.0586	1.9015	0.5065	4.9600e-003	0.1280	3.9600e-003	0.1320	0.0369	3.7900e-003	0.0406		529.1004	529.1004	0.0354		529.9854
Worker	0.3690	0.2398	2.7083	8.3100e-003	0.8942	6.5800e-003	0.9008	0.2372	6.0600e-003	0.2432		828.5343	828.5343	0.0222		829.0894
Total	0.5718	7.0905	4.3263	0.0278	1.3600	0.0259	1.3860	0.3666	0.0246	0.3912		2,931.7456	2,931.7456	0.1691		2,935.9736

3.3 Site Preparation - Phase 1 - 2021**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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.6569	3,685.6569	1.1920		3,715.4573
Total	3.8882	40.4971	21.1543	0.0380	18.0663	2.0445	20.1107	9.9307	1.8809	11.8116		3,685.6569	3,685.6569	1.1920		3,715.4573

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3.3 Site Preparation - Phase 1 - 2021**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	0.0293	0.9507	0.2533	2.4800e-003	0.0640	1.9800e-003	0.0660	0.0184	1.9000e-003	0.0203		264.5502	264.5502	0.0177		264.9927
Worker	0.2306	0.1498	1.6927	5.2000e-003	0.5589	4.1100e-003	0.5630	0.1482	3.7900e-003	0.1520		517.8339	517.8339	0.0139		518.1809
Total	0.2599	1.1006	1.9460	7.6800e-003	0.6229	6.0900e-003	0.6290	0.1667	5.6900e-003	0.1723		782.3841	782.3841	0.0316		783.1736

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809	0.0000	3,685.6569	3,685.6569	1.1920		3,715,4573
Total	3.8882	40.4971	21.1543	0.0380	18.0663	2.0445	20.1107	9.9307	1.8809	11.8116	0.0000	3,685.6569	3,685.6569	1.1920		3,715,4573

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

3.3 Site Preparation - Phase 1 - 2021**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	0.0293	0.9507	0.2533	2.4800e-003	0.0640	1.9800e-003	0.0660	0.0184	1.9000e-003	0.0203		264.5502	264.5502	0.0177		264.9927
Worker	0.2306	0.1498	1.6927	5.2000e-003	0.5589	4.1100e-003	0.5630	0.1482	3.7900e-003	0.1520		517.8339	517.8339	0.0139		518.1809
Total	0.2599	1.1006	1.9460	7.6800e-003	0.6229	6.0900e-003	0.6290	0.1667	5.6900e-003	0.1723		782.3841	782.3841	0.0316		783.1736

3.4 Grading - Phase 1 - 2021**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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.2903	24.7367	15.8575	0.0296		1.1599	1.1599		1.0671	1.0671		2,871.9285	2,871.9285	0.9288		2,895.1495
Total	2.2903	24.7367	15.8575	0.0296	6.5523	1.1599	7.7123	3.3675	1.0671	4.4346		2,871.9285	2,871.9285	0.9288		2,895.1495

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3.4 Grading - Phase 1 - 2021**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	0.0293	0.9507	0.2533	2.4800e-003	0.0640	1.9800e-003	0.0660	0.0184	1.9000e-003	0.0203		264.5502	264.5502	0.0177		264.9927
Worker	0.3690	0.2398	2.7083	8.3100e-003	0.8942	6.5800e-003	0.9008	0.2372	6.0600e-003	0.2432		828.5343	828.5343	0.0222		829.0894
Total	0.3982	1.1905	2.9616	0.0108	0.9582	8.5600e-003	0.9668	0.2556	7.9600e-003	0.2635		1,093.0845	1,093.0845	0.0399		1,094.0821

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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.2903	24.7367	15.8575	0.0296		1.1599	1.1599		1.0671	1.0671	0.0000	2,871.9285	2,871.9285	0.9288		2,895.1495
Total	2.2903	24.7367	15.8575	0.0296	6.5523	1.1599	7.7123	3.3675	1.0671	4.4346	0.0000	2,871.9285	2,871.9285	0.9288		2,895.1495

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3.4 Grading - Phase 1 - 2021**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	0.0293	0.9507	0.2533	2.4800e-003	0.0640	1.9800e-003	0.0660	0.0184	1.9000e-003	0.0203		264.5502	264.5502	0.0177		264.9927
Worker	0.3690	0.2398	2.7083	8.3100e-003	0.8942	6.5800e-003	0.9008	0.2372	6.0600e-003	0.2432		828.5343	828.5343	0.0222		829.0894
Total	0.3982	1.1905	2.9616	0.0108	0.9582	8.5600e-003	0.9668	0.2556	7.9600e-003	0.2635		1,093.0845	1,093.0845	0.0399		1,094.0821

3.4 Grading - Phase 1 - 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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656		2,872.0464	2,872.0464	0.9289		2,895.2684
Total	1.9486	20.8551	15.2727	0.0297	6.5523	0.9409	7.4932	3.3675	0.8656	4.2331		2,872.0464	2,872.0464	0.9289		2,895.2684

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

3.4 Grading - Phase 1 - 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	0.0275	0.9017	0.2395	2.4500e-003	0.0640	1.7200e-003	0.0657	0.0184	1.6400e-003	0.0201		262.1942	262.1942	0.0170		262.6199
Worker	0.3470	0.2165	2.4998	8.0100e-003	0.8942	6.3900e-003	0.9006	0.2372	5.8900e-003	0.2430		798.8292	798.8292	0.0201		799.3305
Total	0.3745	1.1182	2.7393	0.0105	0.9582	8.1100e-003	0.9663	0.2556	7.5300e-003	0.2631		1,061.0234	1,061.0234	0.0371		1,061.9504

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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656	0.0000	2,872.0464	2,872.0464	0.9289		2,895.2684
Total	1.9486	20.8551	15.2727	0.0297	6.5523	0.9409	7.4932	3.3675	0.8656	4.2331	0.0000	2,872.0464	2,872.0464	0.9289		2,895.2684

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3.4 Grading - Phase 1 - 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	0.0275	0.9017	0.2395	2.4500e-003	0.0640	1.7200e-003	0.0657	0.0184	1.6400e-003	0.0201		262.1942	262.1942	0.0170		262.6199
Worker	0.3470	0.2165	2.4998	8.0100e-003	0.8942	6.3900e-003	0.9006	0.2372	5.8900e-003	0.2430		798.8292	798.8292	0.0201		799.3305
Total	0.3745	1.1182	2.7393	0.0105	0.9582	8.1100e-003	0.9663	0.2556	7.5300e-003	0.2631		1,061.0234	1,061.0234	0.0371		1,061.9504

3.5 Building Construction - Phase 1 - 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	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322

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3.5 Building Construction - Phase 1 - 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	0.0824	2.7052	0.7185	7.3600e-003	0.1920	5.1600e-003	0.1972	0.0553	4.9300e-003	0.0602		786.5827	786.5827	0.0511		787.8598
Worker	0.5205	0.3248	3.7497	0.0120	1.3413	9.5900e-003	1.3509	0.3557	8.8300e-003	0.3646		1,198.2438	1,198.2438	0.0301		1,198.9958
Total	0.6029	3.0299	4.4682	0.0194	1.5333	0.0148	1.5481	0.4110	0.0138	0.4248		1,984.8265	1,984.8265	0.0812		1,986.8556

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	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322

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3.5 Building Construction - Phase 1 - 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	0.0824	2.7052	0.7185	7.3600e-003	0.1920	5.1600e-003	0.1972	0.0553	4.9300e-003	0.0602		786.5827	786.5827	0.0511		787.8598
Worker	0.5205	0.3248	3.7497	0.0120	1.3413	9.5900e-003	1.3509	0.3557	8.8300e-003	0.3646		1,198.2438	1,198.2438	0.0301		1,198.9958
Total	0.6029	3.0299	4.4682	0.0194	1.5333	0.0148	1.5481	0.4110	0.0138	0.4248		1,984.8265	1,984.8265	0.0812		1,986.8556

3.6 Paving - Phase 1 - 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	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

3.6 Paving - Phase 1 - 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	0.0275	0.9017	0.2395	2.4500e-003	0.0640	1.7200e-003	0.0657	0.0184	1.6400e-003	0.0201		262.1942	262.1942	0.0170		262.6199
Worker	0.1735	0.1083	1.2499	4.0100e-003	0.4471	3.2000e-003	0.4503	0.1186	2.9400e-003	0.1215		399.4146	399.4146	0.0100		399.6653
Total	0.2010	1.0100	1.4894	6.4600e-003	0.5111	4.9200e-003	0.5160	0.1370	4.5800e-003	0.1416		661.6088	661.6088	0.0271		662.2852

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	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

3.6 Paving - Phase 1 - 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	0.0275	0.9017	0.2395	2.4500e-003	0.0640	1.7200e-003	0.0657	0.0184	1.6400e-003	0.0201		262.1942	262.1942	0.0170		262.6199
Worker	0.1735	0.1083	1.2499	4.0100e-003	0.4471	3.2000e-003	0.4503	0.1186	2.9400e-003	0.1215		399.4146	399.4146	0.0100		399.6653
Total	0.2010	1.0100	1.4894	6.4600e-003	0.5111	4.9200e-003	0.5160	0.1370	4.5800e-003	0.1416		661.6088	661.6088	0.0271		662.2852

3.7 Architectural Coating - Phase 1 - 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					
Archit. Coating	48.8375					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	49.0421	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

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3.7 Architectural Coating - Phase 1 - 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	0.0550	1.8034	0.4790	4.9100e-003	0.1280	3.4400e-003	0.1314	0.0369	3.2900e-003	0.0401		524.3885	524.3885	0.0341		525.2399
Worker	0.3470	0.2165	2.4998	8.0100e-003	0.8942	6.3900e-003	0.9006	0.2372	5.8900e-003	0.2430		798.8292	798.8292	0.0201		799.3305
Total	0.4019	2.0199	2.9788	0.0129	1.0222	9.8300e-003	1.0321	0.2740	9.1800e-003	0.2832		1,323.2177	1,323.2177	0.0541		1,324.5704

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	48.8375					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	49.0421	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062

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3.7 Architectural Coating - Phase 1 - 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	0.0550	1.8034	0.4790	4.9100e-003	0.1280	3.4400e-003	0.1314	0.0369	3.2900e-003	0.0401		524.3885	524.3885	0.0341		525.2399
Worker	0.3470	0.2165	2.4998	8.0100e-003	0.8942	6.3900e-003	0.9006	0.2372	5.8900e-003	0.2430		798.8292	798.8292	0.0201		799.3305
Total	0.4019	2.0199	2.9788	0.0129	1.0222	9.8300e-003	1.0321	0.2740	9.1800e-003	0.2832		1,323.2177	1,323.2177	0.0541		1,324.5704

3.8 Demolition - Phases 2 and 3 - 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					
Fugitive Dust					2.0936	0.0000	2.0936	0.3170	0.0000	0.3170			0.0000			0.0000
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280		3,746.9840	3,746.9840	1.0494		3,773.2183
Total	2.2691	21.4844	19.6434	0.0388	2.0936	0.9975	3.0912	0.3170	0.9280	1.2450		3,746.9840	3,746.9840	1.0494		3,773.2183

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3.8 Demolition - Phases 2 and 3 - 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	0.0454	1.4687	0.4906	6.8800e-003	0.1689	2.7800e-003	0.1717	0.0463	2.6600e-003	0.0490		746.9002	746.9002	0.0500		748.1504
Vendor	0.0820	2.7202	0.8471	9.5100e-003	0.2560	3.2300e-003	0.2592	0.0737	3.0900e-003	0.0768		1,017.4466	1,017.4466	0.0590		1,018.9209
Worker	0.4091	0.2448	2.8799	9.6400e-003	1.1178	7.7800e-003	1.1256	0.2964	7.1700e-003	0.3036		961.2964	961.2964	0.0226		961.8610
Total	0.5365	4.4337	4.2176	0.0260	1.5427	0.0138	1.5565	0.4164	0.0129	0.4293		2,725.6432	2,725.6432	0.1316		2,728.9323

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					2.0936	0.0000	2.0936	0.3170	0.0000	0.3170			0.0000			0.0000
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280	0.0000	3,746.9840	3,746.9840	1.0494		3,773.2183
Total	2.2691	21.4844	19.6434	0.0388	2.0936	0.9975	3.0912	0.3170	0.9280	1.2450	0.0000	3,746.9840	3,746.9840	1.0494		3,773.2183

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

3.8 Demolition - Phases 2 and 3 - 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	0.0454	1.4687	0.4906	6.8800e-003	0.1689	2.7800e-003	0.1717	0.0463	2.6600e-003	0.0490		746.9002	746.9002	0.0500		748.1504
Vendor	0.0820	2.7202	0.8471	9.5100e-003	0.2560	3.2300e-003	0.2592	0.0737	3.0900e-003	0.0768		1,017.4466	1,017.4466	0.0590		1,018.9209
Worker	0.4091	0.2448	2.8799	9.6400e-003	1.1178	7.7800e-003	1.1256	0.2964	7.1700e-003	0.3036		961.2964	961.2964	0.0226		961.8610
Total	0.5365	4.4337	4.2176	0.0260	1.5427	0.0138	1.5565	0.4164	0.0129	0.4293		2,725.6432	2,725.6432	0.1316		2,728.9323

3.9 Site Preparation - Phases 2 and 3 - 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					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647		3,687.3081	3,687.3081	1.1926		3,717.1219
Total	2.6595	27.5242	18.2443	0.0381	18.0663	1.2660	19.3323	9.9307	1.1647	11.0954		3,687.3081	3,687.3081	1.1926		3,717.1219

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3.9 Site Preparation - Phases 2 and 3 - 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	0.0410	1.3601	0.4235	4.7600e-003	0.1280	1.6100e-003	0.1296	0.0369	1.5400e-003	0.0384		508.7233	508.7233	0.0295		509.4604
Worker	0.4909	0.2938	3.4559	0.0116	1.3413	9.3400e-003	1.3507	0.3557	8.6000e-003	0.3643		1,153.5557	1,153.5557	0.0271		1,154.2332
Total	0.5319	1.6538	3.8795	0.0163	1.4693	0.0110	1.4803	0.3926	0.0101	0.4027		1,662.2790	1,662.2790	0.0566		1,663.6936

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647	0.0000	3,687.3081	3,687.3081	1.1926		3,717.1219
Total	2.6595	27.5242	18.2443	0.0381	18.0663	1.2660	19.3323	9.9307	1.1647	11.0954	0.0000	3,687.3081	3,687.3081	1.1926		3,717.1219

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3.9 Site Preparation - Phases 2 and 3 - 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	0.0410	1.3601	0.4235	4.7600e-003	0.1280	1.6100e-003	0.1296	0.0369	1.5400e-003	0.0384		508.7233	508.7233	0.0295		509.4604
Worker	0.4909	0.2938	3.4559	0.0116	1.3413	9.3400e-003	1.3507	0.3557	8.6000e-003	0.3643		1,153.5557	1,153.5557	0.0271		1,154.2332
Total	0.5319	1.6538	3.8795	0.0163	1.4693	0.0110	1.4803	0.3926	0.0101	0.4027		1,662.2790	1,662.2790	0.0566		1,663.6936

3.10 Grading - Phases 2 and 3 - 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					
Fugitive Dust					6.5981	0.0000	6.5981	3.3744	0.0000	3.3744			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129		2,872.6910	2,872.6910	0.9291		2,895.9182
Total	1.7109	17.9359	14.7507	0.0297	6.5981	0.7749	7.3730	3.3744	0.7129	4.0873		2,872.6910	2,872.6910	0.9291		2,895.9182

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3.10 Grading - Phases 2 and 3 - 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	0.2374	7.6871	2.5678	0.0360	0.8841	0.0146	0.8986	0.2423	0.0139	0.2562		3,909.268 2	3,909.268 2	0.2617		3,915.811 7
Vendor	0.0410	1.3601	0.4235	4.7600e-003	0.1280	1.6100e-003	0.1296	0.0369	1.5400e-003	0.0384		508.7233	508.7233	0.0295		509.4604
Worker	0.6545	0.3917	4.6079	0.0154	1.7884	0.0125	1.8009	0.4743	0.0115	0.4858		1,538.074 3	1,538.074 3	0.0361		1,538.977 6
Total	0.9329	9.4389	7.5992	0.0562	2.8005	0.0286	2.8291	0.7534	0.0269	0.7804		5,956.065 8	5,956.065 8	0.3274		5,964.249 7

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					6.5981	0.0000	6.5981	3.3744	0.0000	3.3744			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129	0.0000	2,872.691 0	2,872.691 0	0.9291		2,895.918 2
Total	1.7109	17.9359	14.7507	0.0297	6.5981	0.7749	7.3730	3.3744	0.7129	4.0873	0.0000	2,872.691 0	2,872.691 0	0.9291		2,895.918 2

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3.10 Grading - Phases 2 and 3 - 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	0.2374	7.6871	2.5678	0.0360	0.8841	0.0146	0.8986	0.2423	0.0139	0.2562		3,909.268 2	3,909.268 2	0.2617		3,915.811 7
Vendor	0.0410	1.3601	0.4235	4.7600e-003	0.1280	1.6100e-003	0.1296	0.0369	1.5400e-003	0.0384		508.7233	508.7233	0.0295		509.4604
Worker	0.6545	0.3917	4.6079	0.0154	1.7884	0.0125	1.8009	0.4743	0.0115	0.4858		1,538.074 3	1,538.074 3	0.0361		1,538.977 6
Total	0.9329	9.4389	7.5992	0.0562	2.8005	0.0286	2.8291	0.7534	0.0269	0.7804		5,956.065 8	5,956.065 8	0.3274		5,964.249 7

3.11 Building Construction - Phases 2 and 3 - 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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.209 9	2,555.209 9	0.6079		2,570.406 1
Total	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.209 9	2,555.209 9	0.6079		2,570.406 1

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3.11 Building Construction - Phases 2 and 3 - 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	0.1231	4.0803	1.2706	0.0143	0.3840	4.8400e-003	0.3889	0.1106	4.6300e-003	0.1152		1,526.1699	1,526.1699	0.0885		1,528.3813
Worker	1.2272	0.7344	8.6398	0.0289	3.3533	0.0234	3.3767	0.8893	0.0215	0.9108		2,883.8893	2,883.8893	0.0678		2,885.5830
Total	1.3502	4.8146	9.9105	0.0432	3.7373	0.0282	3.7655	0.9999	0.0261	1.0260		4,410.0592	4,410.0592	0.1562		4,413.9643

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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

3.11 Building Construction - Phases 2 and 3 - 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	0.1231	4.0803	1.2706	0.0143	0.3840	4.8400e-003	0.3889	0.1106	4.6300e-003	0.1152		1,526.1699	1,526.1699	0.0885		1,528.3813
Worker	1.2272	0.7344	8.6398	0.0289	3.3533	0.0234	3.3767	0.8893	0.0215	0.9108		2,883.8893	2,883.8893	0.0678		2,885.5830
Total	1.3502	4.8146	9.9105	0.0432	3.7373	0.0282	3.7655	0.9999	0.0261	1.0260		4,410.0592	4,410.0592	0.1562		4,413.9643

3.11 Building Construction - Phases 2 and 3 - 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	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077

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3.11 Building Construction - Phases 2 and 3 - 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	0.1204	4.0714	1.2342	0.0142	0.3840	4.7700e-003	0.3888	0.1106	4.5600e-003	0.1151		1,520.9792	1,520.9792	0.0870		1,523.1541
Worker	1.1649	0.6690	8.0553	0.0280	3.3533	0.0230	3.3763	0.8893	0.0212	0.9105		2,788.8676	2,788.8676	0.0620		2,790.4183
Total	1.2853	4.7403	9.2895	0.0422	3.7373	0.0278	3.7651	0.9999	0.0258	1.0256		4,309.8468	4,309.8468	0.1490		4,313.5724

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	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

3.11 Building Construction - Phases 2 and 3 - 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	0.1204	4.0714	1.2342	0.0142	0.3840	4.7700e-003	0.3888	0.1106	4.5600e-003	0.1151		1,520.9792	1,520.9792	0.0870		1,523.1541
Worker	1.1649	0.6690	8.0553	0.0280	3.3533	0.0230	3.3763	0.8893	0.0212	0.9105		2,788.8676	2,788.8676	0.0620		2,790.4183
Total	1.2853	4.7403	9.2895	0.0422	3.7373	0.0278	3.7651	0.9999	0.0258	1.0256		4,309.8468	4,309.8468	0.1490		4,313.5724

3.12 Paving - Phases 2 and 3 - 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	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.5472	2,207.5472	0.7140		2,225.3963

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

3.12 Paving - Phases 2 and 3 - 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	0.0401	1.3571	0.4114	4.7400e-003	0.1280	1.5900e-003	0.1296	0.0369	1.5200e-003	0.0384		506.9931	506.9931	0.0290		507.7180
Worker	0.3106	0.1784	2.1481	7.4600e-003	0.8942	6.1500e-003	0.9004	0.2372	5.6600e-003	0.2428		743.6980	743.6980	0.0165		744.1115
Total	0.3508	1.5355	2.5595	0.0122	1.0222	7.7400e-003	1.0300	0.2740	7.1800e-003	0.2812		1,250.6911	1,250.6911	0.0455		1,251.8296

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	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310	0.0000	2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310	0.0000	2,207.5472	2,207.5472	0.7140		2,225.3963

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

3.12 Paving - Phases 2 and 3 - 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	0.0401	1.3571	0.4114	4.7400e-003	0.1280	1.5900e-003	0.1296	0.0369	1.5200e-003	0.0384		506.9931	506.9931	0.0290		507.7180
Worker	0.3106	0.1784	2.1481	7.4600e-003	0.8942	6.1500e-003	0.9004	0.2372	5.6600e-003	0.2428		743.6980	743.6980	0.0165		744.1115
Total	0.3508	1.5355	2.5595	0.0122	1.0222	7.7400e-003	1.0300	0.2740	7.1800e-003	0.2812		1,250.6911	1,250.6911	0.0455		1,251.8296

3.13 Architectural Coating - Phases 2 and 3 - 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	49.9733					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	50.1540	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

3.13 Architectural Coating - Phases 2 and 3 - 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	0.0803	2.7142	0.8228	9.4800e-003	0.2560	3.1800e-003	0.2592	0.0737	3.0400e-003	0.0767		1,013.986 1	1,013.986 1	0.0580		1,015.436 1
Worker	0.9319	0.5352	6.4443	0.0224	2.6826	0.0184	2.7011	0.7115	0.0170	0.7284		2,231.094 1	2,231.094 1	0.0496		2,232.334 6
Total	1.0122	3.2494	7.2671	0.0319	2.9386	0.0216	2.9603	0.7852	0.0200	0.8052		3,245.080 2	3,245.080 2	0.1076		3,247.770 7

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	49.9733					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	50.1540	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

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

3.13 Architectural Coating - Phases 2 and 3 - 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	0.0803	2.7142	0.8228	9.4800e-003	0.2560	3.1800e-003	0.2592	0.0737	3.0400e-003	0.0767		1,013.9861	1,013.9861	0.0580		1,015.4361
Worker	0.9319	0.5352	6.4443	0.0224	2.6826	0.0184	2.7011	0.7115	0.0170	0.7284		2,231.0941	2,231.0941	0.0496		2,232.3346
Total	1.0122	3.2494	7.2671	0.0319	2.9386	0.0216	2.9603	0.7852	0.0200	0.8052		3,245.0802	3,245.0802	0.1076		3,247.7707

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

	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	3.6801	17.7865	41.3513	0.1685	15.5725	0.1253	15.6978	4.1658	0.1163	4.2821		17,222.02 26	17,222.02 26	0.8030		17,242.09 77
Unmitigated	3.6801	17.7865	41.3513	0.1685	15.5725	0.1253	15.6978	4.1658	0.1163	4.2821		17,222.02 26	17,222.02 26	0.8030		17,242.09 77

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,362.34	1,304.48	1325.52	4,601,434	4,601,434
Enclosed Parking with Elevator	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	890.51	1,478.02	1018.86	1,352,980	1,352,980
Other Asphalt Surfaces	0.00	0.00	0.00		
Regional Shopping Center	263.17	306.60	171.62	554,321	554,321
Total	2,516.01	3,089.10	2,516.00	6,508,735	6,508,735

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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	40.00	19.40	40.60	86	11	3
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
High Turnover (Sit Down)	16.60	8.40	6.90	8.50	72.50	19.00	37	20	43
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Enclosed Parking with Elevator	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
High Turnover (Sit Down Restaurant)	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Other Asphalt Surfaces	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Regional Shopping Center	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825

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	0.1195	1.0380	0.5574	6.5200e-003		0.0826	0.0826		0.0826	0.0826		1,303.7404	1,303.7404	0.0250	0.0239	1,311.4879
NaturalGas Unmitigated	0.1195	1.0380	0.5574	6.5200e-003		0.0826	0.0826		0.0826	0.0826		1,303.7404	1,303.7404	0.0250	0.0239	1,311.4879

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

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	8234.03	0.0888	0.7588	0.3229	4.8400e-003		0.0614	0.0614		0.0614	0.0614		968.7097	968.7097	0.0186	0.0178	974.4663
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
High Turnover (Sit Down Restaurant)	2807.76	0.0303	0.2753	0.2312	1.6500e-003		0.0209	0.0209		0.0209	0.0209		330.3248	330.3248	6.3300e-003	6.0600e-003	332.2877
Other Asphalt Surfaces	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
Regional Shopping Center	40	4.3000e-004	3.9200e-003	3.2900e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		4.7059	4.7059	9.0000e-005	9.0000e-005	4.7339
Total		0.1195	1.0380	0.5574	6.5100e-003		0.0826	0.0826		0.0826	0.0826		1,303.7404	1,303.7404	0.0250	0.0239	1,311.4879

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

5.2 Energy by Land Use - NaturalGas**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	8.23403	0.0888	0.7588	0.3229	4.8400e-003		0.0614	0.0614		0.0614	0.0614		968.7097	968.7097	0.0186	0.0178	974.4663
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
High Turnover (Sit Down Restaurant)	2.80776	0.0303	0.2753	0.2312	1.6500e-003		0.0209	0.0209		0.0209	0.0209		330.3248	330.3248	6.3300e-003	6.0600e-003	332.2877
Other Asphalt Surfaces	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
Regional Shopping Center	0.04	4.3000e-004	3.9200e-003	3.2900e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		4.7059	4.7059	9.0000e-005	9.0000e-005	4.7339
Total		0.1195	1.0380	0.5574	6.5100e-003		0.0826	0.0826		0.0826	0.0826		1,303.7404	1,303.7404	0.0250	0.0239	1,311.4879

6.0 Area Detail**6.1 Mitigation Measures Area**

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

	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	8.5499	4.1819	23.4334	0.0263		0.4384	0.4384		0.4384	0.4384	0.0000	5,058.0716	5,058.0716	0.1341	0.0920	5,088.8429
Unmitigated	8.5499	4.1819	23.4334	0.0263		0.4384	0.4384		0.4384	0.4384	0.0000	5,058.0716	5,058.0716	0.1341	0.0920	5,088.8429

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	0.6168					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.8145					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4601	3.9314	1.6729	0.0251		0.3179	0.3179		0.3179	0.3179	0.0000	5,018.8235	5,018.8235	0.0962	0.0920	5,048.6479
Landscaping	0.6585	0.2505	21.7605	1.1500e-003		0.1206	0.1206		0.1206	0.1206		39.2480	39.2480	0.0379		40.1950
Total	8.5499	4.1819	23.4334	0.0262		0.4384	0.4384		0.4384	0.4384	0.0000	5,058.0716	5,058.0716	0.1341	0.0920	5,088.8429

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

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	0.6168					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.8145					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4601	3.9314	1.6729	0.0251		0.3179	0.3179		0.3179	0.3179	0.0000	5,018.8235	5,018.8235	0.0962	0.0920	5,048.6479
Landscaping	0.6585	0.2505	21.7605	1.1500e-003		0.1206	0.1206		0.1206	0.1206		39.2480	39.2480	0.0379		40.1950
Total	8.5499	4.1819	23.4334	0.0262		0.4384	0.4384		0.4384	0.4384	0.0000	5,058.0716	5,058.0716	0.1341	0.0920	5,088.8429

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

Pacific Coast Commons Specific Plan Project - South Coast AQMD Air District, Winter

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

Attachment D

Start date and time 04/05/21 10:13:47

AERSCREEN 16216

Pacific Coast Commons Operation

Pacific Coast Commons Operation

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

METRIC

ENGLISH

** AREADATA **

Emission Rate: 0.126E-02 g/s 0.998E-02 lb/hr

Area Height: 3.00 meters 9.84 feet

Area Source Length: 256.00 meters 839.90 feet

Area Source Width: 101.00 meters 331.36 feet

Vertical Dimension: 1.50 meters 4.92 feet

Model Mode: URBAN

Population: 16731

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:

2021.04.05_PacificCoastCommons_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 04/05/21 10:15:50

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 *****

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 5

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 10

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 15

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 20

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 6

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 25

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

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 *****

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 5

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 10

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

CO W320	36	URBOPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP		

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 15

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

CO W320	36	URBOPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP		

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 20

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

CO W320	36	URBOPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP		

Processing wind flow sector 6

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 25

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

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 *****

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 5

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 10

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 15

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 20

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 6

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 25

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

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 *****

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 5

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 10

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 15

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 20

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

Processing wind flow sector 6

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 25

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

FLOWSECTOR ended 04/05/21 10:16:08

REFINE started 04/05/21 10:16:08

AERMOD Finishes Successfully for REFINE stage 3 Winter sector 0

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

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP

REFINE ended 04/05/21 10:16:11

AERSCREEN Finished Successfully

But with Warnings

Check log file for details

Ending date and time 04/05/21 10:16:14

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											
	0.14967E+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												
	0.16113E+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												
	0.17120E+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												
	0.17982E+01		75.00	0.00	0.0			Winter		0-360	10011001		
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0												
	0.18752E+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												
	0.19374E+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												
*	0.19469E+01		129.00	0.00	0.0			Winter		0-360	10011001		
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0												
	0.15401E+01		150.00	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												
	0.12075E+01		175.00	0.00	0.0			Winter		0-360	10011001		
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0												
	0.99699E+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												
	0.85889E+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												
	0.75015E+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												
	0.66363E+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												
	0.59258E+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												
	0.53380E+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												
	0.48434E+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										
	0.44244E+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										
	0.40624E+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										
	0.37520E+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										
	0.34763E+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										
	0.32366E+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										
	0.30234E+00	500.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.28334E+00	525.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.26642E+00	550.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.25111E+00	575.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.23713E+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										
	0.22452E+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										
	0.21308E+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										
	0.20267E+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										
	0.19310E+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										
	0.18421E+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										
	0.17597E+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										
	0.16836E+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										
	0.16133E+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										
	0.15481E+00		825.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.14875E+00		850.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.14310E+00		875.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.13775E+00		900.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.13275E+00		925.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.12807E+00		950.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.12367E+00		975.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.11953E+00		1000.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.11564E+00		1025.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.11194E+00		1050.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.10844E+00		1075.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.10513E+00		1100.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.10199E+00		1125.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.99015E-01		1150.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043										

0.93475E-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						
0.90891E-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						
0.88430E-01	1250.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.86084E-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						
0.83846E-01	1300.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.81708E-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						
0.79664E-01	1350.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.77708E-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						
0.75836E-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						
0.74042E-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						
0.72321E-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						
0.70669E-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						
0.69083E-01	1500.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.67558E-01	1525.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.66092E-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						
0.64681E-01	1575.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.63317E-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											
	0.62000E-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											
	0.60731E-01	1650.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.59506E-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											
	0.58324E-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											
	0.57182E-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											
	0.56075E-01	1750.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.55001E-01	1775.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.53963E-01	1800.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.52958E-01	1825.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.51986E-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											
	0.51045E-01	1875.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.50132E-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											
	0.49248E-01	1925.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.48906E-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											
	0.48060E-01	1975.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.47239E-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											
	0.46442E-01	2025.00	0.00	0.0		Winter	0-360	10011001				

-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.45668E-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										
	0.44916E-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										
	0.44186E-01		2100.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.43475E-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										
	0.42784E-01		2150.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.42112E-01		2175.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.41458E-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										
	0.40822E-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										
	0.40202E-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										
	0.39598E-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										
	0.39010E-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										
	0.38437E-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										
	0.37878E-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										
	0.37334E-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										
	0.36802E-01		2400.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0										

0.35778E-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						
0.35284E-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						
0.34802E-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						
0.34331E-01	2525.00	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						
0.33871E-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						
0.33422E-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						
0.32983E-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						
0.32554E-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						
0.32134E-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						
0.31723E-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						
0.31322E-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						
0.30930E-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						
0.30545E-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						
0.30169E-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						
0.29801E-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						
0.29441E-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						
0.29088E-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											
	0.28742E-01	2875.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.28404E-01	2900.00	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											
	0.28072E-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											
	0.27747E-01	2950.00	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											
	0.27429E-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											
	0.27116E-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											
	0.26810E-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											
	0.26510E-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											
	0.26215E-01	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											
	0.25927E-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											
	0.25643E-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											
	0.25365E-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											
	0.25092E-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											
	0.24824E-01	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											
	0.24561E-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											
	0.24303E-01	3250.00	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											
	0.24050E-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										
	0.23801E-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										
	0.23556E-01		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										
	0.23316E-01		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										
	0.23080E-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										
	0.22848E-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										
	0.22620E-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										
	0.22396E-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										
	0.22176E-01		3475.00		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										
	0.21960E-01		3500.00		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										
	0.21747E-01		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										
	0.21538E-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										
	0.21332E-01		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										
	0.21130E-01		3600.00		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										
	0.20931E-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										
	0.20735E-01		3650.00		0.00	0.0		Winter	0-360	10011001	
-1.30											

0.20352E-01	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						
0.20166E-01	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						
0.19982E-01	3750.00	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						
0.19801E-01	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						
0.19623E-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						
0.19448E-01	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						
0.19276E-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						
0.19106E-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						
0.18938E-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						
0.18774E-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						
0.18611E-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						
0.18451E-01	3975.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.18294E-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						
0.18138E-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						
0.17986E-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						
0.17835E-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						
0.17686E-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											
	0.17540E-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											
	0.17396E-01		4149.99		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											
	0.17253E-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											
	0.17113E-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											
	0.16974E-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											
	0.16838E-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											
	0.16703E-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											
	0.16571E-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											
	0.16440E-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											
	0.16311E-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											
	0.16184E-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											
	0.16058E-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											
	0.15934E-01		4425.00		0.00	0.0		Winter		0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0											
	0.15812E-01		4450.00		0.00	0.0		Winter		0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0											
	0.15691E-01		4475.00		0.00							

-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.15338E-01		4550.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.15224E-01		4575.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.15111E-01		4600.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.14999E-01		4625.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.14889E-01		4650.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.14780E-01		4675.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.14673E-01		4700.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.14567E-01		4725.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.14462E-01		4750.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.14359E-01		4775.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.14256E-01		4800.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.14156E-01		4825.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.14056E-01		4850.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.13957E-01		4875.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.13860E-01		4900.00		0.00	5.0		Winter	0-360	10011001	
-1.30	0										

0.13669E-01	4950.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.13575E-01	4975.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.13482E-01	5000.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						



Technical Consultation, Data Analysis and
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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 unconventional oil drilling operations, oil spills, landfills, boilers and incinerators, process stacks, storage tanks, confined animal feeding operations, and many other industrial and agricultural sources. 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 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, 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 dozens of sites and has testified as an expert witness on more than ten cases involving exposure to air contaminants from industrial 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 H₂O 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

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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 Florida, Alabama. *The AEHS Annual Meeting*. Lecture conducted from San Diego, CA.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Teaching Experience:

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

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

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

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

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

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

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

Academic Grants Awarded:

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

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

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

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

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

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

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

Deposition and/or Trial Testimony:

In the United States District Court For The Southern District of Illinois

Duarte et al, *Plaintiffs*, vs. United States Metals Refining Company et. al. *Defendant*.

Case No.: 3:19-cv-00302-SMY-GCS

Rosenfeld Deposition. 2-19-2020

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 Agrosiences, 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 Iowa District Court For Wapello County
Jerry Dovico, et al., Plaintiffs vs. Valley View Sine LLC, et al., Defendants
Law No.: LALA105144 - Division A
Rosenfeld Deposition, August 2015

In The Iowa District Court For Wapello County
Doug Pauls, et al., et al., Plaintiffs vs. Richard Warren, et al., Defendants
Law No.: LALA105144 - Division A
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 Third Judicial District County of Dona Ana, New Mexico
Betty Gonzalez, et al. Plaintiffs vs. Del Oro Dairy, Del Oro Real Estate LLC, Jerry Settles and Deward
DeRuyter, Defendants
Rosenfeld Deposition: July 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



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 – 2014, 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 150 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, Colorado.

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 representatives, 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., Fukunaga, 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.

From: [Planning](#)
To: [Allen, Michael](#)
Cc: [Samaras, Paul](#); [Schonborn, Eduardo](#)
Subject: FW: Pacific Coast Commons Specific Plan
Date: Friday, December 10, 2021 8:30:32 AM

FYI

From: Jack Cool <coolj538@gmail.com>
Sent: Thursday, December 9, 2021 8:12 PM
To: Planning <Planning@elsegundo.org>
Subject: Pacific Coast Commons Specific Plan

Hello,

This email is in regard to the Pacific Coast Commons Specific Plan on [475-629 North Pacific Coast Highway](#).

I live at [403, Indiana Street, Unit 25, El Segundo CA 90245](#) and am writing this email because I oppose the project. Parking is already difficult in the streets surrounding my apartment and the construction will only make matters worse. Construction also picks up plenty of dust that will surely make its way into neighboring windows.

Thank you,
Jack A Cool