



*Green Jobs & Clean Communities*

November 11, 2024

City of Perris City Council  
101 N. "D" St.  
Perris, CA 92570

**SUBJECT:** Appeal to the City of Perris City Council regarding a decision of the City of Perris Planning Commission regarding (DPR) 22-00018, adopting Resolution 24-19 certifying the Final EIR (SCH 2023040144) and adopting Resolution 24-17 on November 6, 2024.

**PROJECT NAME:** Ellis Logistics Center - SCH# 2023040144

**APPELLANT:** Golden State Environmental Justice Alliance

### **PURPOSE OF APPEAL**

This appeal seeks to reverse the entire decision of the Planning Commission on November 6, 2024, approving the Ellis Logistics Center.

### **REASONS FOR APPEAL AND DENIAL OF PROJECT**

Golden State Environmental Justice Alliance ("Appellant") presented multiple arguments in our comment letter dated June 26, 2024, addressing the flaws of the EIR (see attached). Furthermore, GSEJA also provided a response from our Air Quality consultant Soil / Water / Air Protection Enterprise (SWAPE) to the response to comments from the FEIR (see attached). In the SWAPE RTC comments they advised the following in addition to other measures that should be taken:

"We therefore maintain that the DEIR's air quality analysis should not be relied upon to determine Project significance. Our revised analysis estimates that volatile organic compounds ("VOC") emissions from Project construction would exceed the applicable South Coast Air Quality Management District ("SCAQMD") threshold of 75 pounds per day (lbs/day) (see table below).2 "





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**SWAPE Criteria Air Pollutant Emissions**

**Construction VOC**

(lbs/day)

DEIR 60.6

SWAPE 360

% Increase 494%

SCAQMD Threshold **75**

*Exceeds? **Yes***

The Planning Commission had a duty to adequately address the environmental, social, and economic burden placed on the City of Perris residents. The Planning Commission should have requested a new EIR be prepared for this project, due to the deficiencies of the EIR and continued health, exposures, socioeconomic factors and environmental effects the citizenry of Perris already suffers and will continue to suffer, based on our comment letter dated June 26, 2024, and the Response to Comments analysis from SWAPE dated November 4, 2024.

**GRIEVANCES**

With the Planning Commission's decision to approve the project, on November 6, 2024. GSEJA believes the Planning Commission did not fulfill its duty to adequately investigate nor mitigate the project. Further, under CEQA, the city must "Take all action necessary to provide the people of this state with clean air and water, enjoyment of aesthetic, natural, scenic, and historic environmental qualities, and freedom from excessive noise."

Furthermore, this appeal also addresses the inadequacy of the Planning Commissions understanding of the California Environmental Quality Act's purpose in properly applying the law and its intent as defined below by the California Legislature in passing CEQA.

The importance of a healthy environment for all of California's residents is reflected in CEQA's purpose. In passing CEQA, the Legislature determined:

CEQA's Purposes

- "The maintenance of a quality environment for the people of this state now and in the future is a matter of statewide concern." (Pub. Res. Code, § 21000, subd. (a).)
- We must "identify any critical thresholds for the health and safety of the people of the state and take all coordinated actions necessary to prevent such thresholds from being reached." (Id. at subd. (d).)





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- “[M]ajor consideration [must be] given to preventing environmental damage, while providing a decent home and satisfying living environment for every Californian.” (Id. at subd. (g).)
- We must “[t]ake all action necessary to provide the people of this state with clean air and water, enjoyment of aesthetic, natural, scenic, and historic environmental qualities, and freedom from excessive noise.” (Pub. Res. Code, § 21001, subd. (b).)

Cities, counties, and other local governmental entities have an important role to play in ensuring environmental justice for all of California’s residents. Under state law: “[E]nvironmental justice” means the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies.

(Gov. Code, § 65040.12, subd. (e).) Fairness in this context means that the benefits of a healthy environment should be available to everyone, and the burdens of pollution should not be focused on sensitive populations or on communities that already are experiencing its adverse effects.

The Cal Enviro Screening Information in the next page depicts the severity of the level of pollution and health hazards the City of Perris and its citizens are already experiencing. The overall percentiles of pollution exposures and its subsequent health impacts should have been enough data to reconsider the approval of the project and request a new EIR with enhanced mitigation measures.

Below are quotes from the July 24, 2023, edition of the I.E. Business Daily regarding the City of Perris & City of Menifee dispute over the Ethanac & Barnett Road project.

“Because of the project’s location on the Perris border, the residents of Perris will bear the brunt of the majority of the environmental impacts from the construction and operation of the project” the lawsuit states. “That includes noise, construction, and [poor] air quality emissions, as well as construction and traffic.”

“The city of Perris is responsible for the well-being and safety of the residents we serve,” Perris Mayor Michael M. Vargas said in a statement. “The lawsuit filed against the city of Menifee is a reflection of this commitment to our residents.”

It is obvious the City Council is concerned about their citizens’ exposure to environmental impacts based on the pursuit and verbiage stated in the litigation and your own Mayors’ comments. The City Council needs to do the right thing and further protect its citizenry from the environmental impact burdens they will encounter and approve GSEJA’s appeal in requesting a new EIR.





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**Perris - Ellis Logistics Center EIR  
 Census Tract: 6065042800**

**Population: 9,515**

<b>Overall Percentiles</b>	<b>%</b>
CalEnviroScreen 4.0 Percentile	<b>94%</b>
Pollution Burden Percentile	<b>90%</b>
Population Characteristics Percentile	<b>89%</b>
<b>Exposures</b>	<b>%</b>
Ozone	<b>95%</b>
Diesel Particulate Matter	<b>83%</b>
Lead from Housing	<b>83%</b>
Traffic	<b>76%</b>
Pesticides	<b>70%</b>
<b>Environmental Effects</b>	<b>%</b>
Solid Waste	<b>93%</b>
Groundwater Threats	<b>71%</b>
<b>Sensitive Populations</b>	<b>%</b>
Cardiovascular Disease	<b>87%</b>
Asthma	<b>62%</b>
Low Birth Weight	<b>57%</b>
<b>Socioeconomic Factors</b>	<b>%</b>
Poverty	<b>94%</b>
Education	<b>93%</b>
Unemployment	<b>88%</b>
Linguistic Isolation	<b>77%</b>
Housing Burden	<b>76%</b>





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**Conclusion**

Due to the above-mentioned reasons as well as the reasons listed in the original comment letter to the EIR, GSEJA believes the EIR is flawed and a new EIR must be prepared for the proposed project and circulated for public review. GSEJA requests the City of Perris City Council reverse the decision of the Planning Commission's approval of the project and require a new EIR.

Sincerely,

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November 4, 2024

Gary Ho  
Blum, Collins & Ho LLP  
707 Wilshire Blvd, Ste. 4880  
Los Angeles, CA 90017

**Subject: Comments on the Ellis Logistics Center Project**

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Dear Mr. Ho,

Review of the October 2024 Responses to Comments (“RTC”) and May 2024 Draft Environmental Impact Report (“DEIR”) for the Ellis Logistics Center Project (“Project”) in the City of Perris (“City”) indicates that concerns outlined in our June 25<sup>th</sup> comment letter remain insufficiently addressed.

## **Air Quality**

### **Unsubstantiated Input Parameters Used to Estimate Project Emissions**

We agree with the RTC’s position that any changes made to default values while modeling with the California Emissions Estimator Model (“CalEEMod”) must be properly justified under the California Environmental Quality Act (“CEQA”) (p. 55). Neither the DEIR nor RTC, however, adequately substantiate the modifications to the Project’s construction schedule, as noted in our June 25<sup>th</sup> analysis under the comment titled “Unsubstantiated Changes to Individual Construction Phase Lengths” (p. 4 – 6). Specifically, the DEIR alters and extends individual construction phase lengths while only substantiating the total construction duration of 13 months. This could result in fewer construction activities per day, leading to lower daily pollutant emissions.

In response to our comment, the RTC states:

“As discussed above, the CalEEMod User’s Guide allows for changes to the model for project-specific parameters. No further response or changes to the Draft EIR are required” (p. 56).

The RTC again fails to adequately substantiate the changes made to the individual construction phase lengths in the DEIR’s model (Appendix C1, pp. 158). Without providing proper justification for the



revised schedule, the model may underestimate peak daily emissions for certain phases. We therefore maintain that the DEIR’s air quality analysis should not be relied upon to determine Project significance.

### Updated Analysis Indicates a Potentially Significant Air Quality Impact

To estimate the Project’s construction air quality impacts, we used CalEEMod Version 2022.1 with Project-specific data provided in the DEIR. We again included individual construction phase lengths that have been proportionately altered to match the Project’s proposed construction duration of 13 months. The remaining modeled inputs were left as default.<sup>1</sup>

Our revised analysis estimates that volatile organic compounds (“VOC”) emissions from Project construction would exceed the applicable South Coast Air Quality Management District (“SCAQMD”) threshold of 75 pounds per day (lbs/day) (see table below).<sup>2</sup>

SWAPE Criteria Air Pollutant Emissions	
<b>Construction</b>	<b>VOC</b> (lbs/day)
DEIR	60.6
SWAPE	360
% Increase	494%
SCAQMD Threshold	<b>75</b>
<i>Exceeds?</i>	<b>Yes</b>

Construction-related VOC emissions increase by approximately 494%, which exceeds the SCAQMD significance threshold of 75 lbs/day. The updated model demonstrates that Project construction would result in a potentially significant air quality impact, which has not been previously addressed in either the DEIR or RTC. We maintain that a revised EIR should be prepared to properly evaluate and mitigate the Project's potential air quality impact.

## Mitigation

### Feasible Mitigation Measures Available to Reduce Emissions

In our June 25<sup>th</sup> comment letter, we raised that the DEIR is required under CEQA Guidelines § 15096 to implement all feasible mitigation to reduce the Project’s potential impacts. We consequently recommended feasible mitigation for the DEIR to consider and implement. The RTC responded:

“State CEQA Guidelines Section 15126.4(a)(3) states that mitigation measures are not required for effects which are not found to be significant. Therefore, the suggested revisions are not required” (p. 57).

<sup>1</sup> See Attachment A for the proportionately altered construction schedule and Attachment B for CalEEMod model.

<sup>2</sup> “South Coast AQMD Air Quality Significance Thresholds.” SCAQMD, April 2019, *available at*: <https://www.aqmd.gov/docs/default-source/ceqa/handbook/south-coast-aqmd-air-quality-significance-thresholds.pdf?sfvrsn=25>.



The RTC claims that mitigation would not be necessary as Project emissions were found to be below significance thresholds. As demonstrated in the sections above, however, the Project would result in potentially significant construction-related VOC emissions. As such, we again recommend the implementation of the following mitigation measures (see below).

The California Department of Justice recommends:<sup>3</sup>

- Require the use of super compliant, low-VOC paints less than 10 g/L during the architectural coating construction phase.

Los Angeles County recommends:<sup>4</sup>

- If paints and coatings with VOC content of 0 grams/liter to less than 10 grams/liter cannot be utilized, the developer shall avoid application of architectural coatings during the peak smog season: July, August, and September.

We maintain that a revised EIR should be prepared that includes all feasible mitigation measures, as well as updated air quality analysis to ensure that the necessary mitigation measures are implemented to reduce emissions to the maximum extent feasible.

## 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.

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<sup>3</sup> "Warehouse Projects: Best Practices and Mitigation Measures to Comply with the California Environmental Quality Act." State of California Department of Justice, September 2022, *available at*: <https://oag.ca.gov/system/files/media/warehouse-best-practices.pdf>, p. 8 – 10.

<sup>4</sup> "Mitigation Monitoring and Reporting Program." Los Angeles County Housing Element Update Program EIR, August 2021, *available at*: [https://planning.lacounty.gov/wp-content/uploads/2023/07/Housing\\_final-peir-mitigation-monitoring.pdf](https://planning.lacounty.gov/wp-content/uploads/2023/07/Housing_final-peir-mitigation-monitoring.pdf).



A handwritten signature in blue ink that reads "Paul Rosenfeld". The signature is written in a cursive style with a large initial 'P'.

Paul E. Rosenfeld, Ph.D.

**Attachment A: Construction Calculations**  
**Attachment B: CalEEMod Output Files**  
**Attachment C: Matt Hagemann CV**  
**Attachment D: Paul Rosenfeld CV**



Construction Schedule Calculations					
Phase	Default Phase Length	Construction Duration	%	Construction Duration	Revised Phase Length
Site Preparation	20	809	0.0247	394	10
Grading	45	809	0.0556	394	22
Construction	440	809	0.5439	394	214
Paving	35	809	0.0433	394	17
Architectural Coating	35	809	0.0433	394	17

	Total Default Construction Duration	Revised Construction Duration
Start Date	4/13/2024	3/1/2024
End Date	7/1/2026	3/30/2025
Total Days	809	394



# Ellis Ave Warehouse V2 Detailed Report

## Table of Contents

- 1. Basic Project Information
  - 1.1. Basic Project Information
  - 1.2. Land Use Types
  - 1.3. User-Selected Emission Reduction Measures by Emissions Sector
- 2. Emissions Summary
  - 2.1. Construction Emissions Compared Against Thresholds
  - 2.2. Construction Emissions by Year, Unmitigated
- 3. Construction Emissions Details
  - 3.1. Site Preparation (2024) - Unmitigated
  - 3.3. Grading (2024) - Unmitigated
  - 3.5. Building Construction (2024) - Unmitigated
  - 3.7. Building Construction (2025) - Unmitigated
  - 3.9. Paving (2025) - Unmitigated
  - 3.11. Architectural Coating (2025) - Unmitigated
- 4. Operations Emissions Details



- 4.10. Soil Carbon Accumulation By Vegetation Type
  - 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated
  - 4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated
  - 4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated
- 5. Activity Data
  - 5.1. Construction Schedule
  - 5.2. Off-Road Equipment
    - 5.2.1. Unmitigated
  - 5.3. Construction Vehicles
    - 5.3.1. Unmitigated
  - 5.4. Vehicles
    - 5.4.1. Construction Vehicle Control Strategies
  - 5.5. Architectural Coatings
  - 5.6. Dust Mitigation
    - 5.6.1. Construction Earthmoving Activities
    - 5.6.2. Construction Earthmoving Control Strategies
  - 5.7. Construction Paving
  - 5.8. Construction Electricity Consumption and Emissions Factors



- 5.18. Vegetation
  - 5.18.1. Land Use Change
    - 5.18.1.1. Unmitigated
    - 5.18.1. Biomass Cover Type
      - 5.18.1.1. Unmitigated
    - 5.18.2. Sequestration
      - 5.18.2.1. Unmitigated
- 6. Climate Risk Detailed Report
  - 6.1. Climate Risk Summary
  - 6.2. Initial Climate Risk Scores
  - 6.3. Adjusted Climate Risk Scores
  - 6.4. Climate Risk Reduction Measures
- 7. Health and Equity Details
  - 7.1. CalEnviroScreen 4.0 Scores
  - 7.2. Healthy Places Index Scores
  - 7.3. Overall Health & Equity Scores
  - 7.4. Health & Equity Measures
  - 7.5. Evaluation Scorecard



7.6. Health & Equity Custom Measures

8. User Changes to Default Data



# 1. Basic Project Information

## 1.1. Basic Project Information

Data Field	Value
Project Name	Ellis Ave Warehouse V2
Construction Start Date	3/1/2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	0.20
Location	33.77089494606136, -117.21457696082105
County	Riverside-South Coast
City	Perris
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5503
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.28

## 1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Unrefrigerated Warehouse-Rail	643	1000sqft	14.8	643,419	315,700	—	—	—
Parking Lot	501	1000sqft	11.5	0.00	0.00	—	—	—
						5 / 30		



### 1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

## 2. Emissions Summary

### 2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e	
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.62	4.51	98.0	47.2	0.43	2.51	24.3	26.9	2.39	7.84	10.2	—	63,155	63,155	1.31	9.13	120	66,030	
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	360	360	101	47.0	0.43	2.51	24.3	26.9	2.39	10.2	11.6	—	63,161	63,161	1.29	9.13	3.12	65,918	
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	17.1	17.0	15.5	20.2	0.05	0.47	4.27	4.74	0.44	1.30	1.74	—	8,686	8,686	0.26	0.88	8.54	8,963	
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.12	3.11	2.84	3.68	0.01	0.09	0.78	0.87	0.08	0.24	0.32	—	1,438	1,438	0.04	0.15	1.41	1,484	

### 2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e	
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	6.62	4.51	98.0	47.2	0.43	2.51	24.3	26.9	2.39	7.84	10.2	—	63,155	63,155	1.31	9.13	120	66,030	















Dust From Material Movement	0.00	0.00	0.00	0.00	9.54	9.54	3.71	3.71	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	0.21	2.07	1.82	< 0.005	0.09	0.08	0.08	—	398	398	0.02	< 0.005	399
Dust From Material Movement	0.00	0.00	0.00	0.00	0.58	0.58	0.22	0.22	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.38	0.33	< 0.005	0.02	0.01	0.01	—	65.8	65.8	< 0.005	< 0.005	66.1
Dust From Material Movement	0.00	0.00	0.00	0.00	0.10	0.10	0.04	0.04	—	—	—	—	—	—
Onsite truck	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
Offsite Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.10	1.67	0.00	0.26	0.06	0.06	—	288	288	0.01	0.01	292
Vendor	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
Hauling	2.32	0.89	63.6	15.3	0.37	1.06	5.14	4.08	—	56,269	56,269	1.03	9.07	59,117







Off-Road Equipment	1.44	1.20	11.2	13.1	0.02	0.50	—	0.50	—	0.46	—	0.46	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.73	0.61	5.71	6.67	0.01	0.25	—	0.25	—	0.23	—	0.23	—	1,220	1,220	0.05	0.01	—	1,224
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	1.04	1.22	<0.0005	0.05	—	0.05	—	0.04	—	0.04	—	202	202	0.01	<0.0005	—	203
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.52	1.39	1.30	22.6	0.00	3.53	0.83	3.53	0.83	0.83	—	0.83	—	3,890	3,890	0.16	0.13	15.4	3,949
Vendor	0.15	0.10	3.71	1.15	0.02	0.05	0.25	0.90	0.05	0.30	—	0.25	—	3,274	3,274	0.07	0.49	9.22	3,431
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.44	1.30	1.54	17.1	0.00	3.53	0.83	3.53	0.83	0.83	—	0.83	—	3,575	3,575	0.17	0.13	0.40	3,619
Vendor	0.14	0.09	3.88	1.18	0.02	0.05	0.25	0.90	0.05	0.30	—	0.25	—	3,276	3,276	0.07	0.49	0.24	3,425
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—



Worker	0.73	0.66	0.78	9.14	0.00	0.00	1.80	1.80	0.42	0.42	0.00	0.42	0.42	1,842	1,842	0.09	0.07	3.39	1,868
Vendor	0.07	0.05	1.97	0.60	0.01	0.02	0.46	0.46	0.15	0.13	0.02	0.15	0.15	1,666	1,666	0.04	0.25	2.02	1,744
Hauling	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	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.12	0.14	1.67	0.00	0.00	0.33	0.33	0.08	0.08	0.00	0.08	0.08	305	305	0.01	0.01	0.56	309
Vendor	0.01	0.01	0.36	0.11	< 0.005	< 0.005	0.08	0.08	0.03	0.02	< 0.005	0.03	0.03	276	276	0.01	0.04	0.33	289
Hauling	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	0.00	0.00	0.00

### 3.7. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e	
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406	
Onsite truck	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	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.08	0.78	0.97	< 0.005	0.03	—	0.03	0.03	—	0.03	—	178	178	0.01	< 0.005	—	179	
Onsite truck	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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—



Off-Road Equipment	0.02	0.02	0.14	0.18	<0.005	0.01	—	0.01	—	0.01	—	29.5	<0.005	<0.005	—	29.6
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.28	1.14	1.30	15.8	0.00	0.00	3.53	0.00	0.83	0.83	—	3,501	0.16	0.13	0.36	3,546
Vendor	0.14	0.07	3.71	1.13	0.02	0.05	0.90	0.05	0.25	0.30	—	3,229	0.07	0.49	0.24	3,377
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.11	1.24	0.00	0.00	0.26	0.00	0.06	0.06	—	264	0.01	0.01	0.45	267
Vendor	0.01	0.01	0.28	0.08	<0.005	<0.005	0.07	<0.005	0.02	0.02	—	240	0.01	0.04	0.30	251
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.23	0.00	0.00	0.05	0.00	0.01	0.01	—	43.7	<0.005	<0.005	0.07	44.3
Vendor	<0.005	<0.005	0.05	0.02	<0.005	<0.005	0.01	<0.005	<0.005	<0.005	—	39.7	<0.005	0.01	0.05	41.6
Hauling	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

### 3.9. Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—







Vendor	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Hauling	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.00	0.00	0.00	< 0.005	< 0.005	< 0.005	< 0.005	9.17	9.17	< 0.005	< 0.005	0.02	9.30	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	0.00	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.52	1.52	< 0.005	< 0.005	< 0.005	1.54	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 3.11. Architectural Coating (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e	
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134	
Architectural Coatings	359	359	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00	







Vendor	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	0.00	0.00	0.00	0.00	0.00
Hauling	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	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	<0.005	<0.005	0.03	0.00	0.00	0.01	0.00	<0.005	<0.005	0.00	0.01	0.00	<0.005	5.47	5.47	<0.005	<0.005	0.01	0.01	0.01	5.55
Vendor	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	0.00	0.00	0.00	0.00	0.00
Hauling	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	0.00	0.00	0.00	0.00	0.00

## 4. Operations Emissions Details

### 4.10. Soil Carbon Accumulation By Vegetation Type

#### 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

##### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e	
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

#### 4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

##### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e	
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—











### 5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Back hoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Tractors/Loaders/Back hoes	Diesel	Average	2.00	8.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Back hoes	Diesel	Average	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

### 5.3. Construction Vehicles

#### 5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.2	HHDT,MHDT
			21 / 30	



Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT
Grading	Hauling	803	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	270	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	105	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	54.0	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

## 5.4. Vehicles

### 5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

## 5.5. Architectural Coatings



Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	965,129	321,710	30,060

## 5.6. Dust Mitigation

### 5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	—	15.0	0.00	—
Grading	141,400	—	66.0	0.00	—
Paving	0.00	0.00	0.00	0.00	11.5

### 5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

## 5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Unrefrigerated Warehouse-Rail	0.00	0%
Parking Lot	11.5	100%

## 5.8. Construction Electricity Consumption and Emissions Factors

### kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	532	0.03	< 0.005
2025	0.00	532	0.03	< 0.005

## 5.18. Vegetation



5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
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5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
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5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
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## 6. Climate Risk Detailed Report

### 6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	29.5	annual days of extreme heat
Extreme Precipitation	2.30	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	6.30	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi. Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.



Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

### 6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	0	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	0	0	0	N/A
Wildfire	0	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

### 6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A



Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

## 6.4. Climate Risk Reduction Measures

# 7. Health and Equity Details

## 7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	97.1
AQ-PM	51.1
AQ-DPM	22.7
Drinking Water	62.2
Lead Risk Housing	38.2
Pesticides	74.4
Toxic Releases	29.5
Traffic	64.5
Effect Indicators	—
CleanUp Sites	37.6
Groundwater	14.3
Haz Waste Facilities/Generators	16.6
Impaired Water Bodies	0.00
Solid Waste	59.2
	26 / 30



Sensitive Population	—
Asthma	34.5
Cardio-vascular	75.9
Low Birth Weights	66.1
Socioeconomic Factor Indicators	—
Education	75.4
Housing	72.6
Linguistic	59.4
Poverty	65.1
Unemployment	—

## 7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	15.68073912
Employed	8.956756063
Median HI	18.47812139
Education	—
Bachelor's or higher	21.19851148
High school enrollment	100
Preschool enrollment	31.61811882
Transportation	—
Auto Access	59.70742974
Active commuting	10.39394328
Social	—
2-parent households	77.56961376
Voting	33.02964199



Neighborhood	—
Alcohol availability	75.72180162
Park access	8.058514051
Retail density	12.52406005
Supermarket access	20.54407802
Tree canopy	1.578339535
Housing	—
Homeownership	59.66893366
Housing habitability	44.57846786
Low-inc homeowner severe housing cost burden	28.23046324
Low-inc renter severe housing cost burden	42.28153471
Uncrowded housing	24.38085461
Health Outcomes	—
Insured adults	33.79956371
Arthritis	13.5
Asthma ER Admissions	49.4
High Blood Pressure	8.4
Cancer (excluding skin)	49.7
Asthma	5.9
Coronary Heart Disease	21.3
Chronic Obstructive Pulmonary Disease	13.3
Diagnosed Diabetes	13.1
Life Expectancy at Birth	24.0
Cognitively Disabled	46.5
Physically Disabled	52.4
Heart Attack ER Admissions	12.4
Mental Health Not Good	17.1
Chronic Kidney Disease	10.6



Obesity	6.5
Pedestrian Injuries	97.1
Physical Health Not Good	17.0
Stroke	6.5
Health Risk Behaviors	—
Binge Drinking	82.5
Current Smoker	17.7
No Leisure Time for Physical Activity	13.9
Climate Change Exposures	—
Wildfire Risk	27.2
SLR Inundation Area	0.0
Children	17.1
Elderly	58.6
English Speaking	45.7
Foreign-born	50.3
Outdoor Workers	12.5
Climate Change Adaptive Capacity	—
Impervious Surface Cover	90.6
Traffic Density	38.2
Traffic Access	23.0
Other Indices	—
Hardship	81.5
Other Decision Support	—
2016 Voting	47.0

### 7.3. Overall Health & Equity Scores

Metric

Result for Project Census Tract

CalEnviroScreen 4.0 Score for Project Location (a)

70.0

29 / 30



Healthy Places Index Score for Project Location (b)	19.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

- a. The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
- b. The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

### 7.4. Health & Equity Measures

No Health & Equity Measures selected.

### 7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

### 7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

## 8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	See SWAPE's comment on "Unsubstantiated Input Parameters Used to Estimate Project Emissions."





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 100 industrial facilities.
- Expert witness on numerous cases including, for example, perfluorooctanoic acid (PFOA) contamination of groundwater, MTBE litigation, air toxins at hazards at a school, CERCLA compliance in assessment and remediation, and industrial stormwater contamination.
- Technical assistance and litigation support for vapor intrusion concerns.
- Lead analyst and testifying expert in the review of environmental issues in license applications for large solar power plants before the California Energy Commission.
- Manager of a project to evaluate numerous formerly used military sites in the western U.S.
- Manager of a comprehensive evaluation of potential sources of perchlorate contamination in Southern California drinking water wells.
- Manager and designated expert for litigation support under provisions of Proposition 65 in the review of releases of gasoline to sources drinking water at major refineries and hundreds of gas stations throughout California.

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

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



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

**Executive Director:**

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

**Hydrogeology:**

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

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

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

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

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



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

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

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

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

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

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

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**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.





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***Paul Rosenfeld, Ph.D.***

Chemical Fate and Transport &amp; Air Dispersion Modeling

*Principal Environmental Chemist***Risk Assessment & Remediation Specialist****Education**

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

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

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

**Professional Experience**

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

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



## **Professional History:**

Soil Water Air Protection Enterprise (SWAPE); 2003 to present; Principal and Founding Partner  
UCLA School of Public Health; 2007 to 2011; Lecturer (Assistant Researcher)  
UCLA School of Public Health; 2003 to 2006; Adjunct Professor  
UCLA Environmental Science and Engineering Program; 2002-2004; Doctoral Intern Coordinator  
UCLA Institute of the Environment, 2001-2002; Research Associate  
Komex H<sub>2</sub>O Science, 2001 to 2003; Senior Remediation Scientist  
National Groundwater Association, 2002-2004; Lecturer  
San Diego State University, 1999-2001; Adjunct Professor  
Anteon Corp., San Diego, 2000-2001; Remediation Project Manager  
Ogden (now Amec), San Diego, 2000-2000; Remediation Project Manager  
Bechtel, San Diego, California, 1999 – 2000; Risk Assessor  
King County, Seattle, 1996 – 1999; Scientist  
James River Corp., Washington, 1995-96; Scientist  
Big Creek Lumber, Davenport, California, 1995; Scientist  
Plumas Corp., California and USFS, Tahoe 1993-1995; Scientist  
Peace Corps and World Wildlife Fund, St. Kitts, West Indies, 1991-1993; Scientist

## **Publications:**

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

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

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

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

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

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

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

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

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

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



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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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



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

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

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

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

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

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

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

## **Presentations:**

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

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

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

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

**Rosenfeld, P.E.** (April 19-23, 2009). 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 23<sup>rd</sup> 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 23<sup>rd</sup> 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 23<sup>rd</sup> 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 2010) Taught Environmental Health Science 100 to students, including undergrad, medical doctors, public health professionals and nurses. Course focused on the health effects of environmental contaminants.

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

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

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

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

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

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

### **Academic Grants Awarded:**

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

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

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

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



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

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

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

### **Deposition and/or Trial Testimony:**

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

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

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

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

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

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

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

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

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



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

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

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

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

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

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

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

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

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

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

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



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

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

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

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

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

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

In the Superior Court of the State of Arizona In and For the Cunty of Maricopa  
Mary Tryon et al. vs. The City of Pheonix v. Cox Cactus Farm, L.L.C., Utah Shelter Systems, Inc.  
Case No. CV20127-094749  
Rosenfeld Deposition 5-7-2021

In the United States District Court for the Eastern District of Texas Beaumont Division  
Robinson, Jeremy et al vs. CNA Insurance Company et al.  
Case No. 1:17-cv-000508  
Rosenfeld Deposition 3-25-2021

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

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

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



- In the United States District Court For The District of New Jersey  
Duarte et al, Plaintiffs, vs. United States Metals Refining Company et. al. Defendant.  
Case No. 2:17-cv-01624-ES-SCM  
Rosenfeld Deposition 6-7-2019
- In the United States District Court of Southern District of Texas Galveston Division  
M/T Carla Maersk vs. Conti 168., Schiffahrts-GMBH & Co. Bulker KG MS “Conti Perdido” Defendant.  
Case No. 3:15-CV-00106 consolidated with 3:15-CV-00237  
Rosenfeld Deposition 5-9-2019
- In The Superior Court of the State of California In And For The County Of Los Angeles – Santa Monica  
Carole-Taddeo-Bates et al., vs. Ifran Khan et al., Defendants  
Case No. BC615636  
Rosenfeld Deposition 1-26-2019
- In The Superior Court of the State of California In And For The County Of Los Angeles – Santa Monica  
The San Gabriel Valley Council of Governments et al. vs El Adobe Apts. Inc. et al., Defendants  
Case No. BC646857  
Rosenfeld Deposition 10-6-2018; Trial 3-7-19
- In United States District Court For The District of Colorado  
Bells et al. Plaintiffs vs. The 3M Company et al., Defendants  
Case No. 1:16-cv-02531-RBJ  
Rosenfeld Deposition 3-15-2018 and 4-3-2018
- In The District Court Of Regan County, Texas, 112<sup>th</sup> Judicial District  
Phillip Bales et al., Plaintiff vs. Dow Agrosciences, LLC, et al., Defendants  
Cause No. 1923  
Rosenfeld Deposition 11-17-2017
- In The Superior Court of the State of California In And For The County Of Contra Costa  
Simons et al., Plaintiffs vs. Chevron Corporation, et al., Defendants  
Cause No. C12-01481  
Rosenfeld Deposition 11-20-2017
- In The Circuit Court Of The Twentieth Judicial Circuit, St Clair County, Illinois  
Martha Custer et al., Plaintiff vs. Cerro Flow Products, Inc., Defendants  
Case No.: No. 0i9-L-2295  
Rosenfeld Deposition 8-23-2017
- In United States District Court For The Southern District of Mississippi  
Guy Manuel vs. The BP Exploration et al., Defendants  
Case No. 1:19-cv-00315-RHW  
Rosenfeld Deposition 4-22-2020
- In The Superior Court of the State of California, For The County of Los Angeles  
Warrn Gilbert and Penny Gilber, Plaintiff vs. BMW of North America LLC  
Case No. LC102019 (c/w BC582154)  
Rosenfeld Deposition 8-16-2017, Trail 8-28-2018
- In the Northern District Court of Mississippi, Greenville Division  
Brenda J. Cooper, et al., Plaintiffs, vs. Meritor Inc., et al., Defendants  
Case No. 4:16-cv-52-DMB-JVM  
Rosenfeld Deposition July 2017



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

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

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

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

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

In the Circuit Court of the 17<sup>th</sup> Judicial Circuit, in and For Broward County, Florida  
Walter Hinton, et. al. Plaintiff, vs. City of Fort Lauderdale, Florida, a Municipality, Defendant.  
Case No. CACE07030358 (26)  
Rosenfeld Deposition December 2014

In the County Court of Dallas County Texas  
Lisa Parr et al, Plaintiff, vs. Aruba et al, Defendant.  
Case No. cc-11-01650-E  
Rosenfeld Deposition: March and September 2013  
Rosenfeld Trial April 2014

In the Court of Common Pleas of Tuscarawas County Ohio  
John Michael Abicht, et al., Plaintiffs, vs. Republic Services, Inc., et al., Defendants  
Case No. 2008 CT 10 0741 (Cons. w/ 2009 CV 10 0987)  
Rosenfeld Deposition October 2012

In the United States District Court for the Middle District of Alabama, Northern Division  
James K. Benefield, et al., Plaintiffs, vs. International Paper Company, Defendant.  
Civil Action No. 2:09-cv-232-WHA-TFM  
Rosenfeld Deposition July 2010, June 2011

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

In the United States District Court, Western District Lafayette Division  
Ackle et al., Plaintiffs, vs. Citgo Petroleum Corporation, et al., Defendants.  
Case No. 2:07CV1052  
Rosenfeld Deposition July 2009



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June 26, 2024

Alferdo Garcia  
City of Perris – Planning Division  
135 North “D” Street  
Perris, California 92570

VIA EMAIL TO:  
algarcia@cityofperris.org

***SUBJECT: COMMENTS ON ELLIS LOGISTICS CENTER EIR (SCH NO. 2023040144)***

Dear Mr. Garcia,

Thank you for the opportunity to comment on the Environmental Impact Report (EIR) for the proposed Ellis Logistics Center. Please accept and consider these comments on behalf of Golden State Environmental Justice Alliance. Also, Golden State Environmental Justice Alliance formally requests to be added to the public interest list regarding any subsequent environmental documents, public notices, public hearings, and notices of determination for this project. Send all communications to Golden State Environmental Justice Alliance P.O. Box 79222 Corona, CA 92877.

### **1.0 Summary**

The project proposes the construction and operation of one 643,419 square foot (sf) industrial warehouse building on an approximately 34.52 acre site. The building includes 10,000 sf of office mezzanine space and 633,419 sf of warehouse area. The building is designed as a cross-dock fulfillment center with 87 truck/trailer loading dock doors (39 docks on the north side of the building and 48 on the south side of the building), and the site provides 174 passenger car parking stalls and 227 truck/trailer parking stalls (67 truck/trailer parking stalls are arranged in a tandem configuration on the south side of the building).

### **3.0 Project Description**

The EIR does not include a floor plan, detailed building elevations, detailed site plan, or a conceptual grading plan. The basic components of a Planning Application include a detailed site plan, floor plan, conceptual grading plan, written narrative, and detailed elevations. For example, the EIR states that, “The proposed project would also include an approximately 455-square-foot



fire pump house,” but does not identify the fire pump house within the key notes on the Site Plan, and also does not provide any analysis or information regarding the need for an onsite fire pump house. Figure 3-6: Proposed Building Elevations does not provide any useful or meaningful information such as building height (to the highest overall point of the building on each elevation), building colors, or materials. The EIR has also excluded a grading plan from public review. The EIR states that, “Based on the existing topography grading of the project site would involve approximately 8,600 cubic yards of cut and approximately 150,000 cubic yards of fill. Project development would require the import of approximately 140,000 cubic yards of fill soil,” yet there is no method for the public to verify this claim. Providing the grading plan and earthwork quantity notes is vital as this directly informs the quantity of necessary truck hauling trips due to soil import/export during the grading phase of construction. A revised EIR must be prepared to include wholly accurate and unedited detailed floor plan, grading plan, site plan, elevations, and project narrative for public review.

#### **4.2 Air Quality, 4.5 Energy, and 4.7 Greenhouse Gas Emissions**

Please see the attachment for a full technical commentary and analysis from SWAPE.

The EIR does not include for analysis relevant environmental justice issues in reviewing potential impacts, including cumulative impacts from the proposed project. According to CalEnviroScreen 4.0<sup>1</sup>, CalEPA’s screening tool that ranks each census tract in the state for pollution and socioeconomic vulnerability, the proposed project’s census tract (6065042620) is highly burdened by pollution. The surrounding community, including sensitive receptors such as Park Place Mobile Home Park (adjacent to the west) and Camper Resorts of America (adjacent to the east), bears the impact of multiple sources of pollution and is more polluted than average on several pollution indicator measured by CalEnviroScreen. For example, the project census tract ranks in the 98th percentile for ozone burden, the 53rd percentile for particulate matter (PM) 2.5 burden, and 82nd percentile for traffic burden. All of these environmental factors are attributed to heavy truck activity in the area. Ozone can cause lung irritation, inflammation, and worsening of existing chronic health conditions, even at low levels of exposure<sup>2</sup>. Exhaust fumes contain toxic chemicals that can damage DNA, cause cancer, make breathing difficult, and cause low weight and premature births<sup>3</sup>.

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<sup>1</sup> [https://experience.arcgis.com/experience/11d2f52282a54ceebcac7428e6184203/page/CalEnviroScreen-4\\_0/](https://experience.arcgis.com/experience/11d2f52282a54ceebcac7428e6184203/page/CalEnviroScreen-4_0/)

<sup>2</sup> OEHHA Ozone <https://oehha.ca.gov/calenviroscreen/indicator/air-quality-ozone>

<sup>3</sup> OEHHA Traffic <https://oehha.ca.gov/calenviroscreen/indicator/traffic-density>



The census tract also bears more impacts from cleanup sites than 69% of the state. Chemicals in the buildings, soil, or water at cleanup sites can move into nearby communities through the air or movement of water<sup>4</sup>.

Further, the project's census tract is a diverse community including 69% Hispanic, 13% African-American, and 7% Asian-American residents, whom are especially vulnerable to the impacts of pollution. The community has a high rate of low educational attainment, meaning 75% of the census tract over age 25 has not attained a high school diploma, which is an indication that they may lack health insurance or access to medical care. The community also has a high rate of poverty, meaning 65% of the households in the census tract have a total income before taxes that is less than the poverty level. Income can affect health when people cannot afford healthy living and working conditions, nutritious food and necessary medical care<sup>5</sup>. Poor communities are often located in areas with high levels of pollution<sup>6</sup>. Poverty can cause stress that weakens the immune system and causes people to become ill from pollution<sup>7</sup>. Living in poverty is also an indication that residents may lack health insurance or access to medical care. Medical care is vital for this census tract as it ranks in the 91st percentile for incidence of cardiovascular disease and 66th percentile for incidence of asthma. The community also has a high rate of linguistic isolation, meaning 53% of the census tract speaks little to no English and faces further inequities as a result.

Additionally, the project census tract (6065042620) and the census tracts adjacent to the project site (6065046700 (north), 6065048800 (north), and (6065042010) west) are identified as SB 535 Disadvantaged Communities<sup>8</sup>. This indicates that cumulative negative impacts of development and environmental impacts in the area are disproportionately impacting these communities. The EIR does not discuss that the surrounding area is a disadvantaged community and does not utilize this information in its analysis. The EIR has not considered the environmental impacts in relation to the SB 535 status of the project census tract and surrounding area. The negative environmental, health, and quality of life impacts of the warehousing and logistics industry in the area have become distinctly inequitable. The severity of environmental impacts particularly on these Disadvantaged Communities must be included for analysis as part of a revised EIR.

The State of California lists three approved compliance modeling softwares<sup>9</sup> for non-residential buildings: CBECC-Com, EnergyPro, and IES VE. CalEEMod is not listed as an approved

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<sup>4</sup> OEHHA Cleanup Sites <https://oehha.ca.gov/calenviroscreen/indicator/cleanup-sites>

<sup>5</sup> OEHHA Poverty <https://oehha.ca.gov/calenviroscreen/indicator/poverty>

<sup>6</sup> Ibid.

<sup>7</sup> Ibid.

<sup>8</sup> OEHHA SB 535 Census Tracts <https://oehha.ca.gov/calenviroscreen/sb535>

<sup>9</sup> California Energy Commission 2022 Energy Code Compliance Software

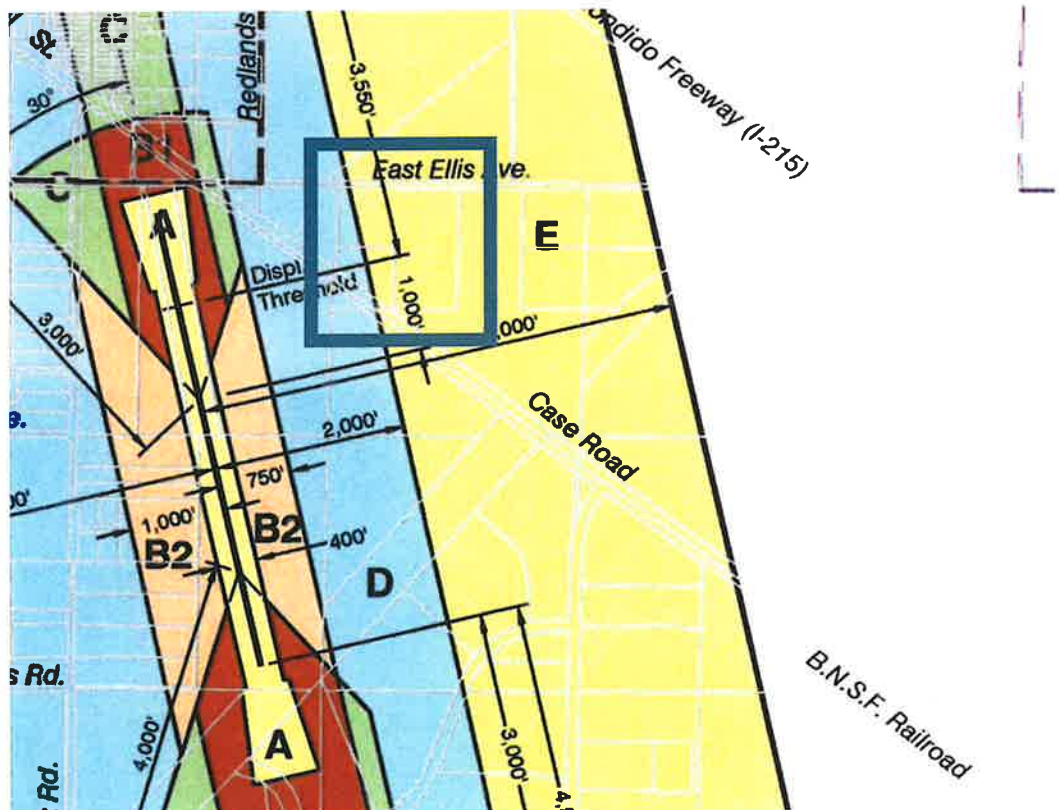
<https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-1>



software. The CalEEMod modeling does not comply with the 2022 Building Energy Efficiency Standards and under-reports the project's significant Energy impacts and fuel consumption to the public and decision makers. Since the EIR did not accurately or adequately model the energy impacts in compliance with Title 24, it cannot conclude the project will generate less than significant impacts and a finding of significance must be made. A revised EIR with modeling using one of the approved software types must be prepared and circulated for public review in order to adequately analyze the project's significant environmental impacts. This is vital as the EIR utilizes CalEEMod as a source in its methodology and analysis, which is clearly not an approved software.

#### 4.8 Hazards and Hazardous Materials

The EIR states, "As shown in Map PV-1 of the Perris Valley Airport Land Use Compatibility Plan, the project site is located within Compatibility Zone E, defined as 'other airport environs' and does not have a limit on development intensities." The EIR is inadequate as an informational document as Map PV-1 of the Perris Valley Airport Land Use Compatibility Plan<sup>10</sup> (PV ALUCP) depicts the project site located within Compatibility Zones D and E.



<sup>10</sup> <https://rcaluc.org/sites/g/files/alnrop421/files/migrated/Portals-13-19-20--20Vol.-201-20Perris-20Valley-20-Final-Mar.2011-.pdf>



The project site is also located within March Air Reserve Base (MARB)/Inland Port Airport Compatibility Zones D and E. T The EIR does not provide any information regarding required review by the Riverside County Airport Land Use Commission (RCALUC).

Implementation Measures of the General Plan require MARB/RCALUC review and comment prior to making any land use decisions:

1. Land Use Element Implementation Measure V.C.I. Circulate all development plans within the Clear Zone and Accident Potential Zones of the March Air Reserve Base/Inland Port Plan to Department of the Air Force, MARCH Air Reserve Base to provide recommendations and guidance on land use compatibility in accordance with the policies of the most recent Air Force Instruction (AFI) 32-7063.
2. Safety Element Implementation Measure I.D.2 Continue to notify March Air Reserve Base of new development project applications and consider their input prior to making land use decisions.

The EIR is misleading to the public and decision makers by excluding the required review by MARB/RCALUC. Delaying MARB/RCALUC review until after the CEQA process is implementation of the project prior to CEQA review and deferred mitigation in violation of CEQA. An EIR must be prepared which includes a review and comment letter regarding the proposed development plans from MARB/RCALUC.

#### **4.10 Land Use**

A revised EIR must be prepared to provide a quantified analysis of the project's growth within the General Plan buildout scenario to determine if it exceeds the buildout scenario for its Planning Area within General Plan, in accordance with Table LU-28: Building Area by Land Use Designation, Table LU-29: General Plan Population Projections, and Table LU-30: General Plan Employment Projections of the City's General Plan Land Use Element, including all cumulative development and projects "in the pipeline."

Table 4.10-2: City of Perris General Plan Consistency Analysis does not provide a consistency analysis with all land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. The project has significant potential to conflict with many of these items, including but not limited to the following from the General Plan:



1. Policy HC 1.5 On an ongoing basis, identify and address health inequities in Perris (i.e. unjust barriers that result in differences in environmental conditions and health outcomes) and strive to provide a high quality of life for all residents, regardless of income, age or ethnicity.
2. Policy HC 1.6 Encourage the attraction and retention of high quality grocery stores and other healthy food purveyors as an economic development strategy for the City. Healthy food outlets include full-service grocery stores, regularly-held farmer's markets, fruit and vegetable markets, and convenience stores or corner stores that sell a significant proportion of healthy food.
3. Policy HC 2.4 Promote development patterns and policies that: Reduce commute times.
4. Policy HC 2.6 Encourage land use and urban design to promote physical activity, provide access to nutritious foods, and reduce air pollution.
5. Goal HC-5: Healthy Economy – Encourage businesses to provide meaningful employment opportunities to residents.
6. Policy HC 5.1 Develop programs to attract and retain industries that can provide a living wage, provide health insurance benefits, and meet existing levels of workforce education.
7. Land Use Element Implementation Measure V.C.I. Circulate all development plans within the Clear Zone and Accident Potential Zones of the March Air Reserve Base/Inland Port Plan to Department of the Air Force, MARCH Air Reserve Base to provide recommendations and guidance on land use compatibility in accordance with the policies of the most recent Air Force Instruction (AFI) 32-7063.
8. Safety Element Implementation Measure I.D.2 Continue to notify March Air Reserve Base of new development project applications and consider their input prior to making land use decisions.
9. Environmental Justice Goal 6.2 Policy 2: Discourage development in proximity to sensitive land uses (e.g., schools, hospitals, homes, and long-term care facilities) near source point pollution sources that impact health, including freeways and hazardous waste sites.

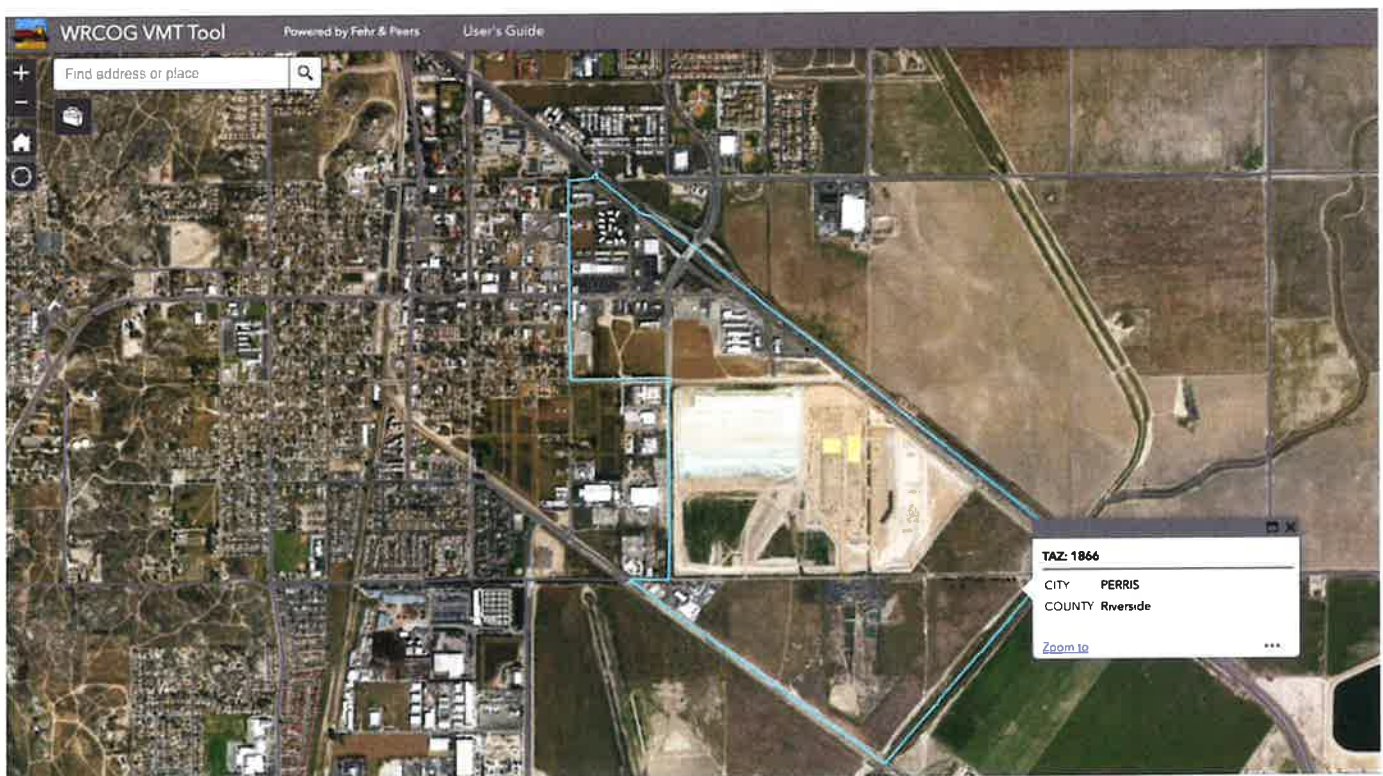
A revised EIR must be prepared to include an analysis of the project's potential inconsistency with these goals and policies. The revised EIR must also include information and analysis regarding the fact that the project site is identified as a Disadvantaged Community in Figure 1 of the Environmental Justice Element of the General Plan.



Table 4.10-1: SCAG Policy Consistency Analysis provides a misleading and erroneous consistency analysis with SCAG's 2020-2045 Connect SoCal RTP/SCS. Due to errors in modeling and modeling without supporting evidence (as noted throughout this comment letter and attachments), the proposed project is directly inconsistent with Goal 5 to reduce greenhouse gas emissions and improve air quality, Goal 6 to support healthy and equitable communities, and Goal 7 to adapt to a changing climate. The EIR must be revised to include revised, accurate modeling and consistency analysis with all goals of SCAG's 2020-2045 Connect SoCal RTP/SCS.

### 4.13 Transportation and Traffic

The project's VMT impacts are misrepresented by the VMT modeling. The EIR relies upon a VMT screening analysis which concludes that the proposed project site is located in a low VMT-generating Traffic Analysis Zone (TAZ) which results in less than significant Transportation impacts. The project site is located in TAZ ID 1866 which is San Jacinto Avenue to the north, the I-215 highway to the east, Redlands Avenue/G Street to the west, Case Road and the riverbed/flood control channel to the south.



The TAZ is primarily comprised of vacant land with a few strip shopping centers and an apartment complex. The proposed project is unique in that the TAZ in which the Project site is located does not contain any other operational warehouse buildings and is over 50% vacant land. The VMT



screening analysis does not adequately or accurately represent the VMT impacts of the proposed project and a revised EIR must be prepared with a project-specific VMT analysis. The Fehr and Peer's WRCOG SB 743 Implementation Pathway Document Package<sup>11</sup> states that the exemption for projects in low VMT areas, "may not be appropriate if the project land uses would alter the existing built environment in such a way as to increase the rate or length of vehicle trips." The proposed project will generate 1,693 average daily trips and daily operations as a warehouse involves extremely high VMT rates during the course of business. The operational nature of industrial/warehouse uses involves high rates of truck/trailer/delivery van VMT due to traveling from large import hubs to regional distribution centers to smaller industrial parks and then to their final delivery destinations. Once employees arrive at work at the proposed distribution facility, they will conduct their jobs by driving delivery vans across the region as part of the daily operations as a distribution facility, which will drastically increase project-generated VMT. The project's truck/trailer and delivery van activity is unable to utilize public transit or active transportation and it is misleading to the public and decision makers to exclude this activity from VMT analysis. A revised EIR must be prepared to reflect a quantified VMT analysis that includes all truck/trailer and delivery van activity and remove the applied VMT exemption.

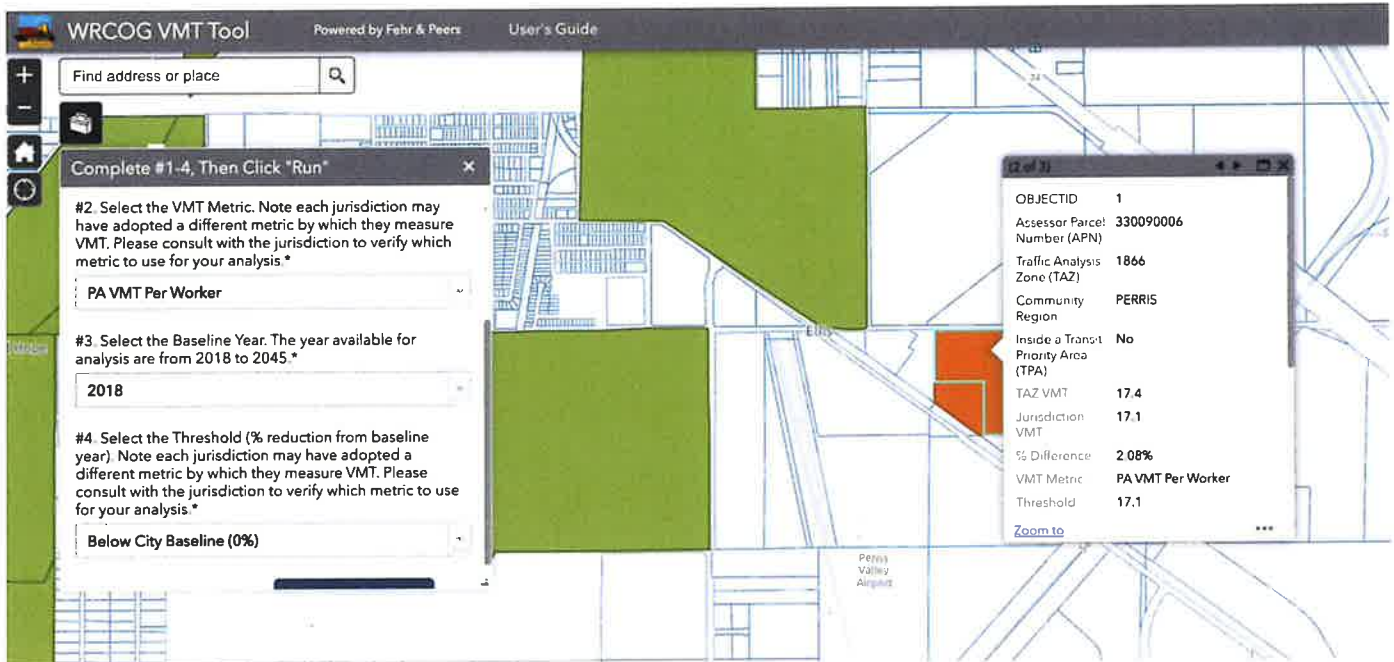
Further, Fehr and Peer's WRCOG SB 743 Implementation Pathway Document Package<sup>12</sup> states "that a per capita or per employee VMT that is fifteen percent below that of existing development" is a reasonable threshold to determine that a project would have a less than significant VMT impact. Attachment E: VMT Scoping Form within Appendix K: Transportation depicts that the Citywide employment based VMT per employee is 11.62 VMT and the Project TAZ rate is 11.29 VMT per employee, which is 0.33 VMT lower than the City average. This does not meet the Implementation threshold of a 15% below existing VMT because it is only a 2% less than the TAZ VMT. However, the EIR nor its appendices provide any input/output modeling information to support any of these claims. This does not comply with CEQA's requirements for adequate informational documents and meaningful disclosure (CEQA § 15121 and 21003(b)). Excluding the VMT input/output modeling information contributes directly to analysis of the problem at hand. A revised EIR must be prepared to include these items for review by the public and decision makers.

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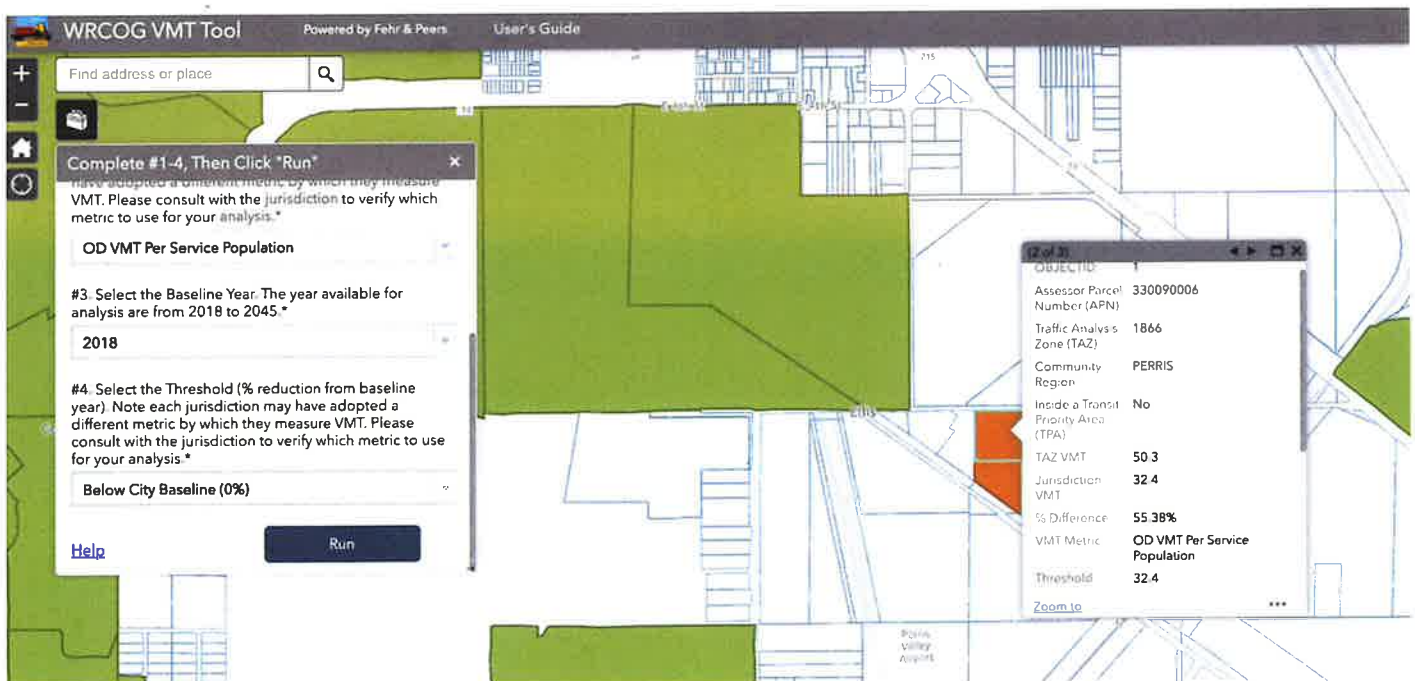
<sup>11</sup> WRCOG SB 743 Implementation Pathway Document Package <https://www.fehrandpeers.com/wp-content/uploads/2019/12/WRCOG-SB743-Document-Package.pdf>

<sup>12</sup> WRCOG SB 743 Implementation Pathway Document Package <https://www.fehrandpeers.com/wp-content/uploads/2019/12/WRCOG-SB743-Document-Package.pdf>



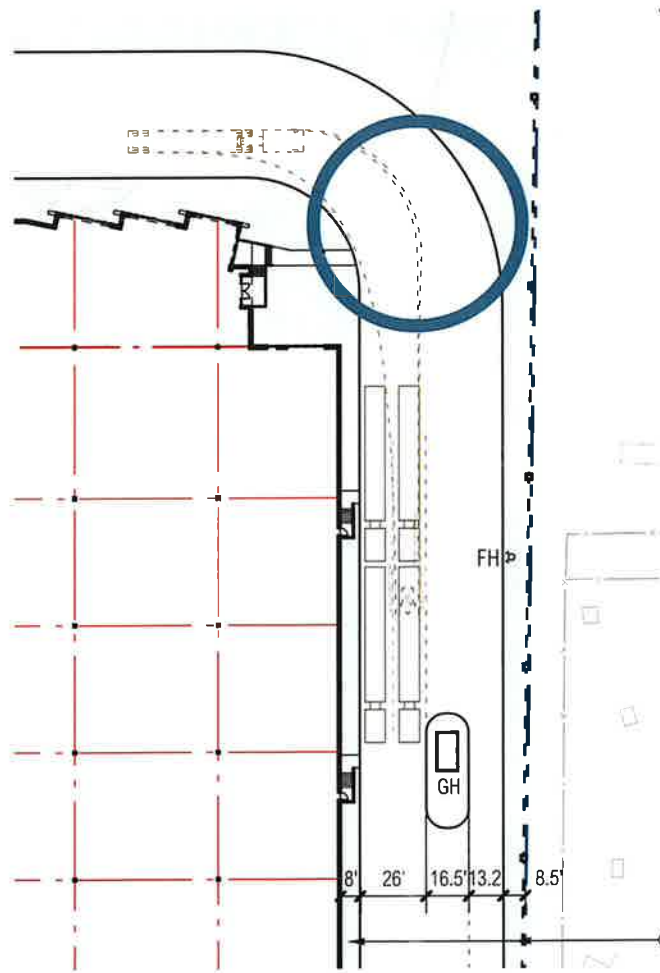


As shown below, modeling the project site is not located in a low VMT TAZ and the TAZ VMT exceeds the jurisdiction VMT threshold in both PA VMT and OD VMT per worker scenarios:





The EIR has not adequately analyzed the project's potential to substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses; or the project's potential to result in inadequate emergency access. There are no exhibits adequately depicting the available maneuvering and queuing space for trucks/trailers at the intersection of the project driveways and the adjacent streets. For example, the Site Plan does not clearly state if WB-67 sized trucks were utilized for maneuvering modeling. The EIR states that, "Inbound vehicle queues and delays are not *expected* to be *significant* issues," but has not provided any meaningful evidence to substantiate this claim. The internal circulation of the site presents several areas of conflicts, queues, and delays. For example, trucks accessing the truck/trailer loading dock court on the south side of the building must traverse through a narrow turn to pass the gate house. The Site plan only models a single truck utilizing the curved internal road to access the gate house and excludes modeling of two trucks simultaneously entering and exiting the site via the gate house area. This is likely because there is not adequate maneuvering space for two trucks to simultaneously utilize this curved area and significant unavoidable impacts exist.

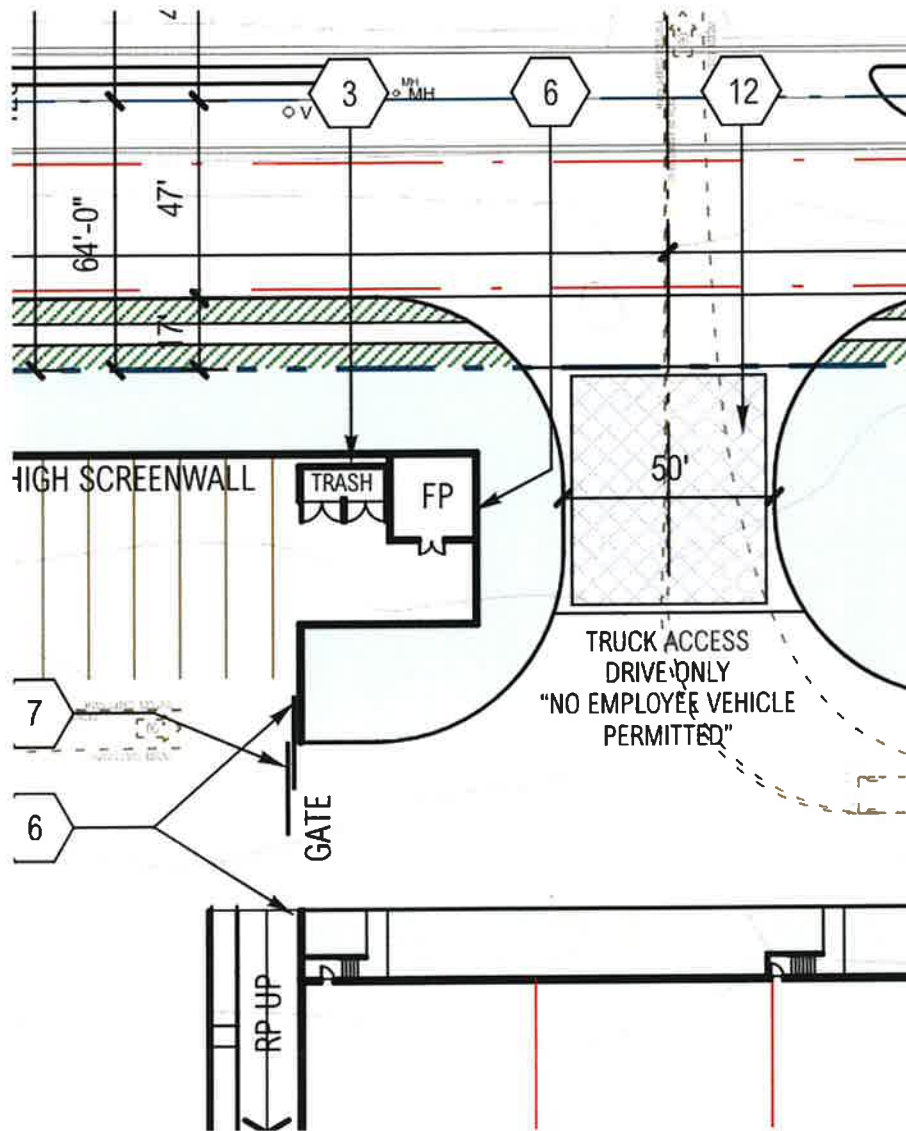




Further, the Site Plan depicts truck/trailer parking stalls located in a tandem configuration adjacent to the truck/trailer loading dock courts on the south side of the building. These parking stalls may be in use at any time and further restrict truck/trailer movement, including increasing truck idling times as tandem parked trucks require additional time to maneuver, which will also result in increased queuing duration and associated need for increased queuing area for trucks/trailers. The EIR has not provided any exhibits demonstrating that there is sufficient backup space for trucks/trailers to utilize these spaces. A revised EIR must be prepared to include a finding of significance due to these significant and unavoidable impacts.

There are also no exhibits depicting emergency vehicle access and maneuvering. The EIR states that, "it is *assumed* that fire apparatus vehicles would stage in the project parking lots or Ellis Avenue. Existing fire hydrants along the project frontage would provide direct fire water access for emergency personnel." However, the EIR does not provide any meaningful evidence to support these declared assumptions. Notably, this section of analysis does not provide any information regarding the proposed 455 square foot onsite fire pump house. The fire The proposed project would also include an approximately 455-square-foot fire pump house house is not clearly identified on the Site Plan, but if it is depicted as "FP" as shown below (keynote 6 refers to the adjacent fencing), access may be limited due to several design features, including the adjacent truck driveway, gate, trash enclosure, and truck/trailer parking stalls that impede access to this point. Deferring this environmental analysis required by CEQA to the construction permitting phase is improper mitigation and does not comply with CEQA's requirement for meaningful disclosure and adequate informational documents. A revised EIR must be prepared for the proposed project with truck turning exhibits and emergency access exhibits and associated analysis/requirements in order to provide an adequate and accurate environmental analysis.





Additionally, the EIR has not provided any analysis of the available horizontal and vertical sight distance at the intersection of the project driveways and adjacent streets. Sight distance is the continuous length of street ahead visible to the driver. At unsignalized intersections, corner sight distance must provide a substantially clear line of sight between the driver of the vehicle waiting on the minor road (driveway) and the driver of an approaching vehicle. Deferring this environmental analysis required by CEQA to the construction permitting phase is improper mitigation and does not comply with CEQA's requirement for meaningful disclosure and adequate informational documents. A revised EIR must be prepared with this analysis based on the American Association of State Highway and Transportation Officials (AASHTO) Stopping Sight Distance requirements.



## **5.2 Significant and Irreversible Environmental Changes, 5.3 Growth Inducing Impacts, and 5.4 Mandatory Significance Findings**

The EIR relies upon erroneous Energy modeling to determine that the project will meet sustainability requirements. As noted above, the EIR did not model the project's energy consumption in compliance with Title 24 modeling software. The EIR must be revised to include a finding of significance due to the an inaccurate and erroneous analysis regarding the project's Air Quality, Greenhouse Gas, and Energy impacts.

A revised EIR must be prepared to provide a quantified analysis of the project's growth within the General Plan buildout scenario to determine if it exceeds the buildout scenario for its Planning Area within General Plan, in accordance with Table LU-28: Building Area by Land Use Designation, Table LU-29: General Plan Population Projections, and Table LU-30: General Plan Employment Projections of the City's General Plan Land Use Element, including all cumulative development and projects "in the pipeline."

The EIR has not provided an adequate or accurate cumulative analysis discussion to demonstrate the impact of the proposed project in a cumulative setting. SCAG's Connect SoCal Demographics and Growth Forecast<sup>13</sup> notes that the City will add 10,300 jobs between 2016 - 2045. Utilizing SCAG's Employment Density Study calculation of 1,112 employees, the project represents 10.8% of the City's employment growth from 2016 - 2045. A single project accounting for this amount of the projected employment over 29 years represents a significant amount of growth. An EIR must be prepared to include this analysis, and also provide a cumulative analysis discussion of projects approved since 2016 and projects "in the pipeline" to determine if the project will exceed SCAG's employment growth forecast for the City or General Plan growth analysis. For example, other recent industrial projects such as Patterson Commerce Center (256 employees), First Industrial at Wilson DPR 22-017 (194 employees), Duke Warehouse Patterson and Nance (1,333 employees) Harley Knox Commerce Center (152 employees), PVCCSP Amendment No. 13 (603 employees), Core 5 Rider Warehouse (432 employees), First Industrial Warehouse at Rider (562 employees), Perris and Morgan 3 Industrial Buildings (494 employees), First Industrial at Wilson 1 (526 employees), First Industrial at Wilson 2 (276 employees), IDI Rider Warehouses 2 and 4 (1,313 employees), Ramona-Indian Warehouse (440 employees), Redlands East Warehouse (442 employees), Redlands West Warehouse (592 employees), Ramona-Brennan Warehouse (287 employees), Ramona Gateway (997 employees), First March Logistics (538 employees), OLC3 (892 employees), Distribution Park Commercial and Industrial (386 employees), and Perris DC 11

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<sup>13</sup> SCAG Connect SoCal Demographics and Growth Forecast adopted September 3, 2020  
[https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocial\\_demographics-and-growth-forecast.pdf?1606001579](https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocial_demographics-and-growth-forecast.pdf?1606001579)



(536 employees) combined with the proposed project's 1,112 employees will cumulatively generate 13,798 employees, which is 133% of the City's SCAG employment growth forecast over 29 years. These totals increase exponentially when commercial development activity is added to the brief list of recent industrial activity above. An EIR must be prepared to include this information for analysis, and also provide a cumulative analysis discussion of projects approved since General Plan adoption, 2016 (SCAG), and projects "in the pipeline" to determine if the proposed project will exceed the employment/population growth forecasts by SCAG and/or the City's General Plan.

## **6.0 Alternatives**

The EIR is required to evaluate a reasonable range of alternatives to the proposed project which will avoid or substantially lessen any of the significant effects of the project (CEQA § 15126.6.) The alternatives chosen for analysis include the CEQA required "No Project/No Development" alternative and only two others - Two Building Alternative and Office Buildings Alternative. The EIR does not include an alternative that meets the project objectives and also eliminates all of the project's significant and unavoidable impacts. The EIR must be revised to include analysis of a reasonable range of alternatives and foster informed decision making (CEQA § 15126.6). This could include alternatives such as development of the site with a project that reduces all of the proposed project's significant and unavoidable impacts to a less than significant level, and a mixed-use project that provides affordable housing and exclusively local-serving commercial uses that may reduce VMT, GHG emissions and simultaneously improve Air Quality.

## **7.8 Effects Found Not to be Significant: Population and Housing**

The EIR does not provide any calculation of the construction or operational employees generated by the proposed project. SCAG's Employment Density Study<sup>14</sup> provides the following applicable employment generation rates for Riverside County:

- 1 employee per 581 sf of warehouse area
- 1 employee per 481 sf of office area

Application of these ratios results in the following calculation:

Warehouse:  $633,419 \text{ sf} / 581 \text{ sf} = 1,091$  employees  
Office:  $10,000 \text{ square feet} / 481 \text{ sf} = 21$  employees  
Total: 1,112 employees

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<sup>14</sup> SCAG Employment Density Study

<http://www.mwcog.org/file.aspx?A=QTTITR24POOOUIw5mPNzK8F4d8djdJe4LF9Exj6IXOU%3D>



SCAG's Connect SoCal Demographics and Growth Forecast<sup>15</sup> notes that the City will add 10,300 jobs between 2016 - 2045. Utilizing SCAG's Employment Density Study calculation of 1,112 employees, the project represents 10.8% of the City's employment growth from 2016 - 2045. A single project accounting for this amount of the projected employment over 29 years represents a significant amount of growth. An EIR must be prepared to include this analysis, and also provide a cumulative analysis discussion of projects approved since 2016 and projects "in the pipeline" to determine if the project will exceed SCAG's employment growth forecast for the City. For example, other recent industrial projects such as Patterson Commerce Center (256 employees), First Industrial at Wilson DPR 22-017 (194 employees), Duke Warehouse Patterson and Nance (1,333 employees) Harley Knox Commerce Center (152 employees), PVCCSP Amendment No. 13 (603 employees), Core 5 Rider Warehouse (432 employees), First Industrial Warehouse at Rider (562 employees), Perris and Morgan 3 Industrial Buildings (494 employees), First Industrial at Wilson 1 (526 employees), First Industrial at Wilson 2 (276 employees), IDI Rider Warehouses 2 and 4 (1,313 employees), Ramona-Indian Warehouse (440 employees), Redlands East Warehouse (442 employees), Redlands West Warehouse (592 employees), Ramona-Brennan Warehouse (287 employees), Ramona Gateway (997 employees), First March Logistics (538 employees), OLC3 (892 employees), Distribution Park Commercial and Industrial (386 employees), and Perris DC 11 (536 employees) combined with the proposed project's 1,112 employees will cumulatively generate 13,798 employees, which is 133% of the City's SCAG employment growth forecast over 29 years. These totals increase exponentially when commercial development activity is added to the brief list of recent industrial activity above. An EIR must be prepared to include this information for analysis, and also provide a cumulative analysis discussion of projects approved since General Plan adoption, 2016 (SCAG), and projects "in the pipeline" to determine if the proposed project will exceed the employment/population growth forecasts by SCAG and/or the City's General Plan.

The EIR utilizes uncertain language and does not provide any meaningful analysis or supporting evidence to substantiate the conclusion that there will be no significant impacts to population and housing. For example, the EIR concludes that impacts to population and housing will not be significant because, "The workforces for both construction and operation are *anticipated to be limited* and workers are *anticipated* to come from the *local population and other nearby cities in the region*," without providing any quantified analysis or meaningful evidence to support this claim. The geographic boundaries of the "local population" and the "nearby cities in the region" are undefined. The EIR provides a list of total populations for adjacent cities Menifee and Moreno Valley, but the total population includes individuals that are not part of the workforce (children,

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<sup>15</sup> SCAG Connect SoCal Demographics and Growth Forecast adopted September 3, 2020  
[https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocial\\_demographics-and-growth-forecast.pdf?1606001579](https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocial_demographics-and-growth-forecast.pdf?1606001579)



elderly, disabled population), and does not provide any information about the unemployed/available workforce, such as their qualifications for or interest in work in the industrial sector.

Relying on the entire labor force within the greater Inland Empire region to fill the project's construction and operational jobs will increase VMT and emissions during all phases of construction and operations and a revised EIR must be prepared to account for longer worker trip distances. This is vital as the VMT analysis improperly "screened out" the project from providing a project-specific VMT analysis. For example, the City is approximately 85 miles from Coachella and approximately 66 miles from Victorville while the EIR relies upon a Citywide VMT per employee of 11.62 VMT and the project TAZ VMT per employee is 17.4 VMT. The EIR must be revised to include a finding of significance as the construction worker and operational worker employment analysis has not provided meaningful evidence to support a less than significant finding.

### **Conclusion**

For the foregoing reasons, GSEJA believes the EIR is flawed and a revised EIR must be prepared for the proposed project and circulated for public review. Golden State Environmental Justice Alliance requests to be added to the public interest list regarding any subsequent environmental documents, public notices, public hearings, and notices of determination for this project. Send all communications to Golden State Environmental Justice Alliance P.O. Box 79222 Corona, CA 92877.

Sincerely,

A handwritten signature in black ink, appearing to read "Gary Ho", with a stylized, overlapping flourish at the end.

Gary Ho  
Blum, Collins & Ho LLP

Attachment: SWAPE Analysis





Technical Consultation, Data Analysis and  
Litigation Support for the Environment

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June 25, 2024

Gary Ho  
Blum, Collins & Ho LLP  
707 Wilshire Blvd, Ste. 4880  
Los Angeles, CA 90017

**Subject: Comments on the Ellis Logistics Center Project (SCH No. 2023040144)**

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Dear Mr. Ho,

We have reviewed the May 2024 Draft Environmental Impact Report (“DEIR”) for the Ellis Logistics Center Project (“Project”) located in the City of Perris (“City”). The Project proposes to construct 643,419-square-feet (“SF”) of warehouse space including 10,000-SF of office space, 174 automobile parking spaces, and 317 truck parking spaces on the 33.51-acre site.

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

## **Air Quality**

### **Failure to Provide Complete CalEEMod Output Files**

Land use development projects under the California Environmental Quality Act (“CEQA”) typically evaluate air quality impacts and calculate potential criteria air pollutant emissions using the California Emissions Estimator Model (“CalEEMod”).<sup>1</sup> 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 CEQA requires that such changes be

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<sup>1</sup> “CalEEMod User’s Guide.” California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at*: <https://www.aqmd.gov/caleemod/user's-guide>.



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 used in calculating the Project’s air pollutant emissions and demonstrate which default values are changed. Justifications are provided for the selected values.

According to the DEIR, CalEEMod Version 2022.1 is relied upon to estimate Project emissions (p. 4.7-17). However, this poses a problem, as the currently available version of CalEEMod 2022.1 is described as a “soft release” which fails to provide complete output files.<sup>2</sup> Specifically, the “User Changes to Default Data” table no longer provides the quantitative counterparts to the changes to the default values (see excerpt below) (Appendix C1, pp. 158):

### 8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases Operations: Vehicle Data	Anticipated construction timeline  The average trip length for heavy trucks were based on the SCAQMD documents for the implementation of the Facility-Based Mobile Source Measures (FBMSMs) adopted in the 2016 AQMP. SCAQMD’s “Preliminary Warehouse Emission Calculations” cites 39 9-mile trip length for heavy-heavy trucks (41). As a conservative measure, a trip length of 40 miles has been utilized for all trucks for the purpose of this analysis
Operations: Fleet Mix	Anticipated trip gen

However, previous CalEEMod Versions, such as 2020.4.0, include the specific numeric changes to the model’s default values (see example excerpt below):

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	230.00	167.00
tblConstructionPhase	PhaseEndDate	11/22/2023	8/25/2023
tblConstructionPhase	PhaseEndDate	9/27/2023	6/30/2023
tblConstructionPhase	PhaseEndDate	10/25/2023	7/28/2023
tblConstructionPhase	PhaseStartDate	10/26/2023	7/29/2023
tblConstructionPhase	PhaseStartDate	9/28/2023	7/11/2023
tblLandUse	LandUseSquareFeet	160,000.00	160,371.00
tblLandUse	LandUseSquareFeet	119,000.00	41,155.00
tblLandUse	LotAcreage	3.67	3.68
tblLandUse	LotAcreage	2.73	2.74

The output files associated with CalEEMod Version 2022.1 fail to present the exact parameters used to calculate Project emissions. To remedy this issue, the DEIR should have provided access to the model’s “.JSON” output files, which allow third parties to review the model’s revised input parameters.<sup>3</sup> Without access to the complete output files, including the specific numeric changes to the default values, we cannot verify that the DEIR air modeling and subsequent analysis is an accurate reflection of the proposed Project. As a result, a revised EIR should be prepared to include an updated air quality analysis

<sup>2</sup> “CalEEMod California Emissions Estimator Model Soft Release.” California Air Pollution Control Officers Association (CAPCOA), 2022, available at: <https://caleemod.com/>.

<sup>3</sup> “Video Tutorials for CalEEMod Version 2022.1.” California Air Pollution Control Officers Association (CAPCOA), May 2022, available at: <https://www.caleemod.com/tutorials>.



that correctly provides the complete output files for CalEEMod Version 2022.1, or includes an updated air model using an older release of CalEEMod.<sup>4</sup>

### Unsubstantiated Input Parameters Used to Estimate Project Emissions

As previously discussed, the DEIR relies on CalEEMod Version 2022.1 to estimate the Project’s air quality emissions and fails to provide the complete output files required to adequately evaluate model’s analysis (p. 4.7-17). Regardless, when reviewing the Project’s CalEEMod output files, provided in the Air Quality and Greenhouse Gas Emissions Model Data (“AQ & GHG Report”) as Appendix C1 to the DEIR, we were able to identify several model inputs that are inconsistent with information disclosed in the DEIR. The Project’s construction and operational emissions may consequently be underestimated. A revised 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.

### Failure to Consider Potential Cold Storage Requirements

Review of the CalEEMod output files demonstrates that the “Ellis Ave Warehouse V2” model includes 643,419-SF of the “Unrefrigerated Warehouse-Rail” land use (see excerpt below) (Appendix C1, pp. 119).

### 1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)
Unrefrigerated Warehouse-Rail	643	1000sqft	14.8	643,419	315,700
Parking Lot	501	1000sqft	11.5	0.00	0.00

As demonstrated above, the model does not include any refrigerated warehouse space whatsoever. Regarding refrigerated warehouse space the DEIR states:

“No more than 25 percent, or 136,730 square feet, could be operated as refrigerated storage” (p. 1-2).

As demonstrated above, the DEIR indicates that up to 25%, or 136,730-SF, of cold storage space may be provided on the Project site. According to the South Coast Air Quality Management District (“SCAQMD”), “CEQA requires the use of ‘conservative analyses to afford ‘fullest possible protection of the environment.’”<sup>5</sup> Thus, the DEIR must account for the use of refrigerated cold storage space on the site. An updated model should be prepared to include the maximum refrigerated space to account for the additional emissions that refrigeration requirements may generate.

This presents an issue, as refrigerated warehouses release more criteria air pollutant and GHG emissions when compared to unrefrigerated land uses for three reasons. First, warehouses equipped with cold

<sup>4</sup> “CalEEMod Version 2020.4.0.” California Air Pollution Control Officers Association (CAPCOA), May 2021, available at: <http://www.aqmd.gov/caleemod/download-model>.

<sup>5</sup> “Warehouse Truck Trip Study Data Results and Usage” Presentation. SCAQMD Inland Empire Logistics Council, June 2014, available at: [http://www.aqmd.gov/docs/default-source/ceqa/handbook/high-cube-warehouse-trip-rate-study-for-air-quality-analysis/final-ielc\\_6-19-2014.pdf?sfvrsn=2](http://www.aqmd.gov/docs/default-source/ceqa/handbook/high-cube-warehouse-trip-rate-study-for-air-quality-analysis/final-ielc_6-19-2014.pdf?sfvrsn=2).



storage, such as refrigerators and freezers, are known to consume more energy when compared to warehouses without cold storage.<sup>6</sup> Second, warehouses equipped with cold storage typically require refrigerated trucks, which are known to idle for much longer when compared to unrefrigerated hauling trucks.<sup>7</sup> Lastly, according to a July 2014 *Warehouse Truck Trip Study Data Results and Usage* presentation prepared by the SCAQMD hauling trucks that require refrigeration result in greater truck trip rates when compared to non-refrigerated hauling trucks.<sup>8</sup>

By failing to account for any potential cold storage requirements, the model may underestimate the Project’s operational emissions and should not be relied upon to determine Project significance. A revised EIR should be prepared to account for the additional refrigerated warehouse needs by the Project’s future tenants.

*Unsubstantiated Changes to Individual Construction Phase Lengths*

Review of the CalEEMod output files demonstrates that the “Ellis Ave Warehouse V2” model includes changes to the default construction schedule (see excerpt below) (Appendix C1, pp. 158):

**8. User Changes to Default Data**

Screen	Justification
Construction: Construction Phases	Anticipated construction timeline
Operations: Vehicle Data	The average trip length for heavy trucks were based on the SCAQMD documents for the implementation of the Facility-Based Mobile Source Measures (FBMSMs) adopted in the 2016 AQMP. SCAQMD’s “Preliminary Warehouse Emission Calculations” cites 39.9-mile trip length for heavy-heavy trucks (41). As a conservative measure, a trip length of 40 miles has been utilized for all trucks for the purpose of this analysis
Operations: Fleet Mix	Anticipated trip gen

As a result of these changes, the model includes the following construction schedule (see excerpt below) (Appendix C1, pp. 145, 146):

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase
Site Preparation	Site Preparation	3/1/2024	4/1/2024	5.00	22.0
Grading	Grading	4/2/2024	5/13/2024	5.00	30.0
Building Construction	Building Construction	5/14/2024	2/10/2025	5.00	195
Paving	Paving	2/11/2025	3/28/2025	5.00	34.0
Architectural Coating	Architectural Coating	11/1/2024	3/28/2025	5.00	106

<sup>6</sup> “Warehouses.” Business Energy Advisor, available at: <https://ouc.bizenergyadvisor.com/article/warehouses>.

<sup>7</sup> “Estimation of Fuel Use by Idling Commercial Trucks.” Transportation Research Record Journal of the Transportation Research Board, January 2006, p. 8, available at: <https://www.researchgate.net/publication/245561735> Estimation of Fuel Use by Idling Commercial Trucks.

<sup>8</sup> “Warehouse Truck Trip Study Data Results and Usage” Presentation. SCAQMD Mobile Source Committee, July 2014, available at: <http://www.aqmd.gov/docs/default-source/ceqa/handbook/high-cube-warehouse-trip-rate-study-for-air-quality-analysis/finaltrucktripstudymisc072514.pdf?sfvrsn=2>, p. 7, 9.



As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.<sup>9</sup> As demonstrated above in the "User Changes to Default Data" table, the justification provided for this change is:

"Anticipated construction timeline" (Appendix C1, pp. 158).

Regarding the Project's construction duration, the DEIR states:

"The project would be constructed over approximately 13 months, conservatively estimated in this EIR to begin in March of 2024" (p. 3-20).

However, the changes to the individual construction phase lengths remain unsubstantiated. While the DEIR justifies a total length of Project construction of 13 months, the DEIR fails to mention the individual construction phase lengths whatsoever. Until the *individual* construction phase lengths are substantiated, the model should have included proportionately altered individual phase lengths to match the proposed construction duration of 13 months.<sup>10</sup>

The failure to provide the construction schedule presents an issue, as CalEEMod uses construction phase lengths to calculate the Project's construction emissions. Specifically, each construction phase is associated with different emissions activities (see excerpt below).<sup>11</sup>

**Demolition** involves removing buildings or structures.

**Site Preparation** involves clearing vegetation (grubbing and tree/stump removal) and removing stones and other unwanted material or debris prior to grading.

**Grading** involves the cut and fill of land to ensure that the proper base and slope is created for the foundation.

**Building Construction** involves the construction of the foundation, structures and buildings.

**Architectural Coating** involves the application of coatings to both the interior and exterior of buildings or structures, the painting of parking lot or parking garage striping, associated signage and curbs, and the painting of the walls or other components such as stair railings inside parking structures.

**Paving** involves the laying of concrete or asphalt such as in parking lots, roads, driveways, or sidewalks.

By disproportionately altering and extending some of the individual construction phase lengths without proper justification, the model assumes there are a greater number of days to complete the construction activities required by the prolonged phases. As a result, there will be less construction activities required per day and, consequently, less pollutants emitted per day. Until we are able to verify

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<sup>9</sup> "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, available at: <https://www.aqmd.gov/caleemod/user's-guide>, p. 1, 14.

<sup>10</sup> See Attachment A for proportionately altered construction schedule.

<sup>11</sup> "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, available at: <https://www.aqmd.gov/caleemod/user's-guide>, p. 32.



the revised construction schedule, the model may underestimate the peak daily emissions associated with some phases of construction and should not be relied upon to determine Project significance.

*Unsubstantiated Changes to Operational Fleet Mix Values*

Review of the CalEEMod output files demonstrates that the “Ellis Ave Warehouse V2” model includes changes to the default operational vehicle fleet mix percentages (see excerpt below) (Appendix C1, pp. 158):

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Anticipated construction timeline
Operations: Vehicle Data	The average trip length for heavy trucks were based on the SCAQMD documents for the implementation of the Facility-Based Mobile Source Measures (FBMSMs) adopted in the 2016 AQMP. SCAQMD’s “Preliminary Warehouse Emission Calculations” cites 39.9-mile trip length for heavy-heavy trucks (41). As a conservative measure, a trip length of 40 miles has been utilized for all trucks for the purpose of this analysis
Operations: Fleet Mix	Anticipated trip gen

As previously stated, the CalEEMod User’s Guide requires any changes to model defaults be justified.<sup>12</sup> As demonstrated above in the “User Changes to Default Data” table, the justification provided for these changes is:

“Anticipated trip gen” (Appendix C1, pp. 158).

The DEIR includes the following Project fleet mix tables for passenger cars and trucks (see excerpt below) (p. 4.13-7, Table 4.13-1).

**Table 4.13-1: Project Trip Generation**

Proposed Project Trips										
Land Use	Quantity	Unit <sup>2</sup>	Daily	AM Peak Hour			PM Peak Hour			
				In	Out	Total	In	Out	Total	
Warehousing <sup>1</sup>	643	KSF	1,100	84	25	109	32	84	116	
Passenger Vehicles			714	74	22	96	27	70	97	
Trucks			386	10	3	13	5	14	19	
Truck Trips – Passenger Car Equivalents (PCE)										
Vehicle Type	Truck Mix <sup>3</sup>	Daily Vehicles	PCE Factor	Daily	AM Peak Hour			PM Peak Hour		
Passenger Vehicles	--	714	1.0	714	74	22	96	27	70	97
2-Axle Truck	16.7%	64	1.5	96	2	1	3	1	4	5
3-Axle Truck	20.7%	80	2.0	160	4	1	5	2	6	8
4+ Axle Trucks	62.6%	241	3.0	723	19	6	25	0	26	36
<b>Total Truck PCE Trips</b>				<b>979</b>	<b>25</b>	<b>8</b>	<b>33</b>	<b>13</b>	<b>36</b>	<b>49</b>
<b>Total Project PCE Trips</b>				<b>1,693</b>	<b>99</b>	<b>30</b>	<b>129</b>	<b>40</b>	<b>106</b>	<b>146</b>

<sup>12</sup> “CalEEMod User’s Guide.” California Air Pollution Control Officers Association (CAPCOA), May 2021, available at: <https://www.aqmd.gov/caleemod/user's-guide>, p. 1, 14.



However, the changes to the model’s operational fleet mix values are unsubstantiated. As previously discussed, the output files for CalEEMod 2022.1 do not present the numeric changes to any model defaults. Upon further review of the output files, changes to fleet mix percentages are not mentioned outside of the “User Changes to Default Data” table. Until the DEIR verifies the breakdown of heavy-heavy duty (“HHD”), medium-heavy duty (“MHD”), light-heavy duty (“LHD1, LDH2”), trucks used in the model, we cannot verify that these values are accurate and consistent with the information provided by the DEIR (p. 4.13-7, Table 4.13-1).<sup>13</sup>

These unsubstantiated changes present an issue, as CalEEMod uses operational vehicle fleet mix percentages to calculate the Project’s operational emissions associated with on-road vehicles.<sup>14</sup> By including several unsubstantiated changes to the default operational vehicle fleet mix percentages, the model may underestimate the Project’s mobile-source operational emissions and should not be relied upon to determine Project significance.

### Updated Analysis Indicates a Potentially Significant Air Quality Impact

In an effort to quantitatively estimate the Project’s construction-related and operational emissions, we used the CalEEMod Version 2020.4.0, as well as Project-specific information provided by the DEIR. Our model accounted for 25% warehouse cold storage space, which resulted in the following breakdown: 482,564.25-SF of the “Unrefrigerated Warehouse-Rail” land use and 160,854.75-SF of the “Refrigerated Warehouse-Rail” land use. We omitted the operational fleet mix values and proportionally altered the individual construction phase lengths to match the total construction duration of 13 months. All other values are consistent with the DEIR’s model.<sup>15</sup>

Our updated analysis estimates that the volatile organic compounds (“VOC”) emissions associated with Project construction exceed the applicable SCAQMD threshold of 75 pounds per day (“lbs/day”), as referenced by the DEIR (p. 4.2-17, Table 4.2-6) (see table below).<sup>16</sup>

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<sup>13</sup> “CalEEMod User’s Guide.” California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at*: <https://www.aqmd.gov/caleemod/user's-guide>, p. 38.

<sup>14</sup> “CalEEMod User’s Guide.” California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at*: <https://www.aqmd.gov/caleemod/user's-guide>, p. 36.

<sup>15</sup> See Attachment B for CalEEMod model.

<sup>16</sup> “South Coast AQMD Air Quality Significance Thresholds.” SCAQMD, April 2019, *available at*: <https://www.aqmd.gov/docs/default-source/ceqa/handbook/south-coast-aqmd-air-quality-significance-thresholds.pdf?sfvrsn=25>.



SWAPE Criteria Air Pollutant Emissions	
<b>Construction</b>	<b>VOC</b> (lbs/day)
DEIR	60.6
SWAPE	351.2
% Increase	480%
SCAQMD Threshold	<b>75</b>
<i>Exceeds?</i>	<b>Yes</b>

As demonstrated above, construction-related VOC emissions, as estimated by SWAPE, increase by approximately 480% and exceed the applicable SCAQMD significance threshold. Our updated modeling demonstrates that the Project would result in a potentially significant air quality impact that was not previously identified or addressed by the DEIR. As a result, a revised EIR should be prepared to adequately assess and mitigate the potential air quality impacts that the Project may have on the environment.

### Disproportionate Health Risk Impacts of Warehouses on Surrounding Communities

Upon review of the DEIR and associated documents, we have determined that the development of the proposed Project may contribute to the disproportionate health risk impacts that warehouses pose to community members living, working, and going to school within the immediate area of the Project site. According to SCAQMD:

“Those living within a half mile of warehouses are more likely to include communities of color, have health impacts such as higher rates of asthma and heart attacks, and a greater environmental burden.”<sup>17</sup>

In particular, the SCAQMD found that more than 2.4 million people live within a half mile radius of at least one warehouse, and that those areas not only experience increased rates of asthma and heart attacks, but are also disproportionately Black and Latino communities below the poverty line.<sup>18</sup> Another study similarly indicates that “neighborhoods with lower household income levels and higher percentages of minorities are expected to have higher probabilities of containing warehousing facilities.”<sup>19</sup> Additionally, a report authored by the Inland Empire-based People’s Collective for Environmental Justice and University of Redlands states:

<sup>17</sup> “South Coast AQMD Governing Board Adopts Warehouse Indirect Source Rule.” SCAQMD, May 2021, *available at*: <http://www.aqmd.gov/docs/default-source/news-archive/2021/board-adopts-waisr-may7-2021.pdf?sfvrsn=9>.

<sup>18</sup> “Southern California warehouse boom a huge source of pollution. Regulators are fighting back.” Los Angeles Times, May 2021, *available at*: <https://www.latimes.com/california/story/2021-05-05/air-quality-officials-target-warehouses-bid-to-curb-health-damaging-truck-pollution>.

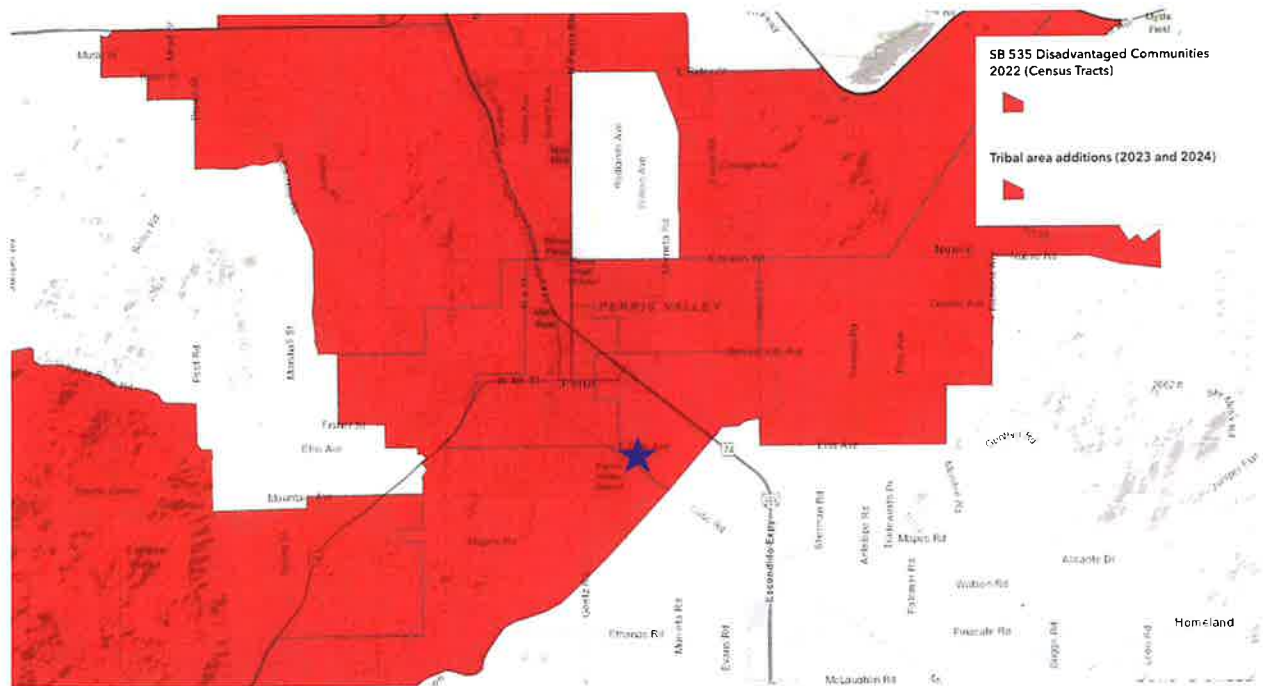
<sup>19</sup> “Location of warehouses and environmental justice: Evidence from four metros in California.” Metro Freight Center of Excellence, January 2018, *available at*: [https://www.metrotrans.org/assets/research/MF%201.1g\\_Location%20of%20warehouses%20and%20environmental%20justice\\_Final%20Report\\_021618.pdf](https://www.metrotrans.org/assets/research/MF%201.1g_Location%20of%20warehouses%20and%20environmental%20justice_Final%20Report_021618.pdf), p. 21.



“As the warehouse and logistics industry continues to grow and net exponential profits at record rates, more warehouse projects are being approved and constructed in low-income communities of color and serving as a massive source of pollution by attracting thousands of polluting truck trips daily. Diesel trucks emit dangerous levels of nitrogen oxide and particulate matter that cause devastating health impacts including asthma, chronic obstructive pulmonary disease (COPD), cancer, and premature death. As a result, physicians consider these pollution-burdened areas ‘diesel death zones.’”<sup>20</sup>

It is evident that the continued development of industrial warehouses within these communities poses a significant environmental justice challenge. However, the acceleration of warehouse development is only increasing despite the consequences on public health.

Perris, the setting of the proposed Project, has long borne a disproportionately high pollution burden compared to the rest of California. According to CalEnviroScreen’s SB 535 Disadvantaged Communities Map, the Project site is located in a designated disadvantaged community (see excerpt below).<sup>21</sup>



SB 535 provides funding for development projects that provide a benefit to disadvantaged communities. CalEPA has been given the responsibility for identifying those communities based on “geographic,

<sup>20</sup> “Warehouses, Pollution, and Social Disparities: An analytical view of the logistics industry’s impacts on environmental justice communities across Southern California.” People’s Collective for Environmental Justice, April 2021, *available at*: [https://earthjustice.org/sites/default/files/files/warehouse\\_research\\_report\\_4.15.2021.pdf](https://earthjustice.org/sites/default/files/files/warehouse_research_report_4.15.2021.pdf), p. 4.

<sup>21</sup> “SB 535 Disadvantaged Communities (2022 Update).” California Environmental Protection Agency, *available at*: <https://experience.arcgis.com/experience/1c21c53da8de48f1b946f3402fbae55c/page/SB-535-Disadvantaged-Communities/>



socioeconomic, public health, and environmental hazard criteria.”<sup>22</sup> As the Project site is located in a designated disadvantaged community, development of the proposed Project would contribute to the disproportionate impact warehouses are posing to the health conditions of nearby residents.

In April 2022, the American Lung Association ranked San Bernadino County as the worst for ozone pollution in the nation.<sup>23</sup> This year, the County continues to face the worst ozone pollution, as it has seen the highest recorded Air Quality Index (“AQI”) values for ground-level ozone in California.<sup>24</sup> The U.S. Environmental Protection Agency (“EPA”) indicates that ozone, the main ingredient in “smog,” can cause several health problems, which includes aggravating lung diseases and increasing the frequency of asthma attacks. The U.S. EPA states:

“Children are at greatest risk from exposure to ozone because their lungs are still developing and they are more likely to be active outdoors when ozone levels are high, which increases their exposure. Children are also more likely than adults to have asthma.”<sup>25</sup>

A revised EIR should be prepared to evaluate the proposed Project’s contribution to the disproportionate impacts that warehouses are posing to communities adjacent to the Project site. The revised EIR should include an analysis of the impact on children and people of color who live in the surrounding area. Finally, to evaluate the cumulative air quality impact from the several warehouse projects proposed or built in a one-mile radius of the Project site, the revised EIR should also prepare a cumulative health risk assessment to quantify the adverse health outcome from the effects of exposure to multiple warehouses in the immediate area in conjunction with the poor ambient air quality in the Project’s census tract.

## Mitigation

### Feasible Mitigation Measures Available to Reduce Emissions

According to California Environmental Quality Act (“CEQA”) Guidelines § 15096(g)(2):

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

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<sup>22</sup> “Final Designation of Disadvantaged Communities.” California Environmental Protection Agency, *available at*: <https://calepa.ca.gov/wp-content/uploads/sites/6/2022/05/Updated-Disadvantaged-Communities-Designation-DAC-May-2022-Eng.a.hp-1.pdf?emrc=e05e10>.

<sup>23</sup> “State of the Air 2022.” American Lung Association, April 2022, *available at*: <https://www.lung.org/research/sota/key-findings/most-polluted-places>.

<sup>24</sup> “High Ozone Days.” American Lung Association, 2022, *available at*: <https://www.lung.org/research/sota/city-rankings/states/california>.

<sup>25</sup> “Health Effects of Ozone Pollution.” U.S. EPA, May 2021, *available at*: <https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution>.



The DEIR is consequently required under CEQA to implement all feasible mitigation to reduce the Project's potential impacts. As demonstrated in the sections above, the Project would result in potentially significant air quality impacts that should be mitigated further.

In order to reduce the VOC emissions associated with Project construction, we recommend the DEIR consider incorporating the following mitigation measure from the California Department of Justice:<sup>26</sup>

- Require the use of super compliant, low-VOC paints less than 10 g/L during the architectural coating construction phase.

Furthermore, Los Angeles County recommends:<sup>27</sup>

- If paints and coatings with VOC content of 0 grams/liter to less than 10 grams/liter cannot be utilized, the developer shall avoid application of architectural coatings during the peak smog season: July, August, and September.

A revised EIR should be prepared that includes all feasible mitigation measures, as well as updated air quality analysis to ensure that the necessary mitigation measures are implemented to reduce emissions to the maximum extent feasible. The revised EIR should also demonstrate a commitment to the implementation of these measures prior to Project approval, to ensure that the Project's potentially 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,

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<sup>26</sup> "Warehouse Projects: Best Practices and Mitigation Measures to Comply with the California Environmental Quality Act." State of California Department of Justice, September 2022, *available at*: <https://oag.ca.gov/system/files/media/warehouse-best-practices.pdf>, p. 8 – 10.

<sup>27</sup> "Mitigation Monitoring and Reporting Program." Los Angeles County Housing Element Update Program EIR, August 2021, *available at*: [https://planning.lacounty.gov/wp-content/uploads/2023/07/Housing\\_final-peir-mitigation-monitoring.pdf](https://planning.lacounty.gov/wp-content/uploads/2023/07/Housing_final-peir-mitigation-monitoring.pdf).





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



Paul E. Rosenfeld, Ph.D.

Attachment A: Update Construction Schedule  
Attachment B: SWAPE's CalEEMod Output Files  
Attachment C: Matt Hagemann CV  
Attachment D: Paul Rosenfeld CV



Construction Schedule Calculations						
Phase	Default Phase Length	Construction Duration	%	Construction Duration	Revised Phase Length	
Site Preparation	10	531	0.0188	392	7	
Grading	30	531	0.0565	392	22	
Construction	300	531	0.5650	392	221	
Paving	20	531	0.0377	392	15	
Architectural Coating	20	531	0.0377	392	15	

	Total Default Construction Duration	Revised Construction Duration
Start Date	3/1/2024	3/1/2024
End Date	8/14/2025	3/28/2025
Total Days	531	392



Ellis Ave Warehouse V2 - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**Ellis Ave Warehouse V2**

Riverside-South Coast County, Annual

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-Rail	160.85	1000sqft	3.69	160,854.75	0
Unrefrigerated Warehouse-Rail	482.56	1000sqft	11.08	482,564.25	0
Parking Lot	501.00	1000sqft	11.50	0.00	0

**1.2 Other Project Characteristics**

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2025

Utility Company Southern California Edison

CO2 Intensity (lb/MW/hr)	390.98	CH4 Intensity (lb/MW/hr)	0.033	N2O Intensity (lb/MW/hr)	0.004
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**1.3 User Entered Comments & Non-Default Data**

Project Characteristics - Consistent with the DEIR's model

Land Use - See SWAPE's comment on "Failure to Consider Potential Cold Storage Requirements."

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

Grading - Consistent with the DEIR's model.

Vehicle Trips - Consistent with the DEIR's model.

Fleet Mix - See SWAPE's comment on "Unsubstantiated Changes to Operational Fleet Mix Values."

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	35.00	17.00
tblConstructionPhase	NumDays	440.00	215.00



Ellis Ave Warehouse V2 - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

tblConstructionPhase	NumDays	45.00	22.00
tblConstructionPhase	NumDays	35.00	17.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	PhaseEndDate	5/14/2026	3/28/2025
tblConstructionPhase	PhaseEndDate	2/5/2026	2/10/2025
tblConstructionPhase	PhaseEndDate	5/30/2024	4/15/2024
tblConstructionPhase	PhaseEndDate	3/26/2026	3/5/2025
tblConstructionPhase	PhaseEndDate	3/28/2024	3/14/2024
tblConstructionPhase	PhaseStartDate	3/27/2026	3/6/2025
tblConstructionPhase	PhaseStartDate	5/31/2024	4/16/2024
tblConstructionPhase	PhaseStartDate	3/29/2024	3/15/2024
tblConstructionPhase	PhaseStartDate	2/6/2026	2/11/2025
tblGrading	AcresOfGrading	66.00	90.00
tblGrading	AcresOfGrading	15.00	33.00
tblGrading	MaterialImported	0.00	141,400.00
tblLandUse	LandUseSquareFeet	160,850.00	160,854.75
tblLandUse	LandUseSquareFeet	482,560.00	482,564.25
tblLandUse	LandUseSquareFeet	501,000.00	0.00
tblVehicleTrips	ST_TR	0.00	0.77
tblVehicleTrips	ST_TR	2.12	0.00
tblVehicleTrips	ST_TR	1.74	1.48
tblVehicleTrips	SU_TR	0.00	0.77
tblVehicleTrips	SU_TR	2.12	0.00
tblVehicleTrips	SU_TR	1.74	1.48
tblVehicleTrips	WD_TR	0.00	0.77
tblVehicleTrips	WD_TR	2.12	0.00
tblVehicleTrips	WD_TR	1.74	1.48



Ellis Ave Warehouse V2 - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**2.1 Overall Construction**

**Unmitigated Construction**

Year	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
2024	0.2877	2.8701	2.9721	0.0111	0.6835	0.0903	0.7737	0.2182	0.0847	0.3029	0.0000	1,026.1203	1,026.1203	0.0879	0.0869	1,054.1993
2025	3.0407	0.3239	0.5155	1.2500e-003	0.0591	0.0123	0.0714	0.0159	0.0115	0.0274	0.0000	112.7910	112.7910	0.0146	4.5200e-003	114.5012
Maximum	3.0407	2.8701	2.9721	0.0111	0.6835	0.0903	0.7737	0.2182	0.0847	0.3029	0.0000	1,026.1203	1,026.1203	0.0879	0.0869	1,054.1993

**Mitigated Construction**

Year	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
2024	0.2877	2.8701	2.9721	0.0111	0.6835	0.0903	0.7737	0.2182	0.0847	0.3029	0.0000	1,026.1199	1,026.1199	0.0879	0.0869	1,054.1989
2025	3.0407	0.3239	0.5155	1.2500e-003	0.0591	0.0123	0.0714	0.0159	0.0115	0.0274	0.0000	112.7909	112.7909	0.0146	4.5200e-003	114.5011
Maximum	3.0407	2.8701	2.9721	0.0111	0.6835	0.0903	0.7737	0.2182	0.0847	0.3029	0.0000	1,026.1199	1,026.1199	0.0879	0.0869	1,054.1989



Ellis Ave Warehouse V2 - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
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	3-1-2024	5-31-2024	1.6506	1.6506
2	6-1-2024	8-31-2024	0.6546	0.6546
3	9-1-2024	11-30-2024	0.6511	0.6511
4	12-1-2024	2-28-2025	0.5716	0.5716
5	3-1-2025	5-31-2025	2.9152	2.9152
		Highest	2.9152	2.9152

**2.2 Overall Operational Unmitigated Operational**

Category	tons/yr															MT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e				
Area	2.6246	1.3000e-004	0.0146	0.0000	5.0000e-005	5.0000e-005	5.0000e-005	5.0000e-005	5.0000e-005	5.0000e-005	0.0000	0.0284	0.0284	7.0000e-005	0.0000	0.0303				
Energy	0.0501	0.4554	0.3826	2.7300e-003	0.0346	0.0346	0.0346	0.0346	0.0346	0.0346	0.0000	1,830.859 <sub>2</sub>	1,830.859 <sub>2</sub>	0.1222	0.0228	1,840.692 <sub>9</sub>				
Mobile	0.3749	0.6365	4.1697	0.0105	1.1574	8.3300e-003	1.1658	0.3092	7.8100e-003	0.3170	0.0000	968.5539	968.5539	0.0464	0.0463	983.5135				
Waste						0.0000	0.0000	0.0000	0.0000	0.0000	122.7710	122.7710	7.2556	0.0000	304.1599					
Water						0.0000	0.0000	0.0000	0.0000	0.0000	47.2038	343.5850	4.8773	0.1180	547.8627					
<b>Total</b>	<b>3.0495</b>	<b>1.0920</b>	<b>4.5668</b>	<b>0.0132</b>	<b>1.1574</b>	<b>0.0430</b>	<b>1.2004</b>	<b>0.3092</b>	<b>0.0425</b>	<b>0.3516</b>	<b>169.9747</b>	<b>3,143.026<sub>5</sub></b>	<b>3,313.001<sub>2</sub></b>	<b>12.3015</b>	<b>0.1870</b>	<b>3,676.279<sub>2</sub></b>				



Ellis Ave Warehouse V2 - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**2.2 Overall Operational**

Mitigated Operational

Category	tons/yr											MT/yr					CO2e
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O		
Area	2.6246	1.3000e-004	0.0146	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0284	0.0284	7.0000e-005	0.0000	0.0303	
Energy	0.0501	0.4554	0.3826	2.7300e-003		0.0346	0.0346		0.0346	0.0346	0.0000	1,830.8592	1,830.8592	0.1222	0.0228	1,840.6929	
Mobile	0.3749	0.6365	4.1697	0.0105	1.1574	8.3300e-003	1.1658	0.3092	7.8100e-003	0.3170	0.0000	968.5539	968.5539	0.0464	0.0463	983.5135	
Waste						0.0000	0.0000		0.0000	0.0000	122.7710	122.7710	7.2556	0.0000	304.1599		
Water						0.0000	0.0000		0.0000	0.0000	47.2038	343.5850	390.7887	4.8773	0.1180	547.8827	
<b>Total</b>	<b>3.0495</b>	<b>1.0920</b>	<b>4.5668</b>	<b>0.0132</b>	<b>1.1574</b>	<b>0.0430</b>	<b>1.2004</b>	<b>0.3092</b>	<b>0.0425</b>	<b>0.3516</b>	<b>169.9747</b>	<b>3,143.0265</b>	<b>3,313.0012</b>	<b>12.3015</b>	<b>0.1870</b>	<b>3,676.2792</b>	

Percent Reduction	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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	Site Preparation	Site Preparation	3/1/2024	3/14/2024	5	10	
2	Grading	Grading	3/15/2024	4/15/2024	5	22	
3	Building Construction	Building Construction	4/16/2024	2/10/2025	5	215	



Ellis Ave Warehouse V2 - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

4	Paving	2/11/2025	3/5/2025	5	17
5	Architectural Coating	3/6/2025	3/28/2025	5	17

**Acres of Grading (Site Preparation Phase): 33**

**Acres of Grading (Grading Phase): 90**

**Acres of Paving: 11.5**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 965,129; Non-Residential Outdoor: 321,710; Striped Parking Area: 0 (Architectural Coating ~ sqft)**

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	231	0.29
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

**Trips and VMT**



Ellis Ave Warehouse V2 - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

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
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00;LD_Mix	HDT_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	13,981.00	14.70	6.90	20.00;LD_Mix	HDT_Mix	HDT_Mix	HHDT
Building Construction	9	270.00	105.00	0.00	14.70	6.90	20.00;LD_Mix	HDT_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00;LD_Mix	HDT_Mix	HDT_Mix	HHDT
Architectural Coating	1	54.00	0.00	0.00	14.70	6.90	20.00;LD_Mix	HDT_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

**3.2 Site Preparation - 2024**

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MT/yr															
Fugitive Dust					0.1078	0.0000	0.1078	0.0515	0.0000	0.0515	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1359	0.0917	1.9000e-004	6.1500e-003	6.1500e-003	6.1500e-003	5.6600e-003	5.6600e-003	5.6600e-003	0.0000	16.7285	16.7285	5.4100e-003	0.0000	16.8638
<b>Total</b>	<b>0.0133</b>	<b>0.1359</b>	<b>0.0917</b>	<b>1.9000e-004</b>	<b>0.1078</b>	<b>6.1500e-003</b>	<b>0.1140</b>	<b>0.0515</b>	<b>5.6600e-003</b>	<b>0.0572</b>	<b>0.0000</b>	<b>16.7285</b>	<b>16.7285</b>	<b>5.4100e-003</b>	<b>0.0000</b>	<b>16.8638</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.2 Site Preparation - 2024**

**Unmitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	1.9000e-004	2.6400e-003	1.0000e-005	9.9000e-004	0.0000	9.9000e-004	2.6000e-004	0.0000	2.7000e-004	0.0000	0.7285	0.7285	2.0000e-005	2.0000e-005	0.7344
<b>Total</b>	<b>2.7000e-004</b>	<b>1.9000e-004</b>	<b>2.6400e-003</b>	<b>1.0000e-005</b>	<b>9.9000e-004</b>	<b>0.0000</b>	<b>9.9000e-004</b>	<b>2.6000e-004</b>	<b>0.0000</b>	<b>2.7000e-004</b>	<b>0.0000</b>	<b>0.7285</b>	<b>0.7285</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.7344</b>

**Mitigated Construction On-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					0.1078	0.0000	0.1078	0.0515	0.0000	0.0515	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1359	0.0917	1.9000e-004	6.1500e-003	6.1500e-003	6.1500e-003	5.6500e-003	5.6500e-003	5.6500e-003	0.0000	16.7285	16.7285	5.4100e-003	0.0000	16.8638
<b>Total</b>	<b>0.0133</b>	<b>0.1359</b>	<b>0.0917</b>	<b>1.9000e-004</b>	<b>0.1078</b>	<b>6.1500e-003</b>	<b>0.1140</b>	<b>0.0515</b>	<b>5.6500e-003</b>	<b>0.0572</b>	<b>0.0000</b>	<b>16.7285</b>	<b>16.7285</b>	<b>5.4100e-003</b>	<b>0.0000</b>	<b>16.8638</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.2 Site Preparation - 2024**

**Mitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	1.9000e-004	2.6400e-003	1.0000e-005	9.9000e-004	0.0000	9.9000e-004	2.6000e-004	0.0000	2.7000e-004	0.0000	0.7285	2.0000e-005	2.0000e-005	2.0000e-005	0.7344
<b>Total</b>	<b>2.7000e-004</b>	<b>1.9000e-004</b>	<b>2.6400e-003</b>	<b>1.0000e-005</b>	<b>9.9000e-004</b>	<b>0.0000</b>	<b>9.9000e-004</b>	<b>2.6000e-004</b>	<b>0.0000</b>	<b>2.7000e-004</b>	<b>0.0000</b>	<b>0.7285</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.7344</b>

**3.3 Grading - 2024**

**Unmitigated Construction On-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					0.1140	0.0000	0.1140	0.0416	0.0000	0.0416	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0354	0.3562	0.3050	6.8000e-004	0.0147	0.0147	0.0147	0.0135	0.0135	0.0135	0.0000	59.9715	59.9715	0.0194	0.0000	60.4564
<b>Total</b>	<b>0.0354</b>	<b>0.3562</b>	<b>0.3050</b>	<b>6.8000e-004</b>	<b>0.1140</b>	<b>0.0147</b>	<b>0.1287</b>	<b>0.0416</b>	<b>0.0135</b>	<b>0.0551</b>	<b>0.0000</b>	<b>59.9715</b>	<b>59.9715</b>	<b>0.0194</b>	<b>0.0000</b>	<b>60.4564</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.3 Grading - 2024**

**Unmitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0148	0.7386	0.1958	3.7800e-003	0.1206	8.3800e-003	0.1290	0.0331	8.0200e-003	0.0411	0.0000	366.2887	366.2887	5.5500e-003	0.0577	383.6312
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	4.7000e-004	6.4400e-003	2.0000e-005	2.4200e-003	1.0000e-005	2.4300e-003	6.4000e-004	1.0000e-005	6.5000e-004	0.0000	1.7807	1.7807	4.0000e-005	5.0000e-005	1.7952
<b>Total</b>	<b>0.0154</b>	<b>0.7391</b>	<b>0.2022</b>	<b>3.8000e-003</b>	<b>0.1230</b>	<b>8.3900e-003</b>	<b>0.1314</b>	<b>0.0338</b>	<b>8.0300e-003</b>	<b>0.0418</b>	<b>0.0000</b>	<b>368.0694</b>	<b>368.0694</b>	<b>5.5900e-003</b>	<b>0.0578</b>	<b>385.4264</b>

**Mitigated Construction On-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					0.1140	0.0000	0.1140	0.0416	0.0000	0.0416	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0354	0.3562	0.3050	6.8000e-004		0.0147	0.0147	0.0135	0.0135	0.0135	0.0000	59.9714	59.9714	0.0194	0.0000	60.4563
<b>Total</b>	<b>0.0354</b>	<b>0.3562</b>	<b>0.3050</b>	<b>6.8000e-004</b>	<b>0.1140</b>	<b>0.0147</b>	<b>0.1287</b>	<b>0.0416</b>	<b>0.0135</b>	<b>0.0551</b>	<b>0.0000</b>	<b>59.9714</b>	<b>59.9714</b>	<b>0.0194</b>	<b>0.0000</b>	<b>60.4563</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.3 Grading - 2024**

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	tons/yr			MT/yr					CO2e		
					Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2		Total CO2	CH4
Hauling	0.0148	0.7386	0.1958	3.7800e-003	0.1206	8.3800e-003	0.1290	0.0331	8.0200e-003	0.0411	0.0000	366.2887	5.5500e-003	0.0577	383.6312
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	4.7000e-004	6.4400e-003	2.0000e-005	2.4200e-003	1.0000e-005	2.4300e-003	6.4000e-004	1.0000e-005	6.5000e-004	0.0000	1.7807	4.0000e-005	5.0000e-005	1.7952
<b>Total</b>	<b>0.0154</b>	<b>0.7391</b>	<b>0.2022</b>	<b>3.8000e-003</b>	<b>0.1230</b>	<b>8.3900e-003</b>	<b>0.1314</b>	<b>0.0338</b>	<b>8.0300e-003</b>	<b>0.0418</b>	<b>0.0000</b>	<b>368.0694</b>	<b>5.5900e-003</b>	<b>0.0578</b>	<b>385.4264</b>

**3.4 Building Construction - 2024**

**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	tons/yr			MT/yr					CO2e		
					Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2		Total CO2	CH4
Off-Road	0.1369	1.2503	1.5035	2.5100e-003		0.0570	0.0570		0.0537	0.0537	0.0000	215.6197	0.0510	0.0000	216.8944
<b>Total</b>	<b>0.1369</b>	<b>1.2503</b>	<b>1.5035</b>	<b>2.5100e-003</b>		<b>0.0570</b>	<b>0.0570</b>		<b>0.0537</b>	<b>0.0537</b>	<b>0.0000</b>	<b>215.6197</b>	<b>0.0510</b>	<b>0.0000</b>	<b>216.8944</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.4 Building Construction - 2024**

**Unmitigated Construction Off-Site**

Category	tons/yr										MT/yr				CO2e	
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4		N2O
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0104	0.3348	0.1319	1.6800e-003	0.0617	2.7600e-003	0.0645	0.0178	2.6400e-003	0.0204	0.0000	161.7656	161.7656	1.7200e-003	0.0239	168.9257
Worker	0.0760	0.0537	0.7352	2.2200e-003	0.2760	1.2500e-003	0.2772	0.0733	1.1500e-003	0.0744	0.0000	203.2372	203.2372	4.7500e-003	5.1800e-003	204.8983
<b>Total</b>	<b>0.0865</b>	<b>0.3885</b>	<b>0.8671</b>	<b>3.9000e-003</b>	<b>0.3377</b>	<b>4.0100e-003</b>	<b>0.3417</b>	<b>0.0911</b>	<b>3.7900e-003</b>	<b>0.0949</b>	<b>0.0000</b>	<b>365.0028</b>	<b>365.0028</b>	<b>6.4700e-003</b>	<b>0.0291</b>	<b>373.8239</b>

**Mitigated Construction On-Site**

Category	tons/yr										MT/yr				CO2e	
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4		N2O
Off-Road	0.1369	1.2503	1.5035	2.5100e-003		0.0570	0.0570		0.0537	0.0537	0.0000	215.6194	215.6194	0.0510	0.0000	216.8941
<b>Total</b>	<b>0.1369</b>	<b>1.2503</b>	<b>1.5035</b>	<b>2.5100e-003</b>		<b>0.0570</b>	<b>0.0570</b>		<b>0.0537</b>	<b>0.0537</b>	<b>0.0000</b>	<b>215.6194</b>	<b>215.6194</b>	<b>0.0510</b>	<b>0.0000</b>	<b>216.8941</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.4 Building Construction - 2024**

**Mitigated Construction Off-Site**

Category	tons/yr											MT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0104	0.3348	0.1319	1.6800e-003	0.0617	2.7600e-003	0.0645	0.0178	2.6400e-003	0.0204	0.0000	161.7656	161.7656	1.7200e-003	0.0239	168.9257
Worker	0.0760	0.0537	0.7352	2.2200e-003	0.2760	1.2500e-003	0.2772	0.0733	1.1500e-003	0.0744	0.0000	203.2372	203.2372	4.7500e-003	5.1800e-003	204.8983
<b>Total</b>	<b>0.0865</b>	<b>0.3885</b>	<b>0.8671</b>	<b>3.9000e-003</b>	<b>0.3377</b>	<b>4.0100e-003</b>	<b>0.3417</b>	<b>0.0911</b>	<b>3.7900e-003</b>	<b>0.0949</b>	<b>0.0000</b>	<b>365.0028</b>	<b>365.0028</b>	<b>6.4700e-003</b>	<b>0.0291</b>	<b>373.8239</b>

**3.4 Building Construction - 2025**

**Unmitigated Construction On-Site**

Category	tons/yr											MT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	0.0198	0.1808	0.2332	3.9000e-004	7.6500e-003	7.6500e-003	7.6500e-003	7.2000e-003	7.2000e-003	7.2000e-003	0.0000	33.6283	33.6283	7.9000e-003	0.0000	33.8260
<b>Total</b>	<b>0.0198</b>	<b>0.1808</b>	<b>0.2332</b>	<b>3.9000e-004</b>	<b>7.6500e-003</b>	<b>7.6500e-003</b>	<b>7.6500e-003</b>	<b>7.2000e-003</b>	<b>7.2000e-003</b>	<b>7.2000e-003</b>	<b>0.0000</b>	<b>33.6283</b>	<b>33.6283</b>	<b>7.9000e-003</b>	<b>0.0000</b>	<b>33.8260</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.4 Building Construction - 2025**

**Unmitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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	1.6000e-003	0.0518	0.0203	2.6000e-004	9.6200e-003	4.3000e-004	0.0101	2.7700e-003	4.1000e-004	3.1900e-003	0.0000	24.7771	24.7771	2.8000e-004	3.6500e-003	25.8719
Worker	0.0111	7.5000e-003	0.1067	3.3000e-004	0.0430	1.9000e-004	0.0432	0.0114	1.7000e-004	0.0116	0.0000	30.6129	30.6129	6.7000e-004	7.5000e-004	30.8539
<b>Total</b>	<b>0.0127</b>	<b>0.0593</b>	<b>0.1270</b>	<b>5.9000e-004</b>	<b>0.0527</b>	<b>6.2000e-004</b>	<b>0.0533</b>	<b>0.0142</b>	<b>5.8000e-004</b>	<b>0.0148</b>	<b>0.0000</b>	<b>55.3899</b>	<b>55.3899</b>	<b>9.5000e-004</b>	<b>4.4000e-003</b>	<b>56.7258</b>

**Mitigated Construction On-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	0.0198	0.1808	0.2332	3.9000e-004		7.6500e-003	7.6500e-003		7.2000e-003	7.2000e-003	0.0000	33.6283	33.6283	7.9000e-003	0.0000	33.8259
<b>Total</b>	<b>0.0198</b>	<b>0.1808</b>	<b>0.2332</b>	<b>3.9000e-004</b>		<b>7.6500e-003</b>	<b>7.6500e-003</b>		<b>7.2000e-003</b>	<b>7.2000e-003</b>	<b>0.0000</b>	<b>33.6283</b>	<b>33.6283</b>	<b>7.9000e-003</b>	<b>0.0000</b>	<b>33.8259</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.4 Building Construction - 2025**

**Mitigated Construction Off-Site**

Category	tons/yr										MT/yr					CO2e
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	
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	1.6000e-003	0.0518	0.0203	2.6000e-004	9.6200e-003	4.3000e-004	0.0101	2.7700e-003	4.1000e-004	3.1900e-003	0.0000	24.7771	24.7771	2.8000e-004	3.6500e-003	25.8719
Worker	0.0111	7.5000e-003	0.1067	3.3000e-004	0.0430	1.9000e-004	0.0432	0.0114	1.7000e-004	0.0116	0.0000	30.6129	30.6129	6.7000e-004	7.5000e-004	30.8539
<b>Total</b>	<b>0.0127</b>	<b>0.0593</b>	<b>0.1270</b>	<b>5.9000e-004</b>	<b>0.0527</b>	<b>6.2000e-004</b>	<b>0.0533</b>	<b>0.0142</b>	<b>5.8000e-004</b>	<b>0.0148</b>	<b>0.0000</b>	<b>55.3899</b>	<b>55.3899</b>	<b>9.5000e-004</b>	<b>4.4000e-003</b>	<b>56.7258</b>

**3.5 Paving - 2025**

**Unmitigated Construction On-Site**

Category	tons/yr										MT/yr					CO2e
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	
Off-Road	7.7800e-003	0.0729	0.1239	1.9000e-004		3.5600e-003	3.5600e-003		3.2700e-003	3.2700e-003	0.0000	17.0164	17.0164	5.5000e-003	0.0000	17.1540
Paving	0.0151					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0229</b>	<b>0.0729</b>	<b>0.1239</b>	<b>1.9000e-004</b>		<b>3.5600e-003</b>	<b>3.5600e-003</b>		<b>3.2700e-003</b>	<b>3.2700e-003</b>	<b>0.0000</b>	<b>17.0164</b>	<b>17.0164</b>	<b>5.5000e-003</b>	<b>0.0000</b>	<b>17.1540</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.5 Paving - 2025**

**Unmitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	2.4000e-004	3.4800e-003	1.0000e-005	1.4000e-003	1.0000e-005	1.4100e-003	3.7000e-004	1.0000e-005	3.8000e-004	0.0000	0.9970	0.9970	2.0000e-005	2.0000e-005	1.0048
<b>Total</b>	<b>3.6000e-004</b>	<b>2.4000e-004</b>	<b>3.4800e-003</b>	<b>1.0000e-005</b>	<b>1.4000e-003</b>	<b>1.0000e-005</b>	<b>1.4100e-003</b>	<b>3.7000e-004</b>	<b>1.0000e-005</b>	<b>3.8000e-004</b>	<b>0.0000</b>	<b>0.9970</b>	<b>0.9970</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>1.0048</b>

**Mitigated Construction On-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	7.7800e-003	0.0729	0.1239	1.9000e-004	3.5600e-003	3.5600e-003	3.5600e-003	3.2700e-003	3.2700e-003	3.2700e-003	0.0000	17.0164	17.0164	5.5000e-003	0.0000	17.1539
Paving	0.0151				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0229</b>	<b>0.0729</b>	<b>0.1239</b>	<b>1.9000e-004</b>	<b>3.5600e-003</b>	<b>3.5600e-003</b>	<b>3.5600e-003</b>	<b>3.2700e-003</b>	<b>3.2700e-003</b>	<b>3.2700e-003</b>	<b>0.0000</b>	<b>17.0164</b>	<b>17.0164</b>	<b>5.5000e-003</b>	<b>0.0000</b>	<b>17.1539</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.5 Paving - 2025**

**Mitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	2.4000e-004	3.4800e-003	1.0000e-005	1.4000e-003	1.0000e-005	1.4100e-003	3.7000e-004	1.0000e-005	3.8000e-004	0.0000	0.9970	0.9970	2.0000e-005	2.0000e-005	1.0048
<b>Total</b>	<b>3.6000e-004</b>	<b>2.4000e-004</b>	<b>3.4800e-003</b>	<b>1.0000e-005</b>	<b>1.4000e-003</b>	<b>1.0000e-005</b>	<b>1.4100e-003</b>	<b>3.7000e-004</b>	<b>1.0000e-005</b>	<b>3.8000e-004</b>	<b>0.0000</b>	<b>0.9970</b>	<b>0.9970</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>1.0048</b>

**3.6 Architectural Coating - 2025**

**Unmitigated Construction On-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Archit. Coating	2.9823					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4500e-003	9.7400e-003	0.0154	3.0000e-005		4.4000e-004	4.4000e-004	4.4000e-004	4.4000e-004	4.4000e-004	0.0000	2.1703	2.1703	1.2000e-004	0.0000	2.1732
<b>Total</b>	<b>2.9837</b>	<b>9.7400e-003</b>	<b>0.0154</b>	<b>3.0000e-005</b>		<b>4.4000e-004</b>	<b>4.4000e-004</b>	<b>4.4000e-004</b>	<b>4.4000e-004</b>	<b>4.4000e-004</b>	<b>0.0000</b>	<b>2.1703</b>	<b>2.1703</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>2.1732</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.6 Architectural Coating - 2025**

**Unmitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-003	8.8000e-004	0.0125	4.0000e-005	5.0400e-003	2.0000e-005	5.0700e-003	1.3400e-003	2.0000e-005	1.3600e-003	0.0000	3.5891	3.5891	8.0000e-005	9.0000e-005	3.6174
<b>Total</b>	<b>1.3000e-003</b>	<b>8.8000e-004</b>	<b>0.0125</b>	<b>4.0000e-005</b>	<b>5.0400e-003</b>	<b>2.0000e-005</b>	<b>5.0700e-003</b>	<b>1.3400e-003</b>	<b>2.0000e-005</b>	<b>1.3600e-003</b>	<b>0.0000</b>	<b>3.5891</b>	<b>3.5891</b>	<b>8.0000e-005</b>	<b>9.0000e-005</b>	<b>3.6174</b>

**Mitigated Construction On-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Archit. Coating	2.9823					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4500e-003	9.7400e-003	0.0154	3.0000e-005	4.4000e-004	4.4000e-004	4.4000e-004	4.4000e-004	4.4000e-004	4.4000e-004	0.0000	2.1703	2.1703	1.2000e-004	0.0000	2.1732
<b>Total</b>	<b>2.9837</b>	<b>9.7400e-003</b>	<b>0.0154</b>	<b>3.0000e-005</b>	<b>4.4000e-004</b>	<b>4.4000e-004</b>	<b>4.4000e-004</b>	<b>4.4000e-004</b>	<b>4.4000e-004</b>	<b>4.4000e-004</b>	<b>0.0000</b>	<b>2.1703</b>	<b>2.1703</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>2.1732</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.6 Architectural Coating - 2025**

**Mitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-003	8.8000e-004	0.0125	4.0000e-005	5.0400e-003	2.0000e-005	5.0700e-003	1.3400e-003	2.0000e-005	1.3600e-003	0.0000	3.5891	3.5891	8.0000e-005	9.0000e-005	3.6174
<b>Total</b>	<b>1.3000e-003</b>	<b>8.8000e-004</b>	<b>0.0125</b>	<b>4.0000e-005</b>	<b>5.0400e-003</b>	<b>2.0000e-005</b>	<b>5.0700e-003</b>	<b>1.3400e-003</b>	<b>2.0000e-005</b>	<b>1.3600e-003</b>	<b>0.0000</b>	<b>3.5891</b>	<b>3.5891</b>	<b>8.0000e-005</b>	<b>9.0000e-005</b>	<b>3.6174</b>

**I.0 Operational Detail - Mobile**

**I.1 Mitigation Measures Mobile**



Ellis Ave Warehouse V2 - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Mitigated	0.3749	0.6365	4.1697	0.0105	1.1574	8.3300e-003	1.1658	0.3092	7.8100e-003	0.3170	0.0000	968.5539	968.5539	0.0464	0.0463	983.5135
Unmitigated	0.3749	0.6365	4.1697	0.0105	1.1574	8.3300e-003	1.1658	0.3092	7.8100e-003	0.3170	0.0000	968.5539	968.5539	0.0464	0.0463	983.5135

**I.2 Trip Summary Information**

Land Use	Average Daily Trip Rate			Unmitigated Annual VMT	Mitigated Annual VMT
	Weekday	Saturday	Sunday		
Parking Lot	0.00	0.00	0.00		
Refrigerated Warehouse-Rail	0.00	0.00	0.00		
Unrefrigerated Warehouse-Rail	714.19	714.19	714.19	3,060,811	3,060,811
<b>Total</b>	<b>714.19</b>	<b>714.19</b>	<b>714.19</b>	<b>3,060,811</b>	<b>3,060,811</b>

**I.3 Trip Type Information**

Land Use	Miles						Trip %						Trip Purpose %					
	H-W or C-W	H-S or C-C	H-O or C-C	H-W or C-NW	H-O or C-C	H-S or C-C	H-W or C-W	H-S or C-C	H-O or C-C	H-W or C-NW	H-O or C-C	H-S or C-C	Primary	Diverted	Pass-by			
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0			
Refrigerated Warehouse-Rail	16.60	8.40	6.90	59.00	0.00	41.00	59.00	0.00	41.00	0.00	41.00	92	5	3	3			
Unrefrigerated Warehouse-Rail	16.60	8.40	6.90	59.00	0.00	41.00	59.00	0.00	41.00	0.00	41.00	92	5	3	3			

**I.4 Fleet Mix**

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.540541	0.056458	0.173793	0.136090	0.025268	0.007074	0.011525	0.018705	0.000610	0.000304	0.023606	0.001094	0.004932
Refrigerated Warehouse-Rail	0.540541	0.056458	0.173793	0.136090	0.025268	0.007074	0.011525	0.018705	0.000610	0.000304	0.023606	0.001094	0.004932



Ellis Ave Warehouse V2 - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Unrefrigerated Warehouse-Rail	0.540541	0.056458	0.173793	0.136090	0.025268	0.007074	0.011525	0.018705	0.000610	0.000304	0.023606	0.001094	0.004932
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**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

Category	tons/yr										MT/yr						
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Electricity Mitigated						0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,335,057	7	1,335,057	0.1127	0.0137	1,341,945
Electricity Unmitigated						0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,335,057	7	1,335,057	0.1127	0.0137	1,341,945
Natural/Gas Mitigated	0.0501	0.4554	0.3826	2.7300e-003		0.0346	0.0346	0.0346	0.0346	0.0346	0.0000	495.8016	495.8016	9.5000e-003	9.0900e-003	498.7479	
Natural/Gas Unmitigated	0.0501	0.4554	0.3826	2.7300e-003		0.0346	0.0346	0.0346	0.0346	0.0346	0.0000	495.8016	495.8016	9.5000e-003	9.0900e-003	498.7479	



Ellis Ave Warehouse V2 - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**5.2 Energy by Land Use - NaturalGas**

**Unmitigated**

Land Use	NaturalGas Use kBtu/yr	tons/yr										MT/yr					CO2e		
		ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O			
Parking Lot	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	0.0000	0.0000	0.0000	
Refrigerated Warehouse-Rail	8.32102e+006	0.0449	0.4079	0.3426	2.4500e-003	0.0310	0.0310	0.0310	0.0310	0.0310	0.0310	0.0310	0.0310	0.0310	0.0310	0.0310	8.1400e-003	8.1400e-003	446.6798
Unrefrigerated Warehouse-Rail	969954	5.2300e-003	0.0476	0.0399	2.9000e-004	3.6100e-003	3.6100e-003	3.6100e-003	3.6100e-003	3.6100e-003	3.6100e-003	3.6100e-003	3.6100e-003	3.6100e-003	3.6100e-003	3.6100e-003	9.9000e-004	9.9000e-004	52.0680
<b>Total</b>		<b>0.0501</b>	<b>0.4554</b>	<b>0.3826</b>	<b>2.7400e-003</b>	<b>0.0346</b>	<b>0.0346</b>	<b>0.0346</b>	<b>0.0346</b>	<b>0.0346</b>	<b>0.0346</b>	<b>0.0346</b>	<b>0.0346</b>	<b>0.0346</b>	<b>0.0346</b>	<b>0.0346</b>	<b>9.5000e-003</b>	<b>9.5000e-003</b>	<b>498.7479</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**5.2 Energy by Land Use - NaturalGas**

Mitigated

Land Use	NaturalGas Use kBTU/yr	tons/yr										MT/yr					CO2e
		ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	
Parking Lot	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	0.0000	0.0000
Refrigerated Warehouse-Rail	8.32102e+006	0.0449	0.4079	0.3426	2.4500e-003	0.0310	0.0310	0.0310	0.0310	0.0310	0.0310	0.0310	0.0310	0.0310	8.5100e-003	8.1400e-003	446.6798
Unrefrigerated Warehouse-Rail	969954	5.2300e-003	0.0476	0.0399	2.9000e-004	3.6100e-003	3.6100e-003	3.6100e-003	3.6100e-003	3.6100e-003	3.6100e-003	3.6100e-003	3.6100e-003	3.6100e-003	9.9000e-004	9.5000e-004	52.0680
<b>Total</b>		<b>0.0501</b>	<b>0.4554</b>	<b>0.3826</b>	<b>2.7400e-003</b>	<b>0.0346</b>	<b>0.0346</b>	<b>0.0346</b>	<b>0.0346</b>	<b>0.0346</b>	<b>0.0346</b>	<b>0.0346</b>	<b>0.0346</b>	<b>0.0346</b>	<b>9.5000e-003</b>	<b>9.0900e-003</b>	<b>498.7479</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**5.3 Energy by Land Use - Electricity**

**Unmitigated**

Land Use	Electricity Use	Total CO2	CH4	N2O	CO2e
	kWh/yr	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-Rail	6.40845e+006	1,136.5106	0.0959	0.0116	1,142.3737
Unrefrigerated Warehouse-Rail	1.11955e+006	198.5470	0.0168	2.0300e-003	199.5713
<b>Total</b>		<b>1,335.0577</b>	<b>0.1127</b>	<b>0.0137</b>	<b>1,341.9450</b>



**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**5.3 Energy by Land Use - Electricity**

**Mitigated**

Land Use	Electricity Use	Total CO2	CH4	N2O	CO2e
	KWh/yr	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-Rail	6,408,456 <sup>+006</sup>	1,136,510 <sup>6</sup>	0.0959	0.0116	1,142,373 <sup>7</sup>
Unrefrigerated Warehouse-Rail	1,119,556 <sup>+006</sup>	198,5470	0.0168	2.0300e-003	199,5713
<b>Total</b>		<b>1,335,057<sup>7</sup></b>	<b>0.1127</b>	<b>0.0137</b>	<b>1,341,945<sup>0</sup></b>

**6.0 Area Detail**

**6.1 Mitigation Measures Area**



Ellis Ave Warehouse V2 - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated	2.6246	1.3000e-004	0.0146	0.0000	5.0000e-005	5.0000e-005	5.0000e-005	5.0000e-005	5.0000e-005	5.0000e-005	0.0000	0.0284	0.0284	7.0000e-005	0.0000	0.0303
Unmitigated	2.6246	1.3000e-004	0.0146	0.0000	5.0000e-005	5.0000e-005	5.0000e-005	5.0000e-005	5.0000e-005	5.0000e-005	0.0000	0.0284	0.0284	7.0000e-005	0.0000	0.0303

**6.2 Area by SubCategory**

Unmitigated

SubCategory	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Architectural Coating	0.2982				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.3250				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	1.3400e-003	1.3000e-004	0.0146	0.0000	5.0000e-005	5.0000e-005	5.0000e-005	5.0000e-005	5.0000e-005	5.0000e-005	0.0000	0.0284	0.0284	7.0000e-005	0.0000	0.0303
<b>Total</b>	<b>2.6246</b>	<b>1.3000e-004</b>	<b>0.0146</b>	<b>0.0000</b>	<b>5.0000e-005</b>	<b>5.0000e-005</b>	<b>5.0000e-005</b>	<b>5.0000e-005</b>	<b>5.0000e-005</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>0.0284</b>	<b>0.0284</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>0.0303</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**6.2 Area by SubCategory**

**Mitigated**

SubCategory	tons/yr										MT/yr						
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Architectural Coating	0.2982					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.3250					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.3400e-003	1.3000e-004	0.0146	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0284	0.0284	7.0000e-005	0.0000	0.0000	0.0303
<b>Total</b>	<b>2.6246</b>	<b>1.3000e-004</b>	<b>0.0146</b>	<b>0.0000</b>		<b>5.0000e-005</b>	<b>5.0000e-005</b>		<b>5.0000e-005</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>0.0284</b>	<b>0.0284</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0303</b>

**7.0 Water Detail**

**7.1 Mitigation Measures Water**



**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	390.7887	4.8773	0.1180	547.8827
Unmitigated	390.7887	4.8773	0.1180	547.8827

**7.2 Water by Land Use**

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-Rail	37.1966 / 0	97.6957	1.2193	0.0295	136.9686
Unrefrigerated Warehouse-Rail	111.592 / 0	293.0931	3.6580	0.0885	410.9142
<b>Total</b>		<b>390.7887</b>	<b>4.8773</b>	<b>0.1180</b>	<b>547.8827</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**7.2 Water by Land Use**

**Mitigated**

Land Use	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-Rail	37,1966 / 0	97.6957	1.2193	0.0295	136.9686
Unrefrigerated Warehouse-Rail	111,592 / 0	293.0931	3.6580	0.0885	410.9142
<b>Total</b>		<b>390.7887</b>	<b>4.8773</b>	<b>0.1180</b>	<b>547.8827</b>

**3.0 Waste Detail**

**3.1 Mitigation Measures Waste**



Ellis Ave Warehouse V2 - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	122.7710	7.2556	0.0000	304.1599
Unmitigated	122.7710	7.2556	0.0000	304.1599

**3.2 Waste by Land Use**

Unmitigated

Land Use	Waste Disposed	Total CO2	CH4	N2O	CO2e
	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-Rail	151.2	30.6922	1.8139	0.0000	76.0387
Unrefrigerated Warehouse-Rail	453.61	92.0787	5.4417	0.0000	228.1212
<b>Total</b>		<b>122.7710</b>	<b>7.2556</b>	<b>0.0000</b>	<b>304.1599</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.2 Waste by Land Use**

Mitigated

Land Use	Waste Disposed tons	Total CO2	CH4	N2O	CO2e
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-Rail	151.2	30.6922	1.8139	0.0000	76.0387
Unrefrigerated Warehouse-Rail	453.61	92.0787	5.4417	0.0000	228.1212
<b>Total</b>		<b>122.7710</b>	<b>7.2556</b>	<b>0.0000</b>	<b>304.1599</b>

**3.0 Operational Offroad**

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

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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Ellis Ave Warehouse V2 - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**11.0 Vegetation**

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Ellis Ave Warehouse V2 - Riverside-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**Ellis Ave Warehouse V2**

Riverside-South Coast County, Summer

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-Rail	160.85	1000sqft	3.69	160,854.75	0
Unrefrigerated Warehouse-Rail	482.56	1000sqft	11.08	482,564.25	0
Parking Lot	501.00	1000sqft	11.50	0.00	0

**1.2 Other Project Characteristics**

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2025

Utility Company Southern California Edison

CO2 Intensity (lb/MW/hr)	390.98	CH4 Intensity (lb/MW/hr)	0.033	N2O Intensity (lb/MW/hr)	0.004
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**1.3 User Entered Comments & Non-Default Data**

Project Characteristics - Consistent with the DEIR's model

Land Use - See SWAPE's comment on "Failure to Consider Potential Cold Storage Requirements."

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

Grading - Consistent with the DEIR's model.

Vehicle Trips - Consistent with the DEIR's model.

Fleet Mix - See SWAPE's comment on "Unsubstantiated Changes to Operational Fleet Mix Values."

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	35.00	17.00
tblConstructionPhase	NumDays	440.00	215.00



Ellis Ave Warehouse V2 - Riverside-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

tblConstructionPhase	NumDays	45.00	22.00
tblConstructionPhase	NumDays	35.00	17.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	PhaseEndDate	5/14/2026	3/28/2025
tblConstructionPhase	PhaseEndDate	2/5/2026	2/10/2025
tblConstructionPhase	PhaseEndDate	5/30/2024	4/15/2024
tblConstructionPhase	PhaseEndDate	3/26/2026	3/5/2025
tblConstructionPhase	PhaseEndDate	3/28/2024	3/14/2024
tblConstructionPhase	PhaseStartDate	3/27/2026	3/6/2025
tblConstructionPhase	PhaseStartDate	5/31/2024	4/16/2024
tblConstructionPhase	PhaseStartDate	3/29/2024	3/15/2024
tblConstructionPhase	PhaseStartDate	2/6/2026	2/11/2025
tblGrading	AcresOfGrading	66.00	90.00
tblGrading	AcresOfGrading	15.00	33.00
tblGrading	MaterialImported	0.00	141,400.00
tblLandUse	LandUseSquareFeet	160,850.00	160,854.75
tblLandUse	LandUseSquareFeet	482,560.00	482,564.25
tblLandUse	LandUseSquareFeet	501,000.00	0.00
tblVehicleTrips	ST_TR	0.00	0.77
tblVehicleTrips	ST_TR	2.12	0.00
tblVehicleTrips	ST_TR	1.74	1.48
tblVehicleTrips	SU_TR	0.00	0.77
tblVehicleTrips	SU_TR	2.12	0.00
tblVehicleTrips	SU_TR	1.74	1.48
tblVehicleTrips	WD_TR	0.00	0.77
tblVehicleTrips	WD_TR	2.12	0.00
tblVehicleTrips	WD_TR	1.74	1.48



Ellis Ave Warehouse V2 - Riverside-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**2.1 Overall Construction (Maximum Daily Emission)**

**Unmitigated Construction**

Year	lb/day															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
2024	4.6740	96.0593	46.0518	0.4072	21.7671	2.0979	23.8039	10.3619	1.9580	11.4937	0.0000	42,883.82	42,883.82	2.5062	5.7857	44,670.62
2025	351.1954	16.3585	26.0528	0.0695	3.6905	0.5700	4.2605	0.9940	0.5364	1.5304	0.0000	6,947.180	6,947.180	0.7165	0.3320	7,062.934
Maximum	351.1954	96.0593	46.0518	0.4072	21.7671	2.0979	23.8039	10.3619	1.9580	11.4937	0.0000	42,883.82	42,883.82	2.5062	5.7857	44,670.62

**Mitigated Construction**

Year	lb/day															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
2024	4.6740	96.0593	46.0518	0.4072	21.7671	2.0979	23.8039	10.3619	1.9580	11.4937	0.0000	42,883.82	42,883.82	2.5062	5.7857	44,670.62
2025	351.1954	16.3585	26.0528	0.0695	3.6905	0.5700	4.2605	0.9940	0.5364	1.5304	0.0000	6,947.180	6,947.180	0.7165	0.3320	7,062.934
Maximum	351.1954	96.0593	46.0518	0.4072	21.7671	2.0979	23.8039	10.3619	1.9580	11.4937	0.0000	42,883.82	42,883.82	2.5062	5.7857	44,670.62







Ellis Ave Warehouse V2 - Riverside-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**2.2 Overall Operational**

**Unmitigated Operational**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Area	14.3845	1.0600e-003	0.1165	1.0000e-005	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004		0.2505	0.2505	6.5000e-004		0.2667
Energy	0.2745	2.4956	2.0963	0.0150	0.1897	0.1897	0.1897	0.1897	0.1897	0.1897		2,994.672 <sub>2</sub>	2,994.672 <sub>2</sub>	0.0574	0.0549	3,012.468 <sub>0</sub>
Mobile	2.3569	3.2729	25.2392	0.0610	6.4661	0.0458	6.5120	1.7249	0.0430	1.7679		6,218.541 <sub>2</sub>	6,218.541 <sub>2</sub>	0.2777	0.2733	6,306.917 <sub>3</sub>
<b>Total</b>	<b>17.0160</b>	<b>5.7695</b>	<b>27.4520</b>	<b>0.0760</b>	<b>6.4661</b>	<b>0.2359</b>	<b>6.7020</b>	<b>1.7249</b>	<b>0.2330</b>	<b>1.9579</b>		<b>9,213.463<sub>8</sub></b>	<b>9,213.463<sub>8</sub></b>	<b>0.3357</b>	<b>0.3282</b>	<b>9,319.652<sub>0</sub></b>

**Mitigated Operational**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Area	14.3845	1.0600e-003	0.1165	1.0000e-005	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004		0.2505	0.2505	6.5000e-004		0.2667
Energy	0.2745	2.4956	2.0963	0.0150	0.1897	0.1897	0.1897	0.1897	0.1897	0.1897		2,994.672 <sub>2</sub>	2,994.672 <sub>2</sub>	0.0574	0.0549	3,012.468 <sub>0</sub>
Mobile	2.3569	3.2729	25.2392	0.0610	6.4661	0.0458	6.5120	1.7249	0.0430	1.7679		6,218.541 <sub>2</sub>	6,218.541 <sub>2</sub>	0.2777	0.2733	6,306.917 <sub>3</sub>
<b>Total</b>	<b>17.0160</b>	<b>5.7695</b>	<b>27.4520</b>	<b>0.0760</b>	<b>6.4661</b>	<b>0.2359</b>	<b>6.7020</b>	<b>1.7249</b>	<b>0.2330</b>	<b>1.9579</b>		<b>9,213.463<sub>8</sub></b>	<b>9,213.463<sub>8</sub></b>	<b>0.3357</b>	<b>0.3282</b>	<b>9,319.652<sub>0</sub></b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
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	Site Preparation	Site Preparation	3/1/2024	3/14/2024	5	10	
2	Grading	Grading	3/15/2024	4/15/2024	5	22	
3	Building Construction	Building Construction	4/16/2024	2/10/2025	5	215	
4	Paving	Paving	2/11/2025	3/5/2025	5	17	
5	Architectural Coating	Architectural Coating	3/6/2025	3/28/2025	5	17	

**Acres of Grading (Site Preparation Phase): 33**

**Acres of Grading (Grading Phase): 90**

**Acres of Paving: 11.5**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 965,129; Non-Residential Outdoor: 321,710; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	231	0.29
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41



Ellis Ave Warehouse V2 - Riverside-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

**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
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	13,981.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	270.00	105.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	54.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**



Ellis Ave Warehouse V2 - Riverside-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.2 Site Preparation - 2024**

**Unmitigated Construction On-Site**

Category	lb/day										lb/day					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					21.5659	0.0000	21.5659	10.3086	0.0000	10.3086			0.0000			0.0000
Off-Road	2.6609	27.1760	18.3356	0.0381	1.2294	1.2294	1.2294	1.1310	1.1310	1.1310	3.688.010	0	3.688.010	1.1928		3,717.829 4
<b>Total</b>	<b>2.6609</b>	<b>27.1760</b>	<b>18.3356</b>	<b>0.0381</b>	<b>21.5659</b>	<b>1.2294</b>	<b>22.7953</b>	<b>10.3086</b>	<b>1.1310</b>	<b>11.4396</b>	<b>3.688.010</b>	<b>0</b>	<b>3.688.010</b>	<b>1.1928</b>		<b>3,717.829</b> <b>4</b>

**Unmitigated Construction Off-Site**

Category	lb/day										lb/day					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0613	0.0362	0.6156	1.7100e-003	0.2012	9.0000e-004	0.2021	0.0534	8.3000e-004	0.0542	173.1792	173.1792	173.1792	3.7500e-003	3.9200e-003	174.4420
<b>Total</b>	<b>0.0613</b>	<b>0.0362</b>	<b>0.6156</b>	<b>1.7100e-003</b>	<b>0.2012</b>	<b>9.0000e-004</b>	<b>0.2021</b>	<b>0.0534</b>	<b>8.3000e-004</b>	<b>0.0542</b>	<b>173.1792</b>	<b>173.1792</b>	<b>173.1792</b>	<b>3.7500e-003</b>	<b>3.9200e-003</b>	<b>174.4420</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.2 Site Preparation - 2024**

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Fugitive Dust					21.5659	0.0000	21.5659	10.3086	0.0000	10.3086			0.0000			0.0000
Off-Road	2.6609	27.1760	18.3356	0.0381	1.2294	1.2294	1.2294	1.1310	1.1310	1.1310	0.0000	3,688.010	3,688.010	1.1928		3,717.829
<b>Total</b>	<b>2.6609</b>	<b>27.1760</b>	<b>18.3356</b>	<b>0.0381</b>	<b>21.5659</b>	<b>1.2294</b>	<b>22.7953</b>	<b>10.3086</b>	<b>1.1310</b>	<b>11.4396</b>	<b>0.0000</b>	<b>3,688.010</b>	<b>3,688.010</b>	<b>1.1928</b>		<b>3,717.829</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0613	0.0362	0.6156	1.7100e-003	0.2012	9.0000e-004	0.2021	0.0534	8.3000e-004	0.0542		173.1792	173.1792	3.7500e-003	3.9200e-003	174.4420
<b>Total</b>	<b>0.0613</b>	<b>0.0362</b>	<b>0.6156</b>	<b>1.7100e-003</b>	<b>0.2012</b>	<b>9.0000e-004</b>	<b>0.2021</b>	<b>0.0534</b>	<b>8.3000e-004</b>	<b>0.0542</b>		<b>173.1792</b>	<b>173.1792</b>	<b>3.7500e-003</b>	<b>3.9200e-003</b>	<b>174.4420</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.3 Grading - 2024**

**Unmitigated Construction On-Site**

Category	lb/day															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					10.3605	0.0000	10.3605	3.7787	0.0000	3.7787			0.0000			0.0000
Off-Road	3.2181	32.3770	27.7228	0.0621		1.3354	1.3354	1.2286	1.2286	1.2286		6,009.7487	6,009.7487	1.9437		6,058.3405
<b>Total</b>	<b>3.2181</b>	<b>32.3770</b>	<b>27.7228</b>	<b>0.0621</b>	<b>10.3605</b>	<b>1.3354</b>	<b>11.6959</b>	<b>3.7787</b>	<b>1.2286</b>	<b>5.0072</b>		<b>6,009.7487</b>	<b>6,009.7487</b>	<b>1.9437</b>		<b>6,058.3405</b>

**Unmitigated Construction Off-Site**

Category	lb/day															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	1.3878	63.6422	17.6450	0.3432	11.1219	0.7615	11.8834	3.0491	0.7285	3.7777		36,681.6551	36,681.6551	0.5584	5.7814	38,418.4570
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0681	0.0402	0.6840	1.9000e-003	0.2236	1.0000e-003	0.2246	0.0593	9.2000e-004	0.0602		192.4214	192.4214	4.1600e-003	4.3600e-003	193.8244
<b>Total</b>	<b>1.4558</b>	<b>63.6824</b>	<b>18.3290</b>	<b>0.3451</b>	<b>11.3455</b>	<b>0.7625</b>	<b>12.1080</b>	<b>3.1084</b>	<b>0.7295</b>	<b>3.8379</b>		<b>36,874.0764</b>	<b>36,874.0764</b>	<b>0.5625</b>	<b>5.7857</b>	<b>38,612.2814</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.3 Grading - 2024**

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Fugitive Dust					10.3605	0.0000	10.3605	3.7787	0.0000	3.7787			0.0000			0.0000
Off-Road	3.2181	32.3770	27.7228	0.0621	1.3354	1.3354	1.3354	1.2286	1.2286	1.2286	0.0000	6,009.748	6,009.748	1.9437		6,058.340
<b>Total</b>	<b>3.2181</b>	<b>32.3770</b>	<b>27.7228</b>	<b>0.0621</b>	<b>10.3605</b>	<b>1.3354</b>	<b>11.6959</b>	<b>3.7787</b>	<b>1.2286</b>	<b>5.0072</b>	<b>0.0000</b>	<b>6,009.748</b>	<b>6,009.748</b>	<b>1.9437</b>		<b>6,058.340</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Hauling	1.3878	63.6422	17.6450	0.3432	11.1219	0.7615	11.8834	3.0491	0.7285	3.7777			36,681.65	0.5584	5.7814	38,418.45
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	0.0681	0.0402	0.6840	1.9000e-003	0.2236	1.0000e-003	0.2246	0.0593	9.2000e-004	0.0602			192.4214	4.1600e-003	4.3600e-003	193.8244
<b>Total</b>	<b>1.4558</b>	<b>63.6824</b>	<b>18.3290</b>	<b>0.3451</b>	<b>11.3455</b>	<b>0.7625</b>	<b>12.1080</b>	<b>3.1084</b>	<b>0.7295</b>	<b>3.8379</b>			<b>36,874.07</b>	<b>0.5625</b>	<b>5.7857</b>	<b>38,612.28</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.4 Building Construction - 2024**

**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
	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
<b>Total</b>	<b>1.4716</b>	<b>13.4438</b>	<b>16.1668</b>	<b>0.0270</b>		<b>0.6133</b>	<b>0.6133</b>		<b>0.5769</b>	<b>0.5769</b>		<b>2,555.6989</b>	<b>2,555.6989</b>	<b>0.6044</b>			<b>2,570.8077</b>

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
	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	0.1165	3.4307	1.3963	0.0181	0.6725	0.0297	0.7022	0.1936	0.0284	0.2220		1,915.3636	1,915.3636	0.0205			2,000.0938
Worker	0.9187	0.5426	9.2342	0.0257	3.0180	0.0135	3.0314	0.8004	0.0124	0.8128		2,597.6883	2,597.6883	0.0562			2,616.6297
<b>Total</b>	<b>1.0352</b>	<b>3.9733</b>	<b>10.6305</b>	<b>0.0438</b>	<b>3.6905</b>	<b>0.0431</b>	<b>3.7336</b>	<b>0.9940</b>	<b>0.0408</b>	<b>1.0348</b>		<b>4,513.0519</b>	<b>4,513.0519</b>	<b>0.0767</b>	<b>0.3415</b>		<b>4,616.7235</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.4 Building Construction - 2024**

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Off-Road	1.4716	13.4438	16.1668	0.0270	0.6133	0.6133	0.6133	0.5769	0.5769	0.5769	0.0000	2,555.698 <sub>9</sub>	2,555.698 <sub>9</sub>	0.6044		2,570.807 <sub>7</sub>
<b>Total</b>	<b>1.4716</b>	<b>13.4438</b>	<b>16.1668</b>	<b>0.0270</b>	<b>0.6133</b>	<b>0.6133</b>	<b>0.6133</b>	<b>0.5769</b>	<b>0.5769</b>	<b>0.5769</b>	<b>0.0000</b>	<b>2,555.698<sub>9</sub></b>	<b>2,555.698<sub>9</sub></b>	<b>0.6044</b>		<b>2,570.807<sub>7</sub></b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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	0.1165	3.4307	1.3963	0.0181	0.6725	0.0297	0.7022	0.1936	0.0284	0.2220		1,915.363 <sub>6</sub>	1,915.363 <sub>6</sub>	0.0205		2,000.093 <sub>8</sub>
Worker	0.9187	0.5426	9.2342	0.0257	3.0180	0.0135	3.0314	0.8004	0.0124	0.8128		2,597.688 <sub>3</sub>	2,597.688 <sub>3</sub>	0.0562		2,616.629 <sub>7</sub>
<b>Total</b>	<b>1.0352</b>	<b>3.9733</b>	<b>10.6305</b>	<b>0.0438</b>	<b>3.6905</b>	<b>0.0431</b>	<b>3.7336</b>	<b>0.9940</b>	<b>0.0408</b>	<b>1.0348</b>		<b>4,513.051<sub>9</sub></b>	<b>4,513.051<sub>9</sub></b>	<b>0.0767</b>	<b>0.3415</b>	<b>4,616.723<sub>5</sub></b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.4 Building Construction - 2025**

**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Off-Road	1.3674	12.4697	16.0847	0.0270	0.5276	0.5276	0.5276	0.4963	0.4963	0.4963		2,556.474 4	2,556.474 4	0.6010		2,571,498 1
<b>Total</b>	<b>1.3674</b>	<b>12.4697</b>	<b>16.0847</b>	<b>0.0270</b>	<b>0.5276</b>	<b>0.5276</b>	<b>0.5276</b>	<b>0.4963</b>	<b>0.4963</b>	<b>0.4963</b>		<b>2,556.474 4</b>	<b>2,556.474 4</b>	<b>0.6010</b>		<b>2,571,498 1</b>

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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	0.1150	3.4025	1.3805	0.0177	0.6725	0.0297	0.7022	0.1936	0.0284	0.2220		1,881.601 0	1,881.601 0	0.0213	0.2771	1,964,700 5
Worker	0.8584	0.4863	8.5876	0.0248	3.0180	0.0128	3.0307	0.8004	0.0118	0.8121		2,509.104 7	2,509.104 7	0.0506	0.0549	2,526,736 1
<b>Total</b>	<b>0.9733</b>	<b>3.8888</b>	<b>9.9682</b>	<b>0.0426</b>	<b>3.6905</b>	<b>0.0425</b>	<b>3.7329</b>	<b>0.9940</b>	<b>0.0402</b>	<b>1.0342</b>		<b>4,390.705 7</b>	<b>4,390.705 7</b>	<b>0.0719</b>	<b>0.3320</b>	<b>4,491,436 6</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.4 Building Construction - 2025**

**Mitigated Construction On-Site**

Category	lb/day															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.474 4	2,556.474 4	0.6010		2,571.498 1
<b>Total</b>	<b>1.3674</b>	<b>12.4697</b>	<b>16.0847</b>	<b>0.0270</b>		<b>0.5276</b>	<b>0.5276</b>		<b>0.4963</b>	<b>0.4963</b>	<b>0.0000</b>	<b>2,556.474 4</b>	<b>2,556.474 4</b>	<b>0.6010</b>		<b>2,571.498 1</b>

**Mitigated Construction Off-Site**

Category	lb/day															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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	0.1150	3.4025	1.3805	0.0177	0.6725	0.0297	0.7022	0.1936	0.0284	0.2220		1,881.601 0	1,881.601 0	0.0213	0.2771	1,964.700 5
Worker	0.8564	0.4863	8.5876	0.0248	3.0180	0.0128	3.0307	0.8004	0.0118	0.8121		2,509.104 7	2,509.104 7	0.0506	0.0549	2,526.736 1
<b>Total</b>	<b>0.9733</b>	<b>3.8888</b>	<b>9.9682</b>	<b>0.0426</b>	<b>3.6905</b>	<b>0.0425</b>	<b>3.7329</b>	<b>0.9940</b>	<b>0.0402</b>	<b>1.0342</b>		<b>4,390.705 7</b>	<b>4,390.705 7</b>	<b>0.0719</b>	<b>0.3320</b>	<b>4,491.436 6</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.5 Paving - 2025**

**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850		2.206.745 <sub>2</sub>	2,206.745 <sub>2</sub>	0.7137		2,224.587 <sub>8</sub>
Paving	1.7724					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>2.6875</b>	<b>8.5816</b>	<b>14.5780</b>	<b>0.0228</b>		<b>0.4185</b>	<b>0.4185</b>		<b>0.3850</b>	<b>0.3850</b>		<b>2,206.745<sub>2</sub></b>	<b>2,206.745<sub>2</sub></b>	<b>0.7137</b>		<b>2,224.587<sub>8</sub></b>

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0477	0.0270	0.4771	1.3800e-003	0.1677	7.1000e-004	0.1684	0.0445	6.5000e-004	0.0451		139.3947	139.3947	2.8100e-003	3.0500e-003	140.3742
<b>Total</b>	<b>0.0477</b>	<b>0.0270</b>	<b>0.4771</b>	<b>1.3800e-003</b>	<b>0.1677</b>	<b>7.1000e-004</b>	<b>0.1684</b>	<b>0.0445</b>	<b>6.5000e-004</b>	<b>0.0451</b>		<b>139.3947</b>	<b>139.3947</b>	<b>2.8100e-003</b>	<b>3.0500e-003</b>	<b>140.3742</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.5 Paving - 2025**

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Off-Road	0.9152	8.5816	14.5780	0.0228	0.4185	0.4185	0.4185	0.3850	0.3850	0.3850	0.0000	2,206.745 <sub>2</sub>	2,206.745 <sub>2</sub>	0.7137		2,224.587 <sub>8</sub>
Paving	1.7724				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>2.6875</b>	<b>8.5816</b>	<b>14.5780</b>	<b>0.0228</b>	<b>0.4185</b>	<b>0.4185</b>	<b>0.4185</b>	<b>0.3850</b>	<b>0.3850</b>	<b>0.3850</b>	<b>0.0000</b>	<b>2,206.745<sub>2</sub></b>	<b>2,206.745<sub>2</sub></b>	<b>0.7137</b>		<b>2,224.587<sub>8</sub></b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0477	0.0270	0.4771	1.3800e-003	0.1677	7.1000e-004	0.1684	0.0445	6.5000e-004	0.0451		139.3947	139.3947	2.8100e-003	3.0500e-003	140.3742
<b>Total</b>	<b>0.0477</b>	<b>0.0270</b>	<b>0.4771</b>	<b>1.3800e-003</b>	<b>0.1677</b>	<b>7.1000e-004</b>	<b>0.1684</b>	<b>0.0445</b>	<b>6.5000e-004</b>	<b>0.0451</b>		<b>139.3947</b>	<b>139.3947</b>	<b>2.8100e-003</b>	<b>3.0500e-003</b>	<b>140.3742</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.6 Architectural Coating - 2025**

**Unmitigated Construction On-Site**

Category	lb/day															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Archit. Coating	350.8529				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003	0.0515	0.0515	0.0515	0.0515	0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
<b>Total</b>	<b>351.0237</b>	<b>1.1455</b>	<b>1.8091</b>	<b>2.9700e-003</b>	<b>0.0515</b>	<b>0.0515</b>	<b>0.0515</b>	<b>0.0515</b>	<b>0.0515</b>	<b>0.0515</b>		<b>281.4481</b>	<b>281.4481</b>	<b>0.0154</b>		<b>281.8319</b>

**Unmitigated Construction Off-Site**

Category	lb/day															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	0.1717	0.0973	1.7175	4.9600e-003	0.6036	2.5600e-003	0.6062	0.1601	2.3500e-003	0.1624		501.8210	501.8210	0.0101	0.0110	505.3472
<b>Total</b>	<b>0.1717</b>	<b>0.0973</b>	<b>1.7175</b>	<b>4.9600e-003</b>	<b>0.6036</b>	<b>2.5600e-003</b>	<b>0.6062</b>	<b>0.1601</b>	<b>2.3500e-003</b>	<b>0.1624</b>		<b>501.8210</b>	<b>501.8210</b>	<b>0.0101</b>	<b>0.0110</b>	<b>505.3472</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.6 Architectural Coating - 2025**

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Archit. Coating	350.8529				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003	0.0515	0.0515	0.0515	0.0515	0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
<b>Total</b>	<b>351.0237</b>	<b>1.1455</b>	<b>1.8091</b>	<b>2.9700e-003</b>	<b>0.0515</b>	<b>0.0515</b>	<b>0.0515</b>	<b>0.0515</b>	<b>0.0515</b>	<b>0.0515</b>	<b>0.0000</b>	<b>281.4481</b>	<b>281.4481</b>	<b>0.0154</b>		<b>281.8319</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	0.1717	0.0973	1.7175	4.9600e-003	0.6036	2.5600e-003	0.6062	0.1601	2.3500e-003	0.1624			501.8210	0.0101	0.0110	505.3472
<b>Total</b>	<b>0.1717</b>	<b>0.0973</b>	<b>1.7175</b>	<b>4.9600e-003</b>	<b>0.6036</b>	<b>2.5600e-003</b>	<b>0.6062</b>	<b>0.1601</b>	<b>2.3500e-003</b>	<b>0.1624</b>			<b>501.8210</b>	<b>0.0101</b>	<b>0.0110</b>	<b>505.3472</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**1.0 Operational Detail - Mobile**

**1.1 Mitigation Measures Mobile**

Category	lb/day											lb/day				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated	2.3569	3.2729	25.2392	0.0610	6.4661	0.0458	6.5120	1.7249	0.0430	1.7679	6,218.541	2	6,218.541	0.2777	0.2733	6,306.917
Unmitigated	2.3569	3.2729	25.2392	0.0610	6.4661	0.0458	6.5120	1.7249	0.0430	1.7679	6,218.541	2	6,218.541	0.2777	0.2733	6,306.917

**1.2 Trip Summary Information**

Land Use	Average Daily Trip Rate			Unmitigated		Mitigated	
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00				
Refrigerated Warehouse-Rail	0.00	0.00	0.00				
Unrefrigerated Warehouse-Rail	714.19	714.19	714.19	3,060,811			3,060,811
<b>Total</b>	<b>714.19</b>	<b>714.19</b>	<b>714.19</b>	<b>3,060,811</b>			<b>3,060,811</b>

**1.3 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	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0.00	0.00	0	0	0
Refrigerated Warehouse-Rail	16.60	8.40	6.90	59.00	0.00	41.00	0.00	41.00	92	5	3
Unrefrigerated Warehouse-Rail	16.60	8.40	6.90	59.00	0.00	41.00	0.00	41.00	92	5	3



Ellis Ave Warehouse V2 - Riverside-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**I.4 Fleet Mix**

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.540541	0.056458	0.173793	0.136090	0.025268	0.007074	0.011525	0.018705	0.000610	0.000304	0.023606	0.001094	0.004932
Refrigerated Warehouse-Rail	0.540541	0.056458	0.173793	0.136090	0.025268	0.007074	0.011525	0.018705	0.000610	0.000304	0.023606	0.001094	0.004932
Unrefrigerated Warehouse-Rail	0.540541	0.056458	0.173793	0.136090	0.025268	0.007074	0.011525	0.018705	0.000610	0.000304	0.023606	0.001094	0.004932

**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

Category	lb/day										lb/day					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
NaturalGas Mitigated	0.2745	2.4956	2.0963	0.0150		0.1897	0.1897	0.1897	0.1897	0.1897		2,994.672	2,994.672	0.0574	0.0549	3,012.468
NaturalGas Unmitigated	0.2745	2.4956	2.0963	0.0150		0.1897	0.1897	0.1897	0.1897	0.1897		2,994.672	2,994.672	0.0574	0.0549	3,012.468



Ellis Ave Warehouse V2 - Riverside-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**5.2 Energy by Land Use - NaturalGas**

**Unmitigated**

Land Use	NaturalGas Use kBTU/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Parking Lot	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	
Refrigerated Warehouse-Rail	22797.3	0.2459	2.2350	1.8774	0.0134		0.1699	0.1699		0.1699	0.1699		2,682.0359	2,682.0359	0.0514	0.0492	2,697.9739	
Unrefrigerated Warehouse-Rail	2657.41	0.0287	0.2605	0.2189	1.5600e-003		0.0198	0.0198		0.0198	0.0198		312.6363	312.6363	5.9900e-003	5.7300e-003	314.4942	
<b>Total</b>		<b>0.2745</b>	<b>2.4956</b>	<b>2.0963</b>	<b>0.0150</b>		<b>0.1897</b>	<b>0.1897</b>		<b>0.1897</b>	<b>0.1897</b>		<b>2,994.6722</b>	<b>2,994.6722</b>	<b>0.0574</b>	<b>0.0549</b>	<b>3,012.4680</b>	



Ellis Ave Warehouse V2 - Riverside-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**5.2 Energy by Land Use - Natural Gas**

**Mitigated**

Land Use	Natural Gas Use kBTU/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																	
Parking Lot	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
Refrigerated Warehouse-Rail	22.7973	0.2459	2.2350	1.8774	0.0134		0.1699	0.1699		0.1699	0.1699		2.6820359	2.6820359	0.0514	0.0492	2.697.9739
Unrefrigerated Warehouse-Rail	2.65741	0.0287	0.2605	0.2189	1.5600e-003		0.0198	0.0198		0.0198	0.0198		312.6363	312.6363	5.9900e-003	5.7300e-003	314.4942
<b>Total</b>		<b>0.2745</b>	<b>2.4956</b>	<b>2.0963</b>	<b>0.0150</b>		<b>0.1897</b>	<b>0.1897</b>		<b>0.1897</b>	<b>0.1897</b>		<b>2.994.6722</b>	<b>2,994.6722</b>	<b>0.0574</b>	<b>0.0549</b>	<b>3,012.4680</b>

**6.0 Area Detail**

**6.1 Mitigation Measures Area**



Ellis Ave Warehouse V2 - Riverside-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Mitigated	14.3845	1.0600e-003	0.1165	1.0000e-005	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	0.2505	0.2505	0.2505	6.5000e-004		0.2667
Unmitigated	14.3845	1.0600e-003	0.1165	1.0000e-005	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	0.2505	0.2505	0.2505	6.5000e-004		0.2667

**6.2 Area by SubCategory**

Unmitigated

SubCategory	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Architectural Coating	1.6341				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Consumer Products	12.7397				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Landscaping	0.0107	1.0600e-003	0.1165	1.0000e-005	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	0.2505	0.2505	0.2505	6.5000e-004		0.2667
<b>Total</b>	<b>14.3845</b>	<b>1.0600e-003</b>	<b>0.1165</b>	<b>1.0000e-005</b>	<b>4.1000e-004</b>	<b>4.1000e-004</b>	<b>4.1000e-004</b>	<b>4.1000e-004</b>	<b>4.1000e-004</b>	<b>4.1000e-004</b>	<b>0.2505</b>	<b>0.2505</b>	<b>0.2505</b>	<b>6.5000e-004</b>		<b>0.2667</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**6.2 Area by SubCategory**

**Mitigated**

SubCategory	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Architectural Coating	1.6341					0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Consumer Products	12.7397					0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Landscaping	0.0107	1.0600e-003	0.1165	1.0000e-005	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004		0.2505	0.2505	6.5000e-004		0.2667
<b>Total</b>	<b>14.3845</b>	<b>1.0600e-003</b>	<b>0.1165</b>	<b>1.0000e-005</b>	<b>4.1000e-004</b>	<b>4.1000e-004</b>	<b>4.1000e-004</b>	<b>4.1000e-004</b>	<b>4.1000e-004</b>	<b>4.1000e-004</b>		<b>0.2505</b>	<b>0.2505</b>	<b>6.5000e-004</b>		<b>0.2667</b>

**7.0 Water Detail**

**7.1 Mitigation Measures Water**



Ellis Ave Warehouse V2 - Riverside-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.0 Waste Detail**

**3.1 Mitigation Measures Waste**

**3.0 Operational Offroad**

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

**Fire Pumps and Emergency Generators**

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

**Boilers**

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

**User Defined Equipment**

Equipment Type	Number
----------------	--------

**11.0 Vegetation**



Ellis Ave Warehouse V2 - Riverside-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**Ellis Ave Warehouse V2**

Riverside-South Coast County, Winter

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-Rail	160.85	1000sqft	3.69	160,854.75	0
Unrefrigerated Warehouse-Rail	482.56	1000sqft	11.08	482,564.25	0
Parking Lot	501.00	1000sqft	11.50	0.00	0

**1.2 Other Project Characteristics**

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2025

Utility Company Southern California Edison

CO2 Intensity (lb/MW/hr)	390.98	CH4 Intensity (lb/MW/hr)	0.033	N2O Intensity (lb/MW/hr)	0.004
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**1.3 User Entered Comments & Non-Default Data**

Project Characteristics - Consistent with the DEIR's model

Land Use - See SWAPE's comment on "Failure to Consider Potential Cold Storage Requirements."

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

Grading - Consistent with the DEIR's model.

Vehicle Trips - Consistent with the DEIR's model.

Fleet Mix - See SWAPE's comment on "Unsubstantiated Changes to Operational Fleet Mix Values."

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	35.00	17.00
tblConstructionPhase	NumDays	440.00	215.00



Ellis Ave Warehouse V2 - Riverside-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

tb\ConstructionPhase	NumDays	45.00	22.00
tb\ConstructionPhase	NumDays	35.00	17.00
tb\ConstructionPhase	NumDays	20.00	10.00
tb\ConstructionPhase	PhaseEndDate	5/14/2026	3/28/2025
tb\ConstructionPhase	PhaseEndDate	2/5/2026	2/10/2025
tb\ConstructionPhase	PhaseEndDate	5/30/2024	4/15/2024
tb\ConstructionPhase	PhaseEndDate	3/26/2026	3/5/2025
tb\ConstructionPhase	PhaseEndDate	3/28/2024	3/14/2024
tb\ConstructionPhase	PhaseStartDate	3/27/2026	3/6/2025
tb\ConstructionPhase	PhaseStartDate	5/31/2024	4/16/2024
tb\ConstructionPhase	PhaseStartDate	3/29/2024	3/15/2024
tb\ConstructionPhase	PhaseStartDate	2/6/2026	2/11/2025
tb\Grading	AcresOfGrading	66.00	90.00
tb\Grading	AcresOfGrading	15.00	33.00
tb\Grading	MaterialImported	0.00	141,400.00
tb\LandUse	LandUseSquareFeet	160,850.00	160,854.75
tb\LandUse	LandUseSquareFeet	482,560.00	482,564.25
tb\LandUse	LandUseSquareFeet	501,000.00	0.00
tb\VehicleTrips	ST_TR	0.00	0.77
tb\VehicleTrips	ST_TR	2.12	0.00
tb\VehicleTrips	ST_TR	1.74	1.48
tb\VehicleTrips	SU_TR	0.00	0.77
tb\VehicleTrips	SU_TR	2.12	0.00
tb\VehicleTrips	SU_TR	1.74	1.48
tb\VehicleTrips	WD_TR	0.00	0.77
tb\VehicleTrips	WD_TR	2.12	0.00
tb\VehicleTrips	WD_TR	1.74	1.48



Ellis Ave Warehouse V2 - Riverside-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**2.1 Overall Construction (Maximum Daily Emission)**

Unmitigated Construction

Year	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
2024	4.5577	99.8578	46.2893	0.4076	21.7671	2.0989	23.8049	10.3619	1.9590	11.4937	0.0000	42,923.36	42,923.36	2.5008	5.7949	44,712.77
												52	52			10
2025	351.1856	16.5827	24.4981	0.0672	3.6905	0.5701	4.2606	0.9940	0.5365	1.5305	0.0000	6,717.330	6,717.330	0.7165	0.3342	6,833.725
												2	2			0
Maximum	351.1856	99.8578	46.2893	0.4076	21.7671	2.0989	23.8049	10.3619	1.9590	11.4937	0.0000	42,923.36	42,923.36	2.5008	5.7949	44,712.77
												52	52			10

Mitigated Construction

Year	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
2024	4.5577	99.8578	46.2893	0.4076	21.7671	2.0989	23.8049	10.3619	1.9590	11.4937	0.0000	42,923.36	42,923.36	2.5008	5.7949	44,712.77
												52	52			10
2025	351.1856	16.5827	24.4981	0.0672	3.6905	0.5701	4.2606	0.9940	0.5365	1.5305	0.0000	6,717.330	6,717.330	0.7165	0.3342	6,833.725
												2	2			0
Maximum	351.1856	99.8578	46.2893	0.4076	21.7671	2.0989	23.8049	10.3619	1.9590	11.4937	0.0000	42,923.36	42,923.36	2.5008	5.7949	44,712.77
												52	52			10







Ellis Ave Warehouse V2 - Riverside-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**2.2 Overall Operational**

**Unmitigated Operational**

Category	lb/day															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Area	14.3845	1.0600e-003	0.1165	1.0000e-005	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	0.2505	0.2505	0.2505	6.5000e-004		0.2667
Energy	0.2745	2.4956	2.0963	0.0150	0.1897	0.1897	0.1897	0.1897	0.1897	0.1897	2,994.6722	2,994.6722	2,994.6722	0.0574	0.0549	3,012.4680
Mobile	2.0368	3.4745	22.1326	0.0567	6.4661	0.0458	6.5120	1.7249	0.0430	1.7679	5,774.5842	5,774.5842	5,774.5842	0.2815	0.2789	5,864.7259
<b>Total</b>	<b>16.6958</b>	<b>5.9712</b>	<b>24.3454</b>	<b>0.0716</b>	<b>6.4661</b>	<b>0.2359</b>	<b>6.7021</b>	<b>1.7249</b>	<b>0.2330</b>	<b>1.9580</b>	<b>8,769.5068</b>	<b>8,769.5068</b>	<b>8,769.5068</b>	<b>0.3396</b>	<b>0.3338</b>	<b>8,877.4607</b>

**Mitigated Operational**

Category	lb/day															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Area	14.3845	1.0600e-003	0.1165	1.0000e-005	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	0.2505	0.2505	0.2505	6.5000e-004		0.2667
Energy	0.2745	2.4956	2.0963	0.0150	0.1897	0.1897	0.1897	0.1897	0.1897	0.1897	2,994.6722	2,994.6722	2,994.6722	0.0574	0.0549	3,012.4680
Mobile	2.0368	3.4745	22.1326	0.0567	6.4661	0.0458	6.5120	1.7249	0.0430	1.7679	5,774.5842	5,774.5842	5,774.5842	0.2815	0.2789	5,864.7259
<b>Total</b>	<b>16.6958</b>	<b>5.9712</b>	<b>24.3454</b>	<b>0.0716</b>	<b>6.4661</b>	<b>0.2359</b>	<b>6.7021</b>	<b>1.7249</b>	<b>0.2330</b>	<b>1.9580</b>	<b>8,769.5068</b>	<b>8,769.5068</b>	<b>8,769.5068</b>	<b>0.3396</b>	<b>0.3338</b>	<b>8,877.4607</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
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	Site Preparation	Site Preparation	3/1/2024	3/14/2024	5	10	
2	Grading	Grading	3/15/2024	4/15/2024	5	22	
3	Building Construction	Building Construction	4/16/2024	2/10/2025	5	215	
4	Paving	Paving	2/11/2025	3/5/2025	5	17	
5	Architectural Coating	Architectural Coating	3/6/2025	3/28/2025	5	17	

**Acres of Grading (Site Preparation Phase): 33**

**Acres of Grading (Grading Phase): 90**

**Acres of Paving: 11.5**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 965,129; Non-Residential Outdoor: 321,710; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	231	0.29
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41



Ellis Ave Warehouse V2 - Riverside-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Activity	Equipment	Count	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Paving	Pavers	2	130	8.00	8.00		0.42	
Paving	Paving Equipment	2	132	8.00	8.00		0.36	
Paving	Rollers	2	80	8.00	8.00		0.38	
Grading	Rubber Tired Dozers	1	247	8.00	8.00		0.40	
Site Preparation	Rubber Tired Dozers	3	247	8.00	8.00		0.40	
Grading	Scrapers	2	367	8.00	8.00		0.48	
Building Construction	Tractors/Loaders/Backhoes	3	97	7.00	7.00		0.37	
Grading	Tractors/Loaders/Backhoes	2	97	8.00	8.00		0.37	
Site Preparation	Tractors/Loaders/Backhoes	4	97	8.00	8.00		0.37	
Building Construction	Welders	1	46	8.00	8.00		0.45	

**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
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	13.981.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	270.00	105.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	54.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**



Ellis Ave Warehouse V2 - Riverside-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.2 Site Preparation - 2024**

**Unmitigated Construction On-Site**

Category	lb/day															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					21.5659	0.0000	21.5659	10.3086	0.0000	10.3086			0.0000			0.0000
Off-Road	2.6609	27.1760	18.3356	0.0381	1.2294	1.2294	1.2294	1.1310	1.1310	1.1310		3.688.010	3.688.010	1.1928		3,717.829
<b>Total</b>	<b>2.6609</b>	<b>27.1760</b>	<b>18.3356</b>	<b>0.0381</b>	<b>21.5659</b>	<b>1.2294</b>	<b>22.7953</b>	<b>10.3086</b>	<b>1.1310</b>	<b>11.4396</b>		<b>3,688.010</b>	<b>3,688.010</b>	<b>1.1928</b>		<b>3,717.829</b>

**Unmitigated Construction Off-Site**

Category	lb/day															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0576	0.0375	0.5001	1.5000e-003	0.2012	9.0000e-004	0.2021	0.0534	8.3000e-004	0.0542		156.9468	156.9468	3.7400e-003	4.0100e-003	158.2365
<b>Total</b>	<b>0.0576</b>	<b>0.0375</b>	<b>0.5001</b>	<b>1.5000e-003</b>	<b>0.2012</b>	<b>9.0000e-004</b>	<b>0.2021</b>	<b>0.0534</b>	<b>8.3000e-004</b>	<b>0.0542</b>		<b>156.9468</b>	<b>156.9468</b>	<b>3.7400e-003</b>	<b>4.0100e-003</b>	<b>158.2365</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.2 Site Preparation - 2024**

**Mitigated Construction On-Site**

Category	lb/day															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					21.5659	0.0000	21.5659	10.3086	0.0000	10.3086			0.0000			0.0000
Off-Road	2.6609	27.1760	18.3356	0.0381	1.2294	1.2294	1.2294	1.1310	1.1310	1.1310	0.0000	3.688.010	3.688.010	1.1928		3,717.829
<b>Total</b>	<b>2.6609</b>	<b>27.1760</b>	<b>18.3356</b>	<b>0.0381</b>	<b>21.5659</b>	<b>1.2294</b>	<b>22.7953</b>	<b>10.3086</b>	<b>1.1310</b>	<b>11.4396</b>	<b>0.0000</b>	<b>3,688.010</b>	<b>3,688.010</b>	<b>1.1928</b>		<b>3,717.829</b>

**Mitigated Construction Off-Site**

Category	lb/day															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	0.0576	0.0375	0.5001	1.5000e-003	0.2012	9.0000e-004	0.2021	0.0534	8.3000e-004	0.0542		156.9468	156.9468	3.7400e-003	4.0100e-003	158.2365
<b>Total</b>	<b>0.0576</b>	<b>0.0375</b>	<b>0.5001</b>	<b>1.5000e-003</b>	<b>0.2012</b>	<b>9.0000e-004</b>	<b>0.2021</b>	<b>0.0534</b>	<b>8.3000e-004</b>	<b>0.0542</b>		<b>156.9468</b>	<b>156.9468</b>	<b>3.7400e-003</b>	<b>4.0100e-003</b>	<b>158.2365</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.3 Grading - 2024**

**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Fugitive Dust					10.3605	0.0000	10.3605	3.7787	0.0000	3.7787			0.0000			0.0000
Off-Road	3.2181	32.3770	27.7228	0.0621	1.3354	1.3354	1.3354	1.2286	1.2286	1.2286		6,009.748 <sub>7</sub>	6,009.748 <sub>7</sub>	1.9437		6,058.340 <sub>5</sub>
<b>Total</b>	<b>3.2181</b>	<b>32.3770</b>	<b>27.7228</b>	<b>0.0621</b>	<b>10.3605</b>	<b>1.3354</b>	<b>11.6959</b>	<b>3.7787</b>	<b>1.2286</b>	<b>5.0072</b>		<b>6,009.748<sub>7</sub></b>	<b>6,009.748<sub>7</sub></b>	<b>1.9437</b>		<b>6,058.340<sub>5</sub></b>

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Hauling	1.2756	67.4392	18.0108	0.3438	11.1219	0.7625	11.8845	3.0491	0.7295	3.7787		36,739.23 <sub>12</sub>	36,739.23 <sub>12</sub>	0.5529	5.7905	38,478.61 <sub>21</sub>
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0640	0.0417	0.5557	1.7300e-003	0.2236	1.0000e-003	0.2246	0.0593	9.2000e-004	0.0602		174.3853	174.3853	4.1600e-003	4.4600e-003	175.8183
<b>Total</b>	<b>1.3395</b>	<b>67.4809</b>	<b>18.5665</b>	<b>0.3455</b>	<b>11.3455</b>	<b>0.7635</b>	<b>12.1090</b>	<b>3.1084</b>	<b>0.7305</b>	<b>3.8389</b>		<b>36,913.61<sub>66</sub></b>	<b>36,913.61<sub>66</sub></b>	<b>0.5571</b>	<b>5.7949</b>	<b>38,654.43<sub>05</sub></b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.3 Grading - 2024**

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Fugitive Dust					10.3605	0.0000	10.3605	3.7787	0.0000	3.7787			0.0000			0.0000
Off-Road	3.2181	32.3770	27.7228	0.0621	1.3354	1.3354	1.3354	1.2286	1.2286	1.2286	0.0000	6,009.748 <sub>7</sub>	6,009.748 <sub>7</sub>	1.9437		6,058.340 <sub>5</sub>
<b>Total</b>	<b>3.2181</b>	<b>32.3770</b>	<b>27.7228</b>	<b>0.0621</b>	<b>10.3605</b>	<b>1.3354</b>	<b>11.6959</b>	<b>3.7787</b>	<b>1.2286</b>	<b>5.0072</b>	<b>0.0000</b>	<b>6,009.748<sub>7</sub></b>	<b>6,009.748<sub>7</sub></b>	<b>1.9437</b>		<b>6,058.340<sub>5</sub></b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Hauling	1.2756	67.4392	18.0108	0.3438	11.1219	0.7625	11.8845	3.0491	0.7295	3.7787		36,739.23 <sub>12</sub>	36,739.23 <sub>12</sub>	0.5529	5.7905	38,478.61 <sub>21</sub>
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0640	0.0417	0.5557	1.7300e-003	0.2236	1.0000e-003	0.2246	0.0593	9.2000e-004	0.0602		174.3853	174.3853	4.1600e-003	4.4600e-003	175.8183
<b>Total</b>	<b>1.3395</b>	<b>67.4809</b>	<b>18.5665</b>	<b>0.3455</b>	<b>11.3455</b>	<b>0.7635</b>	<b>12.1090</b>	<b>3.1084</b>	<b>0.7305</b>	<b>3.8389</b>		<b>36,913.61<sub>66</sub></b>	<b>36,913.61<sub>66</sub></b>	<b>0.5571</b>	<b>5.7949</b>	<b>38,654.43<sub>05</sub></b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.4 Building Construction - 2024**

**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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
<b>Total</b>	<b>1.4716</b>	<b>13.4438</b>	<b>16.1668</b>	<b>0.0270</b>		<b>0.6133</b>	<b>0.6133</b>		<b>0.5769</b>	<b>0.5769</b>		<b>2,555.6989</b>	<b>2,555.6989</b>	<b>0.6044</b>		<b>2,570.8077</b>

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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	0.1078	3.6385	1.4437	0.0181	0.6725	0.0298	0.7023	0.1936	0.0285	0.2221		1,920.1503	1,920.1503	0.0201	0.2835	2,005.1494
Worker	0.8637	0.5627	7.5019	0.0233	3.0180	0.0135	3.0314	0.8004	0.0124	0.8128		2,354.2018	2,354.2018	0.0561	0.0602	2,373.5475
<b>Total</b>	<b>0.9715</b>	<b>4.2013</b>	<b>8.9456</b>	<b>0.0414</b>	<b>3.6905</b>	<b>0.0432</b>	<b>3.7337</b>	<b>0.9940</b>	<b>0.0409</b>	<b>1.0349</b>		<b>4,274.3521</b>	<b>4,274.3521</b>	<b>0.0762</b>	<b>0.3438</b>	<b>4,378.6969</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.4 Building Construction - 2024**

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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
<b>Total</b>	<b>1.4716</b>	<b>13.4438</b>	<b>16.1668</b>	<b>0.0270</b>		<b>0.6133</b>	<b>0.6133</b>		<b>0.5769</b>	<b>0.5769</b>	<b>0.0000</b>	<b>2,555.6989</b>	<b>2,555.6989</b>	<b>0.6044</b>		<b>2,570.8077</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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	0.1078	3.6385	1.4437	0.0181	0.6725	0.0298	0.7023	0.1936	0.0285	0.2221		1,920.1503	1,920.1503	0.0201	0.2835	2,005.1494
Worker	0.8637	0.5627	7.5019	0.0233	3.0180	0.0135	3.0314	0.8004	0.0124	0.8128		2,354.2018	2,354.2018	0.0561	0.0602	2,373.5475
<b>Total</b>	<b>0.9715</b>	<b>4.2013</b>	<b>8.9456</b>	<b>0.0414</b>	<b>3.6905</b>	<b>0.0432</b>	<b>3.7337</b>	<b>0.9940</b>	<b>0.0409</b>	<b>1.0349</b>		<b>4,274.3521</b>	<b>4,274.3521</b>	<b>0.0762</b>	<b>0.3438</b>	<b>4,378.6969</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.4 Building Construction - 2025**

**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.474 4	2,556.474 4	0.6010		2,571.498 1
<b>Total</b>	<b>1.3674</b>	<b>12.4697</b>	<b>16.0847</b>	<b>0.0270</b>		<b>0.5276</b>	<b>0.5276</b>		<b>0.4963</b>	<b>0.4963</b>		<b>2,556.474 4</b>	<b>2,556.474 4</b>	<b>0.6010</b>		<b>2,571.498 1</b>

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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	0.1063	3.6087	1.4279	0.0178	0.6725	0.0298	0.7023	0.1936	0.0285	0.2221		1,886.330 5	1,886.330 5	0.0209	0.2780	1,969.692 4
Worker	0.8093	0.5042	6.9856	0.0225	3.0180	0.0128	3.0307	0.8004	0.0118	0.8121		2,274.525 4	2,274.525 4	0.0507	0.0562	2,292.534 5
<b>Total</b>	<b>0.9155</b>	<b>4.1130</b>	<b>8.4135</b>	<b>0.0403</b>	<b>3.6905</b>	<b>0.0426</b>	<b>3.7330</b>	<b>0.9940</b>	<b>0.0403</b>	<b>1.0343</b>		<b>4,160.855 9</b>	<b>4,160.855 9</b>	<b>0.0716</b>	<b>0.3342</b>	<b>4,262.226 9</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.4 Building Construction - 2025**

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.474 4	2,556.474 4	0.6010		2,571.498 1
<b>Total</b>	<b>1.3674</b>	<b>12.4697</b>	<b>16.0847</b>	<b>0.0270</b>		<b>0.5276</b>	<b>0.5276</b>		<b>0.4963</b>	<b>0.4963</b>	<b>0.0000</b>	<b>2,556.474</b> <b>4</b>	<b>2,556.474</b> <b>4</b>	<b>0.6010</b>		<b>2,571.498</b> <b>1</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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	0.1063	3.6087	1.4279	0.0178	0.6725	0.0298	0.7023	0.1936	0.0285	0.2221		1,886.330 5	1,886.330 5	0.0209	0.2780	1,969.692 4
Worker	0.8093	0.5042	6.9856	0.0225	3.0180	0.0128	3.0307	0.8004	0.0118	0.8121		2,274.525 4	2,274.525 4	0.0507	0.0562	2,292.534 5
<b>Total</b>	<b>0.9155</b>	<b>4.1130</b>	<b>8.4135</b>	<b>0.0403</b>	<b>3.6905</b>	<b>0.0426</b>	<b>3.7330</b>	<b>0.9940</b>	<b>0.0403</b>	<b>1.0343</b>		<b>4,160.855</b> <b>9</b>	<b>4,160.855</b> <b>9</b>	<b>0.0716</b>	<b>0.3342</b>	<b>4,262.226</b> <b>9</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.5 Paving - 2025**

**Unmitigated Construction On-Site**

Category	lb/day															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850		2.206.745 <sub>2</sub>	2.206.745 <sub>2</sub>	0.7137		2,224.587 <sub>8</sub>
Paving	1.7724					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>2.6875</b>	<b>8.5816</b>	<b>14.5780</b>	<b>0.0228</b>		<b>0.4185</b>	<b>0.4185</b>		<b>0.3850</b>	<b>0.3850</b>		<b>2.206.745<sub>2</sub></b>	<b>2.206.745<sub>2</sub></b>	<b>0.7137</b>		<b>2,224.587<sub>8</sub></b>

**Unmitigated Construction Off-Site**

Category	lb/day															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0450	0.0280	0.3881	1.2500e-003	0.1677	7.1000e-004	0.1684	0.0445	6.5000e-004	0.0451		126.3625	126.3625	2.8200e-003	3.1200e-003	127.3630
<b>Total</b>	<b>0.0450</b>	<b>0.0280</b>	<b>0.3881</b>	<b>1.2500e-003</b>	<b>0.1677</b>	<b>7.1000e-004</b>	<b>0.1684</b>	<b>0.0445</b>	<b>6.5000e-004</b>	<b>0.0451</b>		<b>126.3625</b>	<b>126.3625</b>	<b>2.8200e-003</b>	<b>3.1200e-003</b>	<b>127.3630</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.5 Paving - 2025**

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Off-Road	0.9152	8.5816	14.5780	0.0228	0.4185	0.4185	0.4185	0.3850	0.3850	0.3850	0.0000	2.206.745 <sub>2</sub>	2.206.745 <sub>2</sub>	0.7137		2,224.587 <sub>8</sub>
Paving	1.7724				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>2.6875</b>	<b>8.5816</b>	<b>14.5780</b>	<b>0.0228</b>	<b>0.4185</b>	<b>0.4185</b>	<b>0.4185</b>	<b>0.3850</b>	<b>0.3850</b>	<b>0.3850</b>	<b>0.0000</b>	<b>2.206.745<sub>2</sub></b>	<b>2.206.745<sub>2</sub></b>	<b>0.7137</b>		<b>2,224.587<sub>8</sub></b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	0.0450	0.0280	0.3881	1.2500e-003	0.1677	7.1000e-004	0.1684	0.0445	6.5000e-004	0.0451		126.3625	126.3625	2.8200e-003	3.1200e-003	127.3630
<b>Total</b>	<b>0.0450</b>	<b>0.0280</b>	<b>0.3881</b>	<b>1.2500e-003</b>	<b>0.1677</b>	<b>7.1000e-004</b>	<b>0.1684</b>	<b>0.0445</b>	<b>6.5000e-004</b>	<b>0.0451</b>		<b>126.3625</b>	<b>126.3625</b>	<b>2.8200e-003</b>	<b>3.1200e-003</b>	<b>127.3630</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.6 Architectural Coating - 2025**

**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Archit. Coating	350.8529				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003	0.0515	0.0515	0.0515	0.0515	0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
<b>Total</b>	<b>351.0237</b>	<b>1.1455</b>	<b>1.8091</b>	<b>2.9700e-003</b>	<b>0.0515</b>	<b>0.0515</b>	<b>0.0515</b>	<b>0.0515</b>	<b>0.0515</b>	<b>0.0515</b>		<b>281.4481</b>	<b>281.4481</b>	<b>0.0154</b>		<b>281.8319</b>

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.1619	0.1009	1.3971	4.5000e-003	0.6036	2.5600e-003	0.6062	0.1601	2.3500e-003	0.1624		454.9051	454.9051	0.0101	0.0112	458.5069
<b>Total</b>	<b>0.1619</b>	<b>0.1009</b>	<b>1.3971</b>	<b>4.5000e-003</b>	<b>0.6036</b>	<b>2.5600e-003</b>	<b>0.6062</b>	<b>0.1601</b>	<b>2.3500e-003</b>	<b>0.1624</b>		<b>454.9051</b>	<b>454.9051</b>	<b>0.0101</b>	<b>0.0112</b>	<b>458.5069</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.6 Architectural Coating - 2025**

**Mitigated Construction On-Site**

Category	lb/day										lb/day					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Archit. Coating	350.8529				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003	0.0515	0.0515	0.0515	0.0515	0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
<b>Total</b>	<b>351.0237</b>	<b>1.1455</b>	<b>1.8091</b>	<b>2.9700e-003</b>	<b>0.0515</b>	<b>0.0515</b>	<b>0.0515</b>	<b>0.0515</b>	<b>0.0515</b>	<b>0.0515</b>	<b>0.0000</b>	<b>281.4481</b>	<b>281.4481</b>	<b>0.0154</b>		<b>281.8319</b>

**Mitigated Construction Off-Site**

Category	lb/day										lb/day					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.1619	0.1009	1.3971	4.5000e-003	0.6036	2.5600e-003	0.6062	0.1601	2.3500e-003	0.1624		454.9051	454.9051	0.0101	0.0112	458.5069
<b>Total</b>	<b>0.1619</b>	<b>0.1009</b>	<b>1.3971</b>	<b>4.5000e-003</b>	<b>0.6036</b>	<b>2.5600e-003</b>	<b>0.6062</b>	<b>0.1601</b>	<b>2.3500e-003</b>	<b>0.1624</b>		<b>454.9051</b>	<b>454.9051</b>	<b>0.0101</b>	<b>0.0112</b>	<b>458.5069</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**I.0 Operational Detail - Mobile**

**I.1 Mitigation Measures Mobile**

Category	lb/day															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated	2.0388	3.4745	22.1326	0.0567	6.4661	0.0458	6.5120	1.7249	0.0430	1.7679	5,774.584 2	5,774.584 2	5,774.584 2	0.2815	0.2789	5,864.725 9
Unmitigated	2.0388	3.4745	22.1326	0.0567	6.4661	0.0458	6.5120	1.7249	0.0430	1.7679	5,774.584 2	5,774.584 2	5,774.584 2	0.2815	0.2789	5,864.725 9

**I.2 Trip Summary Information**

Land Use	Average Daily Trip Rate			Unmitigated		Mitigated	
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00				
Refrigerated Warehouse-Rail	0.00	0.00	0.00				
Unrefrigerated Warehouse-Rail	714.19	714.19	714.19	3,060,811	3,060,811	3,060,811	3,060,811
<b>Total</b>	<b>714.19</b>	<b>714.19</b>	<b>714.19</b>	<b>3,060,811</b>	<b>3,060,811</b>	<b>3,060,811</b>	<b>3,060,811</b>

**I.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
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Refrigerated Warehouse-Rail	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3
Unrefrigerated Warehouse-Rail	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3



Ellis Ave Warehouse V2 - Riverside-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**1.4 Fleet Mix**

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.540541	0.056458	0.173793	0.136090	0.025268	0.007074	0.011525	0.018705	0.000610	0.000304	0.023606	0.001094	0.004932
Refrigerated Warehouse-Rail	0.540541	0.056458	0.173793	0.136090	0.025268	0.007074	0.011525	0.018705	0.000610	0.000304	0.023606	0.001094	0.004932
Unrefrigerated Warehouse-Rail	0.540541	0.056458	0.173793	0.136090	0.025268	0.007074	0.011525	0.018705	0.000610	0.000304	0.023606	0.001094	0.004932

**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Natural Gas Mitigated	0.2745	2.4956	2.0963	0.0150		0.1897	0.1897		0.1897	0.1897		2,994.672	2,994.672	0.0574	0.0549	3,012.468
Natural Gas Unmitigated	0.2745	2.4956	2.0963	0.0150		0.1897	0.1897		0.1897	0.1897		2,994.672	2,994.672	0.0574	0.0549	3,012.468



Ellis Ave Warehouse V2 - Riverside-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**5.2 Energy by Land Use - NaturalGas**

**Unmitigated**

Land Use	NaturalGas Use kBTU/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Parking Lot	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	
Refrigerated Warehouse-Rail	22797.3	0.2459	2.2350	1.8774	0.0134		0.1699	0.1699		0.1699	0.1699		2.682.0359	2.682.0359	0.0514	0.0492	2.697.9739	
Unrefrigerated Warehouse-Rail	2657.41	0.0287	0.2605	0.2189	1.5600e-003		0.0198	0.0198		0.0198	0.0198		312.6363	312.6363	5.9900e-003	5.7300e-003	314.4942	
<b>Total</b>		<b>0.2745</b>	<b>2.4956</b>	<b>2.0963</b>	<b>0.0150</b>		<b>0.1897</b>	<b>0.1897</b>		<b>0.1897</b>	<b>0.1897</b>		<b>2,994.6722</b>	<b>2,994.6722</b>	<b>0.0574</b>	<b>0.0549</b>	<b>3,012.4680</b>	



Ellis Ave Warehouse V2 - Riverside-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**5.2 Energy by Land Use - NaturalGas**

**Mitigated**

Land Use	NaturalGas Use kBTU/yr	lb/day										CO2e					
		ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total		Bio- CO2	NBio- CO2	Total CO2	CH4	N2O
Parking Lot	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	0.0000	0.0000
Refrigerated Warehouse-Rail	22.7973	0.2459	2.2350	1.8774	0.0134	0.1699	0.1699	0.1699	0.1699	0.1699	0.1699	2.682.0359	2.682.0359	2.682.0359	0.0514	0.0492	2.697.9739
Unrefrigerated Warehouse-Rail	2.65741	0.0287	0.2605	0.2189	1.5600e-003	0.0198	0.0198	0.0198	0.0198	0.0198	0.0198	312.6363	312.6363	312.6363	5.9900e-003	5.7300e-003	314.4942
<b>Total</b>		<b>0.2745</b>	<b>2.4956</b>	<b>2.0963</b>	<b>0.0150</b>	<b>0.1897</b>	<b>0.1897</b>	<b>0.1897</b>	<b>0.1897</b>	<b>0.1897</b>	<b>0.1897</b>	<b>2,994.6722</b>	<b>2,994.6722</b>	<b>2,994.6722</b>	<b>0.0574</b>	<b>0.0549</b>	<b>3,012,4680</b>

**6.0 Area Detail**

**6.1 Mitigation Measures Area**



Ellis Ave Warehouse V2 - Riverside-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Mitigated	14.3845	1.0600e-003	0.1165	1.0000e-005	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004		0.2505	0.2505	6.5000e-004		0.2667
Unmitigated	14.3845	1.0600e-003	0.1165	1.0000e-005	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004		0.2505	0.2505	6.5000e-004		0.2667

**6.2 Area by SubCategory**

Unmitigated

SubCategory	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Architectural Coating	1.6341					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	12.7397					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0107	1.0600e-003	0.1165	1.0000e-005	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004		0.2505	0.2505	6.5000e-004		0.2667
<b>Total</b>	<b>14.3845</b>	<b>1.0600e-003</b>	<b>0.1165</b>	<b>1.0000e-005</b>	<b>4.1000e-004</b>	<b>4.1000e-004</b>	<b>4.1000e-004</b>	<b>4.1000e-004</b>	<b>4.1000e-004</b>	<b>4.1000e-004</b>		<b>0.2505</b>	<b>0.2505</b>	<b>6.5000e-004</b>		<b>0.2667</b>



Ellis Ave Warehouse V2 - Riverside-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**6.2 Area by SubCategory**

**Mitigated**

SubCategory	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Architectural Coating	1.6341				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Consumer Products	12.7397				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Landscaping	0.0107	1.0600e-003	0.1165	1.0000e-005	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004		0.2505	0.2505	6.5000e-004		0.2667
<b>Total</b>	<b>14.3845</b>	<b>1.0600e-003</b>	<b>0.1165</b>	<b>1.0000e-005</b>	<b>4.1000e-004</b>	<b>4.1000e-004</b>	<b>4.1000e-004</b>	<b>4.1000e-004</b>	<b>4.1000e-004</b>	<b>4.1000e-004</b>		<b>0.2505</b>	<b>0.2505</b>	<b>6.5000e-004</b>		<b>0.2667</b>

**7.0 Water Detail**

**7.1 Mitigation Measures Water**



Ellis Ave Warehouse V2 - Riverside-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.0 Waste Detail**

**3.1 Mitigation Measures Waste**

**3.0 Operational Offroad**

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

**Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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**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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## Matthew F. Hagemann, P.G., C.Hg., QSD, QSP

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

### Education:

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

### Professional Certifications:

California Professional Geologist  
California Certified Hydrogeologist  
Qualified SWPPP Developer and Practitioner

### Professional Experience:

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

Positions Matt has held include:

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



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

**Senior Regulatory and Litigation Support Analyst:**

With SWAPE, Matt’s responsibilities have included:

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

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

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



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

**Executive Director:**

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

**Hydrogeology:**

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

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

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

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

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



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

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

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

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

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

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

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**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.



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***Paul Rosenfeld, Ph.D.*****Chemical Fate and Transport & Air Dispersion Modeling***Principal Environmental Chemist***Risk Assessment & Remediation Specialist****Education**

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

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

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

**Professional Experience**

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

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



## **Professional History:**

Soil Water Air Protection Enterprise (SWAPE); 2003 to present; Principal and Founding Partner  
UCLA School of Public Health; 2007 to 2011; Lecturer (Assistant Researcher)  
UCLA School of Public Health; 2003 to 2006; Adjunct Professor  
UCLA Environmental Science and Engineering Program; 2002-2004; Doctoral Intern Coordinator  
UCLA Institute of the Environment, 2001-2002; Research Associate  
Komex H<sub>2</sub>O Science, 2001 to 2003; Senior Remediation Scientist  
National Groundwater Association, 2002-2004; Lecturer  
San Diego State University, 1999-2001; Adjunct Professor  
Anteon Corp., San Diego, 2000-2001; Remediation Project Manager  
Ogden (now Amec), San Diego, 2000-2000; Remediation Project Manager  
Bechtel, San Diego, California, 1999 – 2000; Risk Assessor  
King County, Seattle, 1996 – 1999; Scientist  
James River Corp., Washington, 1995-96; Scientist  
Big Creek Lumber, Davenport, California, 1995; Scientist  
Plumas Corp., California and USFS, Tahoe 1993-1995; Scientist  
Peace Corps and World Wildlife Fund, St. Kitts, West Indies, 1991-1993; Scientist

## **Publications:**

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

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

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

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

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

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

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

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

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

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



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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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



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

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

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

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

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

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

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

## **Presentations:**

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

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

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

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

**Rosenfeld, P.E.** (April 19-23, 2009). 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 23<sup>rd</sup> 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 23<sup>rd</sup> 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 23<sup>rd</sup> 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 Superior Court of the State of California, County of San Bernardino  
Billy Wildrick, Plaintiff vs. BNSF Railway Company  
Case No. CIVDS1711810  
Rosenfeld Deposition 10-17-2022

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

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

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

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

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

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

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

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



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

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

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

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

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

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

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

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

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

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

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



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

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

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

In the Circuit Court Of The Twentieth Judicial Circuit, St Clair County, Illinois  
Martha Custer et al.cvs. Cerro Flow Products, Inc.  
Case No. 019-L-2295  
Rosenfeld Deposition 5-14-2021  
Trial October 8-4-2021

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

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

In the Superior Court of the State of Arizona In and For the Cunty of Maricopa  
Mary Tryon et al. vs. The City of Pheonix v. Cox Cactus Farm, L.L.C., Utah Shelter Systems, Inc.  
Case No. CV20127-094749  
Rosenfeld Deposition 5-7-2021

In the United States District Court for the Eastern District of Texas Beaumont Division  
Robinson, Jeremy et al vs. CNA Insurance Company et al.  
Case No. 1:17-cv-000508  
Rosenfeld Deposition 3-25-2021

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

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

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



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

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

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

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

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

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

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

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

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

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

In the Northern District Court of Mississippi, Greenville Division  
Brenda J. Cooper, et al., Plaintiffs, vs. Meritor Inc., et al., Defendants  
Case No. 4:16-cv-52-DMB-JVM  
Rosenfeld Deposition July 2017



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

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

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

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

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

In the Circuit Court of the 17<sup>th</sup> Judicial Circuit, in and For Broward County, Florida  
Walter Hinton, et. al. Plaintiff, vs. City of Fort Lauderdale, Florida, a Municipality, Defendant.  
Case No. CACE07030358 (26)  
Rosenfeld Deposition December 2014

In the County Court of Dallas County Texas  
Lisa Parr et al, Plaintiff, vs. Aruba et al, Defendant.  
Case No. cc-11-01650-E  
Rosenfeld Deposition: March and September 2013  
Rosenfeld Trial April 2014

In the Court of Common Pleas of Tuscarawas County Ohio  
John Michael Abicht, et al., Plaintiffs, vs. Republic Services, Inc., et al., Defendants  
Case No. 2008 CT 10 0741 (Cons. w/ 2009 CV 10 0987)  
Rosenfeld Deposition October 2012

In the United States District Court for the Middle District of Alabama, Northern Division  
James K. Benefield, et al., Plaintiffs, vs. International Paper Company, Defendant.  
Civil Action No. 2:09-cv-232-WHA-TFM  
Rosenfeld Deposition July 2010, June 2011

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

In the United States District Court, Western District Lafayette Division  
Ackle et al., Plaintiffs, vs. Citgo Petroleum Corporation, et al., Defendants.  
Case No. 2:07CV1052  
Rosenfeld Deposition July 2009

