July 8, 2022

Ms. Terri Miller
MILLERS LANDING AT THE LAKE, INC.
27242 Mira Flores
Mission Viejo, California 92692

RE: Millers Landing at the Lake Air Quality & Greenhouse Gas Technical Memorandum
Project No. 19533

Dear Ms. Miller,

Ganddini Group, Inc. is pleased to provide this Air Quality and Greenhouse Gas Technical Memorandum for the Millers Landing at the Lake project. The 0.92-acre project site is located at 179, 185, and 199 South State Highway 173 in the Lake Arrowhead community of unincorporated County of San Bernardino, California. The project site is currently developed with nursery and retail uses. A project location map, showing the project's location, is provided on Figure 1. A glossary is provided in Appendix A to assist the reader with technical terms related to this air quality analysis.

PROJECT DESCRIPTION

The proposed project involves a conditional use permit to allow use of the property as a wedding/events venue, including conversion of two existing retail buildings totaling 2,377 square feet into bride and groom cabins, and conversion of an existing 2,160 square foot barn into a banquet/reception hall with seating for approximately 90 people. The project proposes vehicular access to South State Highway 173 via three driveways. The project site plan is shown on Figure 2.

Nearly all wedding and events are expected to occur on Fridays, Saturdays, and Sundays, though weekday events are not prohibited. The project applicant estimates a total of 54 events throughout the year, or approximately 2 events per week on average, based on the following breakdown:

- January – April: Very slow due to weather. Estimated 2 events total.
- May – October: Expected busy season. Estimated 48 events total (2 per week on average).
- November – December: Very slow due to holidays/weather. Estimated 4 events total.

The event hours vary by customer, with most events projected to be from 4:00 PM to 11:00 PM. Music will be shut down at 10:00 PM with the following hour being used for cleanup. There will be four employees (property owners including husband, wife, and two daughters) for the venue. The proposed development will contract out services such as catering, bar service, flowers, DJ'ing, bussing, and cleaning services. The contract service would be arriving during the day for setup most likely in vans or SUV's.

Table 1 shows the SCAQMD Air Quality Significance Thresholds.

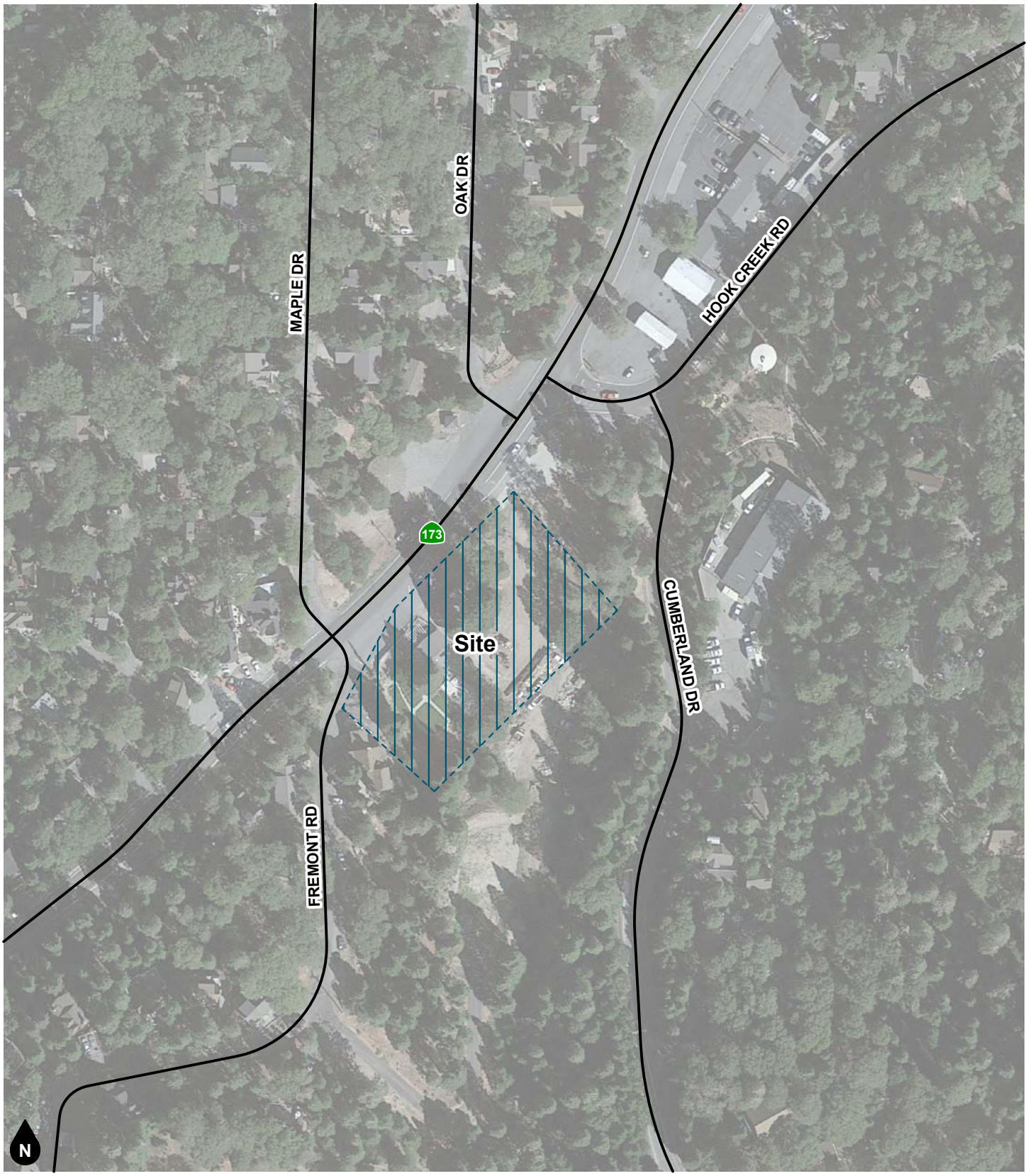

Figure 1
Project Location Map

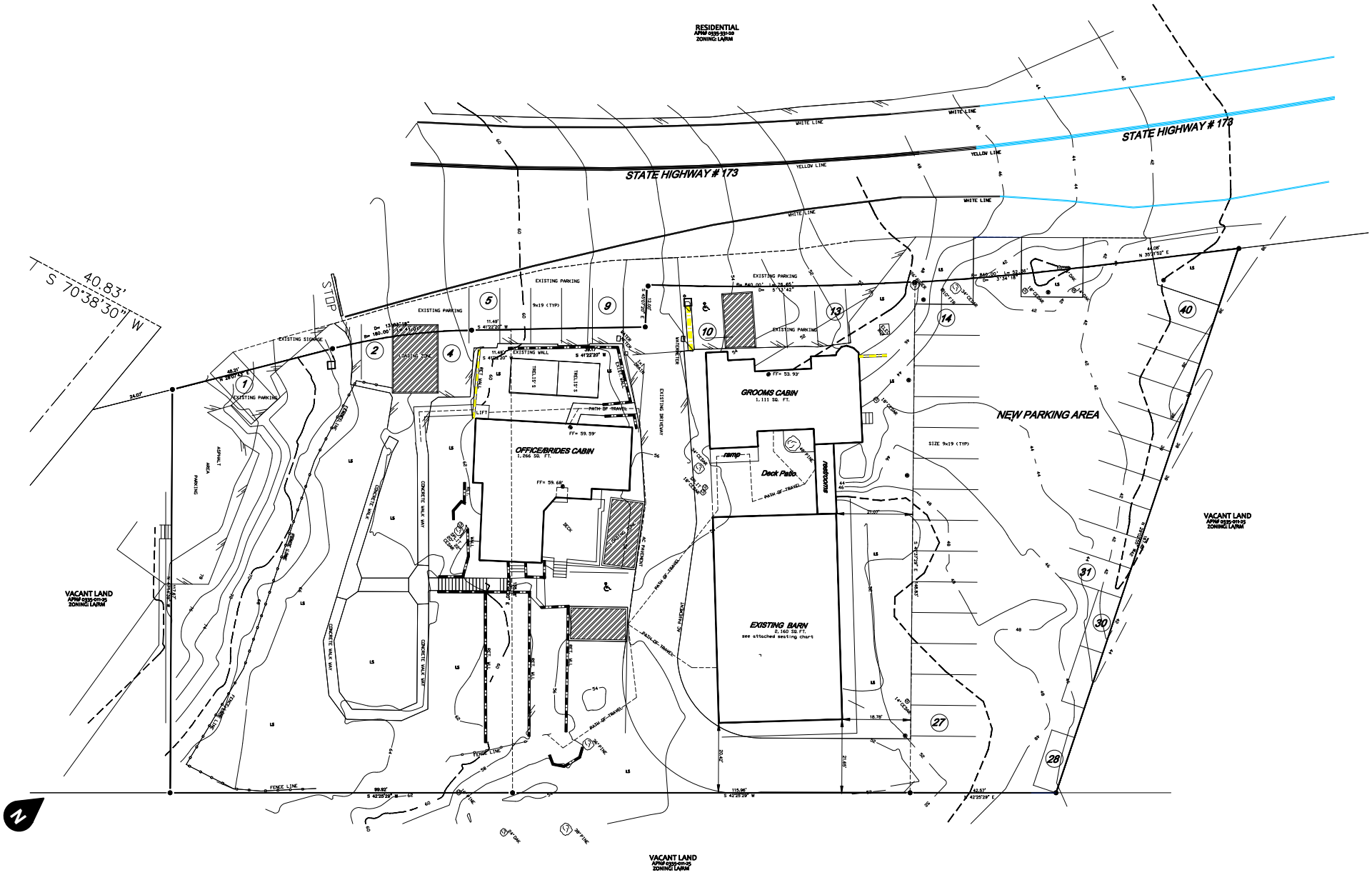

Figure 2
Site Plan

Table 1
SCAQMD Air Quality Significance Thresholds

Mass Daily Thresholds[1,2]		
Pollutant	Construction (lbs/day)	Operation (lbs/day)
NOx	100	55
VOC	75	55
PM10	150	150
PM2.5	55	55
SOx	150	150
CO	550	550
Lead	3	3
Toxic Air Contaminants, Odor and GHG Thresholds		
TACs	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index > 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
GHG	10,000 MT/yr CO2e for industrial projects	
Ambient Air Quality Standards		
Pollutant	SCAQMD Standards	
NO2 -1-hour average	0.18 ppm (338 µg/m^3)	
PM10 -24-hour average Construction Operations	 10.4 µg/m^3 2.5 ug/m^3	
PM2.5 -24-hour average Construction Operations	 10.4 µg/m^3 2.5 µg/m^3	
SO2 1-hour average 24-hour average	 0.25 ppm 0.04 ppm	
CO 1-hour average 8-hour average	 20 ppm (23,000 µg/m^3) 9 ppm (10,000 µg/m^3)	
Lead 30-day average Rolling 3-month average Quarterly average	 1.5 µg/m^3 0.15 µg/m^3 1.5 µg/m^3	

Notes:
(1) Source: http://www.aqmd.gov/ceqa/handbook/signthres.pdf

SHORT-TERM AIR QUALITY CONSTRUCTION IMPACTS

CONSTRUCTION-RELATED REGIONAL AND LOCAL AIR QUALITY IMPACTS

A qualitative discussion of the potential short-term air quality impacts due to regional air quality and local air quality impacts with the construction of the proposed wedding venue use is provided.

The approximately 4,537 square feet of wedding venue structures are existing and will be renovated for use by the project. Therefore, the project consists only of repurposing existing buildings and does not include construction of any new additional structures on the site. In addition, the parking lot and associated driveways for the proposed wedding venue are also existing on the site; however, they are to be re-striped. It is anticipated that project construction would be completed by early August 2022; therefore, the opening year for the proposed project is 2022. As construction of the proposed project includes only minor renovation activities (using hand tools) associated with existing buildings and the re-striping of an existing parking lot; therefore, construction-related emissions would be negligible and not be anticipated to exceed SCAQMD regional or local thresholds. There would be no impact from construction-related emissions.

LONG-TERM AIR QUALITY OPERATIONAL IMPACTS

An analysis of the potential long-term air quality impacts due to operations of the proposed project has been completed. The operations-related criteria air quality impacts created by the proposed project have been analyzed through use of the CalEEMod model. The operating emissions were based on the year 2022, which is the anticipated opening year for the proposed project. CalEEMod output is shown in Appendix B. The CalEEMod analyzes operational emissions from area sources, energy usage, and mobile sources, which are discussed below.

CalEEMod does not have a wedding venue land use in its database. Therefore, the proposed project has been modeled under the Arena land use in CalEEMod as it is the next closest land use available that includes the incorporation of events.

METHODOLOGY

Mobile Sources

Mobile sources include emissions from the additional vehicle miles generated from the proposed project. The vehicle trips associated with the proposed project have been analyzed by inputting the project-generated vehicular trips (trip generation rate) from the Miller's Landing at the Lake Transportation Study Screening Analysis (Transportation Study Screening Analysis) prepared for the proposed project by Ganddini Group (July 8, 2022) into the CalEEMod Model. The Transportation Study Screening Analysis found that the proposed project would create up to approximately 126 vehicle trips per day during an event. As stated previously, events are anticipated to occur on Fridays, Saturdays, and Sundays averaging two events per week during the summer, spring, and fall months with a total of approximately 54 events anticipated per year. To input the proposed project's vehicle trips into CalEEMod, it was assumed that both Saturday and Sunday would have a trip generation rate of 27.77 trips per thousand square foot per day.[1] This trip generation rate is assuming that an event will take place every Saturday and Sunday, which is a conservative analysis as it results in up to approximately 104 total events per year. The program then applies the emission factors for each trip which is provided by the EMFAC2021 model to determine the vehicular traffic pollutant emissions.

[1] 126 trips per day during an event divided by 4.537 thousand square feet of buildings equals 27.77 trips per thousand square foot per day.

Area Sources

Area sources include emissions from hearths, consumer products, landscape equipment and architectural coatings. No changes were made to the default area source parameters.

Energy Usage

Energy usage includes emissions from the generation of electricity and natural gas used on-site. No changes were made to the default energy usage parameters.

OPERATIONAL-RELATED REGIONAL AIR QUALITY IMPACTS

The worst-case summer or winter VOC, NOx, CO, SO_2, PM10, and PM2.5 emissions generated by the proposed project's long-term operations have been calculated and are summarized below in Table 2. Table 2 shows that none of the analyzed criteria pollutants would exceed the regional emissions thresholds. Therefore, a less than significant regional air quality impact would occur from operation of the proposed project.

OPERATIONS-RELATED LOCAL AIR QUALITY IMPACTS

Local Air Quality Impacts from On-Site Operations

Project-related air emissions from on-site sources such as architectural coatings, landscaping equipment, on-site usage of natural gas appliances as well as the operation of vehicles on-site may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the South Coast Air Basin. The nearest sensitive receptors that may be impacted by the proposed project are: the existing single-family residential uses located adjacent to the south (along Fremont Road), 93 feet (~28 meters) to the northwest (at northwest corner of intersection of Highway 173 and Maple Drive), 105 feet (~32 meters) to the northwest (along Pak Drive), and 150 feet (~45 meters) to the southeast (along Cumberland Drive) of the project site.

According to SCAQMD LST methodology, LSTs would apply to the operational phase of a project, if the project includes stationary sources, or attracts mobile sources (such as heavy-duty trucks) that may spend long periods queuing and idling at the site; such as industrial warehouse/transfer facilities. The proposed project consists of the development of the site with a wedding event venue and does not include such uses. Therefore, due the lack of stationary source emissions, no long-term localized significance threshold analysis is warranted.

Table 2
Regional Operational Pollutant Emissions

Activity	Pollutant Emissions (pounds/day)					
	ROG	NOx	CO	SO2	PM10	PM2.5
Area Sources[1]	0.15	0.01	0.20	0.01	0.01	0.01
Energy Usage[2]	0.01	0.05	0.04	0.01	0.01	0.01
Mobile Sources[3]	0.75	1.28	10.70	0.02	0.02	0.15
Total Emissions	0.91	1.34	10.94	0.03	0.03	0.16
SCAQMD Thresholds	55	55	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No

Notes:

Source: CalEEMod Version 2022.1; the higher of either summer or winter emissions.

(1) Area sources consist of emissions from consumer products, architectural coatings, and landscaping equipment.

(2) Energy usage consists of emissions from generation of electricity and on-site natural gas usage.

(3) Mobile sources consist of emissions from vehicles and road dust.

GLOBAL CLIMATE CHANGE ANALYSIS

The proposed project is anticipated to generate GHG emissions from operational and construction activities. The following provides the methodology used to calculate the GHG emissions and discusses the impacts.

METHODOLOGY

The CalEEMod Version 2022.1 was used to calculate the GHG emissions from the proposed project. The project's emissions were compared to the tier 3 SCAQMD screening threshold of 3,000 metric tons CO2e per year for all land uses. Each source of GHG emissions is described in greater detail below.

Area Sources

Area sources include emissions from hearths, consumer products, landscape equipment and architectural coatings. No changes were made to the default area source parameters.

Energy Usage

Energy usage includes emissions from the generation of electricity and natural gas used on-site. No changes were made to the default energy usage parameters.

Mobile Sources

Mobile sources include emissions from the additional vehicle miles generated from the proposed project. The vehicle trips associated with the proposed project have been analyzed by inputting the project-generated vehicular trips from the Transportation Study Screening Analysis into the CalEEMod Model. The program then applies the emission factors for each trip which is provided by the EMFAC2021 model to determine the vehicular traffic pollutant emissions. The CalEEMod default trip lengths were used in this analysis.

Waste

Waste includes the GHG emissions generated from the processing of waste from the proposed project as well as the GHG emissions from the waste once it is interred into a landfill. No changes were made to the default waste parameters.

Water

Water includes the water used for the interior of the building as well as for landscaping and is based on the GHG emissions associated with the energy used to transport and filter the water. No changes were made to the default water parameters.

GREENHOUSE GAS EMISSIONS

The proposed project's GHG emissions have been calculated with the CalEEMod model based on the parameters detailed above. A summary of the results is shown below in Table 3 and CalEEMod model run for the proposed project is provided in Appendix B.

The data provided in Table 3 shows that the proposed project's GHG emissions would be 138.04 $MTCO_2e$ per year. At a level of 138.04 $MTCO_2e$ per year, the project's emissions do not exceed the SCAQMD draft GHG emissions threshold of 3,000 $MTCO_2e$ per year for all land uses; therefore, the impacts from GHGs are considered to be less than significant.

Table 3
Project-Related Greenhouse Gas Emissions

Category	Greenhouse Gas Emissions (Metric Tons/Year)					
	Bio-CO2	NonBio-CO_2	CO_2	CH_4	N_2O	CO_2e
Area Sources[1]	0.00	0.09	0.09	0.01	0.01	0.09
Energy Usage[2]	0.00	20.80	20.80	0.01	0.01	20.80
Mobile Sources[3]	0.00	109.00	109.00	0.01	0.23	111.00
Waste[4]	0.01	0.00	0.01	0.01	0.00	0.04
Water[5]	0.62	3.44	4.06	0.06	0.01	6.11
Total Emissions	0.63	133.33	133.96	0.08	0.25	138.04
SCAQMD Draft Screening Threshold						3,000
Exceeds Threshold?						No

Notes:

Source: CalEEMod Version 2022.1 for Opening Year 2022.

(1) Area sources consist of GHG emissions from consumer products, architectural coatings, and landscape equipment.

(2) Energy usage consist of GHG emissions from electricity and natural gas usage.

(3) Mobile sources consist of GHG emissions from vehicles.

(4) Solid waste includes the CO_2 and CH_4 emissions created from the solid waste placed in landfills.

(5) Water includes GHG emissions from electricity used for transport of water and processing of wastewater.

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MILLERS LANDING AT THE LAKE, INC.
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GREENHOUSE GAS PLAN CONSISTENCY

The proposed project would have the potential to conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

According to the San Bernardino County GHGRP Update, "all development projects, including those otherwise determined to be exempt from CEQA will be subject to applicable Development Code provisions, including the GHG performance standards, and state requirements, such as the California Building Code requirements for energy efficiency. With the application of the GHG performance standards, projects that are exempt from CEQA and small projects that do not exceed 3,000 MTCO2e per year will be considered to be consistent with the Plan and determined to have a less than significant individual and cumulative impact for GHG emissions." The GHGRP Update also states that the County utilizes the 3,000 MTCO2e per year value as it is "the size of development that is too small to be able to provide the level of GHG emission reductions expected from the Screening Tables or alternate emission analysis method (described in Attachment D) based upon the 90th percentile capture rate concept."

The project's operational GHG emissions would not exceed the County's screening threshold of 3,000 MTCO2e per year; therefore, the project does not need to accrue points using the screening tables and is consistent with the GHG Plan pursuant to Section 15183.5 of the State CEQA Guidelines. The project is expected to comply with the performance standards as detailed in the San Bernardino County Greenhouse Gas Emissions Reduction Plan Update (see Appendix C for details on the performance standards for commercial projects). Therefore, the proposed commercial use will not result in substantial emissions of greenhouse gases, will not conflict with the Green County initiatives, and would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. Impacts are less than significant.

CONCLUSIONS

As discussed above, the proposed project would not exceed SCAQMD thresholds for local and regional construction-related emissions or local and regional operational emissions. Furthermore, at a level of 138.04 MTCO2e per year the proposed project's GHG emissions are well below the SCAQMD screening threshold of 3,000 metric tons per year of CO_2e for all land uses; however, the project is expected to comply with the performance standards as detailed in the San Bernardino County Greenhouse Gas Emissions Reduction Plan Update (see Appendix C for details on the performance standards for commercial projects). Therefore, this technical memorandum found that air quality and greenhouse gas-related impacts are considered to be less than significant. No further analysis or mitigation is required.

It has been a pleasure to service your needs on the Millers Landing at the Lake project. Should you have any questions or if we can be of further assistance, please do not hesitate to call at (714) 975-3100.

Respectfully submitted,
GANDDINI GROUP, INC.

Catherine Howe, M.S.
Noise & Air Quality Analyst

APPENDIX A

GLOSSARY

AQMP	Air Quality Management Plan
CAAQS	California Ambient Air Quality Standards
CalEPA	California Environmental Protection Agency
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFCs	Chlorofluorocarbons
CH4	Methane
CNG	Compressed natural gas
CO	Carbon monoxide
CO_2	Carbon dioxide
CO2e	Carbon dioxide equivalent
DPM	Diesel particulate matter
EPA	U.S. Environmental Protection Agency
GHG	Greenhouse gas
GWP	Global warming potential
HFCs	Hydrofluorocarbons
IPCC	International Panel on Climate Change
LST	Localized Significant Thresholds
$MTCO_2e$	Metric tons of carbon dioxide equivalent
$MMTCO_2e$	Million metric tons of carbon dioxide equivalent
MPO	Metropolitan Planning Organization
NAAQS	National Ambient Air Quality Standards
NOx	Nitrogen Oxides
NO_2	Nitrogen dioxide
N_2O	Nitrous oxide
O_3	Ozone
OPR	Governor's Office of Planning and Research
PFCs	Perfluorocarbons
PM	Particle matter
PM10	Particles that are less than 10 micrometers in diameter
PM2.5	Particles that are less than 2.5 micrometers in diameter
PMI	Point of maximum impact
PPB	Parts per billion
PPM	Parts per million
RTIP	Regional Transportation Improvement Plan
RTP	Regional Transportation Plan
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SF_6	Sulfur hexafluoride
SIP	State Implementation Plan
SOx	Sulfur Oxides
TAC	Toxic air contaminants
UNFCC	United Nations Framework Convention on Climate Change
VOC	Volatile organic compounds

APPENDIX B

CALEEMOD MODEL EMISSIONS PRINTOUTS

19533 Millers Landing Project Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	19533 Millers Landing Project
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	8.40
Location	34.253249614552686, -117.17399281304895
County	San Bernardino-South Coast
City	Unincorporated
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5152
EDFZ	10
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas

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
Arena	4.54	1000sqft	0.36	4,537	11,270	0.00	—	Wedding Event Venue
Parking Lot	40.0	Space	0.56	0.00	0.00	0.00	—	40 space parking lot

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations 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.	0.91	0.90	1.24	10.9	0.02	0.02	0.76	0.78	0.02	0.14	0.16	3.81	2,586	2,590	0.50	0.11	11.2	2,647
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.82	0.82	1.33	8.60	0.02	0.02	0.76	0.78	0.02	0.14	0.16	3.81	2,427	2,430	0.50	0.12	0.32	2,478
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.26	0.34	0.43	2.73	0.01	0.01	0.22	0.23	0.01	0.04	0.05	3.81	805	809	0.43	0.04	1.41	834
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.05	0.06	0.08	0.50	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	0.63	133	134	0.07	0.01	0.23	138

2.5. Operations Emissions by Sector, Unmitigated

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

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

Mobile	0.87	0.75	1.19	10.7	0.02	0.02	0.76	0.78	0.02	0.14	0.15	—	2,439	2,439	0.10	0.10	11.2	2,483
Area	0.04	0.15	< 0.005	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.81	0.81	< 0.005	< 0.005	—	0.81
Energy	0.01	< 0.005	0.05	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	126	126	0.01	< 0.005	—	126
Water	—	—	—	—	—	—	—	—	—	—	—	3.75	20.8	24.5	0.39	0.01	—	36.9
Waste	—	—	—	—	—	—	—	—	—	—	—	0.07	0.00	0.07	0.01	0.00	—	0.24
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03
Total	0.91	0.90	1.24	10.9	0.02	0.02	0.76	0.78	0.02	0.14	0.16	3.81	2,586	2,590	0.50	0.11	11.2	2,647
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.82	0.70	1.28	8.56	0.02	0.02	0.76	0.78	0.02	0.14	0.15	—	2,280	2,280	0.10	0.11	0.29	2,315
Area	—	0.11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.01	< 0.005	0.05	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	126	126	0.01	< 0.005	—	126
Water	—	—	—	—	—	—	—	—	—	—	—	3.75	20.8	24.5	0.39	0.01	—	36.9
Waste	—	—	—	—	—	—	—	—	—	—	—	0.07	0.00	0.07	0.01	0.00	—	0.24
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03
Total	0.82	0.82	1.33	8.60	0.02	0.02	0.76	0.78	0.02	0.14	0.16	3.81	2,427	2,430	0.50	0.12	0.32	2,478
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.23	0.20	0.37	2.55	0.01	< 0.005	0.22	0.22	< 0.005	0.04	0.04	—	659	659	0.03	0.03	1.38	670
Area	0.02	0.14	< 0.005	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.56	0.56	< 0.005	< 0.005	—	0.56
Energy	0.01	< 0.005	0.05	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	126	126	0.01	< 0.005	—	126
Water	—	—	—	—	—	—	—	—	—	—	—	3.75	20.8	24.5	0.39	0.01	—	36.9
Waste	—	—	—	—	—	—	—	—	—	—	—	0.07	0.00	0.07	0.01	0.00	—	0.24
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03
Total	0.26	0.34	0.43	2.73	0.01	0.01	0.22	0.23	0.01	0.04	0.05	3.81	805	809	0.43	0.04	1.41	834
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.04	0.04	0.07	0.47	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	109	109	< 0.005	0.01	0.23	111
Area	< 0.005	0.02	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.09	0.09	< 0.005	< 0.005	—	0.09

Energy	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20.8	20.8	< 0.005	< 0.005	—	20.8
Water	—	—	—	—	—	—	—	—	—	—	—	0.62	3.44	4.06	0.06	< 0.005	—	6.11
Waste	—	—	—	—	—	—	—	—	—	—	—	0.01	0.00	0.01	< 0.005	0.00	—	0.04
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Total	0.05	0.06	0.08	0.50	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	0.63	133	134	0.07	0.01	0.23	138

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Arena	0.87	0.75	1.19	10.7	0.02	0.02	0.13	0.15	0.02	0.04	0.06	—	2,439	2,439	0.10	0.10	11.2	2,483
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.87	0.75	1.19	10.7	0.02	0.02	0.13	0.15	0.02	0.04	0.06	—	2,439	2,439	0.10	0.10	11.2	2,483
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Arena	0.82	0.70	1.28	8.56	0.02	0.02	0.13	0.15	0.02	0.04	0.06	—	2,280	2,280	0.10	0.11	0.29	2,315
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.82	0.70	1.28	8.56	0.02	0.02	0.13	0.15	0.02	0.04	0.06	—	2,280	2,280	0.10	0.11	0.29	2,315
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Arena	0.04	0.04	0.07	0.47	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	109	109	< 0.005	0.01	0.23	111

Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.04	0.04	0.07	0.47	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	109	109	< 0.005	0.01	0.23	111

4.2. Energy

4.2.1. Electricity Emissions By Land Use - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Arena	—	—	—	—	—	—	—	—	—	—	—	—	63.1	63.1	< 0.005	< 0.005	—	63.3
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	63.1	63.1	< 0.005	< 0.005	—	63.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Arena	—	—	—	—	—	—	—	—	—	—	—	—	63.1	63.1	< 0.005	< 0.005	—	63.3
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	63.1	63.1	< 0.005	< 0.005	—	63.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Arena	—	—	—	—	—	—	—	—	—	—	—	—	10.4	10.4	< 0.005	< 0.005	—	10.5
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	10.4	10.4	< 0.005	< 0.005	—	10.5

4.2.3. Natural Gas Emissions By Land Use - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Arena	0.01	< 0.005	0.05	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	62.5	62.5	0.01	< 0.005	—	62.6
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.01	< 0.005	0.05	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	62.5	62.5	0.01	< 0.005	—	62.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Arena	0.01	< 0.005	0.05	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	62.5	62.5	0.01	< 0.005	—	62.6
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.01	< 0.005	0.05	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	62.5	62.5	0.01	< 0.005	—	62.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Arena	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.3	10.3	< 0.005	< 0.005	—	10.4
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.3	10.3	< 0.005	< 0.005	—	10.4

4.3. Area Emissions by Source

4.3.2. Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.04	0.03	< 0.005	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.81	0.81	< 0.005	< 0.005	—	0.81
Total	0.04	0.15	< 0.005	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.81	0.81	< 0.005	< 0.005	—	0.81
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.09	0.09	< 0.005	< 0.005	—	0.09
Total	< 0.005	0.02	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.09	0.09	< 0.005	< 0.005	—	0.09

4.4. Water Emissions by Land Use

4.4.2. 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Arena	—	—	—	—	—	—	—	—	—	—	—	3.75	20.8	24.5	0.39	0.01	—	36.9
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	3.75	20.8	24.5	0.39	0.01	—	36.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Arena	—	—	—	—	—	—	—	—	—	—	—	3.75	20.8	24.5	0.39	0.01	—	36.9
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	3.75	20.8	24.5	0.39	0.01	—	36.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Arena	—	—	—	—	—	—	—	—	—	—	—	0.62	3.44	4.06	0.06	< 0.005	—	6.11
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.62	3.44	4.06	0.06	< 0.005	—	6.11

4.5. Waste Emissions by Land Use

4.5.2. 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Arena	—	—	—	—	—	—	—	—	—	—	—	0.07	0.00	0.07	0.01	0.00	—	0.24
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.07	0.00	0.07	0.01	0.00	—	0.24
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Arena	—	—	—	—	—	—	—	—	—	—	—	0.07	0.00	0.07	0.01	0.00	—	0.24
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.07	0.00	0.07	0.01	0.00	—	0.24
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Arena	—	—	—	—	—	—	—	—	—	—	—	0.01	0.00	0.01	< 0.005	0.00	—	0.04
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.01	0.00	0.01	< 0.005	0.00	—	0.04

4.6. Refrigerant Emissions by Land Use

4.6.1. 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Arena	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Arena	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Arena	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	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. 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Arena	0.00	127	127	13,271	0.00	2,716	2,716	283,203
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

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)
0	0.00	7,903	2,634	1,464

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Arena	43,273	532	0.0330	0.0040	194,866
Parking Lot	0.00	532	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Arena	1,954,404	180,986
Parking Lot	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Arena	0.12	0.00
Parking Lot	0.00	0.00

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Arena	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Arena	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Arena	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type
—	—

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

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

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	28.3	annual days of extreme heat
Extreme Precipitation	9.15	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	45.0	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 (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth 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 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
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	3	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack	N/A	N/A	N/A	N/A
Air Quality	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	3	1	1	3
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	N/A	N/A	N/A	N/A
Air Quality	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	100
AQ-PM	49.7
AQ-DPM	3.51
Drinking Water	84.7
Lead Risk Housing	43.4

Pesticides	0.00
Toxic Releases	50.5
Traffic	9.15
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	14.3
Haz Waste Facilities/Generators	16.6
Impaired Water Bodies	12.5
Solid Waste	97.2
Sensitive Population	—
Asthma	59.6
Cardio-vascular	48.5
Low Birth Weights	75.6
Socioeconomic Factor Indicators	—
Education	43.8
Housing	19.8
Linguistic	14.9
Poverty	52.9
Unemployment	33.6

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	47.38868215
Employed	38.39343
Education	—

Bachelor's or higher	67.1885025
High school enrollment	100
Preschool enrollment	18.88874631
Transportation	—
Auto Access	98.98626973
Active commuting	8.866931862
Social	—
2-parent households	60.7596561
Voting	77.23598101
Neighborhood	—
Alcohol availability	93.16052868
Park access	34.09470037
Retail density	9.90632619
Supermarket access	28.74374439
Tree canopy	91.85166175
Housing	—
Homeownership	84.58873348
Housing habitability	86.78301039
Low-inc homeowner severe housing cost burden	91.18439625
Low-inc renter severe housing cost burden	42.93596818
Uncrowded housing	80.21301168
Health Outcomes	—
Insured adults	42.43551906
Arthritis	2.0
Asthma ER Admissions	34.5
High Blood Pressure	4.1
Cancer (excluding skin)	2.7

Asthma	32.2
Coronary Heart Disease	2.9
Chronic Obstructive Pulmonary Disease	9.6
Diagnosed Diabetes	26.4
Life Expectancy at Birth	26.6
Cognitively Disabled	43.0
Physically Disabled	33.4
Heart Attack ER Admissions	53.6
Mental Health Not Good	60.0
Chronic Kidney Disease	10.6
Obesity	50.1
Pedestrian Injuries	19.6
Physical Health Not Good	39.2
Stroke	10.1
Health Risk Behaviors	—
Binge Drinking	78.7
Current Smoker	64.6
No Leisure Time for Physical Activity	60.8
Climate Change Exposures	—
Wildfire Risk	77.5
SLR Inundation Area	0.0
Children	50.1
Elderly	39.7
English Speaking	91.3
Foreign-born	24.0
Outdoor Workers	10.2
Climate Change Adaptive Capacity	—

Impervious Surface Cover	95.2
Traffic Density	11.2
Traffic Access	23.0
Other Indices	—
Hardship	40.8
Other Decision Support	—
2016 Voting	79.9

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	43.0
Healthy Places Index Score for Project Location (b)	54.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
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 and Equity Evaluation Scorecard not completed.

8. User Changes to Default Data

Screen	Justification
Land Use	0.92 ac w/ 4.537 TSF wedding venue bldgs (groom/bride cabins/banquet hall), 11,270 sf landscaping, & 40 space parking lot (assumed paving over rmndr of site ~0.56 ac).

Operations: Vehicle Data	Per Traffic Screening Analysis, 126 trips per day during an event. 126/4.537 = 27.77 trips/TSF/day during an event. ~2 events per week (generally on Friday/Saturday/Sundays); therefore, trip gen entered into Saturday/Sunday. Anticipated up to only 54 events per year.

APPENDIX C

COUNTY OF SAN BERNARDINO GHG REDUCTION PLAN PERFORMANCE STANDARDS

PERFORMANCE STANDARDS

The GHG reducing performance standards were developed by the County to improve the energy efficiency, water conservation, vehicle trip reduction potential, and other GHG reducing impacts from all new development approved within the unincorporated portions of San Bernardino County. As such, the following Performance Standards establish the minimum level of compliance that development must meet to assist in meeting the 2030 GHG reduction target identified in the in the County GHG Emissions Reduction Plan. These Performance Standards apply to all Projects, including those that are exempt under CEQA, and will be included as Conditions of Approval for development projects.

The following are the Performance Standards (Conditions of Approval) used for Industrial, Commercial and Residential projects in the County:

COMMERCIAL AND INDUSTRIAL PROJECTS

1. *GHG – Operational Standards. The developer shall implement the following as greenhouse gas (GHG) mitigation during the operation of the approved project:*

   a) *Waste Stream Reduction. The "developer" shall provide to all tenants and project employees County-approved informational materials about methods and need to reduce the solid waste stream and listing available recycling services.*

   b) Vehicle Trip Reduction. The "developer" shall provide to all tenants and project employees County-approved informational materials about the need to reduce vehicle trips and the program elements this project is implementing. Such elements may include: participation in established ride-sharing programs, creating a new ride-share employee vanpool, designating preferred parking spaces for ride sharing vehicles, designating adequate passenger loading and unloading for ride sharing vehicles with benches in waiting areas, and/or providing a web site or message board for coordinating rides.

   c) Provide Educational Materials. The developer shall provide to all tenants and staff education materials and other publicity about reducing waste and available recycling services. The education and publicity materials/program shall be submitted to County Planning for review and approval. The developer shall also provide to all tenants and require that the tenants shall display in their stores current transit route information for the project area in a visible and convenient location for employees and customers. The specific transit routes displayed shall include Omni Trans Route 8, San Bernardino-Mentone-Yucaipa.

d) Landscape Equipment. The developer shall require in the landscape maintenance contract and/or in onsite procedures that a minimum of 20% of the landscape maintenance equipment shall be electric-powered.

2. *GHG – Construction Standards. The "developer" shall submit for review and obtain approval from County Planning of a signed letter agreeing to include as a condition of all construction contracts/subcontracts requirements to reduce GHG emissions and submitting documentation of compliance. The developer/construction contractors shall do the following:*
   a) Implement the approved Coating Restriction Plans.
   b) Select construction equipment based on low GHG emissions factors and high-energy efficiency. All diesel/gasoline-powered construction equipment shall be replaced, where possible, with equivalent electric or CNG equipment.
   c) Grading contractor shall provide the implement the following when possible:
      1) training operators to use equipment more efficiently.
      2) identifying the proper size equipment for a task can also provide fuel savings and associated reductions in GHG emissions
      3) replacing older, less fuel-efficient equipment with newer models
      4) use GPS for grading to maximize efficiency
   d) Grading plans shall include the following statements:
      - *"All construction equipment engines shall be properly tuned and maintained in accordance with the manufacturers specifications prior to arriving on site and throughout construction duration."*
      - *"All construction equipment (including electric generators) shall be shut off by work crews when not in use and shall not idle for more than 5 minutes."*
   e) *Schedule construction traffic ingress/egress to not interfere with peak-hour traffic and to minimize traffic obstructions. Queuing of trucks on and off site shall be firmly discouraged and not scheduled. A flagperson shall be retained to maintain efficient traffic flow and safety adjacent to existing roadways.*
   f) Recycle and reuse construction and demolition waste (e.g. soil, vegetation, concrete, lumber, metal, and cardboard) per County Solid Waste procedures.
   g) The construction contractor shall support and encourage ridesharing and transit incentives for the construction crew and educate all construction workers about the required waste reduction and the availability of recycling services.

3. *GHG – Design Standards. The developer shall submit for review and obtain approval from County Planning that the following measures have been incorporated into the design of*

the project. These are intended to reduce potential project greenhouse gas (GHGs) emissions. Proper installation of the approved design features and equipment shall be confirmed by County Building and Safety prior to final inspection of each structure.

a) Meet Title 24 Energy Efficiency requirements implemented January 1, 2020. The Developer shall document that the design of the proposed structures meets the current Title 24 energy-efficiency requirements. County Planning shall coordinate this review with the County Building and Safety. Any combination of the following design features may be used to fulfill this requirement, provided that the total increase in efficiency meets or exceeds the cumulative goal (100%+ of Title 24) for the entire project (Title 24, Part 6 of the California Code of Regulations; Energy Efficiency Standards for Residential and Non Residential Buildings, as amended February 14, 2019; Cool Roof Coatings performance standards as amended February 14, 2019):

- *Incorporate dual paned or other energy efficient windows,*
- *Incorporate energy efficient space heating and cooling equipment,*
- *Incorporate energy efficient light fixtures, photocells, and motion detectors,*
- *Incorporate energy efficient appliances,*
- *Incorporate energy efficient domestic hot water systems,*
- *Incorporate solar panels into the electrical system,*
- *Incorporate cool roofs/light colored roofing,*
- *Incorporate other measures that will increase energy efficiency.*
- *Increase insulation to reduce heat transfer and thermal bridging.*
- *Limit air leakage throughout the structure and within the heating and cooling distribution system to minimize energy consumption.*

b) Plumbing. All plumbing shall incorporate the following:

- *All showerheads, lavatory faucets, and sink faucets shall comply with the California Energy Conservation flow rate standards.*
- *Low flush toilets shall be installed where applicable as specified in California State Health and Safety Code Section 17921.3.*
- *All hot water piping and storage tanks shall be insulated. Energy efficient boilers shall be used.*

c) Lighting. Lighting design for building interiors shall support the use of:

- *Compact fluorescent light bulbs or equivalently efficient lighting.*
- *Natural day lighting through site orientation and the use of reflected light.*
- *Skylight/roof window systems.*

- *Light colored building materials and finishes shall be used to reflect natural and artificial light with greater efficiency and less glare.*
- *A multi-zone programmable dimming system shall be used to control lighting to maximize the energy efficiency of lighting requirements at various times of the day.*
- *Provide a minimum of 2.5 percent of the project's electricity needs by on-site solar panels.*

d) *Building Design. Building design and construction shall incorporate the following elements:*

- *Orient building locations to best utilize natural cooling/heating with respect to the sun and prevailing winds/natural convection to take advantage of shade, day lighting and natural cooling opportunities.*
- *Utilize natural, low maintenance building materials that do not require finishes and regular maintenance.*
- *Roofing materials shall have a solar reflectance index of 78 or greater.*
- *All supply duct work shall be sealed and leak-tested. Oval or round ducts shall be used for at least 75 percent of the supply duct work, excluding risers.*
- *Energy Star or equivalent appliances shall be installed.*
- *A building automation system including outdoor temperature/humidity sensors will control public area heating, vent, and air conditioning units*

e) *Landscaping. The developer shall submit for review and obtain approval from County Planning of landscape and irrigation plans that are designed to include drought tolerant and smog tolerant trees, shrubs, and groundcover to ensure the long-term viability and to conserve water and energy. The landscape plans shall include shade trees around main buildings, particularly along southern and western elevations, where practical.*

f) *Irrigation. The developer shall submit irrigation plans that are designed, so that all common area irrigation areas shall be capable of being operated by a computerized irrigation system, which includes either an on-site weather station, ET gauge or ET-based controller capable of reading current weather data and making automatic adjustments to independent run times for each irrigation valve based on changes in temperature, solar radiation, relative humidity, rain and wind. In addition, the computerized irrigation system shall be equipped with flow sensing capabilities, thus automatically shutting down the irrigation system in the event of a mainline break or broken head. These features will assist in conserving water, eliminating the potential*

of slope failure due to mainline breaks and eliminating over-watering and flooding due to pipe and/or head breaks.

g) *Recycling. Exterior storage areas for recyclables and green waste shall be provided. Where recycling pickup is available, adequate recycling containers shall be located in public areas. Construction and operation waste shall be collected for reuse and recycling.*

h) *Transportation Demand Management (TDM) Program. The project shall include adequate bicycle parking near building entrances to promote cyclist safety, security, and convenience. Preferred carpool/vanpool spaces shall be provided and, if available, mass transit facilities shall be provided (e.g. bus stop bench/shelter). The developer shall demonstrate that the TDM program has been instituted for the project or that the buildings will join an existing program located within a quarter mile radius from the project site* that provides a cumulative 20% reduction in unmitigated employee commute trips*. The TDM Program shall publish ride-sharing information for ride-sharing vehicles and provide a website or message board for coordinating rides. The Program shall ensure that appropriate bus route information is placed in each building.*

4. *GHG – Installation/Implementation Standards. The developer shall submit for review and obtain approval from County Planning of evidence that all applicable GHG performance standards have been installed, implemented properly and that specified performance objectives are being met to the satisfaction of County Planning and County Building and Safety. These installations/ procedures include the following:*

   a) *Design features and/or equipment that cumulatively increases the overall compliance of the project to exceed Title 24 minimum standards by five percent.*

   b) *All interior building lighting shall support the use of fluorescent light bulbs or equivalent energy-efficient lighting.*

   c) *Installation of both the identified mandatory and optional design features or equipment that have been constructed and incorporated into the facility/structure.*

RESIDENTIAL PROJECTS

1. *GHG – Operational Standards. The developer shall implement the following as greenhouse gas (GHG) mitigation during the operation of the approved project:*

   a. *Waste stream reduction. The* "developer" shall provide to all tenants and project employees County-approved informational materials about methods and need to reduce the solid waste stream and listing available recycling services.