Ramona-Indian Warehouse Project

Warehouse Operations Health Risk Assessment

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ACRONYMS AND ABBREVIATIONS

ADMRT	Air Dispersion Modeling and Risk Tool
ADT	average daily trips
AERMAP	AERMOD terrain preprocessor
AERMOD	USEPA gaussian plume air dispersion model
amsl	above mean sea level
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
City	City of Perris
DPM	diesel particulate matter
EIR	Environmental Impact Report
°F	Fahrenheit
GVW	gross vehicle weight
HARP	Hotspots Analysis and Reporting Program
HHDT	heavy heavy-duty trucks with a maximum gross vehicle weight more than 33,000 pounds
HRA	health risk assessment
I-	Interstate
LHDT2	light heavy-duty trucks with a maximum gross vehicle weight of 10,000 to 14,000 pounds
m	meters
MHDT	medium heavy-duty trucks with a maximum gross vehicle weight of 14,000 to 33,000 pounds
MEIR	maximally exposed individual resident
mph	miles per hour
NED	National Elevation Dataset
OEHHA	Office of Environmental Health Hazard Assessment
PVCCSP	Perris Valley Commerce Center Specific Plan
REL	Reference Exposure Limit

ACRONYMS AND ABBREVIATIONS (cont.)

SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
SF	square feet
SR-	State Route
T-BACT	Toxics Best Available Control Technology
TACs	toxic air contaminants
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
UTM	Universal Transverse Mercator

EXECUTIVE SUMMARY

This report presents an assessment of the potential for increased cancer and chronic health risks resulting from long-term operation of a proposed warehouse facility included as a component of the Ramona-Indian Warehouse Project (project). The predominant toxic air contaminant (TAC) of concern emitted by the project would be diesel particulate matter (DPM). Future emissions of the TAC DPM were estimated using the trip generation data and truck route provided in the project Traffic Analysis. DPM emissions would result from trucks traveling on public roads and project driveways, truck circulating on the project site, trucks idling at the loading docks and truck/trailer parking area.

Air dispersion modeling was completed for the maximum anticipated truck trips related to project operation. A health risk analysis was completed for the closest existing residential and off-site worker receptors. The increased cancer risk, chronic hazard indices, and cancer burden for the exposed individual residents and off-site workers would be below their respective thresholds. Long-term operation of the proposed warehouse would not result in a significant impact related to the exposure of sensitive receptors to substantial TAC concentrations.

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1.0 INTRODUCTION

This report presents an assessment of the potential for increased cancer and chronic health risks resulting from long-term operation of a proposed warehouse facility included as a component of the Ramona-Indian Warehouse Project (project).

1.1 PROJECT LOCATION

The project site is located at the northeast corner of the intersection of Ramona Expressway and Indian Avenue, in the City of Perris (City) in western Riverside County, California. The project site includes approximately 15 acres and is located approximately 1.4 miles east of Interstate (I-) 215 and approximately 6.5 miles south of State Route (SR-) 60. The project site is within the western Riverside County portion of the South Coast Air Basin (SCAB). Air quality in the project area is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). See Figure 1, *Regional Location*. The project is located within the Perris Valley Commerce Center Specific Plan (PVCCSP) area.

1.1.1 Existing Site Conditions

The project site is generally characterized as disturbed vacant land that was previously used for agricultural purposes. The project site is generally flat with an elevation between 1,450 and 1,460 feet above mean sea level (amsl). The southern portion of the project site includes a surface-level drainage swale that is owned and maintained by the Riverside County Flood Control and Water Conservation District and runs in an east-west direction. Surrounding land uses include: three single family residences (on parcels with commercial and industrial land use designations), undeveloped area, and commercial development (beyond and undeveloped area to the north); a retail gasoline station abutting the project site to the east; commercial development and undeveloped land to the east across Perris Boulevard; commercial development with residential areas beyond to the southeast across Ramona Expressway and Perris Boulevard; industrial development (beyond undeveloped areas) to the south across Ramona Expressway; industrial development to the southwest (beyond retention basins) across Ramona Expressway and Indian Avenue; and undeveloped land to the east across Indian Avenue. See Figure 2, *Aerial Photo*.

1.2 PROJECT DESCRIPTION

The project would develop light industrial uses and commercial uses in two phases. Phase 1 would develop a 232,575 square feet (SF) multi-tenant distribution building (warehouse) that includes 10,000 SF of internal office space, parking areas and driveways, a pad for future commercial development, storm drains and a water quality management retention basin, all on approximately 15 acres at the northeast corner of Indian Avenue and Ramona Expressway. Development of the commercial pad is not a part of the project. The warehouse would include 39 loading docks. The parking area would include 410 auto/light truck stalls, and 52 truck/trailer stalls. The storm drain system would include construction of the storm drain Line E within the project site. See Figure 3, *Site Plan*. The project would include roadway improvements for Ramona Expressway, Indian Avenue, and Perris Boulevard. Additional improvements would include landscaping, screen walls and fencing, and lighting.

Phase 2 would develop a commercial pad on the 1.61 acres in the northeastern portion of the project site with a 125-room hotel. Until development of the commercial pad occurs, temporary staging

activities may occur in this area to support construction of the light industrial uses described above. Trucks traveling to and from the project hotel would utilize the different routes and entrance driveways than trucks traveling to and from the project warehouse. This HRA only analyzes operational DPM emissions from truck associated with operation of the project warehouse.

2.0 ENVIRONMENTAL SETTING

2.1 TOXIC AIR CONTAMINANTS

Toxic air contaminants (TACs) are a diverse group of air pollutants that may cause or contribute to an increase in deaths or in serious illness or that may pose a present or potential hazard to human health. TACs can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage, or short-term acute effects such as eye watering, respiratory irritation (a cough), runny nose, throat pain, and headaches. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For carcinogenic TACs, there is no level of exposure that is considered safe and impacts are evaluated in terms of overall relative risk expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

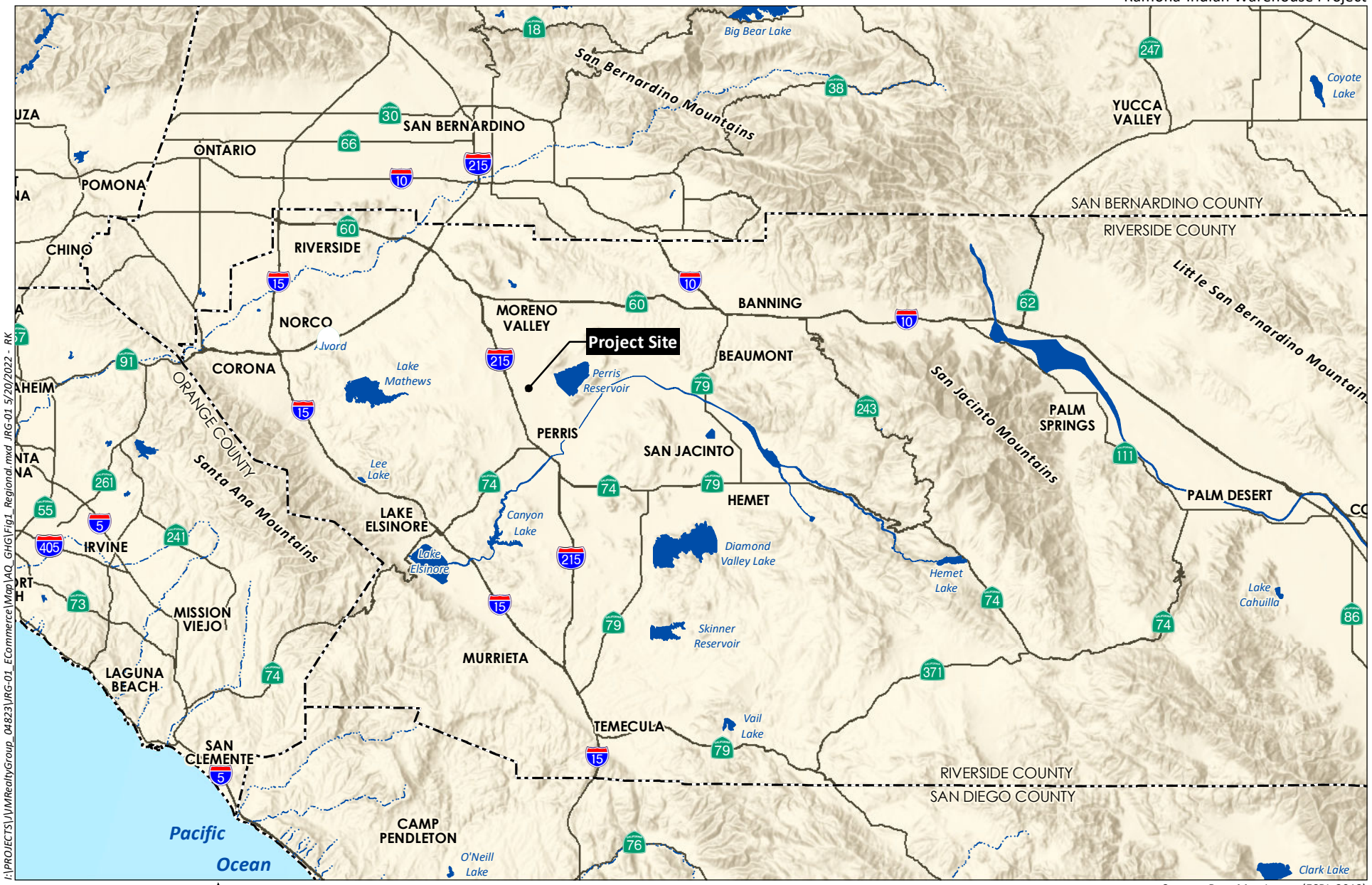
Diesel engines emit a complex mixture of air pollutants, including both gaseous and solid material. The solid material in diesel exhaust is referred to as diesel particulate matter (DPM). Almost all DPM is 10 microns or less in diameter, and 90 percent of DPM is less than 2.5 microns in diameter (California Air Resources Board [CARB] 2021a). Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung. In 1998, CARB identified DPM as a TAC based on published evidence of a relationship between diesel exhaust exposure and lung cancer and other adverse health effects. DPM has a notable effect on California's population—it is estimated that about 70 percent of total known cancer risk related to air toxics in California is attributable to DPM (CARB 2021a).

2.1.1 Toxics Best Available Control Technology

Diesel powered on-road (highway) trucks are a potential source of DPM. The Toxics Best Available Control Technology (T-BACT) for operation of diesel internal combustion engines is compliance with U.S. Environmental Protection Agency (USEPA) and CARB emissions standards. All heavy-duty diesel powered on-road vehicles manufactured since 2010 are required to meet USEPA emissions standards, including reductions of emissions of DPM by approximately 90 percent compared to unregulated engines (USEPA 2021).

2.2 SENSITIVE RECEPTORS

CARB and the Office of Environmental Health Hazard Assessment (OEHHA) have identified the following groups of individuals as the most likely to be affected by air pollution: adults over 65, children under 14, infants (including in utero in the third trimester of pregnancy), and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis (CARB 2005; OEHHA 2015). Some land uses are considered more sensitive to air pollution than others due to the types of population



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Source: Base Map Layers (ESRI, 2013)

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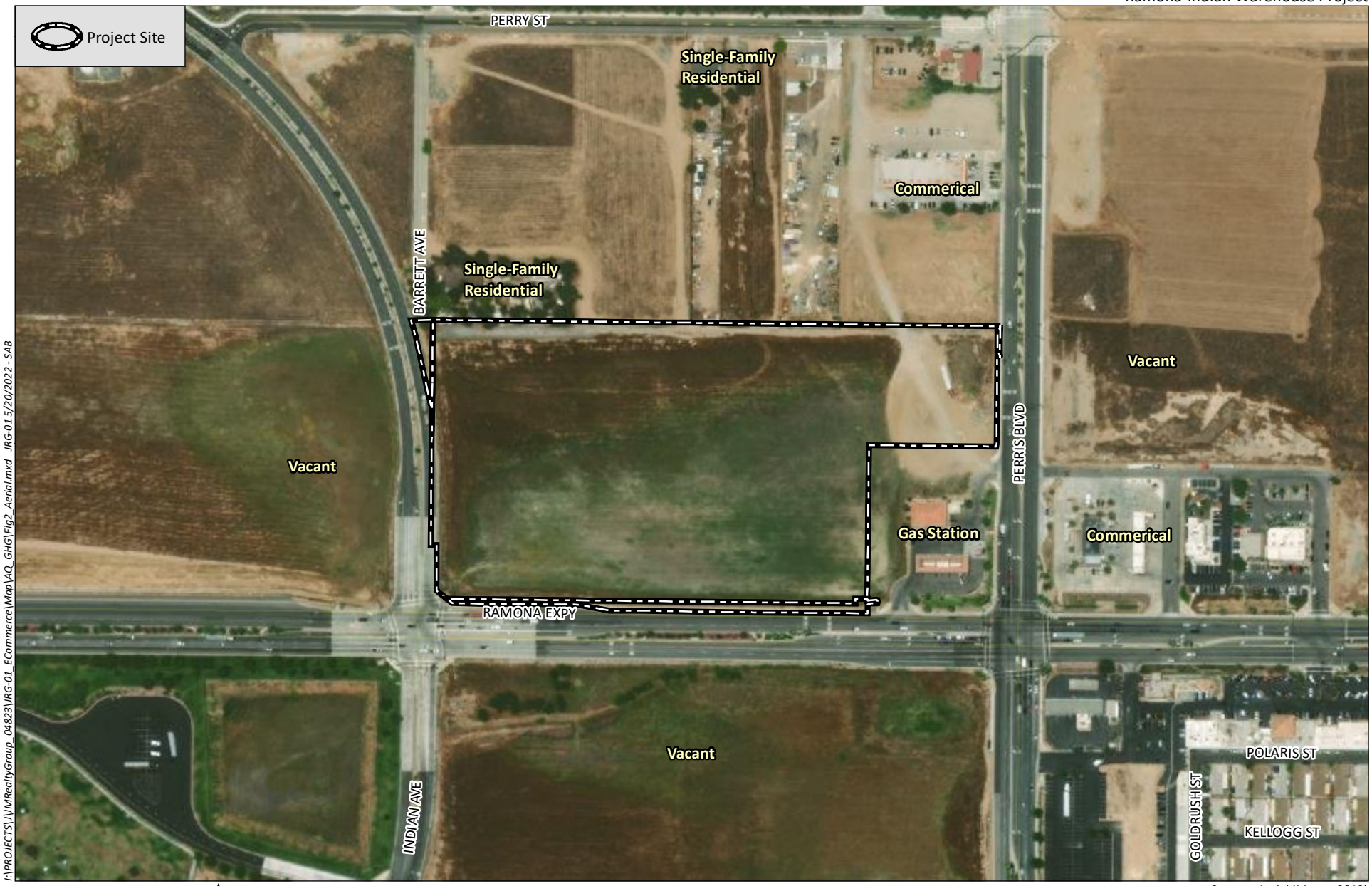
Regional Location

Figure 1



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Source: Aerial (Maxar, 2019)

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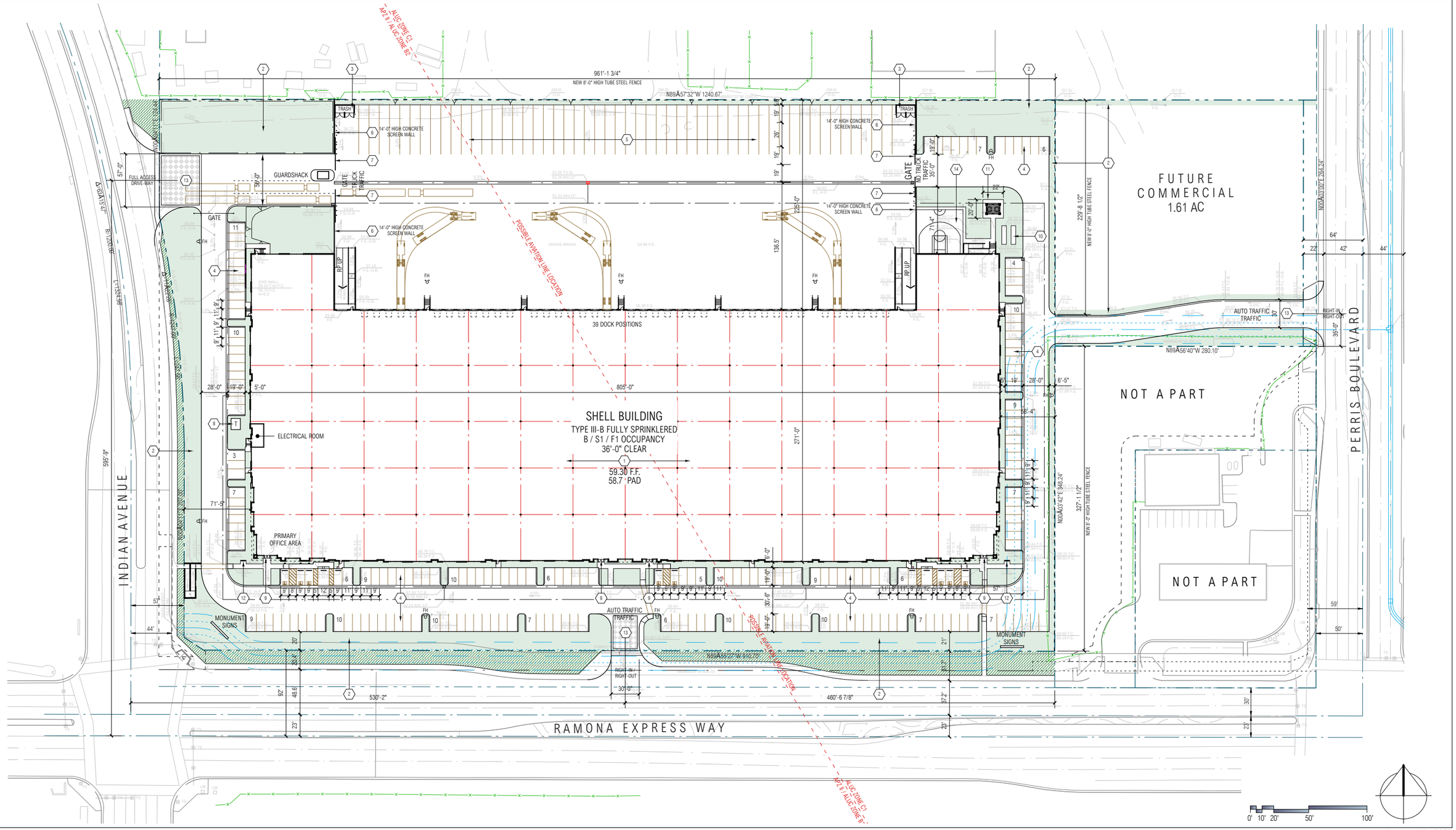
Aerial Photo

Figure 2



Source: RGA 2022

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Site Plan

Figure 3

groups or activities involved and are referred to as sensitive receptor locations. Examples of these sensitive receptor locations are residences, schools, hospitals, and daycare centers. For health risk assessments, the health impacts are analyzed for individual residents assumed to be standing in their primary outdoor spaces closest to the source of TACs, for students assumed to be standing outside of the school buildings or in outdoor recreation areas closest to the source of TACs, and for individual off-site workers assumed to be standing outside of a commercial or industrial building.

The closest existing sensitive receptor locations to the project site are located at three single-family residences on parcels abutting the project site to the north. Even though these parcels are not zoned for residential uses, they are still considered locations where sensitive receptors may be located for extended periods. There are reports that the closest single-family residence to the project site (adjacent to the project northwest corner) has been demolished. However, persons may still be residing at this location in recreational vehicles. To be conservative (health protective) in this analysis, this location is considered a residential site. Additional residential sensitive receptors are located southeast of the project site, across Ramona Expressway and North Perris Boulevard, behind a row of commercial buildings.

3.0 METHODOLOGY

Potential health risks to nearby sensitive receptors from the emission of TACs during operation of the proposed warehouse were analyzed in accordance with applicable portions of the OEHHA *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (OEHHA 2015), and applicable portions of the SCAQMD's *Modeling Guidance for AERMOD* (SCAQMD 2021).

3.1 TAC EMISSIONS

Calculations of DPM emissions were based on the project trip generation estimate (57 trucks entering the site per day) and the truck route (all trucks would use Indian Avenue north of Ramona Expressway) described in the project Traffic Analysis (Urban Crossroads 2021). Trucks on Indian Avenue were assumed be traveling at the posted speed limit of 40 miles pers hour (mph). Trucks entering and exiting the project driveway were assumed to be traveling at 15 mph. Trucks circulating within the project site were assumed to be traveling at 5 mph. All trucks were assumed to idle at the loading docks for the maximum allowable 5 minutes (per California Code of Regulations [CCR] Title 13, Section 2485). In addition, 25 percent of trucks were assumed to stage in the truck/trailer parking area before or after unloading/loading and idle for an additional 5 minutes. Truck idling emissions were assumed to be approximately equivalent to truck emissions at 5 mph.

Emissions of DPM from trucks were calculated using emission factors from CARB's EMFAC2021 version 1.0.1 online database (CARB 2021b). The truck fleet mix was estimated from the project Traffic Analysis which reported average daily trips (ADT; two trips per truck) of 24 two-axle trucks, 30 three-axle trucks, and 88 four or more axle trucks (142 total truck ADT; Urban Crossroads 2021). Two-axle trucks were assumed to be light-heavy duty (LHDT2; 10,000 to 14,000 pounds gross vehicle weight [GVW]). Three-axle trucks were assumed to be medium-heavy duty (MHDT; 14,000 to 33,000 GVR). Four or mor axle trucks were assumed to be heavy-heavy duty (HHDT; greater than 33,000 GVR). The DPM emissions for each source modeled is shown in Table 1, *DPM Emissions*. The complete emissions calculation sheets are included as Appendix A, *DPM Emissions Calculations*, to this report.

Table 1
DPM EMISSIONS

Source	DPM Emissions (pounds/year)	DPM Emissions (pounds/hour)
Trucks traveling northbound on Indian Avenue	0.0947	1.1228E-05
Trucks traveling southbound on Indian Avenue	0.0959	1.1375E-05
Trucks entering the project site	0.0469	5.5019E-06
Trucks exiting the project site	0.0396	4.6422E-06
Trucks circulating within the project site	0.2329	2.7265E-05
Trucks at the loading docks	0.0132	3.6587E-05
Trucks in the parking area	0.0132	3.6587E-05

Source: Emission factors from EMFAC2021 and OFFROAD2021 (CARB 2021b); emissions calculation sheets included in Appendix A.

3.2 DISPERSION MODELING

Localized concentrations of DPM were modeled using Lakes AERMOD View version 10.2.0. The Lakes program utilizes the USEPA's AERMOD gaussian air dispersion model version 19191. Plot files from AERMOD using unitized emissions (one gram per second) for each DPM source were imported into CARB's Hotspots Analysis and Reporting Program (HARP), Air Dispersion Modeling and Risk Tool (ADMRT) version 21118. The ADMRT calculated ground-level concentrations of DPM utilizing the imported plot files and the annual and hourly emissions inventory shown in Table 1. The modeling input and output are included in Appendix B, *HRA Modeling Output*, to this report.

3.2.1 Source Parameters

Trucks traveling on Indian Avenue, the project driveway, and within the project site were modeled as line volume sources following methodology/calculations recommended in the USEPA *Haul Road Workgroup Final Report*, using an average truck height of 4 meters (13.1 feet) and average truck width of 2.6 meters (8.5 feet; USEPA 2011). Trucks parked in the loading dock area and parking area were modeled as volume sources with a 25 meter (82 feet) wide base and a height of 4 meters (13.1 feet). To be conservative in capturing the highest reasonably foreseeable initial plume concentration, half of all trucks were assumed to use the docks on the west end of the dock area with the other half using docks at the east end. Similarly, half of parked trucks were assumed to be concentrated at the west end of the parking area (nearest to the closest sensitive receptor location) with the remaining at the east end. The complete model reports are included in Appendix B to this report.

Emissions of DPM would not be constant throughout the day. The volume of trucks entering and exiting the site would vary by hour of the day and day of the week. However, since the project is assumed to operate 24 hours per day, 7 days per week, the truck volume was assumed to be steady (at peak hour volume) throughout all hours of the day and week. This modeling assumption is generally conservative (health protective).

3.2.2 Meteorological Data

SCAQMD provides pre-processed meteorological data suitable for use with AERMOD (SCAQMD 2017). The available data set most representative of conditions in the project vicinity was from the Perris station, approximately 4 miles south of the project site. A wind rose for the Perris station shows an

average wind speed of 3.7 miles per hour from the northwest (SCAQMD 2017). The wind rose graphics are included in Appendix B to this report. The Perris station set includes 5 years of data collected between 2010 and 2016. Urban dispersion coefficients with a Riverside County population of 2,189,641 were selected in the model in accordance with SCAQMD modeling recommendations (SCAQMD 2021).

3.2.3 Terrain Data

United States Geological Survey (USGS) National Elevation Dataset (NED) files with a 30-meter resolution covering an area approximately one kilometer around the project site were used in the model to cover the analysis area. Terrain data was imported to the model using AERMAP, a terrain preprocessing program for AERMOD.

3.2.4 Receptor Modeling

To develop risk isopleths (linear contours showing equal level of risk), receptors were placed in a cartesian grid 780 meters by 580 meters (approximately 2,560 feet by 1,900 feet), centered on the project site with a grid spacing of 20 meters (66 feet) and a receptor height (flagpole height) of 1.2 meters (4 feet) above the ground. To ensure the area of maximum off-site impact was captured, receptors were placed along the project boundary at 20-meter (66 feet) intervals. Additional discrete receptors were placed at the closest primary outdoor spaces for 3 locations at the closest residence to the northwest, 1 location each for the two residences along Perry Steet to the north, 1 location for the mobile home park to the southeast, and 4 locations for the closest existing worker buildings. See Figure 4, *Receptor Locations*, for the modeled discrete receptor locations relative to the project site and modeled sources.

3.3 RISK DETERMINATION

Health risks resulting from localized concentration of DPM were estimated using the ADMRT. The latest cancer slope factors and chronic Reference Exposure Limits (RELs), and exposure paths for all TACs designated by CARB are included in ADMRT. For the residential cancer risk, an exposure duration of 30 years was selected in accordance with the OEHHA (2015) guidelines. The model conservatively assumes that residents would be standing and breathing outdoors at the location of the property line closest to the project every day between 17 and 21 hours per day (depending on the age group, starting with infants in utero in the third trimester of pregnancy) for 30 years. The Risk Management Policy (RMP) using the derived method for the intake rate percentile was selected in accordance with the SCAQMD guide recommendations (SCAQMD 2021). For off-site worker cancer risk, an exposure duration of 25 years was selected with an assumption of 8 hours per day, 5 days per week of exposure while standing outside with moderate intensity breathing rates, in accordance with the OEHHA guidelines. Because DPM only has an inhalation cancer slope factor and an inhalation chronic REL, only the cancer risk and chronic risk from exposure to DPM was evaluated, and only the inhalations pathway was evaluated. The modeling input and out is included in Appendix B to this report.

Cancer burden evaluates an overall population's increased cancer risk and is defined as the increases in cancer cases in the population due exposure to TACs from a project. Cancer burden is calculated differently from individual risk. Per OEHHA, cancer burden uses a 70-year exposure to evaluate population-wide cancer risk, and the cancer burden only evaluates residential exposure (not worksites). Cancer burden is calculated by multiplying the number of residents exposed to an incremental excess

cancer risk of 1 in 1 million or greater by the estimated incremental excess cancer risk of the maximally exposed individual resident (MEIR).

3.4 SIGNIFICANCE CRITERIA

For a Type A project (siting a new source of emissions), the SCAQMD recommends the following thresholds for the project's incremental contribution to community health risks (SCAQMD 2019):

Cancer Risk – An increased risk of 10 in 1 million for the maximally exposed individual to project emissions.

Cancer Burden – 0.5 excess cancer cases in areas exposed to 1 in 1 million or greater cancer risk from project emissions.

Chronic Health Risk – A Hazard Index of 1 for the maximally exposed individual to project emissions.

4.0 HEALTH RISK IMPACT ANALYSIS

4.1 ANALYSIS IN THE SPECIFIC PLAN EIR

The project is located within the PVCCSP area for which an EIR was certified in 2011. Impacts to sensitive receptors resulting from long-term operation of development within the PVCCSP area were analyzed in the EIR which concluded that, with implementation of mitigation measures, implementation of the PVCCSP would not expose sensitive receptors to substantial pollutant concentrations (EIR; City 2011 pp. 4.2-48 through 4.2-50). The following mitigation measures from the PVCCSP EIR would be applicable to the project and related to the exposure of sensitive receptors to substantial concentrations of DPM from warehouse operations.

MM Air 11: Signage shall be posted at loading docks and all entrances to loading areas prohibiting all on-site truck idling in excess of 5 minutes.

MM AIR 13: In order to promote alternative fuels, and help support "clean" truck fleets, the developer/successor-in-interest of each implementing development project shall provide building occupants information related to SCAQMD's Carl Moyer Program, or other state programs that restrict operations to "clean" trucks, such as 2007 or newer model year or 2010 compliant vehicles.

MM AIR 15: To identify potential implementing development project-specific impacts resulting from the use of diesel trucks, proposed implementing development projects that include in excess of 10 dock doors for a single building, a minimum of 100 truck trips per day, 40 truck trips with TRUs per day, or TRU operations exceeding 300 hours per week, and that are subject to CEQA and are located adjacent to sensitive land uses; shall have a facility-specific Health Risk Assessment performed to assess the diesel particulate matter impacts from mobile-source traffic generated by the that implementing development project. The results of the Health Risk Assessment shall be included in the CEQA documentation for each implementing development project.

This HRA constitutes compliance with MM AIR 15.

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Source: Aerial (Maxar, 2019)

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Receptor Locations

Figure 4

4.2 PROJECT ANALYSIS

The incremental excess cancer risk is an estimate of the chance a person exposed to a specific source of a TAC may have of developing cancer from that exposure beyond the individual's risk of developing cancer from existing background levels of TACs in the ambient air. For context, the average cancer risk from TACs in the ambient air for an individual living in an urban area of California is 830 in 1 million (CARB 2015). Cancer risk estimates do not mean, and should not be interpreted to mean, that a person will develop cancer from estimated exposures to toxic air pollutants.

The maximum estimated community incremental excess cancer risks due to exposure to the project TAC emissions from long term operation are presented in Table 2, *Maximum Incremental Cancer Health Risk*. These estimates are conservative (health protective) and assume that the student, resident, or worker is outdoors for the entire exposure period.

Table 2
MAXIMUM INCREMENTAL CANCER HEALTH RISK

	Maximally Exposed Individual Resident Cancer Risk (per million)	Maximally Exposed Individual Worker Cancer Risk (per million)
Results	1.1	<0.1
Threshold	10	10
Exceed Threshold?	No	No

Source: Lakes AERMOD View version 10.2.0 and CARB ADMRT version 21081. See Appendix B for model inputs, outputs, and risk isopleths.

The estimated incremental excess cancer risk and chronic hazard index due to exposure to the project's TAC emissions for each receptor location (shown in Figure 4) are presented in Table 3, *Discrete Receptor Incremental Cancer and Chronic Health Risk*. The model inputs, outputs, and risk isopleth figures are available in Appendix A to this report.

Table 3
DISCRETE RECEPTOR INCREMENTAL CANCER AND CHRONIC HEALTH RISK

Receptor ID	Type	Location	Cancer Risk (per million)	Chronic Hazard Index
R1	Residential	4111 Barrett Avenue, west	0.7	<0.01
R2	Residential	4111 Barrett Avenue, southwest	0.9	<0.01
R3	Residential	4111 Barrett Avenue, southeast	1.1	<0.01
R4	Residential	111 Perry Street	0.1	<0.01
R5	Residential	91 Perry Street	0.1	<0.01
R6	Residential	Park Place Mobile Home Park, northwest corner	<0.1	<0.01
C1	Commercial	4040 Perris Boulevard, southwest corner	<0.1	<0.01
C2	Commercial	4040 Perris Boulevard, northeast corner	<0.1	<0.01
C3	Commercial	4164 Perris Boulevard	<0.1	<0.01
C4	Commercial	77 Perry Street	<0.1	<0.01

Source: Lakes AERMOD View version 10.2.0 and CARB ADMRT version 211118. See Appendix B for model inputs, outputs, and residential cancer risk isopleths.

For cancer burden, only the residence adjacent to the northwest corner of the project site is within or touching the 1 in 1 million isopleth. Assuming up to 10 residents per residence, the total exposed

population would be 10. The cancer burden would be 1.1 x 10^{-6} (risk at the MEIR using a 70-year exposure) times 10, or 0.00001, below the SCAQMD threshold of 0.5.

The point of maximum off-site impact would be on the project's north boundary at approximately Universal Transverse Mercator (UTM) coordinates Zone 11, 478782 meters East, 3745149 meters North. No students, residents or workers are anticipated to be at the point of maximum impact for prolonged periods. If residents were to be located at the point of maximum impact for 30 years, the estimated incremental excess cancer risk would be 1.5 in 1 million. The point of maximum impact is shown in Figure 4.

As shown in Table 2 and Table 3, the incremental increased cancer risks would not exceed the SCAQMD threshold of 10 in 1 million and the chronic health indices would not exceed the SCAQMD threshold of 1. The estimated incremental excess cancer risk for the MEIR would be 1.1 in 1 million. The residential incremental increased cancer risk isopleths and location of the MEIR are shown in Figure 4. Therefore, community health risks due to exposure to DPM emissions from long term operation of the proposed warehouse would not exceed the SCAQMD thresholds, and long-term operation of the project would not result in a significant impact related to the exposure of sensitive receptors to substantial TAC concentrations.

5.0 LIST OF PREPARERS

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Appendix A

DPM Emissions Calculations

The following section contains content that was obtained from a third party and may not achieve the same level of Americans with Disabilities Act (ADA) and Section 508 accessibility as other parts of this document.

Truck DPM Calculations

Southbound Indian Ave (40 mph)	Emission Factor (lb./mile)	Miles	Peak Hour Trips	ADT	Annual Trips	Max lb./hour	Annual lb./year
2 Axle (LHDT)	3.71326E-05	0.155	0.5	12	4380	2.8778E-06	2.5209E-02
3 Axle (MHDT)	1.08144E-05	0.155	0.5	15	5475	8.3812E-07	9.1774E-03
4 or more Axle (HHDT)	2.47070E-05	0.155	2	44	16060	7.6592E-06	6.1503E-02
Total			**3**	**71**		**1.1375E-05**	**9.5890E-02**

Northbound Indian Ave (40 mph)	Emission Factor (lb./mile)	Miles	Peak Hour Trips	ADT	Annual Trips	Max lb./hour	Annual lb./year
2 Axle (LHDT)	3.71326E-05	0.153	0.5	12	4380	2.8406E-06	2.4884E-02
3 Axle (MHDT)	1.08144E-05	0.153	0.5	15	5475	8.2730E-07	9.0590E-03
4 or more Axle (HHDT)	2.47070E-05	0.153	2	44	16060	7.5603E-06	6.0710E-02
Total			**3**	**71**		**1.1228E-05**	**9.4653E-02**

Entrance Drive (15 mph)	Emission Factor (lb./mile)	Miles	Peak Hour Trips	ADT	Annual Trips	Max lb./hour	Annual lb./year
2 Axle (LHDT)	7.95470E-05	0.064	0.5	12	4380	2.5455E-06	2.2299E-02
3 Axle (MHDT)	9.38922E-06	0.064	0.5	15	5475	3.0045E-07	3.2900E-03
4 or more Axle (HHDT)	2.07497E-05	0.064	2	44	16060	2.6560E-06	2.1327E-02
Total			**3**	**71**		**5.5019E-06**	**4.6916E-02**

Exit Drive (15 mph)	Emission Factor (lb./mile)	Miles	Peak Hour Trips	ADT	Annual Trips	Max lb./hour	Annual lb./year
2 Axle (LHDT)	7.95470E-05	0.054	0.5	12	4380	2.1478E-06	1.8814E-02
3 Axle (MHDT)	9.38922E-06	0.054	0.5	15	5475	2.5351E-07	2.7759E-03
4 or more Axle (HHDT)	2.07497E-05	0.054	2	44	16060	2.2410E-06	1.7995E-02
Total			**3**	**71**		**4.6422E-06**	**3.9585E-02**

Circulation (5 mph)	Emission Factor (lb./mile)	Miles	Peak Hour Trips	ADT	Annual Trips	Max lb./hour	Annual lb./year
2 Axle (LHDT)	1.29091E-04	0.207	0.5	12	4380	1.3361E-05	1.1704E-01
3 Axle (MHDT)	1.40972E-05	0.207	0.5	15	5475	1.4591E-06	1.5977E-02
4 or more Axle (HHDT)	3.00591E-05	0.207	2	44	16060	1.2444E-05	9.9929E-02
Total			**3**	**71**		**2.7265E-05**	**2.3295E-01**

Idling Dock Area 1, 2	Emission Factor (lb./min)	Minutes	Peak Hour Trips	ADT	Annual Trips	Max lb./hour	Annual lb./year
2 Axle (LHDT)	1.07576E-05	5	0.25	6	2190	1.3447E-05	1.1780E-01
3 Axle (MHDT)	1.17477E-06	5	0.25	7.5	2737.5	1.4685E-06	1.6080E-02
4 or more Axle (HHDT)	2.50493E-06	5	1	22	8030	1.2525E-05	1.0057E-01
Total			**1.5**	**35.5**		**1.8293E-05**	**6.6042E-03**

Idling Parking Area 1, 2	Emission Factor (lb./min)	Minutes	Peak Hour Trips	ADT	Annual Trips	Max lb./hour	Annual lb./year
2 Axle (LHDT)	1.07576E-05	5	0.0625	1.5	547.5	3.3618E-06	2.9449E-02
3 Axle (MHDT)	1.17477E-06	5	0.0625	1.9	693.5	3.6711E-07	4.0735E-03
4 or more Axle (HHDT)	2.50493E-06	5	0.25	5.5	2007.5	3.1312E-06	2.5143E-02
Total			**0.375**	**8.9**		**1.8293E-05**	**6.5917E-03**

Notes:
1. Exhaust PM10 emissions factor reported by EMFAC2021 in grams/mile.
2. 1 gram = 0.0022046 pounds.
3. Idling emissions calculated assuming idling emissions are approximately equal to 5 mph emissions.
4. 5 mph = 0.08333 miles per minute.

ADMRT Input

Source ID	Annual (lb/year)	Max Hour (lb/hr)
CIRC	2.32948E-01	2.72645E-05
DOCK1	6.60418E-03	1.82934E-05
DOCK2	6.60418E-03	1.82934E-05
ENTR	4.69160E-02	5.50192E-06
EXIT	3.95853E-02	4.64224E-06
INDN	9.46525E-02	1.12283E-05
INDS	9.58898E-02	1.13751E-05
PARK1	6.59165E-03	1.82934E-05
PARK2	6.59165E-03	1.82934E-05

Source: EMFAC2017 (v1.0.3) Emission Rates
Region Type: Sub-Area
Region: Riverside (SC)
Calendar Year: 2025
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, g/mile for RUNEX, mph for Speed

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	VMT	PM10_RUNEX
Riverside (SC)	2025	HHDT	Aggregate	5	Diesel	4359.75653	0.013634738
Riverside (SC)	2025	HHDT	Aggregate	15	Diesel	3476.70988	0.009411992
Riverside (SC)	2025	HHDT	Aggregate	40	Diesel	109406.185	0.011207014
Riverside (SC)	2025	LHDT2	Aggregate	5	Diesel	405.10861	0.058555466
Riverside (SC)	2025	LHDT2	Aggregate	15	Diesel	280.313151	0.036082299
Riverside (SC)	2025	LHDT2	Aggregate	40	Diesel	10842.413	0.01684325
Riverside (SC)	2025	MHDT	Aggregate	5	Diesel	1914.18008	0.006394443
Riverside (SC)	2025	MHDT	Aggregate	15	Diesel	1395.85207	0.00425892
Riverside (SC)	2025	MHDT	Aggregate	40	Diesel	44505.578	0.004905395

Appendix B

HRA Modeling Output

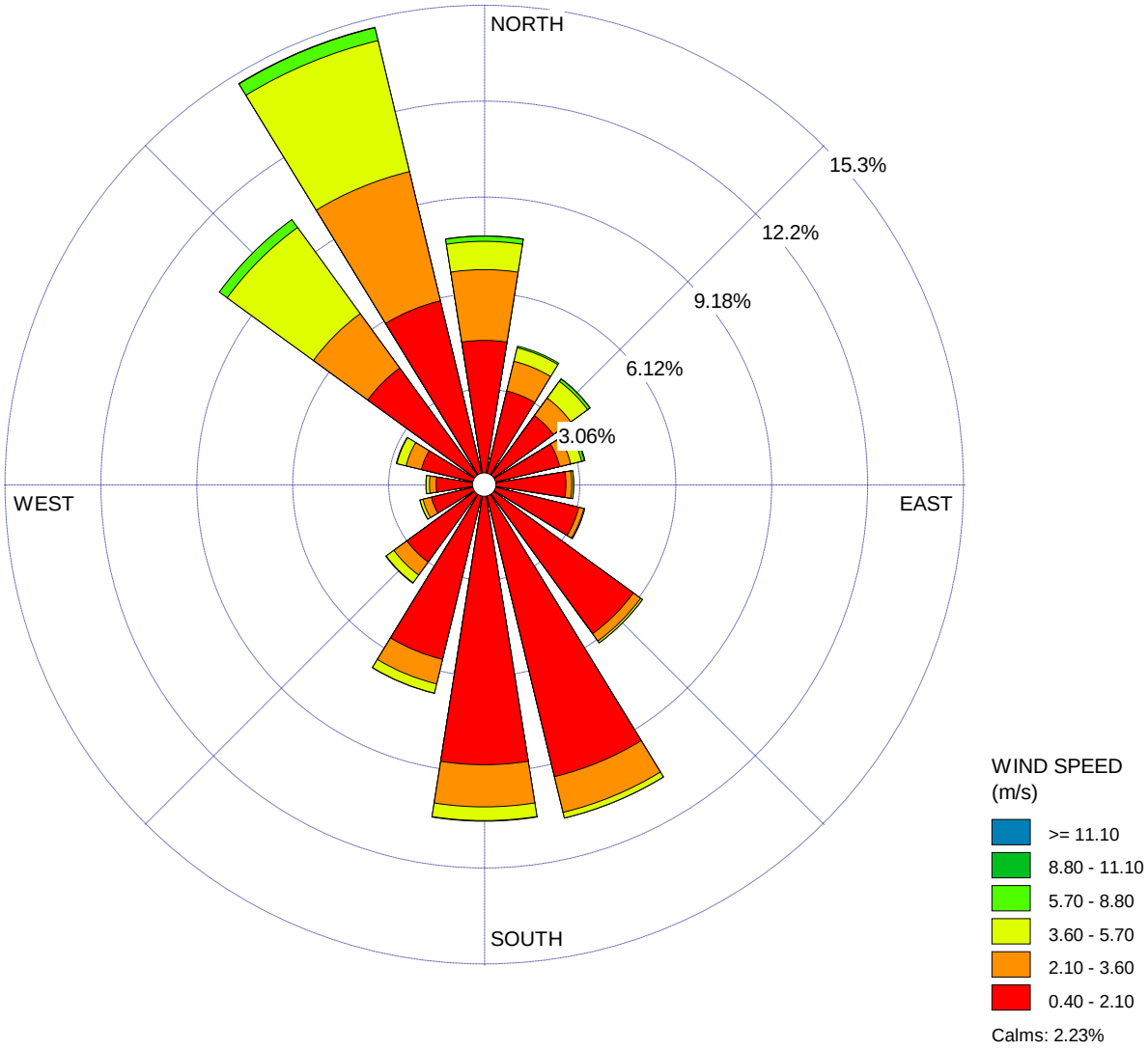
The following section contains content that was obtained from a third party and may not achieve the same level of Americans with Disabilities Act (ADA) and Section 508 accessibility as other parts of this document.

WIND ROSE PLOT:

Station #3171

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS:	DATA PERIOD: **Start Date: 1/1/2010 - 00:00** **End Date: 12/31/2016 - 23:59**	COMPANY NAME: **South Coast Air Quality Management District**	
		MODELER: **Melissa Sheffer**	
	CALM WINDS: **2.23%**	TOTAL COUNT: **43476 hrs.**	
	AVG. WIND SPEED: **1.65 m/s**	DATE: **5/25/2017**	PROJECT NO.:

PROJECT TITLE:

Ramona-indina Warehouse
Residential Cancer Risk

PLOT FILE OF PERIOD VALUES FOR SOURCE GROUP: ALL ug/m^3

Max: 2.0 [ug/m^3] at (478780.00, 3745120.00)

1.0 2.0 5.0

COMMENTS: Chance per Million: 1 in 1 million isopleth	SOURCES: **9**	COMPANY NAME: **HELIX Environmenal Planning**	
	RECEPTORS: **1273**		
	OUTPUT TYPE: **Concentration**	SCALE: 1:6,730 0 0.2 km	
	MAX: **2.0 ug/m^3**	DATE: **5/20/2022**	PROJECT NO.:

PROJECT TITLE:

Ramona-indina Warehouse
Cancer Burden

PLOT FILE OF PERIOD VALUES FOR SOURCE GROUP: ALL ug/m^3

Max: 2.4 [ug/m^3] at (478780.00, 3745120.00)

1.0 10.0

COMMENTS: Chance per Million: 1 in 1 million isopleth	SOURCES: **9**	COMPANY NAME: **HELIX Environmenal Planning**	
	RECEPTORS: **1273**		
	OUTPUT TYPE: **Concentration**	SCALE: 1:6,711 0 0.2 km	
	MAX: **2.4 ug/m^3**	DATE: **5/20/2022**	PROJECT NO.:

Control Pathway

AERMOD

Dispersion Options

Titles

C:\Users\martinr\Desktop\Perris ECommerce HRA\Perris EComm\Perris EC

Dispersion Options

- [■] Regulatory Default
- [ ] Non-Default Options

Dispersion Coefficient

Urban

Population:
Name (Optional):
Roughness Length:

Output Type

- [■] Concentration
- [ ] Total Deposition (Dry & Wet)
- [ ] Dry Deposition
- [ ] Wet Deposition

Plume Depletion

- [ ] Dry Removal
- [ ] Wet Removal

Output Warnings

- [ ] No Output Warnings
- [ ] Non-fatal Warnings for Non-sequential Met Data

Pollutant / Averaging Time / Terrain Options

Pollutant Type

OTHER - DPM

Averaging Time Options

Hours

1	2	3	4	6	8	12	24
[■]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

- [ ] Month
- [■] Period
- [ ] Annual

Exponential Decay

Half-life of 4 hrs will be used

Terrain Height Options

- [ ] Flat
- [■] Elevated

SO: Meters
RE: Meters
TG: Meters

Flagpole Receptors

- [■] Yes
- [ ] No

Default Height = 1.20 m

Control Pathway

Optional Files

Re-Start File	Init File	Multi-Year Analyses	Event Input File	Error Listing File
☐	☐	☐	☐	■

Detailed Error Listing File

Filename: Perris EComm.err

Source Pathway - Source Inputs

Volume Sources

Source Type	Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation (Optional)	Release Height [m]	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dim. [m]	Initial Vertical Dim. [m]
VOLUME	DOCK1	478775.92 Dock Area 1	3745097.05	444.30	3.60	1.00000	25.00	Surface-Based	5.81	1.86
VOLUME	DOCK2	478907.00 Dock Area 2	3745096.97	444.15	3.60	1.00000	25.00	Surface-Based	5.81	1.86
VOLUME	PARK1	478774.46 Parking Area 1	3745133.84	444.61	3.60	1.00000	25.00	Surface-Based	5.81	1.86
VOLUME	PARK2	478906.71 Parking Area 2	3745133.62	444.45	3.60	1.00000	25.00	Surface-Based	5.81	1.86

Source Pathway - Source Inputs

Line Volume Sources

Source Type: LINE VOLUME

Source: CIRC (Truck Circulation)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.60	1.00000		478746.04	3745120.10	444.51	3.40
			478875.89	3745119.95	444.31	3.40
			478886.94	3745110.35	444.22	3.40
			478889.12	3745100.03	444.18	3.40
			478891.73	3745110.79	444.22	3.40
			478891.88	3745131.58	444.48	3.40
			478771.05	3745131.29	444.60	3.40
			478760.43	3745128.24	444.62	3.40
			478745.89	3745127.95	444.63	3.40

Source Type: LINE VOLUME

Source: ENTR (Entrance Drive)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.60	1.00000		478745.99	3745120.01	444.51	3.40
			478674.94	3745120.01	445.49	3.40
			478666.90	3745150.27	445.62	3.40

Source Type: LINE VOLUME

Source: EXIT (Exist Driveway)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.60	1.00000		478745.75	3745127.80	444.63	3.40
			478685.53	3745127.66	445.62	3.40
			478677.26	3745153.97	445.39	3.40

Source Pathway - Source Inputs

Source Type: LINE VOLUME
Source: INDN (Indian Avenue Northbound)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.60	1.00000		478677.33	3745153.99	445.39	3.40
			478656.87	3745206.97	445.59	3.40
			478622.25	3745262.58	445.69	3.40
			478584.48	3745304.55	445.92	3.40
			478552.48	3745333.40	445.90	3.40
			478532.02	3745346.51	446.15	3.40

Source Type: LINE VOLUME
Source: INDS (Indian Avenue Southbound)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.60	1.00000		478666.84	3745150.84	445.63	3.40
			478646.90	3745200.15	445.70	3.40
			478615.43	3745253.14	445.96	3.40
			478577.66	3745296.68	446.04	3.40
			478532.02	3745332.35	446.08	3.40
			478516.28	3745342.84	446.29	3.40

Source Pathway - Source Inputs

Volume Sources Generated from Line Sources

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
CIRC	L0000236	478750.34	3745120.09	444.52	3.40	0.02564	8.60		4.00	3.16
	L0000237	478758.94	3745120.08	444.51	3.40	0.02564	8.60		4.00	3.16
	L0000238	478767.54	3745120.07	444.50	3.40	0.02564	8.60		4.00	3.16
	L0000239	478776.14	3745120.06	444.49	3.40	0.02564	8.60		4.00	3.16
	L0000240	478784.74	3745120.05	444.48	3.40	0.02564	8.60		4.00	3.16
	L0000241	478793.34	3745120.04	444.47	3.40	0.02564	8.60		4.00	3.16
	L0000242	478801.94	3745120.03	444.45	3.40	0.02564	8.60		4.00	3.16
	L0000243	478810.54	3745120.02	444.44	3.40	0.02564	8.60		4.00	3.16
	L0000244	478819.14	3745120.01	444.43	3.40	0.02564	8.60		4.00	3.16
	L0000245	478827.74	3745120.00	444.42	3.40	0.02564	8.60		4.00	3.16
	L0000246	478836.34	3745119.99	444.41	3.40	0.02564	8.60		4.00	3.16
	L0000247	478844.94	3745119.98	444.40	3.40	0.02564	8.60		4.00	3.16
	L0000248	478853.54	3745119.97	444.40	3.40	0.02564	8.60		4.00	3.16
	L0000249	478862.14	3745119.97	444.39	3.40	0.02564	8.60		4.00	3.16
	L0000250	478870.74	3745119.96	444.38	3.40	0.02564	8.60		4.00	3.16
	L0000251	478878.49	3745117.69	444.35	3.40	0.02564	8.60		4.00	3.16
	L0000252	478884.98	3745112.05	444.29	3.40	0.02564	8.60		4.00	3.16
	L0000253	478888.18	3745104.47	444.21	3.40	0.02564	8.60		4.00	3.16
	L0000254	478890.08	3745103.98	444.21	3.40	0.02564	8.60		4.00	3.16
	L0000255	478891.75	3745112.38	444.29	3.40	0.02564	8.60		4.00	3.16
	L0000256	478891.81	3745120.98	444.37	3.40	0.02564	8.60		4.00	3.16
	L0000257	478891.87	3745129.58	444.45	3.40	0.02564	8.60		4.00	3.16
	L0000258	478885.28	3745131.57	444.48	3.40	0.02564	8.60		4.00	3.16
	L0000259	478876.68	3745131.55	444.48	3.40	0.02564	8.60		4.00	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
CIRC	L0000260	478868.08	3745131.52	444.49	3.40	0.02564	8.60		4.00	3.16
	L0000261	478859.48	3745131.50	444.50	3.40	0.02564	8.60		4.00	3.16
	L0000262	478850.88	3745131.48	444.51	3.40	0.02564	8.60		4.00	3.16
	L0000263	478842.28	3745131.46	444.52	3.40	0.02564	8.60		4.00	3.16
	L0000264	478833.68	3745131.44	444.52	3.40	0.02564	8.60		4.00	3.16
	L0000265	478825.08	3745131.42	444.53	3.40	0.02564	8.60		4.00	3.16
	L0000266	478816.48	3745131.40	444.54	3.40	0.02564	8.60		4.00	3.16
	L0000267	478807.88	3745131.38	444.55	3.40	0.02564	8.60		4.00	3.16
	L0000268	478799.28	3745131.36	444.56	3.40	0.02564	8.60		4.00	3.16
	L0000269	478790.68	3745131.34	444.57	3.40	0.02564	8.60		4.00	3.16
	L0000270	478782.08	3745131.32	444.59	3.40	0.02564	8.60		4.00	3.16
	L0000271	478773.48	3745131.30	444.60	3.40	0.02564	8.60		4.00	3.16
	L0000272	478765.12	3745129.59	444.59	3.40	0.02564	8.60		4.00	3.16
	L0000273	478756.72	3745128.16	444.59	3.40	0.02564	8.60		4.00	3.16
	L0000274	478748.12	3745127.99	444.60	3.40	0.02564	8.60		4.00	3.16

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
INDS	L0000275	478665.23	3745154.83	445.73	3.40	0.03448	8.60		4.00	3.16
	L0000276	478662.00	3745162.80	445.87	3.40	0.03448	8.60		4.00	3.16
	L0000277	478658.78	3745170.77	445.92	3.40	0.03448	8.60		4.00	3.16
	L0000278	478655.56	3745178.75	445.86	3.40	0.03448	8.60		4.00	3.16
	L0000279	478652.33	3745186.72	445.79	3.40	0.03448	8.60		4.00	3.16
	L0000280	478649.11	3745194.69	445.76	3.40	0.03448	8.60		4.00	3.16
	L0000281	478645.52	3745202.48	445.72	3.40	0.03448	8.60		4.00	3.16
	L0000282	478641.13	3745209.88	445.77	3.40	0.03448	8.60		4.00	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
INDS	L0000283	478636.73	3745217.27	445.91	3.40	0.03448	8.60		4.00	3.16
	L0000284	478632.34	3745224.66	446.15	3.40	0.03448	8.60		4.00	3.16
	L0000285	478627.95	3745232.06	445.94	3.40	0.03448	8.60		4.00	3.16
	L0000286	478623.56	3745239.45	445.83	3.40	0.03448	8.60		4.00	3.16
	L0000287	478619.16	3745246.85	445.83	3.40	0.03448	8.60		4.00	3.16
	L0000288	478614.59	3745254.11	445.96	3.40	0.03448	8.60		4.00	3.16
	L0000289	478608.95	3745260.60	446.05	3.40	0.03448	8.60		4.00	3.16
	L0000290	478603.31	3745267.10	445.96	3.40	0.03448	8.60		4.00	3.16
	L0000291	478597.68	3745273.59	445.86	3.40	0.03448	8.60		4.00	3.16
	L0000292	478592.04	3745280.09	445.90	3.40	0.03448	8.60		4.00	3.16
	L0000293	478586.41	3745286.59	446.08	3.40	0.03448	8.60		4.00	3.16
	L0000294	478580.77	3745293.08	446.14	3.40	0.03448	8.60		4.00	3.16
	L0000295	478574.63	3745299.04	446.04	3.40	0.03448	8.60		4.00	3.16
	L0000296	478567.85	3745304.34	446.04	3.40	0.03448	8.60		4.00	3.16
	L0000297	478561.08	3745309.64	446.15	3.40	0.03448	8.60		4.00	3.16
	L0000298	478554.30	3745314.93	446.34	3.40	0.03448	8.60		4.00	3.16
	L0000299	478547.53	3745320.23	446.26	3.40	0.03448	8.60		4.00	3.16
	L0000300	478540.75	3745325.52	446.13	3.40	0.03448	8.60		4.00	3.16
	L0000301	478533.97	3745330.82	446.09	3.40	0.03448	8.60		4.00	3.16
	L0000302	478526.93	3745335.74	446.13	3.40	0.03448	8.60		4.00	3.16
	L0000303	478519.77	3745340.51	446.21	3.40	0.03448	8.60		4.00	3.16

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
INDN	L0000304	478675.78	3745158.00	445.49	3.40	0.03448	8.60		4.00	3.16
	L0000305	478672.68	3745166.02	445.53	3.40	0.03448	8.60		4.00	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
INDN	L0000306	478669.58	3745174.04	445.57	3.40	0.03448	8.60		4.00	3.16
	L0000307	478666.49	3745182.07	445.61	3.40	0.03448	8.60		4.00	3.16
	L0000308	478663.39	3745190.09	445.65	3.40	0.03448	8.60		4.00	3.16
	L0000309	478660.29	3745198.11	445.65	3.40	0.03448	8.60		4.00	3.16
	L0000310	478657.19	3745206.14	445.57	3.40	0.03448	8.60		4.00	3.16
	L0000311	478652.80	3745213.51	445.52	3.40	0.03448	8.60		4.00	3.16
	L0000312	478648.25	3745220.81	445.57	3.40	0.03448	8.60		4.00	3.16
	L0000313	478643.71	3745228.11	445.67	3.40	0.03448	8.60		4.00	3.16
	L0000314	478639.16	3745235.41	445.70	3.40	0.03448	8.60		4.00	3.16
	L0000315	478634.62	3745242.71	445.70	3.40	0.03448	8.60		4.00	3.16
	L0000316	478630.07	3745250.01	445.65	3.40	0.03448	8.60		4.00	3.16
	L0000317	478625.52	3745257.31	445.65	3.40	0.03448	8.60		4.00	3.16
	L0000318	478620.64	3745264.36	445.67	3.40	0.03448	8.60		4.00	3.16
	L0000319	478614.89	3745270.75	445.71	3.40	0.03448	8.60		4.00	3.16
	L0000320	478609.14	3745277.15	445.74	3.40	0.03448	8.60		4.00	3.16
	L0000321	478603.38	3745283.54	445.74	3.40	0.03448	8.60		4.00	3.16
	L0000322	478597.63	3745289.93	445.79	3.40	0.03448	8.60		4.00	3.16
	L0000323	478591.88	3745296.32	445.85	3.40	0.03448	8.60		4.00	3.16
	L0000324	478586.12	3745302.72	445.90	3.40	0.03448	8.60		4.00	3.16
	L0000325	478579.92	3745308.66	445.96	3.40	0.03448	8.60		4.00	3.16
	L0000326	478573.53	3745314.41	446.01	3.40	0.03448	8.60		4.00	3.16
	L0000327	478567.14	3745320.17	446.08	3.40	0.03448	8.60		4.00	3.16
	L0000328	478560.76	3745325.93	446.06	3.40	0.03448	8.60		4.00	3.16
	L0000329	478554.37	3745331.69	446.01	3.40	0.03448	8.60		4.00	3.16
	L0000330	478547.38	3745336.66	445.94	3.40	0.03448	8.60		4.00	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
INDN	L0000331	478540.14	3745341.31	445.97	3.40	0.03448	8.60		4.00	3.16
	L0000332	478532.90	3745345.95	446.08	3.40	0.03448	8.60		4.00	3.16

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ENTR	L0000333	478741.69	3745120.01	444.54	3.40	0.08333	8.60		4.00	3.16
	L0000334	478733.09	3745120.01	444.56	3.40	0.08333	8.60		4.00	3.16
	L0000335	478724.49	3745120.01	444.62	3.40	0.08333	8.60		4.00	3.16
	L0000336	478715.89	3745120.01	444.68	3.40	0.08333	8.60		4.00	3.16
	L0000337	478707.29	3745120.01	444.79	3.40	0.08333	8.60		4.00	3.16
	L0000338	478698.69	3745120.01	445.13	3.40	0.08333	8.60		4.00	3.16
	L0000339	478690.09	3745120.01	445.47	3.40	0.08333	8.60		4.00	3.16
	L0000340	478681.49	3745120.01	445.72	3.40	0.08333	8.60		4.00	3.16
	L0000341	478674.41	3745121.99	445.62	3.40	0.08333	8.60		4.00	3.16
	L0000342	478672.20	3745130.30	445.62	3.40	0.08333	8.60		4.00	3.16
	L0000343	478670.00	3745138.61	445.62	3.40	0.08333	8.60		4.00	3.16
	L0000344	478667.79	3745146.92	445.65	3.40	0.08333	8.60		4.00	3.16

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
EXIT	L0000345	478741.45	3745127.79	444.61	3.40	0.10000	8.60		4.00	3.16
	L0000346	478732.85	3745127.77	444.63	3.40	0.10000	8.60		4.00	3.16
	L0000347	478724.25	3745127.75	444.68	3.40	0.10000	8.60		4.00	3.16
	L0000348	478715.65	3745127.73	444.72	3.40	0.10000	8.60		4.00	3.16
	L0000349	478707.05	3745127.71	444.83	3.40	0.10000	8.60		4.00	3.16
	L0000350	478698.45	3745127.69	445.14	3.40	0.10000	8.60		4.00	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
EXIT	L0000351	478689.85	3745127.67	445.45	3.40	0.10000	8.60		4.00	3.16
	L0000352	478684.25	3745131.75	445.63	3.40	0.10000	8.60		4.00	3.16
	L0000353	478681.67	3745139.95	445.56	3.40	0.10000	8.60		4.00	3.16
	L0000354	478679.09	3745148.15	445.50	3.40	0.10000	8.60		4.00	3.16

Receptor Pathway

Receptor Networks

Note: Terrain Elavations and Flagpole Heights for Network Grids are in Page RE2 - 1 (If applicable)
Generated Discrete Receptors for Multi-Tier (Risk) Grid and Receptor Locations for Fenceline Grid are in Page RE3 - 1 (If applicable)

Uniform Cartesian Grid

Receptor Network ID	Grid Origin X Coordinate [m]	Grid Origin Y Coordinate [m]	No. of X-Axis Receptors	No. of Y-Axis Receptors	Spacing for X-Axis [m]	Spacing for Y-Axis [m]
UCART1	478480.00	3744820.00	40	30	20.00	20.00

Discrete Receptors

Discrete Cartesian Receptors

Record Number	X-Coordinate [m]	Y-Coordinate [m]	Group Name (Optional)	Terrain Elevations	Flagpole Heights [m] (Optional)
1	478700.66	3745175.71		444.93	
2	478714.35	3745152.30		444.79	
3	478774.40	3745152.63		444.70	
4	478875.24	3745278.42		444.90	
5	478894.29	3745296.40		445.01	
6	479206.51	3744874.76		444.42	
7	479012.42	3745021.43		444.32	
8	479037.02	3745038.39		444.24	
9	478989.68	3745239.41		444.63	
10	478934.05	3745302.25		445.00	

Plant Boundary Receptors

Receptor Pathway

Cartesian Plant Boundary

Primary

Record Number	X-Coordinate [m]	Y-Coordinate [m]	Group Name (Optional)	Terrain Elevations	Flagpole Heights [m] (Optional)
1	478687.32	3745149.19	FENCEPRI	445.33	
2	478694.38	3745119.43	FENCEPRI	445.30	
3	478700.93	3745078.25	FENCEPRI	445.04	
4	478701.76	3744986.62	FENCEPRI	444.90	
5	478703.54	3744980.27	FENCEPRI	444.82	
6	478707.98	3744975.46	FENCEPRI	444.69	
7	478712.73	3744973.17	FENCEPRI	444.63	
8	478796.68	3744972.98	FENCEPRI	444.11	
9	478810.83	3744969.91	FENCEPRI	444.14	
10	478981.03	3744970.28	FENCEPRI	443.99	
11	478981.04	3745073.76	FENCEPRI	444.02	
12	479067.48	3745074.04	FENCEPRI	444.21	
13	479067.46	3745149.85	FENCEPRI	444.36	

Intermediate

Record Number	X-Coordinate [m]	Y-Coordinate [m]	Group Name (Optional)	Terrain Elevations	Flagpole Heights [m] (Optional)
1	478690.85	3745134.31	FENCEINT	445.38	
2	478696.56	3745105.70	FENCEINT	445.22	
3	478698.75	3745091.98	FENCEINT	445.13	
4	478701.10	3745059.92	FENCEINT	445.04	
5	478701.26	3745041.60	FENCEINT	445.05	
6	478701.43	3745023.27	FENCEINT	444.99	
7	478701.59	3745004.95	FENCEINT	444.94	
8	478729.52	3744973.13	FENCEINT	444.35	
9	478746.31	3744973.09	FENCEINT	444.22	
10	478763.10	3744973.06	FENCEINT	444.17	
11	478779.89	3744973.02	FENCEINT	444.14	
12	478829.74	3744969.95	FENCEINT	444.11	
13	478848.65	3744969.99	FENCEINT	444.08	
14	478867.56	3744970.03	FENCEINT	444.05	
15	478886.47	3744970.07	FENCEINT	444.03	
16	478905.39	3744970.12	FENCEINT	444.02	
17	478924.30	3744970.16	FENCEINT	444.01	
18	478943.21	3744970.20	FENCEINT	443.98	
19	478962.12	3744970.24	FENCEINT	443.94	
20	478981.03	3744987.53	FENCEINT	443.90	
21	478981.03	3745004.77	FENCEINT	443.89	

22	478981.04	3745022.02	FENCEINT	443.90	
23	478981.04	3745039.27	FENCEINT	443.93	
24	478981.04	3745056.51	FENCEINT	443.97	
25	478998.33	3745073.82	FENCEINT	444.06	
26	479015.62	3745073.87	FENCEINT	444.13	
27	479032.90	3745073.93	FENCEINT	444.14	
28	479050.19	3745073.98	FENCEINT	444.17	
29	479067.48	3745092.99	FENCEINT	444.23	
30	479067.47	3745111.95	FENCEINT	444.27	
31	479067.47	3745130.90	FENCEINT	444.32	
32	479048.45	3745149.82	FENCEINT	444.32	
33	479029.45	3745149.78	FENCEINT	444.33	
34	479010.44	3745149.75	FENCEINT	444.37	
35	478991.43	3745149.72	FENCEINT	444.40	
36	478972.43	3745149.69	FENCEINT	444.44	
37	478953.42	3745149.65	FENCEINT	444.47	
38	478934.41	3745149.62	FENCEINT	444.49	
39	478915.40	3745149.59	FENCEINT	444.51	
40	478896.40	3745149.55	FENCEINT	444.54	
41	478877.39	3745149.52	FENCEINT	444.57	
42	478858.38	3745149.49	FENCEINT	444.58	
43	478839.38	3745149.45	FENCEINT	444.61	
44	478820.37	3745149.42	FENCEINT	444.62	
45	478801.36	3745149.39	FENCEINT	444.65	
46	478782.36	3745149.36	FENCEINT	444.68	
47	478763.35	3745149.32	FENCEINT	444.69	
48	478744.34	3745149.29	FENCEINT	444.72	
49	478725.33	3745149.26	FENCEINT	444.75	
50	478706.33	3745149.22	FENCEINT	444.86	

Receptor Groups

Record Number	Group ID	Group Description
1	FENCEPRI	Cartesian plant boundary Primary Receptors
2	FENCEINT	Cartesian plant boundary Intermediate Receptors

Meteorology Pathway

AERMOD

Met Input Data

Surface Met Data

Filename: PERI_v9.SFC
Format Type: Default AERMET format

Profile Met Data

Filename: PERI_v9.PFL
Format Type: Default AERMET format

Wind Speed

☐ Wind Speeds are Vector Mean (Not Scalar Means)

Wind Direction

Rotation Adjustment [deg]:

Potential Temperature Profile

Base Elevation above MSL (for Primary Met Tower): 442.00 [m]

Meteorological Station Data

Stations	Station No.	Year	X Coordinate [m]	Y Coordinate [m]	Station Name
Surface		2010			
Upper Air		2010			
On-Site		2010			

Data Period

Data Period to Process

Start Date: 1/1/2010 Start Hour: 1 End Date: 12/31/2016 End Hour: 24

Wind Speed Categories

Stability Category	Wind Speed [m/s]	Stability Category	Wind Speed [m/s]
A	1.54	D	8.23
B	3.09	E	10.8
C	5.14	F	No Upper Bound

Output Pathway

Tabular Printed Outputs

Short Term Averaging Period	RECTABLE Highest Values Table										MAXTABLE Maximum Values Table	DAYTABLE Daily Values Table
	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th		
1	■	☐	☐	☐	☐	☐	☐	☐	☐	☐		No

Contour Plot Files (PLOTFILE)

Path for PLOTFILES: Perris EComm.AD

Averaging Period	Source Group ID	High Value	File Name
1	ALL	1st	01H1GALL.PLT
Period	ALL	N/A	PE00GALL.PLT

HARP Proje 0/2022

PROJECT INFORMATION
HARP Version: 22118
Project Name: PERRIS ECOMM RISK
Project Out ers\ma rtinr\Deskt ECommerce HRA\ ECOMM RISK
HARP Database: NA

FACILITY INFORMATION
Origin
X (m):0
Y (m):0
Zone:1
No. of Sources:0
No. of Buildings:0

EMISSION INVENTORY
No. of Pollutants:9
No. of Background Pollutants:0

Emissions

ScrID	ProID	PolID	PolAbbrev	Multi	Annual Ems (lbs/yr)	MaxHr Ems (lbs/hr)	MWAF
CIRC	0	9901	DieselExhPM	1	0.232948	2.73E-05	1
DOCK1	0	9901	DieselExhPM	1	0.00660418	1.83E-05	1
DOCK2	0	9901	DieselExhPM	1	0.00660418	1.83E-05	1
INDS	0	9901	DieselExhPM	1	0.0958898	1.14E-05	1
INDN	0	9901	DieselExhPM	1	0.0946525	1.12E-05	1
ENTR	0	9901	DieselExhPM	1	0.046916	5.50E-06	1
PARK1	0	9901	DieselExhPM	1	0.00659165	1.83E-05	1
PARK2	0	9901	DieselExhPM	1	0.00953242	1.83E-05	1
EXIT	0	9901	DieselExhPM	1	0.0395853	4.64E-06	1

Background

PolID	Conc (ug/m^3)	MWAF

Ground lev s (\gl c\)

9901MAXHR.txt
9901PER.txt

***POLLUT ***
Health Data s\HEAL TH17320.mdb
Health Tabl 13
Official: True

PolID	InhCa	ncer	Or r	AcuteREL	InhChronic L	OralChronic EL	InhChronic8 REL
9901	1.1				5		

Residential Cancer Risk

*HARP - HRACalc v22118 5/20/2022 10:22:51 AM - Cancer Risk -

REC	GRP	NETID	X	Y	RISK_SUM	SCENARIO
1201	ALL	R1	478700.66	3745175.71	7.29E-07	30YrCancerRMP_Inh
1202	ALL	R2	478714.35	3745152.3	9.44E-07	30YrCancerRMP_Inh
1203	ALL	R3	478774.4	3745152.63	1.14E-06	30YrCancerRMP_Inh
1204	ALL	R4	478875.24	3745278.42	1.48E-07	30YrCancerRMP_Inh
1205	ALL	R5	478894.29	3745296.4	1.22E-07	30YrCancerRMP_Inh
1206	ALL	R6	479206.51	3744874.76	2.99E-08	30YrCancerRMP_Inh

Off-Site Worker Cancer Risk

*HARP - HRACalc v22118 5/20/2022 10:23:41 AM - Cancer Risk -

REC	GRP	NETID	X	Y	RISK_SUM	SCENARIO
1207	ALL	C1	479012.42	3745021.43	8.38E-09	25YrCancerDerived_Inh
1208	ALL	C2	479037.02	3745038.39	7.22E-09	25YrCancerDerived_Inh
1209	ALL	C3	478989.68	3745239.41	8.45E-09	25YrCancerDerived_Inh
1210	ALL	C4	478934.05	3745302.25	8.17E-09	25YrCancerDerived_Inh

Residential Non-Cancer Chronic Maximum HI

*HARP - HRACalc v22118 5/20/2022 10:24:05 AM - Chronic Risk -

REC	GRP	NETID	X	Y	SCENARIO	MAXHI
1201	ALL	R1	478700.66	3745175.71	NonCancerChronicDerived_Inh	1.92E-04
1202	ALL	R2	478714.35	3745152.3	NonCancerChronicDerived_Inh	2.49E-04
1203	ALL	R3	478774.4	3745152.63	NonCancerChronicDerived_Inh	3.02E-04
1204	ALL	R4	478875.24	3745278.42	NonCancerChronicDerived_Inh	3.91E-05
1205	ALL	R5	478894.29	3745296.4	NonCancerChronicDerived_Inh	3.21E-05
1206	ALL	R6	479206.51	3744874.76	NonCancerChronicDerived_Inh	7.87E-06

Off-Site Worker Non-Cancer Maximum HI

*HARP - HRACalc v22118 5/20/2022 10:24:30 AM - Chronic Risk -

REC	GRP	NETID	X	Y	SCENARIO	MAXHI
1207	ALL	C1	479012.42	3745021.43	NonCancerChronicDerived_Inh	2.71E-05
1208	ALL	C2	479037.02	3745038.39	NonCancerChronicDerived_Inh	2.33E-05
1209	ALL	C3	478989.68	3745239.41	NonCancerChronicDerived_Inh	2.73E-05
1210	ALL	C4	478934.05	3745302.25	NonCancerChronicDerived_Inh	2.64E-05