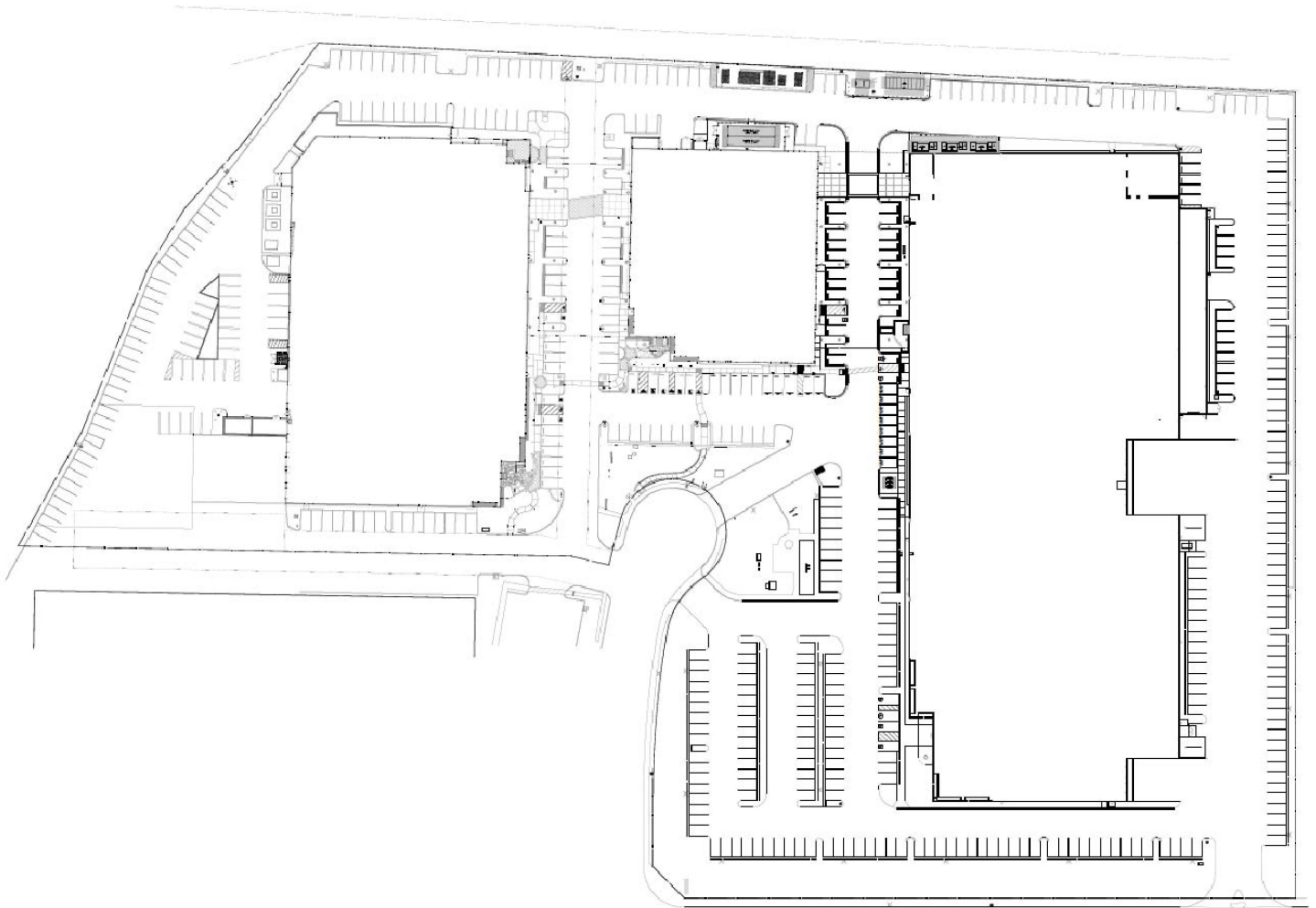


Appendix A

Air Quality and Greenhouse Gas Study

APPLIED MEDICAL BUILDING L203 EXPANSION AIR QUALITY AND GREENHOUSE GAS IMPACT STUDY City of Lake Forest, California



**APPLIED MEDICAL BUILDING L203 EXPANSION
AIR QUALITY AND GREENHOUSE GAS IMPACT STUDY
City of Lake Forest, California**

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1.0 Introduction

The purpose of this air quality and greenhouse gas (GHG) impact study is to determine whether the estimated criteria air pollutants and greenhouse gas emissions generated from the construction and operation of the proposed Applied Medical L203 Building Expansion (hereinafter referred to as project) would cause significant impacts to air resources.

This assessment was conducted within the context of the California Environmental Quality Act (CEQA, California Public Resources Code Sections 21000, et seq.). The methodology follows the California Air Resources Board (CARB), the South Coast Air Quality Management District (SCAQMD), and County of Orange recommendations for quantification of emissions and evaluation of potential impacts.

1.1 Site Location

The proposed Applied Medical L203 building facility project site is located at 20202 Windrow Drive in the City of Lake Forest. The project is located within an existing commercial business park, that consists of the Applied Medical Lake Forest Campus and the Orange County Sheriff Saddleback Station. The project site is located within the South Coast Air Basin (SCAB) and the *Saddleback Valley* air monitoring area-19.

The project site is bounded by California State Route (SR) 241 to the north, Rancho Parkway to the south, residential uses to the east, and Lake Forest Drive, Serrano Creek and the Etnies Skatepark to the west.

The project site is zoned for Urban Activity Commercial/Business Park uses in the City of Lake Forest Zoning Map and is within the Baker Ranch Planned Community area. The site is designated for Business Park uses in the City of Lake Forest General Plan Land Use Plan.

The project location map is provided in Exhibit A.

1.2 Project Description

Applied Medical currently occupies two (2) buildings within the Windrow Drive business park campus (Building L201 located at 20161 Windrow Drive, and Building L202 located at 20162 Windrow Drive) for purposes of developing and manufacturing medical devices. The project consists of expanding Applied Medical's operations into the northern portion of the 20202 Window Drive building (designated as L203 by Applied Medical). The proposed project operations within the L203 building will be similar to the existing operations within

the Applied Medical campus, which consists of research and development, manufacturing, storage and general office uses.

The southerly portion of the 20202 Windrow building will remain occupied by the Orange County Sheriff Department (OCSD).

The project is proposing to expand building L203 by approximately 33,931 square feet and also to construct a 13,253 square foot bridge that will connect building L202 and L203. The proposed bridge will primarily serve as a pedestrian foot bridge between the two buildings and will house a new central cogeneration (Cogen) power plant as well as other mechanical equipment.

The project includes multiple pieces of mechanical equipment associated with the Cogen system and heating, ventilation and exhaust (HVAC). Mechanical equipment will be located on the proposed bridge and on the roof of L203.

The site plan used for this analysis, provided by the TD ARCHITECTS, INC, is illustrated in Exhibit B. Table 1 summarizes the proposed project land uses.

**Table 1
Land Use Summary**

Land Use		Quantity	Metric
Manufacturing (L203 building)	Existing	73,168	Square Feet
	Expansion	33,931	Square Feet
	Total	107,099	Square Feet
Equipment Platform / Bridge (General Light Industry)		13,253	Square Feet

Construction of the project is estimated to begin in the year 2021 and last approximately 11 months. Construction activities are expected to consist of site preparation, grading, building construction, paving, and architectural coating. The project is expected to be operational in the year 2023.

1.3 Sensitive Receptors

Sensitive receptors are considered land uses or other types of population groups that are

more sensitive to air pollution exposure. Sensitive population groups include children, the elderly, the acutely and chronically ill, and those with cardio-respiratory diseases. For CEQA purposes, the SCAQMD considers a sensitive receptor to be a location where a sensitive individual could remain for 24-hours or longer, such as residences, hospitals, and schools (etc), as described in the Localized Significance Threshold Methodology (SCAQMD 2008a, page 3-2).

The nearest sensitive land uses are considered the residential homes located adjacent to the project site to the east of the site. Sensitive receptors are located within 25 meters of the project site.

1.4 Summary of Analysis Results

Table 2-1 provides a summary of the CEQA air quality impact analysis results according to the CEQA Guideline Appendix G Checklist.

**Table 2-1
CEQA Appendix G Air Quality Impact Criteria**

Air Quality Impact Criteria	Potentially Significant	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
<i>Would the project:</i>				
a) Conflict with, or obstruct implementation of the applicable air quality plan?			X	
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable Federal or State ambient air quality standard?			X	
c) Expose sensitive receptors to substantial pollutant concentrations?		X		
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			X	

Table 2-2 provides a summary of the CEQA air quality impact analysis results according to the City of Lake Forest CEQA Significance Thresholds Guide.

**Table 2-2
City of Lake Forest Air Quality Impact Criteria**

Air Quality Impact Criteria	Potentially Significant	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
<i>Would the project:</i>				
a) Conflict with, or obstruct implementation of the applicable air quality plan?			X	
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation. The SCAQMD construction and operational emission thresholds identified in Table (16) of this report.			X	
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including release in emissions which exceed quantitative thresholds for ozone precursors).			X1.	
d) Expose sensitive receptors to substantial pollutant concentrations. Methodologies established by SCAQMD for assessing local impacts, including but not limited to Local Significance Thresholds and thresholds for PM2.5 are used for this assessment.		X		
e) Create objectionable odors affecting a substantial number of people.			X	
f) A project will be considered to result in a cumulatively considerable net increase of any criteria pollutants for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors) where the incremental effect of the project emissions, considered together with past, present, and reasonably anticipated further project emissions, increase the level of any criteria pollutant above the existing ambient level.			X	

Table 3 provides a summary of the CEQA GHG impact criteria analysis results.

**Table 3
CEQA GHG Impact Criteria**

GHG Impact Criteria	Potentially Significant	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
<i>Would the project:</i>				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of greenhouse gases?			X	

1.5 Recommended Mitigation Measures

The following mitigation measures are recommended to help ensure the project does not expose sensitive receptors to substantial pollutant concentrations. In particular, given the close proximity of sensitive receptors, residential use to the west, several standard construction best practices have been included as mitigation to ensure adequate enforcement and compliance.

Mitigation Measures:

MM-1 The project must follow the standard SCAQMD rules and requirements with regards to fugitive dust control, which includes, but are not limited to the following:

1. All active construction areas shall be watered two (2) times daily.
2. Speed on unpaved roads shall be reduced to less than 15 mph.
3. Any visible dirt deposition on any public roadway shall be swept or washed at the site access points within 30 minutes.
4. Any on-site stockpiles of debris, dirt or other dusty material shall be covered or watered twice daily.
5. All operations on any unpaved surface shall be suspended if winds exceed 15 mph.
6. Access points shall be washed or swept daily.
7. Construction sites shall be sandbagged for erosion control.

8. Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for 10 days or more).
9. Cover all trucks hauling dirt, sand, soil, or other loose materials, and maintain at least 2 feet of freeboard space in accordance with the requirements of California Vehicle Code (CVC) section 23114.
10. Pave or gravel construction access roads at least 100 feet onto the site from the main road and use gravel aprons at truck exits.
11. Replace the ground cover of disturbed areas as quickly possible.
12. A fugitive dust control plan should be prepared and submitted to SCAQMD prior to the start of construction.

MM-2 All diesel-powered off-road construction equipment with 25 horsepower or greater shall be equipped with Tier 4 engines. Prior to issuance of the grading permit, the contractor must demonstrate the ability to supply the compliant construction equipment.

MM-3 Prepare and implement a Construction Management Plan which will include Best Available Control Measures to be submitted to the City of Lake Forest.

MM-4 Construction equipment shall be maintained in proper tune.

MM-5 All construction vehicles shall be prohibited from excessive idling. Excessive idling is defined as five (5) minutes or longer.

MM-6 Minimize the simultaneous operation of multiple construction equipment units.

MM-7 The use of heavy construction equipment and earthmoving activity should be suspended during Air Alerts when the Air Quality Index reaches the "Unhealthy" level.

MM-8 Establish an electricity supply to the construction site and use electric powered equipment instead of diesel-powered equipment or generators, where feasible.

MM-9 Establish staging areas for the construction equipment that are as distant as possible from adjacent sensitive receptors (residential land uses).

MM-10 Use haul trucks with on-road engines instead of off-road engines for on-site hauling.

MM-11 Utilize low VOC and no VOC paints and solvents, where feasible.

MM-12 Obtain all necessary Air Permits from SCAQMD to operate the boilers and associated equipment with the Cogen facility.

MM-13 Install signage at loading dock areas informing truck deliveries that idling more than 5 minutes is prohibited.

1.6 Project Design Features

The following project design features are considered standard building code requirements and best practices that will be included in the project design to will help reduce Greenhouse Gas emissions.

DF-1. The project will comply with the mandatory requirements of Title 24 part 11 of the California Building Standards Code (CALGreen) and the Title 24 Part 6 Building Efficiency Standards (Energy Code).

2.0 Air Quality Setting

The Federal Clean Air Act (§ 7602) defines air pollution as any agent or combination of such agents, including any physical, chemical, biological, or radioactive substance which is emitted into or otherwise enters the ambient air. Household combustion devices, motor vehicles, industrial facilities and forest fires are common sources of air pollution. Air pollution can cause disease, allergies and death. It affects soil, water, crops, vegetation, manmade materials, animals, wildlife, weather, visibility, and climate. It can also cause damage to and deterioration of property, present hazards to transportation, and negatively impact the economy.

This section provides background information on criteria air pollutants, the applicable federal, state and local regulations concerning air pollution, and the existing physical setting of the project within the context of local air quality.

2.1 Description of Air Pollutants¹.

The following section describes the air pollutants of concern related to the project. Criteria air pollutants are defined as those pollutants for which the federal and state governments have established air quality standards for outdoor or ambient concentrations to protect public health. The following descriptions of criteria air pollutants have been provided by the SCAQMD.

- **Carbon Monoxide (CO)** is a colorless, odorless, toxic gas produced by incomplete combustion of carbon-containing fuels (e.g., gasoline, diesel fuel, and biomass). Sources include motor vehicle exhaust, industrial processes (metals processing and chemical manufacturing), residential wood burning, and natural sources. CO is somewhat soluble in water; therefore, rainfall and fog can suppress CO conditions. CO enters the body through the lungs, dissolves in the blood, and competes with oxygen, often replacing it in the blood, thus reducing the blood's ability to transport oxygen to vital organs in the body. The ambient air quality standard for carbon monoxide is intended to protect persons whose medical condition already compromises their circulatory system's ability to deliver oxygen. These medical conditions include certain heart ailments, chronic lung diseases, and anemia. Persons with these conditions have reduced exercise capacity even when exposed to relatively low levels of CO. Fetuses are at risk because their blood has an even greater affinity to bind with CO. Smokers are also at risk from ambient CO levels because smoking

¹ SCAQMD. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning (May 6, 2005)

increases the background level of CO in their blood. The South Coast basin has recently achieved attainment status for carbon monoxide by both USEPA and CARB.

- **Nitrogen Dioxide (NO₂)** is a byproduct of fuel combustion. The principal form of nitrogen oxide produced by combustion is nitric oxide (NO), but NO reacts quickly to form NO₂, creating the mixture of NO and NO₂ commonly called NO_x. NO₂ acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, NO₂ is only potentially irritating. There is some indication of a relationship between NO₂ and chronic pulmonary fibrosis. Some increase in bronchitis in young children has also been observed at concentrations below 0.3 parts per million (ppm). NO₂ absorbs blue light which results in a brownish red cast to the atmosphere and reduced visibility. Although NO₂ concentrations have not exceeded national standards since 1991 and the state hourly standard since 1993, NO_x emissions remain of concern because of their contribution to the formation of O₃ and particulate matter.
- **Ozone (O₃)** is one of a number of substances called photochemical oxidants that are formed when volatile organic compounds (VOC) and NO_x react in the presence of ultraviolet sunlight. O₃ concentrations in the South Coast basin are typically among the highest in the nation, and the damaging effects of photochemical smog, which is a popular name for a number of oxidants in combination, are generally related to the concentrations of O₃. Individuals exercising outdoors, children, and people with preexisting lung disease, such as asthma and chronic pulmonary lung disease, are considered to be the subgroups most susceptible to O₃ effects. Short-term exposures (lasting for a few hours) to O₃ at levels typically observed in southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. In recent years, a correlation between elevated ambient O₃ levels and increases in daily hospital admission rates, as well as mortality, has also been reported. The South Coast Air Basin is designated by the USEPA as an extreme non-attainment area for ozone. Although O₃ concentrations have declined substantially since the early 1990s, the South Coast basin continues to have peak O₃ levels that exceed both state and federal standards.
- **Fine Particulate Matter (PM₁₀)** consists of extremely small suspended particles or droplets 10 microns or smaller in diameter that can lodge in the lungs, contributing to respiratory problems. PM₁₀ arises from such sources as re-entrained road dust, diesel soot, combustion products, tire and brake abrasion, construction operations, and fires. It is also formed in the atmosphere from NO_x and SO₂ reactions with ammonia. PM₁₀ scatters light and significantly reduces visibility. Inhalable particulates

pose a serious health hazard, alone or in combination with other pollutants. More than half of the smallest particles inhaled will be deposited in the lungs and can cause permanent lung damage. Inhalable particulates can also have a damaging effect on health by interfering with the body's mechanism for clearing the respiratory tract or by acting as a carrier of an absorbed toxic substance. The South Coast basin has recently achieved federal attainment status for PM₁₀, but is non-attainment based on state requirements.

- **Ultra-Fine Particulate Matter (PM_{2.5})** is defined as particulate matter with a diameter less than 2.5 microns and is a subset of PM₁₀. PM_{2.5} consists mostly of products from the reaction of NO_x and SO₂ with ammonia, secondary organics, finer dust particles, and the combustion of fuels, including diesel soot. PM_{2.5} can cause exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease, declines in pulmonary function growth in children, and increased risk of premature death from heart or lung diseases in the elderly. Daily fluctuations in PM_{2.5} levels have been related to hospital admissions for acute respiratory conditions, school absences, and increased medication use in children and adults with asthma. The South Coast basin is designated as non-attainment for PM_{2.5} by both federal and state standards.
- **Sulfur dioxide (SO₂)** is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. Health effects include acute respiratory symptoms and difficulty in breathing for children. Individuals with asthma may experience constriction of airways with exposure to SO₂. Though SO₂ concentrations have been reduced to levels well below state and federal standards, further reductions in SO₂ emissions are needed because SO₂ is a precursor to sulfate and PM₁₀. The South Coast basin is considered a SO₂ attainment area by USEPA and CARB.
- **Lead (Pb)** is a toxic heavy metal that can be emitted into the air through some industrial processes, burning of leaded gasoline and past use of lead-based consumer products. Lead is a neurotoxin that accumulates in soft tissues and bones, damages the nervous system, and causes blood disorders. It is particularly problematic in children, in that permanent brain damage may result, even if blood levels are promptly normalized with treatment. Concentrations of lead once exceeded the state and federal air quality standards by a wide margin, but as a result of the removal of lead from motor vehicle gasoline, ambient air quality standards for lead have not been exceeded since 1982. Though special monitoring sites immediately downwind of lead sources recorded localized violations of the state standard in 1994, no violations have been recorded since. Consequently, the South Coast basin is designated as an attainment area for lead by both the USEPA and CARB. This report

does not analyze lead emissions from the project, as it is not expected to emit lead in any significant measurable quantity.

- **Volatile Organic Compounds (VOC)**, although not actually a criteria air pollutant, VOCs are regulated by the SCAQMD because they cause chemical reactions which contribute to the formation of ozone. VOCs are also transformed into organic aerosols in the atmosphere, contributing to higher PM₁₀ and lower visibility levels. Sources of VOCs include combustion engines, and evaporative emissions associated with fuel, paints and solvents, asphalt paving, and the use of household consumer products such as aerosols. Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations of VOC. Some hydrocarbon components classified as VOC emissions are hazardous air pollutants. Benzene, for example, is a hydrocarbon component of VOC emissions that are known to be a human carcinogen. The term reactive organic gases (ROG) are often used interchangeably with VOC.
- **Toxic Air Contaminants (TACs)** are defined as air pollutants which may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health, and for which there is no concentration that does not present some risk. This contrasts with the criteria pollutants, in that there is no threshold level for TAC exposure below which adverse health impacts are not expected to occur. The majority of the estimated health risk from TACs can be attributed to a relatively few compounds, the most common being diesel particulate matter (DPM) from diesel engine exhaust. In addition to DPM, benzene and 1,3-butadiene are also significant contributors to overall ambient public health risk in California.

2.2 Federal and State Ambient Air Quality Standards

The Federal Clean Air Act, which was last amended in 1990, requires the EPA to set National Ambient Air Quality Standards (NAAQS) for criteria pollutants considered harmful to public health and the environment. The State of California has also established additional and more stringent California Ambient Air Quality Standards (CAAQS) in addition to the seven criteria pollutants designated by the federal government.

AAQS are designed to protect the health and welfare of the populace with a reasonable margin of safety. The standards are divided into two categories, primary standards and secondary standards. Primary standards are implemented to provide protection for the "sensitive" populations such as those with asthma, or the children and elderly. Secondary standards are to provide protection against visible pollution as well as damage to the surrounding environment, including animals, crops, and buildings.

Table 4 shows the Federal and State Ambient Air Quality Standards.

**Table 4
Federal and State Ambient Air Quality Standards (AAQS)¹**

Air Pollutant	Averaging Time ²	Federal Standard (NAAQS) ²	California Standard (CAAQS) ²
Ozone	1 Hour	--	0.09 ppm
	8 Hour	0.070 ppm	0.070 ppm
Carbon Monoxide (CO)	1 Hour	35 ppm	20 ppm
	8 Hour	9 ppm	9 ppm
Nitrogen Dioxide (NO ₂)	1 Hour	0.100 ppm	0.18 ppm
	Annual	0.053 ppm	0.030 ppm
Sulfur Dioxide (SO ₂)	1 Hour	0.075 ppm	0.25 ppm
	3 Hour	0.5 ppm ³	--
	24 Hour	--	0.04 ppm
Particulate Matter (PM ₁₀)	24 Hour	150 µg/m ³	50 µg/m ³
	Mean	--	20 µg/m ³
Particulate Matter (PM _{2.5})	24 Hour	35 µg/m ³	--
	Annual	12 µg/m ³	12 µg/m ³
Lead	30-day	--	1.5 µg/m
	Quarter	1.5 µg/m	--
	3-month average	0.15 µg/m	--
Visibility reducing particles	8 Hour	--	0.23/km extinction coefficient. (10-mile visibility standard)
Sulfates	24 Hour	--	25 µg/m
Vinyl chloride	24 Hour	--	0.01 ppm
Hydrogen sulfide	24 Hour	--	0.03 ppm

¹ Source: USEPA: <https://www.epa.gov/criteria-air-pollutants/naaqs-table> and

CARB: <https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards>

² ppm = parts per million of air, by volume; µg/m³ = micrograms per cubic meter; Annual = Annual Arithmetic Mean; 30-day = 30-day average; Quarter = Calendar quarter.

³ Secondary standards

Several pollutants listed in Table 4 are not addressed in this analysis. Lead is not included because the project is not anticipated to emit lead. Visibility-reducing particles are not explicitly addressed in this analysis because particulate matter is addressed. The project is not expected to generate or be exposed to vinyl chloride because proposed project uses do not utilize the chemical processes that create this pollutant and there are no such uses in the project vicinity. The proposed project is not expected to cause exposure to hydrogen sulfide because it would not generate hydrogen sulfide in any substantial quantity.

2.3 Attainment Status

The Clean Air Act requires states to prepare a State Implementation Plan (SIP) to ensure air quality meets the NAAQS. The California Air Resources Board (CARB) provides designations of attainment for air basins where AAQS are either met or exceeded. If the AAQS are met, the area is designated as being in “attainment”, if the air pollutant concentrations exceed the AAQS, than the area is designated as being “nonattainment”. If there is inadequate or inconclusive data to make a definitive attainment designation, the area is considered “unclassified.”

National nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards. Each standard has a different definition, or ‘form’ of what constitutes attainment, based on specific air quality statistics. For example, the Federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the federal annual PM_{2.5} standard is met if the three-year average of the annual average PM_{2.5} concentration is less than or equal to the standard.

When a state submits a request to the EPA to re-designate a nonattainment area to attainment, the Clean Air Act (CAA) section 175A(a) requires that the state (or states, if the area is a multi-state area) submit a maintenance plan ensuring the area can maintain the air quality standard for which the area is to be re-designated for at least 10 years following the effective date of re-designation. Table 5 lists the attainment status for the criteria pollutants in the South Coast Air Basin (SCAB).

Table 5
South Coast Air Basin Attainment Status¹

Pollutant	State Status	National Status
Ozone	Nonattainment	Nonattainment (Extreme) ²
Carbon monoxide	Attainment	Attainment (Maintenance)
Nitrogen dioxide	Attainment	Attainment (Maintenance)
PM ₁₀	Nonattainment	Attainment (Maintenance)
PM _{2.5}	Nonattainment	Nonattainment
Lead	Attainment	Nonattainment (Partial) ³

¹ Source: California Air Resources Board. <http://www.arb.ca.gov/desig/adm/adm.htm>

² 8-Hour Ozone.

³ Partial Nonattainment designation – Los Angeles County portion of Basin only.

2.4 South Coast Air Quality Management District (SCAQMD)

The agency responsible for air pollution control for the South Coast Air Basin (SCAB) is the South Coast Air Quality Management District (SCAQMD). SCAQMD is responsible for controlling emissions primarily from stationary sources. SCAQMD maintains air quality monitoring stations throughout the SCAB. SCAQMD, in coordination with the Southern California Association of Governments, is also responsible for developing, updating, and implementing the Air Quality Management Plan (AQMP) for the SCAB. An AQMP is a plan prepared and implemented by an air pollution district for a county or region designated as nonattainment of the federal and/or California ambient air quality standards. The term nonattainment area is used to refer to an air SCAB where one or more ambient air quality standards are exceeded.

Every three (3) years the SCAQMD prepares a new AQMP, updating the previous plan and having a 20-year horizon. The latest version is the 2016 AQMP. The 2016 AQMP is a regional blueprint for achieving the federal air quality standards and healthful air. While air quality has dramatically improved over the years, the SCAB still exceeds federal public health standards for both ozone and particulate matter (PM) and experiences some of the worst air pollution in the nation. The 2016 AQMP includes both stationary and mobile source strategies to ensure that rapidly approaching attainment deadlines are met, that public health is protected to the maximum extent feasible, and that the region is not faced with burdensome sanctions if the Plan is not approved or if the NAAQS are not met on time.

The most significant air quality challenge in the SCAB is to reduce nitrogen oxide (NOx) emissions sufficiently to meet the upcoming ozone standard deadlines. Based on the inventory and modeling results, 522 tons per day (tpd) of total SCAB NOx 2012 emissions are projected to drop to 255 tpd and 214 tpd in the 8-hour ozone attainment years of 2023 and 2031 respectively, due to continued implementation of already adopted regulatory actions (“baseline emissions”). The analysis suggests that total SCAB emissions of NOx must be reduced to approximately 141 tpd in 2023 and 96 tpd in 2031 to attain the 8-hour ozone standards. This represents an additional 45 percent reduction in NOx in 2023, and an additional 55 percent NOx reduction beyond 2031 levels.

The SCAQMD establishes a program of rules and regulations to obtain attainment of the state and federal standards in conjunction with the AQMP. Several of the rules and regulations that may be applicable to this project include, but are not limited to, the following:

SCAQMD Rule 402 prohibits a person from discharging from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

SCAQMD Rule 403 governs emissions of fugitive dust during construction and operation activities. Compliance with this rule is achieved through application of standard Best Management Practices, such as application of water or chemical stabilizers to disturbed soils, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 miles per hour, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph, and establishing a permanent ground cover on finished sites.

SCAQMD Rule 445 restricts wood burning devices from being installed into any new development and is intended to reduce the emissions of particulate matter for wood burning devices.

SCAQMD Rule 1113 governs the sale, use, and manufacturing of architectural coating and limits the VOC content in paints and paint solvents. This rule regulates the VOC content of paints available during construction. Therefore, all paints and solvents used during construction and operation of project must comply with Rule 1113.

SCAQMD Rule 1143 governs the manufacture, sale, and use of paint thinners and solvents used in thinning of coating materials, cleaning of coating application equipment,

and other solvent cleaning operations by limiting their VOC content. This rule regulates the VOC content of solvents used during construction. Solvents used during the construction phase must comply with this rule.

SCAQMD Rule 1186 limits the presence of fugitive dust on paved and unpaved roads and sets certification protocols and requirements for street sweepers that are under contract to provide sweeping services to any federal, state, county, agency or special district such as water, air, sanitation, transit, or school district.

SCAQMD Rule 1303 governs the permitting of re-located or new major emission sources, requiring Best Available Control Measures and setting significance limits for PM10 among other pollutants.

SCAQMD Rule 2202 On-Road Motor Vehicle Mitigation Options, is to provide employers with a menu of options to reduce mobile source emissions generated from employee commutes, to comply with federal and state Clean Air Act requirements, Health & Safety Code Section 40458, and Section 182(d)(1)(B) of the federal Clean Air Act. It applies to any employer who employs 250 or more employees on a full or part-time basis at a worksite for a consecutive six-month period calculated as a monthly average.

2.5 South Coast Air Basin

The project is located within the South Coast Air Basin (SCAB). To the west of the SCAB is the Pacific Ocean. To the north and east are the San Gabriel, San Bernardino, and San Jacinto mountains, while the southern limit of the SCAB is the San Diego County line. The SCAB consists of Orange County, all of Los Angeles County except for the Antelope Valley, the non-desert portion of western San Bernardino County, and the western and Coachella Valley portions of Riverside County.

The local dominant wind blows predominantly from the south-southwest with relatively low velocities. The annual average annual wind speed is about 10 miles per hour. Summer wind speeds average slightly higher than winter wind speeds. Low average wind speeds, together with a persistent temperature inversion limit the vertical dispersion of air pollutants throughout the SCAB.

The region also experiences periods of hot, dry winds from the desert, known as Santa Ana winds. If the Santa Ana winds are strong, they can surpass the sea breeze, which blows from the ocean to the land, and carry the suspended dust and pollutants out to the ocean. If the winds are weak, they are opposed by the sea breeze and cause stagnation, resulting in high pollution events.

The annual average temperature varies little throughout much of the SCAB, ranging from the low to middle 60s (°F). With more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas.

The mountains surrounding the region form natural horizontal barriers to the dispersion of air contaminants. Air pollution created in the coastal regions and Los Angeles metropolitan area are transported inland until reaching the mountains, where the combination of mountains and temperature inversion layers generally prevent further dispersion. This poor ventilation results in a gradual degradation of air quality from the coastal areas to inland areas of the SCAB. Air stagnation may occur during the early evening and early morning periods of transition between day and nighttime flows.

Temperature inversions are an important feature that limits the vertical depth through which pollution can be mixed. During the summer, coastal areas are characterized by a sharp discontinuity between the cool marine air at the surface and the warm, sinking air aloft within the high-pressure cell over the ocean to the west. This marine/subsidence inversion allows for good local mixing, but acts like a giant lid over the SCAB. The air remains stagnant, as the average wind speed in downtown Los Angeles becomes less than five mph.

The second type of inversion forms on clear winter nights when cold air off the mountains sinks to the valley floor while the air aloft over the valley remains warm. This forms radiation inversions. These inversions, in conjunction with calm winds, trap pollutants such as those from automobile exhaust near their source. They lead to air pollution “hotspots” in heavily developed coastal areas of the SCAB, although onshore breezes often push the pollutants along canyons into the inland valleys. Summers are often periods of hazy visibility and occasionally unhealthy air, while winter air quality impacts tend to be highly localized and can consist of elevated levels of nitrogen dioxide and fine particulate matter.

2.6 Local Climate and Meteorology

The weather station closest to the project site is a National Weather Service Cooperative weather station located at Irvine RCH Station, (044303). Climatological data from the National Weather Service at this station is summarized in Table 6.

**Table 6
Meteorological Summary¹**

Month	Temperature (°F)			Mean Precipitation (inches) Max.
	Max.	Min.	Mean	
January	69.9	46.0	58.0	2.57
February	69.6	45.3	57.5	3.10
March	74.4	46.5	60.4	0.61
Total	75.8	48.3	62.0	0.98
May	79.0	52.9	65.9	0.29
June	81.6	56.1	68.9	0.04
July	88.6	59.7	74.1	0.05
August	90.1	60.0	75.0	0.01
September	89.1	58.3	73.7	0.08
October	81.1	53.6	67.4	1.35
November	75.0	49.7	62.4	0.86
December	66.7	45.4	56.0	3.11
Annual	78.4	51.8	65.1	13.05

¹ Source: Western Regional Climate Center 2012. Averages derived from measurements recorded between 2003 and 2012 at Irvine RCH No. 044303.

2.7 Local Air Quality

The air quality at any site is dependent on the regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the air basin. Estimates of the existing emissions in the Basin provided in the Final 2016 Air Quality Management Plan, prepared by SCAQMD, March 2017, indicate that collectively, mobile sources account for 60 percent of the VOC, 90 percent of the NOx emissions, 95 percent of the CO emissions and 34 percent of directly emitted PM2.5, with another 13 percent of PM2.5 from road dust.

The SCAQMD has divided the SCAB into fourteen general forecasting areas and thirty eight Source Receptor Areas (SRA) for monitoring and reporting local air quality. The SCAQMD provides daily reports of the current air quality conditions in each general forecast area and SRA. The monitoring areas provide a general representation of the local meteorological, terrain, and air quality conditions within the SCAB.

The project is located within the Metropolitan general forecasting area and Saddleback Valley air monitoring area (SRA-19).

Table 7 summarizes the published air quality monitoring data from 2017 through 2019, which is the most recent 3-year period available. These pollutant levels were used to comprise a “background” for the project location and existing local air quality. For criteria pollutants not monitored at the Saddleback Valley station, data from the nearest monitoring station with a comparable setting were used.

**Table 7
Local Air Quality**

Air Pollutant Location	Averaging Time	Item	2017	2018	2019
Carbon Monoxide -- Saddleback Valley	1 Hour	Max 1-Hour (ppm)	1.4	1.2	1.0
		Exceeded State Standard (20 ppm)	No	No	No
		Exceeded National Standard (35 ppm)	No	No	No
	8 Hour	Max 8 Hour (ppm)	0.9	0.9	0.8
		Exceeded State Standard (9 ppm)	No	No	No
		Exceeded National Standard (9 ppm)	No	No	No
Ozone -- Saddleback Valley	1 Hour	Max 1-Hour (ppm)	0.103	0.121	0.106
		Days > State Standard (0.09 ppm)	3	2	3
	8 Hour	Max 8 Hour (ppm)	0.083	0.088	0.087
		Days > State Standard (0.07 ppm)	25	9	11
		Days > National Standard (0.07 ppm)	25	9	11
Nitrogen Dioxide -- Saddleback Valley	1 Hour	Max 1-Hour (ppm)	0.049	0.0413	0.038
		Exceeded State Standard (0.18 ppm)	No	No	No
	Annual	Annual Average (ppm)	0.0082	0.0085	0.0068
		Exceeded >State Standard (0.030 ppm)	No	No	No
		Exceeded >National Standard (0.053 ppm)	No	No	No
Sulfur Dioxide -- Saddleback Valley	1 Hour	Max 1 Hour (ppm)	--	--	--
		Exceed State Standard (0.25 ppm)	--	--	--
		Exceed National Standard (0.075 ppm)	--	--	--
Coarse Particles (PM10) -- Saddleback Valley	24 Hour	Max 24-Hour ($\mu\text{g}/\text{m}^3$)	58	55	45
		Days > State Standard ($50 \mu\text{g}/\text{m}^3$)	1	1	0
		Days > National Standard ($150 \mu\text{g}/\text{m}^3$)	0	0	0
	Annual	Annual Average ($\mu\text{g}/\text{m}^3$)	18.4	19.0	16.6
		Exceeded State Standard ($20 \mu\text{g}/\text{m}^3$)	No	No	No
Fine Particulates (PM2.5) -- Saddleback Valley	24 Hour	Max 24-Hour ($\mu\text{g}/\text{m}^3$)	19.59	20.8	20.8
		Days > National Standard ($35 \mu\text{g}/\text{m}^3$)	0	0	0
	Annual	Annual Average ($\mu\text{g}/\text{m}^3$)	7.9	8.31	7.11
		Exceeded State Standard ($12 \mu\text{g}/\text{m}^3$)	No	No	No
		Exceeded National Standard ($15 \mu\text{g}/\text{m}^3$)	No	No	No

Source: <https://www.aqmd.gov/home/air-quality/historical-air-quality-data/historical-data-by-year>

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

ARB = California Air Resource Board

EPA= Environmental Protection Agency

ppm = part per million

(- -) = Data not provided

3.0 Global Climate Change Setting

Global climate change is the change in the average weather of the earth that is measured by such things as alterations in temperature, wind patterns, storms, and precipitation. Current data shows that the recent period of warming is occurring more rapidly than past geological events. The average global surface temperature has increased by approximately 1.4° Fahrenheit since the early 20th Century. 1.4° Fahrenheit may seem like a small change, but it's an unusual event in Earth's recent history, and as we are seeing, even small changes in temperature can cause enormous changes in the environment.

The planet's climate record, preserved in tree rings, ice cores, and coral reefs, shows that the global average temperature has been stable over long periods of time. For example, at the end of the last ice age, when the Northeast United States was covered by more than 3,000 feet of ice, average global temperatures were only 5° to 9° Fahrenheit cooler than today. The Intergovernmental Panel on Climate Change (IPCC), which includes more than 1,300 scientists from the United States and other countries, forecasts a temperature rise of 2.5° to 10° Fahrenheit over the next century. Therefore, significant changes to the environment are expected in the near future.

The consequences of global climate change include more frequent and severe weather, worsening air pollution by increasing ground level ozone, higher rates of plant and animal extinction, more acidic and oxygen depleted oceans, strain on food and water resources, and threats to densely populated coastal and low lying areas from sea level rise.

The impacts of climate change are already visible in the Southwest United States. In California, the consequences of climate change include;

- A rise in sea levels resulting in the displacement of coastal businesses and residencies
- A reduction in the quality and supply of water from the Sierra snowpack
- Increased risk of large wildfires
- Exacerbation of air quality problems
- Reductions in the quality and quantity of agricultural products
- An increased temperature and extreme weather events
- A decrease in the health and productivity of California's forests

3.1 Greenhouse Gases

Most scientists agree the main cause of the current global warming trend is anthropogenic (human-induced) augmentation of the greenhouse effect. The greenhouse effect refers to the way gases in the earth's atmosphere trap and re-emits long wave infrared radiation, acting like a blanket insulating the earth. Activities such as fossil fuel combustion, industrial processes, agriculture, and waste decomposition have elevated the concentration of greenhouse gases in the atmosphere beyond the level of naturally occurring concentrations.

GHGs comprise less than 0.1 percent of the total atmospheric composition, yet they play an essential role in influencing climate. Greenhouse gases include naturally occurring compounds such as carbon dioxide (CO₂), methane (CH₄), water vapor (H₂O), and nitrous oxide (N₂O), while others are synthetic. Man-made GHGs include the chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs) and Perfluorocarbons (PFCs), as well as sulfur hexafluoride (SF₆). Different GHGs have different effects on the Earth's warming. GHGs differ from each other in their ability to absorb energy (their "radiative efficiency") and how long they stay in the atmosphere, also known as the "lifetime".

The Global Warming Potential (GWP) was developed to allow comparisons of the global warming impacts of different gases. Specifically, it is a measure of how much energy the emissions of 1 ton of a gas will absorb over a given period of time, relative to the emissions of 1 ton of CO₂. The larger the GWP, the more than a given gas warms the Earth compared to CO₂ over that time period. The time period usually used for GWPs is 100 years. GWPs provide a common unit of measure, which allows analysts to add up emissions estimates of different gases and allows policymakers to compare emissions reduction opportunities across sectors and gases.

Table 8 lists the 100-year GWP of GHGs from the Intergovernmental Panel on Climate Change (IPCC) fifth assessment report (AR5).

Table 8
Global Warming Potential of Greenhouse Gases^{1, 2}

Gas Name	Formula	Lifetime (years)	GWP
Carbon Dioxide	CO ₂		1
Methane	CH ₄	12	28
Nitrous Oxide	N ₂ O	114	265
Sulphur Hexafluoride	SF ₆	3200	23,500
Nitrogen Trifluoride	NF ₃	740	16,100
Hexafluoroethane (PFC-116)	C ₂ F ₆	10,000	11,100
Octafluoropropane (PFC-218)	C ₃ F ₈	2,600	8,900
Octafluorocyclobutane (PFC-318)	C ₄ F ₈	3,200	9,540
Tetrafluoromethane (PFC-14)	CF ₄	50,000	6,630
Hydrofluorocarbon 125	HFC-125	29	3,170
Hydrofluorocarbon 134a	HFC-134a	14	1,300
Hydrofluorocarbon 143a	HFC-143a	52	4,800
Hydrofluorocarbon 152a	HFC-152a	1	138
Hydrofluorocarbon 227ea	HFC-227ea	34	3,350
Hydrofluorocarbon 23	HFC-23	270	12,400
Hydrofluorocarbon 236fa	HFC-236fa	240	8,060
Hydrofluorocarbon 245fa	HFC-245fa	8	858
Hydrofluorocarbon 32	HFC-32	5	677
Hydrofluorocarbon 365mfc	HFC-365mfc	9	804
Hydrofluorocarbon 43-10mee	HFC-43-10mee	16	1,650

¹ Source: IPCC Fifth Assessment Report (AR5)

https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_Chapter08_FINAL.pdf

² GWPs are used to convert GHG emission values to "carbon dioxide equivalent" (CO₂e) units

3.2 GHG Regulatory Setting - International

Intergovernmental Panel on Climate Change. In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change to assess the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation.

United Nations. The United States participates in the United Nations Framework Convention on Climate Change (UNFCCC) (signed on March 21, 1994). Under the Convention, governments gather and share information on greenhouse gas emissions, national policies, and best practices; launch national strategies for addressing greenhouse gas emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change. The 2014 UN Climate Change Conference in Lima Peru provided a unique opportunity to engage all countries to assess how developed countries are implementing actions to reduce emissions.

Kyoto Protocol. The Kyoto Protocol is a treaty made under the UNFCCC and was the first international agreement to regulate GHG emissions. It has been estimated that if the commitments outlined in the Kyoto Protocol are met, global GHG emissions could be reduced by an estimated 5 percent from 1990 levels during the first commitment period of 2008 – 2012 (UNFCCC 1997). On December 8, 2012, the Doha Amendment to the Kyoto Protocol was adopted. The amendment includes: New commitments for Annex I Parties to the Kyoto Protocol who agreed to take on commitments in a second commitment period from 2013 – 2020, a revised list of greenhouse gases (GHG) to be reported on by Parties in the second commitment period, and Amendments to several articles of the Kyoto Protocol, which specifically referenced issues pertaining to the first commitment period and which needed to be updated for the second commitment period.

The Paris Agreement. The Paris agreement is the first comprehensive global climate agreement to be ratified by the United States, United Nations, China, and India; the largest producers of greenhouse gas emissions in the world. The agreement was negotiated by a total of 195 nations and entered into force on November 4, 2016. The central aim is to strengthen the global response to the threat of climate change by keeping the global temperature rise this century well below 2 degrees Celsius compared to pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius.

Additionally, the agreement aims to strengthen the ability of countries to deal with the impacts of climate change. Currently, 123 parties have ratified the agreement.

3.3 GHG Regulatory Setting – National

Greenhouse Gas Endangerment. On December 2, 2009, the EPA announced that GHGs threaten the public health and welfare of the American people. The EPA also states that GHG emissions from on-road vehicles contribute to that threat. The decision was based on *Massachusetts v. EPA* (Supreme Court Case 05-1120) which argued that GHGs are air pollutants covered by the Clean Air Act and that the EPA has authority to regulate those emissions.

Clean Vehicles. Congress first passed the Corporate Average Fuel Economy (CAFE) law in 1975 to increase the fuel economy of cars and light duty trucks. The law has become more stringent over time. On May 19, 2009, President Obama put in motion a new national policy to increase fuel economy for all new cars and trucks sold in the United States. On April 1, 2010, the EPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) announced a joint final rule establishing a national program that would reduce greenhouse gas emissions and improve fuel economy for new cars and trucks sold in the United States.

The first phase of the national program applied to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They required these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide per mile, equivalent to 35.5 miles per gallon if the automobile industry were to meet this carbon dioxide level solely through fuel economy improvements. Together, these standards were estimated to cut carbon dioxide emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016).

The second phase of the national program for passenger cars, light-duty trucks, and medium-duty passenger vehicles covers model years 2017 through 2025. The final standards were established in 2012 and were projected to result in an average industry fleetwide level of 163 grams/mile of carbon dioxide (CO₂) in model year 2025, which is equivalent to 54.5 miles per gallon (mpg) if achieved exclusively through fuel economy improvements.

The EPA and the U.S. Department of Transportation also implemented the first national standards to reduce greenhouse gas emissions and improve the fuel efficiency of medium-

and heavy-duty engines and vehicles trucks and buses in 2010. The standards applied to all on-road vehicles rated at a gross vehicle weight at or above 8,500 pounds, and the engines that power them, except those covered by the current GHG emissions and CAFE standards for light duty vehicles, for model year 2014 to 2018. In 2016, the EPA and NHTSA finalized phase 2 of the standards which applied to model years 2018 through 2027.

The Safer Affordable Fuel Efficient (SAFE) Vehicles. The National Highway Traffic Safety Administration (NHTSA) and the Environmental Protection Agency (EPA) have amended certain previous Corporate Average Fuel Economy (CAFE) and greenhouse gas emissions standards for passenger cars and light trucks and establish new standards, covering model years 2021 through 2026. The (SAFE) Vehicles Rule published on April 30, 2020 and is effective as of June 29, 2020.

Mandatory Reporting of Greenhouse Gases. On January 1, 2010, the EPA started requiring large emitters of heat-trapping emissions to begin collecting GHG data under a new reporting system. Under the rule, suppliers of fossil fuels or industrial greenhouse gases, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of greenhouse gas emissions are required to submit annual reports to the EPA.

Climate Adaptation Planning. The EPA's Climate Change Adaptation Plan identifies priority actions the EPA will take to incorporate considerations of climate change into its programs, policies, rules and operations to ensure they are effective under future climatic conditions. Under the Trump administration, the EPA has said it would continue to advance climate adaptation efforts and that the agency recognizes the challenges that communities face in adapting to a changing climate. The EPA currently runs the Climate Change Adaptation Resource Center (ARC-X) to help local governments prepare for climate change.

3.4 GHG Regulatory Setting – State of California

The State of California has been a leader in climate change legislation and has passed numerous bills to reduce greenhouse gas emissions across all sectors of the economy. Some of the key climate legislation in the State include the following:

Assembly Bill (AB) 32, California Global Warming Solutions Act of 2006. AB 32 set the stage for the State's transition to a sustainable, low-carbon future. AB 32 was the first program in the country to take a comprehensive, long-term approach to addressing

climate change.² AB 32 was followed by Senate Bill (SB) 32, which further requires GHG emissions to be reduced to 40% below 1990 levels by 2030 and appointing CARB to develop policies (i.e. cap-and-trade) to achieve this goal.

Senate Bill (SB) 375, Sustainable Communities & Climate Protection Act of 2008. SB 375 requires the Air Resources Board to develop regional greenhouse gas emission reduction targets for passenger vehicles GHG reduction targets for 2020 and 2035 for each region covered by the State's 18 metropolitan planning organizations.³

Senate Bill (SB) 100, California Renewables Portfolio Standard Program. SB 100 established a landmark policy requiring renewable energy and zero-carbon resources supply 100 percent of electric retail sales to end-use customers by 2045.⁴

3.5 GHG Emissions Inventory

Table 9 shows the latest GHG emission inventories at the national, state, regional and local levels.

**Table 9
GHG Emissions Inventory¹**

United States (2018) ²	State of California (2018) ³	SCAG (2020) ⁴	City of Lake Forest
6,678 MMTCO ₂ e	425 MMTCO ₂ e	216.4 MMTCO ₂ e	--

¹MMTCO₂e = Million Metric Tons of Carbon Dioxide Equivalent

² <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>

³ https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2018/ghg_inventory_trends_00-18.pdf

⁴ <http://www.scag.ca.gov/programs/Pages/GreenhouseGases.aspx>

² California Air Resources Board. AB 32 Global Warming Solutions Act of 2006.

<https://ww2.arb.ca.gov/resources/fact-sheets/ab-32-global-warming-solutions-act-2006>

³ California Air Resources Board. Sustainable Communities and Climate Protection Program.

<https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-climate-protection-program/about>

⁴ California Energy Commission. SB 100 Joint Agency Report. <https://www.energy.ca.gov/sb100>

4.0 Modeling Parameters and Assumptions

The California Emissions Estimator Model Version 2016.3.2 (CalEEMod) was used to calculate criteria air pollutants and GHG emissions from the construction and operation of the project. CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify criteria air pollutant and GHG emissions.

The model quantifies direct emissions from construction and operation activities (including vehicle use), as well as indirect emissions, such as GHG emissions from off-site energy generation, solid waste disposal, vegetation planting and/or removal, and water use. The model also identifies mitigation measures to reduce criteria pollutant and GHG emissions. The model was developed for the California Air Pollution Control Officers Association (CAPCOA) in collaboration with the California air districts.

4.1 Construction Assumptions

Construction of the project is assumed to begin in the year 2021 and last approximately 11 months. Construction activity will consist of site preparation, grading, building construction, paving, and architectural coating. Construction phases are not expected to overlap.

The project site is currently occupied by building L203 and the project is proposing to expand the existing L203 building by approximately 33,931 square feet. The project is also proposing to construct a 13,253 square feet equipment platform. The project's construction schedule is based on the CalEEMod defaults.

The CalEEMod default construction equipment list is based on survey data and the size of the site. The parameters used to estimate construction emissions, such as the worker and vendor trips and trip lengths, utilize the CalEEMod defaults. The construction equipment list is shown in Table 10.

The quantity of fugitive dust estimated by CalEEMod is based on the number of equipment used during site preparation and grading. CalEEMod estimates the worst-case fugitive dust impacts will occur during the grading phase. The maximum daily disturbance footprint would be 3.5 acres per 8-hour day with all equipment in use.

A soil disturbance rate is applied to tractors/loaders/backhoes as a worst case estimate of fugitive dust emissions and is based on similar type equipment, such as rubber tired dozers and crawler tractors.

Based on recent discussions with SCAQMD, the Fact Sheet for Applying CalEEMod to Localized Significance Thresholds should no longer be used to determine disturbance acreage.

Table 10
Construction Equipment Assumptions Phase ¹

Phase	Equipment	Amount	Hours Per Day	Soil Disturbance Rate (Acres/ 8hr-Day)	Equipment Daily Disturbance Footprint (Acres)	Total Phase Daily Disturbance Footprint (Acres)
Site Preparation	Graders	1	8	0.5	0.50	1.4
	Rubber Tired Dozers	1	7	0.5	0.44	
	Tractors/Loaders/Backhoes	1	8	0.5	0.50	
Grading	Graders	1	6	0.5	0.38	1.2
	Rubber Tired Dozers	1	6	0.5	0.38	
	Tractors/Loaders/Backhoes	1	7	0.5	0.44	
Building Construction	Cranes	1	6	0.0	0.00	0.4
	Forklifts	1	6	0.0	0.00	
	Generator Sets	1	8	0.0	0.00	
	Tractors/Loaders/Backhoes	1	6	0.5	0.38	
	Welders	3	8	0.0	0.00	
Paving	Cement and Mortar Mixers	1	6	0.0	0.00	0.5
	Pavers	1	6	0.0	0.00	
	Paving Equipment	1	8	0.0	0.00	
	Rollers	1	7	0.0	0.00	
	Tractors/Loaders/Backhoes	1	8	0.5	0.50	
Architectural Coating	Air Compressors	1	6	0.0	0.00	0.0

¹ CalEEMod Defaults

4.2 Localized Construction Analysis Modeling Parameters

CalEEMod calculates construction emissions based on the number of equipment hours and the maximum daily disturbance activity possible for each piece of equipment. This report identifies the following parameters in the project design or applicable mitigation measures in order to compare CalEEMod reported emissions against the localized significance threshold lookup tables:

- 1) The off-road equipment list (including type of equipment, horsepower, and hours of operation) assumed for the day of construction activity with maximum emissions.
- 2) The maximum number of acres disturbed on the peak day.
- 3) Any emission control devices added onto off-road equipment.
- 4) Specific dust suppression techniques used on the day of construction activity with maximum emissions.

4.3 Operational Assumptions

Operational emissions occur over the life of the project and are considered “long-term” sources of emissions. Operational emissions include both direct and indirect sources. This section briefly describes the operational sources of emissions analyzed for the project.

4.3.1 Mobile Source Emissions

Mobile source emissions are the largest source of long-term air pollutants from the operation of the project. Mobile sources are direct sources of project emissions that are primarily attributed to tailpipe exhaust and road dust (tire, brake, clutch, and road surface wear) from motor vehicles traveling to and from the site.

Estimates of mobile source emissions require information on four parameters: trip generation, trip length, vehicle/fleet mix, and emission factors (quantity of emission for each mile traveled or time spent idling by each vehicle).

The trip generation rates for this project are based on the latest version of the ITE Trip Generation Manual.

Trip summary information is shown in Table 11.

Table 11
Trip Generation Rates

Land Use	ITE Code	Units ¹	Daily Trip Rate ²		
			Weekday	Saturday	Sunday
Manufacturing	140	TSF	3.93	6.42	5.09

¹ DU = Dwelling Unit; TSF = Thousand Square Feet

² Source: ITE Trip Generation Manual 10th Edition

The Emission Factors (EMFAC) 2014 model is used to estimate the mobile source emissions are embedded in the CalEEMod emissions model. No adjustments have been made to default emission factors.

The project's total vehicle miles traveled is shown in the table 12 for this project.

**Table 12
Operational Vehicle Miles Traveled**

Land Use	Annual Vehicle Miles Traveled (VMT)
Manufacturing (L203 building)	2,111,172

¹ CalEEMod Defaults

The operational vehicle fleet mix is shown in Table 13. The fleet mix for the project is based on CalEEMod default.

**Table 13
Vehicle Mix for Trips¹**

YUY	Vehicle Mix (%)
Light Duty Automobile (LDA)	55.90%
Light Duty Truck (LDT1)	4.35%
Light Duty Truck (LDT2)	20.98%
Medium Duty Truck (MDV)	11.39%
Light Heavy Truck (LHD1)	1.61%
Light Heavy Truck (LHD2)	0.58%
Medium Heavy Truck (MHD)	2.54%
Heavy Heavy Truck (HHD)	1.67%
Other Bus (OBUS)	0.17%
Urban Bus (UBUS)	0.16%
Motorcycle (MCY)	0.49%
School Bus (SBUS)	0.06%
Motor Home (MH)	0.10%
Total	100.0%

¹ CalEEMod defaults

4.3.2 Energy Source Emissions

Energy usage includes both direct and indirect sources of emissions. Direct sources of emissions include on-site natural gas usage (non-hearth) for heating, while indirect emissions include electricity generated by offsite power plants. Natural gas use is measured in units of a thousand British Thermal Units (kBtu) per size metric for each land use subtype and electricity use is measured in kilowatt hours (kWh) per size metric for each land use subtype.

CalEEMod divides building electricity and natural gas use into uses that are subject to Title 24 standards and those that are not. Lighting electricity usage is also calculated as a separate category in CalEEMod. For electricity, Title 24 uses include the major building envelope systems covered by Part 6 (California Energy Code) of Title 24, such as space heating, space cooling, water heating, and ventilation. Non-Title 24 uses include all other end uses, such as appliances, electronics, and other miscellaneous plug-in uses. Because some lighting is not considered as part of the building envelope energy budget, and since a separate mitigation measure is applicable to this end use, CalEEMod makes lighting a separate category.

For natural gas, uses are likewise categorized as Title 24 or Non-Title 24. Title 24 uses include building heating and hot water end uses. Non-Title 24 natural gas uses include cooking and appliances (including pool/spa heaters).

The baseline values are based on the California Energy Commission (CEC) sponsored California Commercial End Use Survey (CEUS) and Residential Appliance Saturation Survey (RASS) studies.

Table 14 shows the total annual expected electricity and natural gas usage for the proposed project.

Table 14
Electricity and Natural Gas Usage³

Land Use	Electricity Usage¹ (KWhr/yr)²	Natural Gas Usage¹ (KBTU/yr)²
Bridge (General Light Industry)	111,988.00	276,988.00
Manufacturing	9,094,995.00	2,238,390.00
Cogen Unit	--	87,652,000.00
Total	9,206,983.00	90,167,378.00

¹ CalEEMod default estimates.

² KWhr/yr = Kilowatt Hours per Year
KBTU/yr = Thousand British Thermal Units per Year

³ It should be noted that the project is expected to generate almost 100% of its electricity demand through an on-site Cogen system. However, for analysis purposes, the default electricity usage is still shown and indirect emissions are still calculated as a worst case scenario.

4.3.3 Area Source Emissions

Area source emissions are direct sources of emissions that fall under four categories; hearths, consumer products, architectural coatings, and landscaping equipment. Per SCAQMD rule 445, no wood burning devices are allowed in new developments; therefore, no wood hearths are included in this project.

Consumer products are various solvents used in non-industrial applications which emit ROG's during their product use. These typically include cleaning supplies, kitchen aerosols, cosmetics and toiletries.

4.3.4 Other Sources of Operational Emissions

Operational Stationary Equipment. The project is proposing to generate 100% of its electricity consumption on-site using a Cogen system. The Cogen system uses natural gas boilers and turbines to generate electricity. The project includes multiple pieces of mechanical equipment associated with the Cogen system. Emissions from stationary equipment used in the electricity production process are included in this analysis. Emissions from five (5) CNG boilers are included.

Water. Greenhouse gas emissions are generated from the upstream energy required to supply and treat the water used on the project site. Indirect emissions from water usage are counted as part of the project's overall impact. The estimated water usage for the

project is reported in Table 15 and recommendations to reduce water usage are discussed in Section 6.0.

Waste. CalEEMod calculates the indirect GHG emissions associated with waste that is disposed of at a landfill. The program uses annual waste disposal rates from the California Department of Resources Recycling and Recovery (CalRecycle) data for individual land uses. The program quantifies the GHG emissions associated with the decomposition of the waste which generates methane based on the total amount of degradable organic carbon.

The estimated waste generation by the project is reported in Table 15 and recommendations to reduce waste generation in landfills are discussed in Section 6.0

Table 15
Operational Water Usage and Waste Generation

Land Use	Water Usage (gallons/year)			Waste Generation (tons/year) ¹
	Indoor	Outdoor	Total	
Manufacturing	24,766,900	--	24,766,900	132.8

¹ CalEEMod default estimates.

5.0 Significance Thresholds

5.1 Air Quality Regional Significance Thresholds

The SCAQMD has established air quality emissions thresholds for criteria air pollutants for the purposes of determining whether a project may have a significant effect on the environment per Section 15002(g) of the Guidelines for implementing CEQA. By complying with the thresholds of significance, the project would be in compliance with the SCAQMD Air Quality Management Plan (AQMP) and the federal and state air quality standards.

Table 16 lists the air quality significance thresholds for the six air pollutants analyzed in this report. Lead is not included as part of this analysis as the project is not expected to emit lead in any significant measurable quantity.

Table 16
SCAQMD Regional Significance Thresholds

Pollutant	Construction (lbs/day)	Operation (lbs/day)
NO _x	100	55
VOC	75	55
PM ₁₀	150	150
PM _{2.5}	55	55
SO _x	150	150
CO	550	550

¹ Source: <http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf>

5.2 Microscale CO Concentration Standards

The significance of localized CO impacts depends on whether ambient CO levels in the vicinity of the project are above or below federal or state standards. If ambient levels are below the standards, a project is considered to have a significant impact if project emissions result in an exceedance of the AAQS. If ambient levels already exceed State or federal standards, project emissions are considered significant if they increase 1-hour CO concentrations by 1.0 ppm or more or 8-hour CO concentrations by 0.45 ppm or more.

Current CO levels in the SCAB are in attainment of both federal and state standards, and local air quality monitoring data indicates there have not been any localized exceedances of CO over the past three years. By complying with the regional and localized significance thresholds, the project would not be expected to cause CO concentrations to exceed the applicable AAQS.

5.3 GHG Significance Thresholds

In the absence of a formal GHG threshold established by the State, the SCAQMD has published the *Interim CEQA Greenhouse Gas (GHG) Significance Thresholds, December 2008* (GHG Significance Thresholds) to assist local agencies with determining the impact of a project for CEQA. SCAQMD's objective in providing the GHG guidelines is to establish a performance standard that will ultimately contribute to reducing GHG emissions below 1990 levels, and thus achieve the requirements of the California Global Warming Solutions Act (AB 32). The SCAQMD has held several GHG Significance Thresholds Stakeholder Working Group meetings where staff has presented updated recommendations that serve in addendum to the interim document.

The SCAQMD describes a five-tiered approach for determining GHG Significance Thresholds.

- **Tier 1** - If a project is exempt from CEQA, project-level and cumulative GHG emissions are less than significant.
- **Tier 2** - If the project complies with a GHG emissions reduction plan or mitigation program that avoids or substantially reduces GHG emissions in the project's geographic area (i.e., city or county), project-level and cumulative GHG emissions are less than significant.

For projects that are not exempt or where no qualifying GHG reduction plans are directly applicable, SCAQMD requires an assessment based on the following tiers.

- **Tier 3** - Consists of screening values that are intended to capture 90 percent of the GHG emissions from projects. If a project's emissions are under the screening thresholds, then the project is less than significant. SCAQMD has presented two options that lead agencies could choose for screening values. Option #1 sets the thresholds for residential projects to 3,500 MTCO₂e/year, commercial projects to 1,400 MTCO₂e/year), and the mixed use to 3,000 MTCO₂e/year. Option #2 sets a single numerical threshold for all non-industrial projects of 3,000 MTCO₂e/year and 10,000 MTCO MTCO₂e/year for industrial projects. The current staff recommendation is to use option #2, but

allows lead agencies to choose option #1 if they prefer. Regardless of which option a lead agency chooses to follow, it is recommended that the same option is consistently used for all projects.

Table 17 shows the screening levels described in option #2, which has been used previously in the City of Lake Forest.

Table 17
SCAQMD Tier 3 GHG Screening Values

Land Use	Screening Value
Industrial Projects	10,000 MTCO ₂ e/Yr
Residential/Commercial Projects	3,000 MTCO ₂ e/Yr

- **Tier 4** - includes three performance standard compliance options to demonstrate the project is significant for GHG emissions.

Compliance Option 1 consists of achieving a target percentage reduction in emission compared to the business as usual (BAU) methodology. The project proponent would need to incorporate design features into the project and/or implement GHG mitigation measures to demonstrate a 30 percent reduction in GHG emissions below BAU that is consistent with the current applicable goals of AB 32 in the State of California.

Compliance Option 2 consists of early compliance with AB 32 through early implementation of CARB’s Scoping Plan Measures. This option is intended for projects in sectors subject to the Scoping Plan Measures.

Compliance Option 3 consists of establishing efficiency-based performance standards at the plan level (program-level projects such as general plans) and project level. Efficiency standards are based on the amount of GHG emissions (MTCO₂e/year) per Service Population (SP). SP is defined as the sum of the residential and employment populations provided by a project.

Table 18
SCAQMD Tier 4 Efficiency Thresholds

Project Type	Efficiency Thresholds ¹	
	Target Year 2020	Target Year 2035
Plan (Program) Level	6.6 MTCO ₂ e/yr/SP	4.1 MTCO ₂ e/yr/SP
Project Level	4.8 MTCO ₂ e/yr/SP	3.0 MTCO ₂ e/yr/SP

- **Tier 5** – involves implementing off-site mitigation or the purchasing of offsets to reduce GHG emissions to less than the proposed screening level. The project proponent would be required to provide offsets for the life of the project, which is defined as 30 years.

By complying with the SCAQMD GHG thresholds of significance, the project is considered to be in compliance with the applicable State GHG legislation.

6.0 Air Quality Impact Analysis

Air Quality impacts are evaluated per the CEQA Guidelines Appendix G and the City's adopted CEQA Significance Thresholds (refer to Appendix 1, City of Lake Forest CEQA Significance Thresholds Guide).

6.1 Short Term Air Quality Impacts - Construction

6.1.1 Regional Emissions - Construction

Regional air quality emissions include both on-site and off-site emissions associated with construction of the project. Regional daily emissions of criteria pollutants are compared to the SCAQMD regional thresholds of significance.

As shown in Table 19, regional daily emissions of criteria pollutants are expected to be below the allowable thresholds of significance.

CalEEMod daily emissions outputs are provided in Appendix A.

Table 19
Regional Construction Emissions

Maximum Daily Emissions (lbs/day) ¹						
Activity	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Site Preparation	1.59	17.44	7.80	0.02	3.07	1.86
Grading	1.32	14.35	6.57	0.01	2.61	1.58
Building Construction	1.92	14.43	13.71	0.03	0.96	0.74
Paving	0.74	6.80	9.17	0.01	0.49	0.36
Architectural Coating	43.96	1.42	1.93	0.00	0.13	0.09
Maximum ¹	43.96	17.44	13.71	0.03	3.07	1.86
SCAQMD Threshold	75	100	550	150	150	55
Exceeds Threshold (?)	No	No	No	No	No	No

¹ Maximum daily emission during summer or winter; includes both on-site and off-site project emissions.

The project must follow all standard SCAQMD rules and requirements with regards to fugitive dust control, as described in Section 6.1.3. Due to the close proximity of the adjacent sensitive receptor, compliance with the standard dust control measures, which are built into the project design and taken into account in the project emissions analysis, are also included as mitigation measures to ensure full compliance.

Table 19 shows that, the project's daily construction emissions will be below the applicable SCAQMD regional air quality standards and thresholds of significance. As a result, the project would not contribute substantially to an existing or projected air quality violation.

Furthermore, by complying with the SCAQMD standards, the project would not contribute to a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

The project's short-term construction impact on regional air resources is less than significant with mitigation.

6.1.2 Fugitive Dust - Construction

The Project is required to comply with regional rules that assist in reducing short-term air pollutant emissions associated with suspended particulate matter, also known as fugitive dust. Fugitive dust emissions are commonly associated with land clearing activities, cut-and-fill grading operations, and exposure of soils to the air and wind. SCAQMD Rule 403 requires that fugitive dust is controlled with best-available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. In addition, SCAQMD Rules 402 and 403 require implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off site.

To ensure full compliance with the applicable dust control standards, the following mitigation measures is recommended for the project:

MM-1 The project must follow the standard SCAQMD rules and requirements with regards to fugitive dust control, which includes, but are not limited to the following:

1. All active construction areas shall be watered two (2) times daily.
2. Speed on unpaved roads shall be reduced to less than 15 mph.

3. Any visible dirt deposition on any public roadway shall be swept or washed at the site access points within 30 minutes.
4. Any on-site stockpiles of debris, dirt or other dusty material shall be covered or watered twice daily.
5. All operations on any unpaved surface shall be suspended if winds exceed 15 mph.
6. Access points shall be washed or swept daily.
7. Construction sites shall be sandbagged for erosion control.
8. Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for 10 days or more).
9. Cover all trucks hauling dirt, sand, soil, or other loose materials, and maintain at least 2 feet of freeboard space in accordance with the requirements of California Vehicle Code (CVC) section 23114.
10. Pave or gravel construction access roads at least 100 feet onto the site from the main road and use gravel aprons at truck exits.
11. Replace the ground cover of disturbed areas as quickly possible.
12. A fugitive dust control plan should be prepared and submitted to SCAQMD prior to the start of construction.

The proposed project's short-term construction activities would cause less than significant Fugitive Dust impacts.

6.1.3 Odors - Construction

Heavy-duty equipment in the project area during construction will emit odors; however, the construction activity would cease to occur after individual construction is completed. The project is required to comply with Rule 402 during construction, which states that a person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. No other sources of objectionable odors have been identified for the proposed Project.

Therefore, the project impact from odor emissions is less than significant.

6.1.4 Asbestos - Construction

Asbestos is a carcinogen and is categorized as a hazardous air pollutant by the Environmental Protection Agency (EPA) and regulated through the National Emissions Standards for Hazardous Air Pollutants (NESHAP). Asbestos fibers imbedded within construction materials become a health hazard once they are disturbed and rendered airborne, such as through physical contact like building renovation and demolition activities.

SCAQMD is the local enforcement authority for asbestos. SCAQMD Rule 1403 establishes the survey requirements, notification, and work practices to prevent asbestos emissions from emanating during building renovation and demolition activities. Since the project does not require the demolition of any existing structures, the impact from asbestos contained in building products is considered less than significant.

Asbestos also occurs naturally in serpentine and ultramafic rock. Based on the California Division of Mines and Geology General Location Guide for Ultramafic Rocks in California - Areas More Likely to Contain Naturally Occurring Asbestos, naturally occurring asbestos has not been shown to occur within in the vicinity of the project site. Therefore, the potential risk for naturally occurring asbestos (NOA) during project construction is small. However, in the event NOA is found on the site, the project will be required to comply with SCAQMD and NESHAP standards.

By following the required asbestos abatement protocols, **the project impact is less than significant.**

6.1.5 Diesel Particulate Matter - Construction

The greatest potential for toxic air contaminant emissions from the project would be related to diesel particulate matter (DPM) emissions associated with heavy diesel equipment used during construction. According to SCAQMD methodology, health effects from carcinogenic air toxics are usually described in terms of "individual cancer risk". "Individual Cancer Risk" is the likelihood that a person exposed to concentrations of toxic air contaminants over a 30-year lifetime will contract cancer, based on the use of standard risk-assessment methodology.

As shown in Tables 19, construction-based particulate matter (PM) emissions (including diesel exhaust emissions) do not exceed regional thresholds. Given the short-term

construction schedule, the proposed project's construction activity is not expected to be a long-term (i.e., 30 years) substantial source of toxic air contaminant emissions and corresponding individual cancer risk.

However, it should be noted that a quantified diesel health risk assessment (HRA) was not included within the scope of this analysis. In September 2000, the CARB adopted the Diesel Risk Reduction Plan, which recommends several control measures to reduce the risks associated with diesel particulate matter (DPM). The key elements of the Plan are to clean up existing engines through engine retrofit emission control devices, to adopt stringent standards for new diesel engines, to lower the sulfur content of diesel fuel, and implement advanced technology emission control devices on diesel engines.

The project is located adjacent to a residential use, therefore, in order to ensure the level of DPM exposure is reduced as much as possible, the project shall implement the following mitigation measures to reduce diesel particulate emissions and potential health risks to adjacent residents:

MM-2 All diesel-powered off-road construction equipment with 25 horsepower or greater shall be equipped with Tier 4 engines. Prior to issuance of the grading permit, the contractor must demonstrate the ability to supply the compliant construction equipment.

Tier 4 engines, along with the latest national fuel standards, will yield PM reductions of over 95% from the typical Tier 2 and Tier 3 engines⁵. Given the relative size of the project, the short-term duration of construction, and the substantial reduction in particulate exhaust from the implementation of Tier 4 engines, the potential risk exposure from off-road construction equipment to the nearest adjacent sensitive receptors can be reasonably considered to have a less than significant without the need for a full health risk assessment study.

Additionally, due to the close proximity of the adjacent sensitive residential use, the following best available pollution control strategies should be included as part of the construction management plan to help further minimize potential exposure to substantial pollution concentrations. The following construction best practices are recommended as project mitigation:

⁵ EPA. Control of Emissions of Air Pollution from Nonroad Diesel Engines and Fuel; Final Rule. (40 CFR Parts 9, 69, et al.)

- MM-3** Prepare and implement a Construction Management Plan which will include Best Available Control Measures to be submitted to the City of Lake Forest.
- MM-4** Construction equipment shall be maintained in proper tune.
- MM-5** All construction vehicles shall be prohibited from excessive idling. Excessive idling is defined as five (5) minutes or longer.
- MM-6** Minimize the simultaneous operation of multiple construction equipment units.
- MM-7** The use of heavy construction equipment and earthmoving activity should be suspended during Air Alerts when the Air Quality Index reaches the “Unhealthy” level.
- MM-8** Establish an electricity supply to the construction site and use electric powered equipment instead of diesel-powered equipment or generators, where feasible.
- MM-9** Establish staging areas for the construction equipment that are as distant as possible from adjacent sensitive receptors (residential land uses).
- MM-10** Use haul trucks with on-road engines instead of off-road engines for on-site hauling.
- MM-11** Utilize low VOC and no VOC paints and solvents, where feasible.

6.2 Long Term Air Quality Impacts - Operation

6.2.1 Regional Emissions - Operation

Long-term operational air pollutant impacts from the project are shown in Table 20. The project is not expected to exceed any of the allowable daily emissions thresholds for criteria pollutants at the regional level. CalEEMod daily emissions outputs are provided in Appendix A.

The project’s daily operational emissions will be below the applicable SCAQMD regional air quality standards and thresholds of significance, and the project would not contribute substantially to an existing or projected air quality violation. Furthermore, by complying with the SCAQMD standards, the project would not contribute to a cumulatively considerable net increase of any criteria pollutant for which the project region is non-

attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

The project related long-term air quality impacts are less than significant.

**Table 20
Regional Operational Emissions**

Maximum Daily Emissions (lbs/day) ¹						
Activity	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Mobile Sources	1.22	5.30	18.63	0.07	6.51	1.77
Energy Sources	0.07	0.68	0.57	0.00	0.05	0.05
Area Sources	2.69	0.00	0.01	0.00	0.00	0.00
Off-Road Equipment	0.78	7.07	7.01	0.01	0.50	0.46
Stationary Sources	1.29	5.76	23.04	0.14	1.79	1.79
Total	6.05	18.80	49.26	0.23	8.85	4.08
SCAQMD Threshold	55	55	550	150	150	55
Exceeds Threshold (?)	No	No	No	No	No	No

¹ Maximum daily emission during summer or winter; includes both on-site and off-site project emissions.

6.2.2 Odors - Operation

Land uses that commonly receive odor complaints include agricultural uses (farming and livestock), chemical plants, composting operations, dairies, fiberglass molding facilities, food processing plants, landfills, refineries, rail yards, and wastewater treatment plants. The proposed self-storage project does not contain land uses that would typically be associated with significant odor emissions.

The project will be required to comply with standard building code requirements related to exhaust ventilation, as well as comply with SCAQMD Rule 402. Rule 402 requires that a person may not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. Project related odors are not

expected to meet the criteria of being a nuisance. **The project's operation would result in less than significant odor impacts.**

6.2.3 Toxic Air Contaminants - Operations

The project would consist of a manufacturing/commercial business park use. This type of project does not typically consist of major sources of toxic air contaminants (TAC) emissions that would result in significant exposure of sensitive receptors to substantial pollutant concentrations. However, the project will include the operation of stationary boilers for the Cogen power generating system and continue to operate four (4) loading docks within 50 feet of residential homes.

The operation of the Cogen system will be subject to the rules and regulations set forth by SCAQMD for controlling toxic air contaminants, and an Air Permit to operate the equipment will be required. Applied Medical currently uses a similar Cogen system, which has been reviewed and approved by SCAQMD to operate with an Air Permit. The purpose of the Air Permit is to ensure stationary sources comply with the State and Federal Clean Air Act and protect public health. As part of the permitting process, a health risk assessment study may be required. By obtaining the necessary SCAQMD Air Permits, the exposure of sensitive receptors to air pollution would be reduced to less than significant levels.

The project is expected to generate approximately 2-4 truck deliveries per day at the loading dock area. This is not considered a substantial amount of truck traffic that may contribute to substantial pollution concentrations from exposure to DPM. According to CARB, residential uses should not be sited within 1,000 feet of distribution centers with more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week⁶. The project is not expected to require TRU trucks or generate more than 100 trucks per day. Hence, the project impact from 2-4 truck per day is considered less than significant.

The following mitigation measures are provided to help further ensure any potential exposure to toxic air contaminants is mitigated.

MM-12 Obtain all necessary Air Permits from SCAQMD to operate the boilers and associated equipment for the Cogen facility.

⁶ California Air Resources Board. Air Quality and Land Use Handbook: A Community Health Perspective. April 2005.

MM-13 Install signage at loading dock areas informing truck deliveries that idling more than 5 minutes is prohibited.

6.3 CO Hot Spot Emissions

A CO hot spot is a localized concentration of carbon monoxide (CO) that is above the state one-hour standard of 20 ppm or the eight-hour standard of 9 ppm. At the time of the publishing of the 1993 CEQA Air Quality Handbook, the SCAB was designated nonattainment, and projects were required to perform hot spot analyses to ensure they did not exacerbate an existing problem. Since this time, the SCAB has achieved attainment status and the potential for hot spots caused by vehicular traffic congestion has been greatly reduced. In fact, the SCAQMD Air Quality Management Plan (AQMP) found that peak CO concentrations were primarily the result of unusual meteorological and topographical conditions, not traffic congestion. Additionally, the 2003 SCAQMD AQMP found that, at four of the busiest intersections in SCAB, there were no CO hot spot concentrations. Therefore, it is reasonable to conclude that the project would not significantly increase traffic congestion in the vicinity of the site that would lead to the formation of CO Hot Spots. **The project impact to CO Hot Spots is less than significant.**

6.4 Health Impacts of Criteria Air Pollutants

The purpose of this discussion is to set forth the issues regarding the potential harmful effects of criteria pollutants on human health. The EPA sets National Ambient Air Quality Standards (NAAQS), and the State of California sets their own more stringent Ambient Air Quality Standards (CAAQS) for six principal criteria air pollutants—nitrogen dioxide, sulfur dioxide, particulate matter, carbon monoxide, ozone and lead—all of which have been shown to be harmful to public health and the environment. The potential health impacts from exposure to criteria air pollutants are discussed in Section 2.0.

To help attain compliance with the NAAQS and CAAQS, the SCAQMD is responsible for adopting an Air Quality Management Plan (AQMP) and has established mass daily thresholds of significance for criteria air pollutants for purposes of protecting public health.

Therefore, by complying with the adopted SCAQMD thresholds of significance, the project is not expected to cause a significant impact to public health.

6.5 SCAQMD Air Quality Management Plan Consistency

CEQA requires a discussion of any inconsistencies between a proposed project and applicable General Plans and Regional Plans (CEQA Guidelines Section 15125). The regional plan that applies to the proposed project includes the SCAQMD AQMP. Therefore, this section discusses any potential inconsistencies in the proposed project with the AQMP.

The purpose of this discussion is to set forth the issues regarding consistency with the assumptions and objectives of the AQMP and discuss whether the proposed project would interfere with the region's ability to comply with Federal and State air quality standards. If the decision-makers determine that the proposed project is inconsistent, the lead agency may consider project modifications or inclusion of mitigation to eliminate the inconsistency.

The SCAQMD CEQA Handbook states that "New or amended General Plan Elements (including land use zoning and density amendments), Specific Plans, and significant projects must be analyzed for consistency with the AQMP." Strict consistency with all aspects of the plan is usually not required. A proposed project should be considered to be consistent with the AQMP if it furthers one or more policies and does not obstruct other policies.

The SCAQMD CEQA Handbook identifies two key indicators of consistency:

- (1) Whether the project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.
- (2) Whether the project will exceed the assumptions in the AQMP in 2016 or increments based on the year of project buildout and phase.

6.5.1 Criterion 1 - Increase in the Frequency or Severity of Violations

The results of the short-term construction emission levels and long-term operational emission levels show that the project would not result in significant impacts based on the SCAQMD regional and local thresholds of significance. Therefore, the proposed project

would not contribute to the exceedance of an air pollutant concentration standard and is found to be consistent with the AQMP for the first criterion.

6.5.2 Criterion 2 - Exceed Assumptions in the AQMP

Consistency with the AQMP assumptions is determined by performing an analysis of the proposed project with the assumptions in the AQMP. The emphasis of this criterion is to ensure that the analyses conducted for the proposed project are based on the same forecasts as the AQMP. The 2016-2040 Regional Transportation/Sustainable Communities Strategy, prepared by the Southern California Association of Governments (SCAG), 2016, includes chapters on: the challenges in a changing region, creating a plan for our future, and the road to greater mobility and sustainable growth. These chapters currently respond directly to federal and state requirements placed on SCAG. Local governments are required to use these as the basis of their plans for purposes of consistency with applicable regional plans under CEQA.

The project is consistent with the land use requirements in the City of Lake Forest Zoning Ordinance for Urban Activity Commercial/Business Park. As a result, the project is not expected to significantly increase emissions compared to what is currently allowed and projected in the AQMP for this region. The project is considered to be consistent with the AQMP and the impact is less than significant. As shown in the regional and localized emissions analysis, the project is below the SCAQMD thresholds of significant for cumulative impacts. **The impact is considered less than significant.**

7.0 Greenhouse Gas Impact Analysis

Consistent with CEQA Guidelines, a significant impact related to greenhouse gas would occur if the proposed project is determined to:

- a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of greenhouse gases.

7.1 Greenhouse Gas Emissions - Construction

Greenhouse gas emissions are estimated for on-site and off-site construction activity using CalEEMod. Table 21 shows the construction greenhouse gas emissions, including equipment and worker vehicle emissions for all phases of construction. Construction emissions are averaged over 30 years and added to the long-term operational emissions, pursuant to SCAQMD recommendations.

CalEEMod annual GHG output calculations are provided in Appendix B.

Table 21
Construction Greenhouse Gas Emissions

Activity	Emissions (MTCO ₂ e) ¹		
	On-site	Off-site	Total
Site Preparation	1.52	0.07	1.59
Grading	2.50	0.15	2.65
Building Construction	182.36	37.18	219.54
Paving	5.93	0.57	6.50
Architectural Coating	1.28	0.18	1.46
Total	193.59	38.15	231.74
Amortized over 30 years ²	6.45	1.27	7.72

¹ MTCO₂e = metric tons of carbon dioxide equivalents (includes carbon dioxide, methane, nitrous oxide, and/or hydrofluorocarbon).

² The emissions are amortized over 30 years and added to the operational emissions, pursuant to SCAQMD recommendations.

Because impacts from construction activities occur over a relatively short-term period of time, they contribute a relatively small portion of the overall lifetime project GHG emissions. By itself, the construction activities from this project are less than significant when compared to the thresholds recommended by SCAQMD. However, SCAQMD recommends that construction emissions be amortized over a 30-year project lifetime and added to the overall project operational emissions. In doing so, construction GHG emissions are included in the overall contribution of the project, as further discussed in the following section.

7.2 Greenhouse Gas Emissions - Operation

Greenhouse gas emissions are estimated for on-site and off-site operational activity using CalEEMod. Greenhouse gas emissions from mobile sources, area sources and energy sources are shown in Table 22. CalEEMod annual GHG output calculations are provided in Appendix B.

**Table 22
Operational Greenhouse Gas Emissions**

Emission Source	GHG Emissions (MTCO₂e)¹
Mobile Source	814.14
Energy Source	460.22
Area Source	0.00
Water	136.83
Waste	66.79
Off-Road Equipment	105.59
Stationary Sources	4,674.65
Construction (30 year amortization)	7.72
Total Annual Emissions	6,265.94
SCAQMD Tier 3 Screening Threshold ²	10,000
Exceed Tier 3 Threshold?	No

¹ MTCO₂e = metric tons of carbon dioxide equivalents

² Per South Coast Air Quality Management District (SCAQMD) Draft Guidance Document - Interim CEQA Greenhouse Gas (GHG) Significance Threshold, October 2008

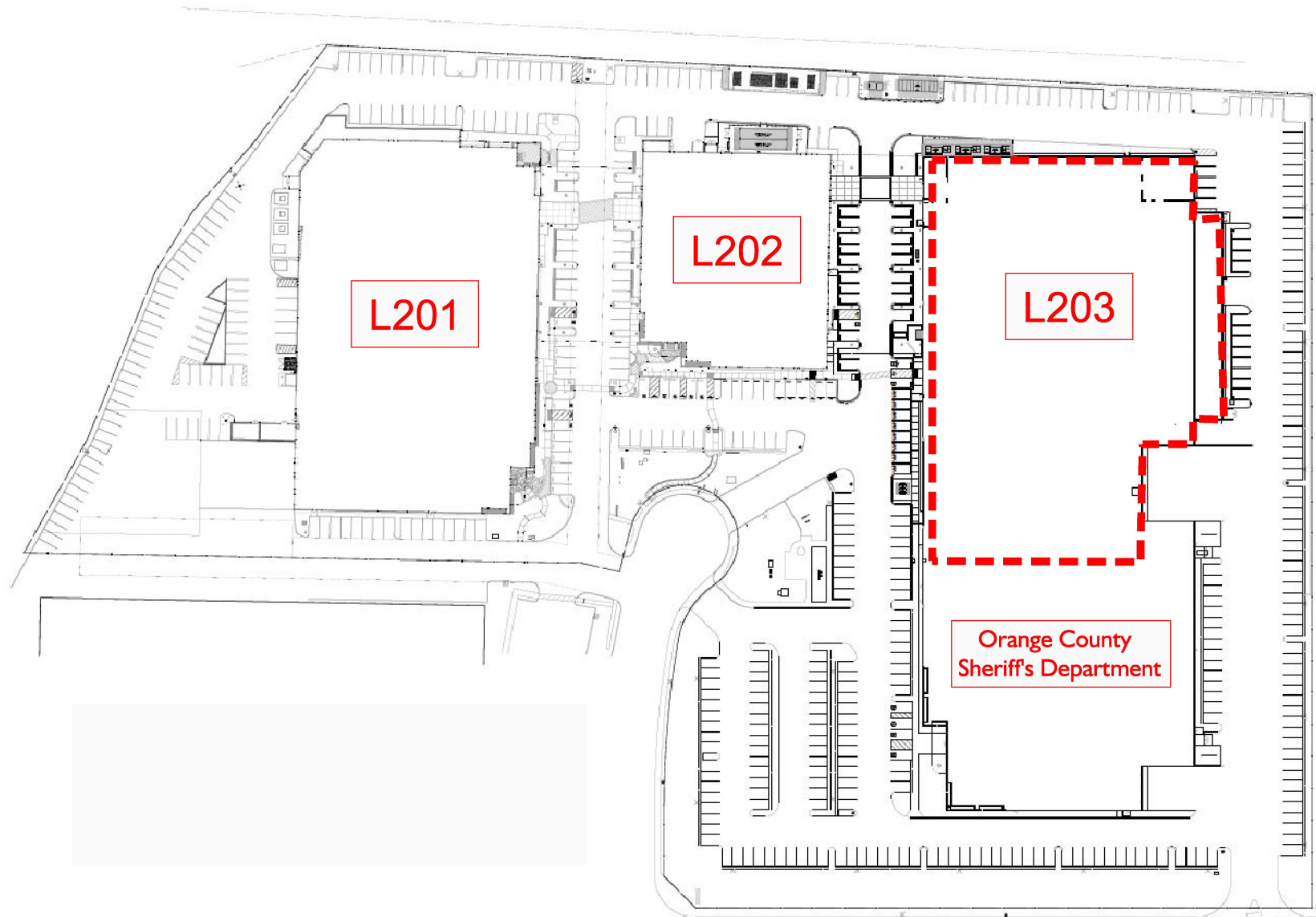
As shown in Table 22, the project GHG emissions are expected to be below the SCAQMD Tier 3 Screening GHG emissions threshold of 10,000 MTCO₂e for industrial stationary source projects. **The project related long-term GHG impacts are less than significant.**

The following project design features are considered standard building code requirements and best practices that will be included in the project design to further help reduce Greenhouse Gas emissions.

- DF-2.** The project will comply with the mandatory requirements of Title 24 part 11 of the California Building Standards Code (CALGreen) and the Title 24 Part 6 Building Efficiency Standards (Energy Code).

Exhibits





Appendices

Appendix A

Daily Emissions Calculations Output
(CalEEMod)

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Summer

Applied Medical L203 Building Expansion Construction Emission Analysis

Orange County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Manufacturing	33.93	1000sqft	0.78	33,931.00	0
General Light Industry	13.25	1000sqft	0.30	13,253.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	30
Climate Zone	8			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	702.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - The project is expected to expand the existing L203 building by approximately 33,931 square feet of manufacturing unit. The project is also expected to construct an equipment platform (bridge) building of approximately 13,253 square feet.

Construction Phase -

Vehicle Trips - No operational mobile emission are calculated.

Energy Use - No operational emission are calculated in this analysis.

Water And Wastewater - No operational emission are calculated in this analysis.

Solid Waste - No operational emission are calculated in this analysis.

Construction Off-road Equipment Mitigation - The project will be required to comply with SCAQMD Rule 403 regarding fugitive dust control.

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Summer

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	PhaseEndDate	8/10/2022	7/13/2022
tblConstructionPhase	PhaseEndDate	7/13/2022	6/15/2022
tblConstructionPhase	PhaseEndDate	10/6/2021	9/8/2021
tblConstructionPhase	PhaseEndDate	7/27/2022	6/29/2022
tblConstructionPhase	PhaseEndDate	9/30/2021	9/2/2021
tblConstructionPhase	PhaseStartDate	7/28/2022	6/30/2022
tblConstructionPhase	PhaseStartDate	10/7/2021	9/9/2021
tblConstructionPhase	PhaseStartDate	10/1/2021	9/3/2021
tblConstructionPhase	PhaseStartDate	7/14/2022	6/16/2022
tblConstructionPhase	PhaseStartDate	9/29/2021	9/1/2021
tblEnergyUse	NT24E	3.83	0.00
tblEnergyUse	NT24E	3.83	0.00
tblEnergyUse	T24E	1.63	0.00
tblEnergyUse	T24E	1.63	0.00
tblSolidWaste	SolidWasteGenerationRate	16.43	0.00
tblSolidWaste	SolidWasteGenerationRate	42.07	0.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	ST_TR	1.49	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	SU_TR	0.62	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblVehicleTrips	WD_TR	3.82	0.00
tblWater	IndoorWaterUseRate	3,064,062.50	0.00
tblWater	IndoorWaterUseRate	7,846,312.50	0.00

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Summer

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	1.9060	17.4377	13.7104	0.0261	5.8890	0.7660	6.6550	2.9774	0.7047	3.6821	0.0000	2,426.6928	2,426.6928	0.5408	0.0000	2,436.1587
2022	43.9578	13.2527	13.4899	0.0260	0.2747	0.5917	0.8663	0.0740	0.5715	0.6455	0.0000	2,417.1052	2,417.1052	0.4139	0.0000	2,426.3311
Maximum	43.9578	17.4377	13.7104	0.0261	5.8890	0.7660	6.6550	2.9774	0.7047	3.6821	0.0000	2,426.6928	2,426.6928	0.5408	0.0000	2,436.1587

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	1.9060	17.4377	13.7104	0.0261	2.3078	0.7660	3.0737	1.1535	0.7047	1.8582	0.0000	2,426.6928	2,426.6928	0.5408	0.0000	2,436.1587
2022	43.9578	13.2527	13.4899	0.0260	0.2747	0.5917	0.8663	0.0740	0.5715	0.6455	0.0000	2,417.1052	2,417.1052	0.4139	0.0000	2,426.3311
Maximum	43.9578	17.4377	13.7104	0.0261	2.3078	0.7660	3.0737	1.1535	0.7047	1.8582	0.0000	2,426.6928	2,426.6928	0.5408	0.0000	2,436.1587

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	58.10	0.00	47.61	59.77	0.00	42.15	0.00	0.00	0.00	0.00	0.00	0.00

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Summer

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0545	4.0000e-005	4.8200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110
Energy	0.0291	0.2649	0.2225	1.5900e-003		0.0201	0.0201		0.0201	0.0201		317.8552	317.8552	6.0900e-003	5.8300e-003	319.7440
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	1.0837	0.2649	0.2273	1.5900e-003	0.0000	0.0202	0.0202	0.0000	0.0202	0.0202		317.8655	317.8655	6.1200e-003	5.8300e-003	319.7550

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0545	4.0000e-005	4.8200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110
Energy	0.0291	0.2649	0.2225	1.5900e-003		0.0201	0.0201		0.0201	0.0201		317.8552	317.8552	6.0900e-003	5.8300e-003	319.7440
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	1.0837	0.2649	0.2273	1.5900e-003	0.0000	0.0202	0.0202	0.0000	0.0202	0.0202		317.8655	317.8655	6.1200e-003	5.8300e-003	319.7550

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	9/1/2021	9/2/2021	5	2	
2	Grading	Grading	9/3/2021	9/8/2021	5	4	
3	Building Construction	Building Construction	9/9/2021	6/15/2022	5	200	
4	Paving	Paving	6/16/2022	6/29/2022	5	10	
5	Architectural Coating	Architectural Coating	6/30/2022	7/13/2022	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 70,776; Non-Residential Outdoor: 23,592; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	6.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	20.00	8.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Summer

3.1 Mitigation Measures Construction

- Use Soil Stabilizer
- Replace Ground Cover
- Water Exposed Area
- Water Unpaved Roads
- Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.5558	17.4203	7.5605	0.0172		0.7654	0.7654		0.7041	0.7041		1,666.5174	1,666.5174	0.5390		1,679.9920
Total	1.5558	17.4203	7.5605	0.0172	5.7996	0.7654	6.5650	2.9537	0.7041	3.6578		1,666.5174	1,666.5174	0.5390		1,679.9920

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Summer

3.2 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0289	0.0175	0.2430	8.4000e-004	0.0894	5.8000e-004	0.0900	0.0237	5.3000e-004	0.0243		84.1755	84.1755	1.8000e-003		84.2206
Total	0.0289	0.0175	0.2430	8.4000e-004	0.0894	5.8000e-004	0.0900	0.0237	5.3000e-004	0.0243		84.1755	84.1755	1.8000e-003		84.2206

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.2183	0.0000	2.2183	1.1298	0.0000	1.1298			0.0000			0.0000
Off-Road	1.5558	17.4203	7.5605	0.0172		0.7654	0.7654		0.7041	0.7041	0.0000	1,666.5174	1,666.5174	0.5390		1,679.9920
Total	1.5558	17.4203	7.5605	0.0172	2.2183	0.7654	2.9837	1.1298	0.7041	1.8339	0.0000	1,666.5174	1,666.5174	0.5390		1,679.9920

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Summer

3.2 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0289	0.0175	0.2430	8.4000e-004	0.0894	5.8000e-004	0.0900	0.0237	5.3000e-004	0.0243		84.1755	84.1755	1.8000e-003		84.2206
Total	0.0289	0.0175	0.2430	8.4000e-004	0.0894	5.8000e-004	0.0900	0.0237	5.3000e-004	0.0243		84.1755	84.1755	1.8000e-003		84.2206

3.3 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.9143	0.0000	4.9143	2.5256	0.0000	2.5256			0.0000			0.0000
Off-Road	1.2884	14.3307	6.3314	0.0141		0.6379	0.6379		0.5869	0.5869		1,365.0648	1,365.0648	0.4415		1,376.1020
Total	1.2884	14.3307	6.3314	0.0141	4.9143	0.6379	5.5522	2.5256	0.5869	3.1125		1,365.0648	1,365.0648	0.4415		1,376.1020

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Summer

3.3 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0289	0.0175	0.2430	8.4000e-004	0.0894	5.8000e-004	0.0900	0.0237	5.3000e-004	0.0243		84.1755	84.1755	1.8000e-003		84.2206
Total	0.0289	0.0175	0.2430	8.4000e-004	0.0894	5.8000e-004	0.0900	0.0237	5.3000e-004	0.0243		84.1755	84.1755	1.8000e-003		84.2206

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.8797	0.0000	1.8797	0.9661	0.0000	0.9661			0.0000			0.0000
Off-Road	1.2884	14.3307	6.3314	0.0141		0.6379	0.6379		0.5869	0.5869	0.0000	1,365.0648	1,365.0648	0.4415		1,376.1020
Total	1.2884	14.3307	6.3314	0.0141	1.8797	0.6379	2.5176	0.9661	0.5869	1.5529	0.0000	1,365.0648	1,365.0648	0.4415		1,376.1020

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Summer

3.3 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0289	0.0175	0.2430	8.4000e-004	0.0894	5.8000e-004	0.0900	0.0237	5.3000e-004	0.0243		84.1755	84.1755	1.8000e-003		84.2206
Total	0.0289	0.0175	0.2430	8.4000e-004	0.0894	5.8000e-004	0.0900	0.0237	5.3000e-004	0.0243		84.1755	84.1755	1.8000e-003		84.2206

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608		2,001.2200	2,001.2200	0.3573		2,010.1517
Total	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608		2,001.2200	2,001.2200	0.3573		2,010.1517

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Summer

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0214	0.7505	0.2035	1.9700e-003	0.0511	1.5600e-003	0.0527	0.0147	1.4900e-003	0.0162		215.0340	215.0340	0.0169		215.4555
Worker	0.0722	0.0437	0.6075	2.1100e-003	0.2236	1.4500e-003	0.2250	0.0593	1.3300e-003	0.0606		210.4388	210.4388	4.5100e-003		210.5515
Total	0.0935	0.7942	0.8110	4.0800e-003	0.2747	3.0100e-003	0.2777	0.0740	2.8200e-003	0.0768		425.4728	425.4728	0.0214		426.0070

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608	0.0000	2,001.2200	2,001.2200	0.3573		2,010.1517
Total	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608	0.0000	2,001.2200	2,001.2200	0.3573		2,010.1517

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Summer

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0214	0.7505	0.2035	1.9700e-003	0.0511	1.5600e-003	0.0527	0.0147	1.4900e-003	0.0162		215.0340	215.0340	0.0169		215.4555
Worker	0.0722	0.0437	0.6075	2.1100e-003	0.2236	1.4500e-003	0.2250	0.0593	1.3300e-003	0.0606		210.4388	210.4388	4.5100e-003		210.5515
Total	0.0935	0.7942	0.8110	4.0800e-003	0.2747	3.0100e-003	0.2777	0.0740	2.8200e-003	0.0768		425.4728	425.4728	0.0214		426.0070

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581
Total	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Summer

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0201	0.7100	0.1965	1.9500e-003	0.0511	1.3600e-003	0.0525	0.0147	1.3000e-003	0.0160		212.9221	212.9221	0.0163		213.3304
Worker	0.0682	0.0396	0.5670	2.0300e-003	0.2236	1.4200e-003	0.2250	0.0593	1.3100e-003	0.0606		202.6403	202.6403	4.0900e-003		202.7426
Total	0.0883	0.7496	0.7635	3.9800e-003	0.2747	2.7800e-003	0.2774	0.0740	2.6100e-003	0.0766		415.5623	415.5623	0.0204		416.0730

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689	0.0000	2,001.5429	2,001.5429	0.3486		2,010.2581
Total	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689	0.0000	2,001.5429	2,001.5429	0.3486		2,010.2581

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Summer

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0201	0.7100	0.1965	1.9500e-003	0.0511	1.3600e-003	0.0525	0.0147	1.3000e-003	0.0160		212.9221	212.9221	0.0163		213.3304
Worker	0.0682	0.0396	0.5670	2.0300e-003	0.2236	1.4200e-003	0.2250	0.0593	1.3100e-003	0.0606		202.6403	202.6403	4.0900e-003		202.7426
Total	0.0883	0.7496	0.7635	3.9800e-003	0.2747	2.7800e-003	0.2774	0.0740	2.6100e-003	0.0766		415.5623	415.5623	0.0204		416.0730

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205		1,297.3789	1,297.3789	0.4113		1,307.6608
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205		1,297.3789	1,297.3789	0.4113		1,307.6608

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Summer

3.5 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0443	0.0257	0.3685	1.3200e-003	0.1453	9.2000e-004	0.1462	0.0385	8.5000e-004	0.0394		131.7162	131.7162	2.6600e-003		131.7827
Total	0.0443	0.0257	0.3685	1.3200e-003	0.1453	9.2000e-004	0.1462	0.0385	8.5000e-004	0.0394		131.7162	131.7162	2.6600e-003		131.7827

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205	0.0000	1,297.3789	1,297.3789	0.4113		1,307.6608
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205	0.0000	1,297.3789	1,297.3789	0.4113		1,307.6608

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Summer

3.5 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0443	0.0257	0.3685	1.3200e-003	0.1453	9.2000e-004	0.1462	0.0385	8.5000e-004	0.0394		131.7162	131.7162	2.6600e-003		131.7827
Total	0.0443	0.0257	0.3685	1.3200e-003	0.1453	9.2000e-004	0.1462	0.0385	8.5000e-004	0.0394		131.7162	131.7162	2.6600e-003		131.7827

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	43.7396					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	43.9441	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Summer

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0136	7.9100e-003	0.1134	4.1000e-004	0.0447	2.8000e-004	0.0450	0.0119	2.6000e-004	0.0121		40.5281	40.5281	8.2000e-004		40.5485
Total	0.0136	7.9100e-003	0.1134	4.1000e-004	0.0447	2.8000e-004	0.0450	0.0119	2.6000e-004	0.0121		40.5281	40.5281	8.2000e-004		40.5485

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	43.7396					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	43.9441	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Summer

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0136	7.9100e-003	0.1134	4.1000e-004	0.0447	2.8000e-004	0.0450	0.0119	2.6000e-004	0.0121		40.5281	40.5281	8.2000e-004		40.5485
Total	0.0136	7.9100e-003	0.1134	4.1000e-004	0.0447	2.8000e-004	0.0450	0.0119	2.6000e-004	0.0121		40.5281	40.5281	8.2000e-004		40.5485

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Manufacturing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3
Manufacturing	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.563406	0.043070	0.209298	0.109958	0.015015	0.005784	0.026182	0.017546	0.001775	0.001524	0.004941	0.000598	0.000904
Manufacturing	0.563406	0.043070	0.209298	0.109958	0.015015	0.005784	0.026182	0.017546	0.001775	0.001524	0.004941	0.000598	0.000904

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Summer

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0291	0.2649	0.2225	1.5900e-003		0.0201	0.0201		0.0201	0.0201		317.8552	317.8552	6.0900e-003	5.8300e-003	319.7440
NaturalGas Unmitigated	0.0291	0.2649	0.2225	1.5900e-003		0.0201	0.0201		0.0201	0.0201		317.8552	317.8552	6.0900e-003	5.8300e-003	319.7440

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Summer

5.2 Energy by Land Use - Natural Gas

Unmitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	758.87	8.1800e-003	0.0744	0.0625	4.5000e-004		5.6500e-003	5.6500e-003		5.6500e-003	5.6500e-003		89.2789	89.2789	1.7100e-003	1.6400e-003	89.8094
Manufacturing	1942.9	0.0210	0.1905	0.1600	1.1400e-003		0.0145	0.0145		0.0145	0.0145		228.5763	228.5763	4.3800e-003	4.1900e-003	229.9346
Total		0.0291	0.2649	0.2225	1.5900e-003		0.0201	0.0201		0.0201	0.0201		317.8552	317.8552	6.0900e-003	5.8300e-003	319.7440

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0.75887	8.1800e-003	0.0744	0.0625	4.5000e-004		5.6500e-003	5.6500e-003		5.6500e-003	5.6500e-003		89.2789	89.2789	1.7100e-003	1.6400e-003	89.8094
Manufacturing	1.9429	0.0210	0.1905	0.1600	1.1400e-003		0.0145	0.0145		0.0145	0.0145		228.5763	228.5763	4.3800e-003	4.1900e-003	229.9346
Total		0.0291	0.2649	0.2225	1.5900e-003		0.0201	0.0201		0.0201	0.0201		317.8552	317.8552	6.0900e-003	5.8300e-003	319.7440

6.0 Area Detail

6.1 Mitigation Measures Area

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0545	4.0000e-005	4.8200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110
Unmitigated	1.0545	4.0000e-005	4.8200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1198					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9342					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.5000e-004	4.0000e-005	4.8200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110
Total	1.0545	4.0000e-005	4.8200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Summer

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1198					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9342					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.5000e-004	4.0000e-005	4.8200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110
Total	1.0545	4.0000e-005	4.8200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Summer

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

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

Equipment Type	Number
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11.0 Vegetation

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Winter

Applied Medical L203 Building Expansion Construction Emission Analysis

Orange County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Manufacturing	33.93	1000sqft	0.78	33,931.00	0
General Light Industry	13.25	1000sqft	0.30	13,253.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	30
Climate Zone	8			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - The project is expected to expand the existing L203 building by approximately 33,931 square feet of manufacturing unit. The project is also expected to construct an equipment platform (bridge) building of approximately 13,253 square feet.

Construction Phase -

Vehicle Trips - No operational mobile emission are calculated.

Energy Use - No operational emission are calculated in this analysis.

Water And Wastewater - No operational emission are calculated in this analysis.

Solid Waste - No operational emission are calculated in this analysis.

Construction Off-road Equipment Mitigation - The project will be required to comply with SCAQMD Rule 403 regarding fugitive dust control.

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Winter

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	PhaseEndDate	8/10/2022	7/13/2022
tblConstructionPhase	PhaseEndDate	7/13/2022	6/15/2022
tblConstructionPhase	PhaseEndDate	10/6/2021	9/8/2021
tblConstructionPhase	PhaseEndDate	7/27/2022	6/29/2022
tblConstructionPhase	PhaseEndDate	9/30/2021	9/2/2021
tblConstructionPhase	PhaseStartDate	7/28/2022	6/30/2022
tblConstructionPhase	PhaseStartDate	10/7/2021	9/9/2021
tblConstructionPhase	PhaseStartDate	10/1/2021	9/3/2021
tblConstructionPhase	PhaseStartDate	7/14/2022	6/16/2022
tblConstructionPhase	PhaseStartDate	9/29/2021	9/1/2021
tblEnergyUse	NT24E	3.83	0.00
tblEnergyUse	NT24E	3.83	0.00
tblEnergyUse	T24E	1.63	0.00
tblEnergyUse	T24E	1.63	0.00
tblSolidWaste	SolidWasteGenerationRate	16.43	0.00
tblSolidWaste	SolidWasteGenerationRate	42.07	0.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	ST_TR	1.49	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	SU_TR	0.62	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblVehicleTrips	WD_TR	3.82	0.00
tblWater	IndoorWaterUseRate	3,064,062.50	0.00
tblWater	IndoorWaterUseRate	7,846,312.50	0.00

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Winter

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	1.9166	17.4395	13.6832	0.0260	5.8890	0.7660	6.6550	2.9774	0.7047	3.6821	0.0000	2,410.1376	2,410.1376	0.5407	0.0000	2,419.6181
2022	43.9596	13.2544	13.4641	0.0259	0.2747	0.5917	0.8664	0.0740	0.5715	0.6455	0.0000	2,401.0100	2,401.0100	0.4138	0.0000	2,410.2495
Maximum	43.9596	17.4395	13.6832	0.0260	5.8890	0.7660	6.6550	2.9774	0.7047	3.6821	0.0000	2,410.1376	2,410.1376	0.5407	0.0000	2,419.6181

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	1.9166	17.4395	13.6832	0.0260	2.3078	0.7660	3.0737	1.1535	0.7047	1.8582	0.0000	2,410.1376	2,410.1376	0.5407	0.0000	2,419.6181
2022	43.9596	13.2544	13.4641	0.0259	0.2747	0.5917	0.8664	0.0740	0.5715	0.6455	0.0000	2,401.0100	2,401.0100	0.4138	0.0000	2,410.2495
Maximum	43.9596	17.4395	13.6832	0.0260	2.3078	0.7660	3.0737	1.1535	0.7047	1.8582	0.0000	2,410.1376	2,410.1376	0.5407	0.0000	2,419.6181

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	58.10	0.00	47.61	59.77	0.00	42.15	0.00	0.00	0.00	0.00	0.00	0.00

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Winter

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0545	4.0000e-005	4.8200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110
Energy	0.0291	0.2649	0.2225	1.5900e-003		0.0201	0.0201		0.0201	0.0201		317.8552	317.8552	6.0900e-003	5.8300e-003	319.7440
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	1.0837	0.2649	0.2273	1.5900e-003	0.0000	0.0202	0.0202	0.0000	0.0202	0.0202		317.8655	317.8655	6.1200e-003	5.8300e-003	319.7550

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0545	4.0000e-005	4.8200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110
Energy	0.0291	0.2649	0.2225	1.5900e-003		0.0201	0.0201		0.0201	0.0201		317.8552	317.8552	6.0900e-003	5.8300e-003	319.7440
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	1.0837	0.2649	0.2273	1.5900e-003	0.0000	0.0202	0.0202	0.0000	0.0202	0.0202		317.8655	317.8655	6.1200e-003	5.8300e-003	319.7550

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	9/1/2021	9/2/2021	5	2	
2	Grading	Grading	9/3/2021	9/8/2021	5	4	
3	Building Construction	Building Construction	9/9/2021	6/15/2022	5	200	
4	Paving	Paving	6/16/2022	6/29/2022	5	10	
5	Architectural Coating	Architectural Coating	6/30/2022	7/13/2022	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 70,776; Non-Residential Outdoor: 23,592; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	6.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	20.00	8.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Winter

3.1 Mitigation Measures Construction

- Use Soil Stabilizer
- Replace Ground Cover
- Water Exposed Area
- Water Unpaved Roads
- Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.5558	17.4203	7.5605	0.0172		0.7654	0.7654		0.7041	0.7041		1,666.5174	1,666.5174	0.5390		1,679.9920
Total	1.5558	17.4203	7.5605	0.0172	5.7996	0.7654	6.5650	2.9537	0.7041	3.6578		1,666.5174	1,666.5174	0.5390		1,679.9920

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Winter

3.2 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0327	0.0192	0.2242	8.0000e-004	0.0894	5.8000e-004	0.0900	0.0237	5.3000e-004	0.0243		79.6666	79.6666	1.7100e-003		79.7092
Total	0.0327	0.0192	0.2242	8.0000e-004	0.0894	5.8000e-004	0.0900	0.0237	5.3000e-004	0.0243		79.6666	79.6666	1.7100e-003		79.7092

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.2183	0.0000	2.2183	1.1298	0.0000	1.1298			0.0000			0.0000
Off-Road	1.5558	17.4203	7.5605	0.0172		0.7654	0.7654		0.7041	0.7041	0.0000	1,666.5174	1,666.5174	0.5390		1,679.9920
Total	1.5558	17.4203	7.5605	0.0172	2.2183	0.7654	2.9837	1.1298	0.7041	1.8339	0.0000	1,666.5174	1,666.5174	0.5390		1,679.9920

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Winter

3.2 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0327	0.0192	0.2242	8.0000e-004	0.0894	5.8000e-004	0.0900	0.0237	5.3000e-004	0.0243		79.6666	79.6666	1.7100e-003		79.7092
Total	0.0327	0.0192	0.2242	8.0000e-004	0.0894	5.8000e-004	0.0900	0.0237	5.3000e-004	0.0243		79.6666	79.6666	1.7100e-003		79.7092

3.3 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.9143	0.0000	4.9143	2.5256	0.0000	2.5256			0.0000			0.0000
Off-Road	1.2884	14.3307	6.3314	0.0141		0.6379	0.6379		0.5869	0.5869		1,365.0648	1,365.0648	0.4415		1,376.1020
Total	1.2884	14.3307	6.3314	0.0141	4.9143	0.6379	5.5522	2.5256	0.5869	3.1125		1,365.0648	1,365.0648	0.4415		1,376.1020

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Winter

3.3 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0327	0.0192	0.2242	8.0000e-004	0.0894	5.8000e-004	0.0900	0.0237	5.3000e-004	0.0243		79.6666	79.6666	1.7100e-003		79.7092
Total	0.0327	0.0192	0.2242	8.0000e-004	0.0894	5.8000e-004	0.0900	0.0237	5.3000e-004	0.0243		79.6666	79.6666	1.7100e-003		79.7092

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.8797	0.0000	1.8797	0.9661	0.0000	0.9661			0.0000			0.0000
Off-Road	1.2884	14.3307	6.3314	0.0141		0.6379	0.6379		0.5869	0.5869	0.0000	1,365.0648	1,365.0648	0.4415		1,376.1020
Total	1.2884	14.3307	6.3314	0.0141	1.8797	0.6379	2.5176	0.9661	0.5869	1.5529	0.0000	1,365.0648	1,365.0648	0.4415		1,376.1020

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Winter

3.3 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0327	0.0192	0.2242	8.0000e-004	0.0894	5.8000e-004	0.0900	0.0237	5.3000e-004	0.0243		79.6666	79.6666	1.7100e-003		79.7092
Total	0.0327	0.0192	0.2242	8.0000e-004	0.0894	5.8000e-004	0.0900	0.0237	5.3000e-004	0.0243		79.6666	79.6666	1.7100e-003		79.7092

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608		2,001.2200	2,001.2200	0.3573		2,010.1517
Total	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608		2,001.2200	2,001.2200	0.3573		2,010.1517

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Winter

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0224	0.7488	0.2233	1.9300e-003	0.0511	1.6200e-003	0.0527	0.0147	1.5500e-003	0.0163		209.7512	209.7512	0.0177		210.1934
Worker	0.0817	0.0480	0.5605	2.0000e-003	0.2236	1.4500e-003	0.2250	0.0593	1.3300e-003	0.0606		199.1664	199.1664	4.2600e-003		199.2731
Total	0.1041	0.7968	0.7838	3.9300e-003	0.2747	3.0700e-003	0.2777	0.0740	2.8800e-003	0.0769		408.9176	408.9176	0.0220		409.4664

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608	0.0000	2,001.2200	2,001.2200	0.3573		2,010.1517
Total	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608	0.0000	2,001.2200	2,001.2200	0.3573		2,010.1517

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Winter

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0224	0.7488	0.2233	1.9300e-003	0.0511	1.6200e-003	0.0527	0.0147	1.5500e-003	0.0163		209.7512	209.7512	0.0177		210.1934
Worker	0.0817	0.0480	0.5605	2.0000e-003	0.2236	1.4500e-003	0.2250	0.0593	1.3300e-003	0.0606		199.1664	199.1664	4.2600e-003		199.2731
Total	0.1041	0.7968	0.7838	3.9300e-003	0.2747	3.0700e-003	0.2777	0.0740	2.8800e-003	0.0769		408.9176	408.9176	0.0220		409.4664

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581
Total	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Winter

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0211	0.7079	0.2153	1.9000e-003	0.0511	1.4100e-003	0.0525	0.0147	1.3500e-003	0.0161		207.6714	207.6714	0.0171		208.0989
Worker	0.0774	0.0435	0.5224	1.9200e-003	0.2236	1.4200e-003	0.2250	0.0593	1.3100e-003	0.0606		191.7958	191.7958	3.8700e-003		191.8925
Total	0.0985	0.7514	0.7377	3.8200e-003	0.2747	2.8300e-003	0.2775	0.0740	2.6600e-003	0.0767		399.4672	399.4672	0.0210		399.9914

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689	0.0000	2,001.5429	2,001.5429	0.3486		2,010.2581
Total	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689	0.0000	2,001.5429	2,001.5429	0.3486		2,010.2581

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Winter

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0211	0.7079	0.2153	1.9000e-003	0.0511	1.4100e-003	0.0525	0.0147	1.3500e-003	0.0161		207.6714	207.6714	0.0171		208.0989
Worker	0.0774	0.0435	0.5224	1.9200e-003	0.2236	1.4200e-003	0.2250	0.0593	1.3100e-003	0.0606		191.7958	191.7958	3.8700e-003		191.8925
Total	0.0985	0.7514	0.7377	3.8200e-003	0.2747	2.8300e-003	0.2775	0.0740	2.6600e-003	0.0767		399.4672	399.4672	0.0210		399.9914

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205		1,297.3789	1,297.3789	0.4113		1,307.6608
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205		1,297.3789	1,297.3789	0.4113		1,307.6608

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Winter

3.5 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0503	0.0283	0.3395	1.2500e-003	0.1453	9.2000e-004	0.1462	0.0385	8.5000e-004	0.0394		124.6672	124.6672	2.5200e-003		124.7301
Total	0.0503	0.0283	0.3395	1.2500e-003	0.1453	9.2000e-004	0.1462	0.0385	8.5000e-004	0.0394		124.6672	124.6672	2.5200e-003		124.7301

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205	0.0000	1,297.3789	1,297.3789	0.4113		1,307.6608
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205	0.0000	1,297.3789	1,297.3789	0.4113		1,307.6608

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Winter

3.5 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0503	0.0283	0.3395	1.2500e-003	0.1453	9.2000e-004	0.1462	0.0385	8.5000e-004	0.0394		124.6672	124.6672	2.5200e-003		124.7301
Total	0.0503	0.0283	0.3395	1.2500e-003	0.1453	9.2000e-004	0.1462	0.0385	8.5000e-004	0.0394		124.6672	124.6672	2.5200e-003		124.7301

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	43.7396					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	43.9441	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Winter

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0155	8.7000e-003	0.1045	3.8000e-004	0.0447	2.8000e-004	0.0450	0.0119	2.6000e-004	0.0121		38.3592	38.3592	7.7000e-004		38.3785
Total	0.0155	8.7000e-003	0.1045	3.8000e-004	0.0447	2.8000e-004	0.0450	0.0119	2.6000e-004	0.0121		38.3592	38.3592	7.7000e-004		38.3785

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	43.7396					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	43.9441	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Winter

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0155	8.7000e-003	0.1045	3.8000e-004	0.0447	2.8000e-004	0.0450	0.0119	2.6000e-004	0.0121		38.3592	38.3592	7.7000e-004		38.3785
Total	0.0155	8.7000e-003	0.1045	3.8000e-004	0.0447	2.8000e-004	0.0450	0.0119	2.6000e-004	0.0121		38.3592	38.3592	7.7000e-004		38.3785

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Manufacturing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3
Manufacturing	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.563406	0.043070	0.209298	0.109958	0.015015	0.005784	0.026182	0.017546	0.001775	0.001524	0.004941	0.000598	0.000904
Manufacturing	0.563406	0.043070	0.209298	0.109958	0.015015	0.005784	0.026182	0.017546	0.001775	0.001524	0.004941	0.000598	0.000904

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Winter

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0291	0.2649	0.2225	1.5900e-003		0.0201	0.0201		0.0201	0.0201		317.8552	317.8552	6.0900e-003	5.8300e-003	319.7440
NaturalGas Unmitigated	0.0291	0.2649	0.2225	1.5900e-003		0.0201	0.0201		0.0201	0.0201		317.8552	317.8552	6.0900e-003	5.8300e-003	319.7440

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Winter

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	758.87	8.1800e-003	0.0744	0.0625	4.5000e-004		5.6500e-003	5.6500e-003		5.6500e-003	5.6500e-003		89.2789	89.2789	1.7100e-003	1.6400e-003	89.8094
Manufacturing	1942.9	0.0210	0.1905	0.1600	1.1400e-003		0.0145	0.0145		0.0145	0.0145		228.5763	228.5763	4.3800e-003	4.1900e-003	229.9346
Total		0.0291	0.2649	0.2225	1.5900e-003		0.0201	0.0201		0.0201	0.0201		317.8552	317.8552	6.0900e-003	5.8300e-003	319.7440

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0.75887	8.1800e-003	0.0744	0.0625	4.5000e-004		5.6500e-003	5.6500e-003		5.6500e-003	5.6500e-003		89.2789	89.2789	1.7100e-003	1.6400e-003	89.8094
Manufacturing	1.9429	0.0210	0.1905	0.1600	1.1400e-003		0.0145	0.0145		0.0145	0.0145		228.5763	228.5763	4.3800e-003	4.1900e-003	229.9346
Total		0.0291	0.2649	0.2225	1.5900e-003		0.0201	0.0201		0.0201	0.0201		317.8552	317.8552	6.0900e-003	5.8300e-003	319.7440

6.0 Area Detail

6.1 Mitigation Measures Area

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0545	4.0000e-005	4.8200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110
Unmitigated	1.0545	4.0000e-005	4.8200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1198					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9342					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.5000e-004	4.0000e-005	4.8200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110
Total	1.0545	4.0000e-005	4.8200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Winter

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1198					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9342					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.5000e-004	4.0000e-005	4.8200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110
Total	1.0545	4.0000e-005	4.8200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Winter

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

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

Equipment Type	Number
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11.0 Vegetation

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Summer

Applied Medical Building L203 Expansion Operational Emission Analysis
Orange County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	13.25	1000sqft	0.30	13,253.00	0
Manufacturing	107.10	1000sqft	2.46	107,100.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	30
Climate Zone	8			Operational Year	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	702.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Summer

Project Characteristics -

Land Use - The project is expected to operate an approximately 107,099 square feet of manufacturing unit. The project is also expected to operate an equipment platform (bridge) building. The equipment platform is not expected to generate any traffic, water usage or waste. The equipment platform building (General Light Industrial) is used to estimate the electricity consumption.

Construction Phase - Construction emission are estimated in a separate file.

Vehicle Trips - The trip generation rates are based of Applied Medical Resources Building L203 Expansion Focused Traffic Analysis, by RK Engineering Group, February 2021.

Water And Wastewater - The equipment platform is not expected to generate any water consumption.

Solid Waste - The equipment platform is not expected to generate solid waste.

Operational Off-Road Equipment - The project is expected to operate 6 electric forklifts at L203 building.

Stationary Sources - Process Boilers - The project is proposing to instal three (3) boilers and two (2) micro turbines. For the purpose of this analysis, microturbines are modelled as boilers. Boiler specification is provided by the applicant.

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	13,250.00	13,253.00
tblOperationalOffRoadEquipment	OperFuelType	Diesel	Electrical
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	6.00
tblSolidWaste	SolidWasteGenerationRate	16.43	0.00
tblStationaryBoilersUse	NumberOfEquipment	0.00	5.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	ST_TR	1.49	6.42
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	SU_TR	0.62	5.09
tblVehicleTrips	WD_TR	6.97	0.00
tblVehicleTrips	WD_TR	3.82	3.93
tblWater	IndoorWaterUseRate	3,064,062.50	0.00

2.0 Emissions Summary

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Summer

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.6898	1.1000e-004	0.0123	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0263	0.0263	7.0000e-005		0.0281
Energy	0.0743	0.6756	0.5675	4.0500e-003		0.0514	0.0514		0.0514	0.0514		810.7583	810.7583	0.0155	0.0149	815.5763
Mobile	1.2176	5.1199	18.6289	0.0724	6.4585	0.0510	6.5094	1.7270	0.0475	1.7745		7,344.9496	7,344.9496	0.2905		7,352.2130
Offroad	0.7760	7.0748	7.0071	9.1700e-003		0.5022	0.5022		0.4620	0.4620		888.1850	888.1850	0.2873		895.3664
Stationary	1.2933	5.7565	23.0448	0.1411		1.7872	1.7872		1.7872	1.7872		28,218.1217	28,218.1217	0.5409		28,231.6429
Total	6.0510	18.6269	49.2607	0.2267	6.4585	2.3917	8.8502	1.7270	2.3480	4.0751		37,262.0409	37,262.0409	1.1343	0.0149	37,294.8266

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Summer

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.6898	1.1000e-004	0.0123	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0263	0.0263	7.0000e-005		0.0281
Energy	0.0743	0.6756	0.5675	4.0500e-003		0.0514	0.0514		0.0514	0.0514		810.7583	810.7583	0.0155	0.0149	815.5763
Mobile	1.2176	5.1199	18.6289	0.0724	6.4585	0.0510	6.5094	1.7270	0.0475	1.7745		7,344.9496	7,344.9496	0.2905		7,352.2130
Offroad	0.7760	7.0748	7.0071	9.1700e-003		0.5022	0.5022		0.4620	0.4620		888.1850	888.1850	0.2873		895.3664
Stationary	1.2933	5.7565	23.0448	0.1411		1.7872	1.7872		1.7872	1.7872		28,218.1217	28,218.1217	0.5409		28,231.6429
Total	6.0510	18.6269	49.2607	0.2267	6.4585	2.3917	8.8502	1.7270	2.3480	4.0751		37,262.0409	37,262.0409	1.1343	0.0149	37,294.8266

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	6/1/2021	6/14/2021	5	10	

Acres of Grading (Site Preparation Phase): 0

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Summer

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 180,530; Non-Residential Outdoor: 60,177; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Summer

3.2 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	111.5677					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	111.7866	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0361	0.0218	0.3037	1.0600e-003	0.1118	7.2000e-004	0.1125	0.0296	6.7000e-004	0.0303		105.2194	105.2194	2.2500e-003		105.2758
Total	0.0361	0.0218	0.3037	1.0600e-003	0.1118	7.2000e-004	0.1125	0.0296	6.7000e-004	0.0303		105.2194	105.2194	2.2500e-003		105.2758

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Summer

3.2 Architectural Coating - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	111.5677					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	111.7866	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0361	0.0218	0.3037	1.0600e-003	0.1118	7.2000e-004	0.1125	0.0296	6.7000e-004	0.0303		105.2194	105.2194	2.2500e-003		105.2758
Total	0.0361	0.0218	0.3037	1.0600e-003	0.1118	7.2000e-004	0.1125	0.0296	6.7000e-004	0.0303		105.2194	105.2194	2.2500e-003		105.2758

4.0 Operational Detail - Mobile

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Summer

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.2176	5.1199	18.6289	0.0724	6.4585	0.0510	6.5094	1.7270	0.0475	1.7745		7,344.9496	7,344.9496	0.2905		7,352.2130
Unmitigated	1.2176	5.1199	18.6289	0.0724	6.4585	0.0510	6.5094	1.7270	0.0475	1.7745		7,344.9496	7,344.9496	0.2905		7,352.2130

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Manufacturing	420.90	687.58	545.14	2,111,172	2,111,172
Total	420.90	687.58	545.14	2,111,172	2,111,172

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3
Manufacturing	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Summer

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.558976	0.043534	0.209821	0.113949	0.016111	0.005791	0.025447	0.016654	0.001713	0.001553	0.004896	0.000590	0.000966
Manufacturing	0.558976	0.043534	0.209821	0.113949	0.016111	0.005791	0.025447	0.016654	0.001713	0.001553	0.004896	0.000590	0.000966

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
NaturalGas Mitigated	0.0743	0.6756	0.5675	4.0500e-003		0.0514	0.0514		0.0514	0.0514		810.7583	810.7583	0.0155	0.0149	815.5763
NaturalGas Unmitigated	0.0743	0.6756	0.5675	4.0500e-003		0.0514	0.0514		0.0514	0.0514		810.7583	810.7583	0.0155	0.0149	815.5763

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Summer

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	758.87	8.1800e-003	0.0744	0.0625	4.5000e-004		5.6500e-003	5.6500e-003		5.6500e-003	5.6500e-003		89.2789	89.2789	1.7100e-003	1.6400e-003	89.8094
Manufacturing	6132.58	0.0661	0.6012	0.5050	3.6100e-003		0.0457	0.0457		0.0457	0.0457		721.4795	721.4795	0.0138	0.0132	725.7668
Total		0.0743	0.6756	0.5675	4.0600e-003		0.0513	0.0513		0.0513	0.0513		810.7583	810.7583	0.0155	0.0149	815.5763

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0.75887	8.1800e-003	0.0744	0.0625	4.5000e-004		5.6500e-003	5.6500e-003		5.6500e-003	5.6500e-003		89.2789	89.2789	1.7100e-003	1.6400e-003	89.8094
Manufacturing	6.13258	0.0661	0.6012	0.5050	3.6100e-003		0.0457	0.0457		0.0457	0.0457		721.4795	721.4795	0.0138	0.0132	725.7668
Total		0.0743	0.6756	0.5675	4.0600e-003		0.0513	0.0513		0.0513	0.0513		810.7583	810.7583	0.0155	0.0149	815.5763

6.0 Area Detail

6.1 Mitigation Measures Area

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.6898	1.1000e-004	0.0123	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0263	0.0263	7.0000e-005		0.0281
Unmitigated	2.6898	1.1000e-004	0.0123	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0263	0.0263	7.0000e-005		0.0281

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3057					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.3830					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.1500e-003	1.1000e-004	0.0123	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0263	0.0263	7.0000e-005		0.0281
Total	2.6898	1.1000e-004	0.0123	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0263	0.0263	7.0000e-005		0.0281

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Summer

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3057					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.3830					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.1500e-003	1.1000e-004	0.0123	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0263	0.0263	7.0000e-005		0.0281
Total	2.6898	1.1000e-004	0.0123	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0263	0.0263	7.0000e-005		0.0281

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	6	8.00	260	89	0.20	Electrical

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Summer

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Forklifts	0.7760	7.0748	7.0071	9.1700e-003		0.5022	0.5022		0.4620	0.4620		888.1850	888.1850	0.2873		895.3664
Total	0.7760	7.0748	7.0071	9.1700e-003		0.5022	0.5022		0.4620	0.4620		888.1850	888.1850	0.2873		895.3664

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
Boiler	5	47.97	17511.24	1.999	CNG

User Defined Equipment

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

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Summer

10.1 Stationary Sources

Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Boiler - CNG (0 - 2 MMBTU)	1.2933	5.7565	23.0448	0.1411		1.7872	1.7872		1.7872	1.7872		28,218.12 17	28,218.12 17	0.5409		28,231.64 29
Total	1.2933	5.7565	23.0448	0.1411		1.7872	1.7872		1.7872	1.7872		28,218.12 17	28,218.12 17	0.5409		28,231.64 29

11.0 Vegetation

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Winter

Applied Medical Building L203 Expansion Operational Emission Analysis
Orange County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	13.25	1000sqft	0.30	13,253.00	0
Manufacturing	107.10	1000sqft	2.46	107,100.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	30
Climate Zone	8			Operational Year	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	702.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Winter

Project Characteristics -

Land Use - The project is expected to operate an approximately 107,099 square feet of manufacturing unit. The project is also expected to operate an equipment platform (bridge) building. The equipment platform is not expected to generate any traffic, water usage or waste. The equipment platform building (General Light Industrial) is used to estimate the electricity consumption.

Construction Phase - Construction emission are estimated in a separate file.

Vehicle Trips - The trip generation rates are based of Applied Medical Resources Building L203 Expansion Focused Traffic Analysis, by RK Engineering Group, February 2021.

Water And Wastewater - The equipment platform is not expected to generate any water consumption.

Solid Waste - The equipment platform is not expected to generate solid waste.

Operational Off-Road Equipment - The project is expected to operate 6 electric forklifts at L203 building.

Stationary Sources - Process Boilers - The project is proposing to instal three (3) boilers and two (2) micro turbines. For the purpose of this analysis, microturbines are modelled as boilers. Boiler specification is provided by the applicant.

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	13,250.00	13,253.00
tblOperationalOffRoadEquipment	OperFuelType	Diesel	Electrical
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	6.00
tblSolidWaste	SolidWasteGenerationRate	16.43	0.00
tblStationaryBoilersUse	NumberOfEquipment	0.00	5.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	ST_TR	1.49	6.42
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	SU_TR	0.62	5.09
tblVehicleTrips	WD_TR	6.97	0.00
tblVehicleTrips	WD_TR	3.82	3.93
tblWater	IndoorWaterUseRate	3,064,062.50	0.00

2.0 Emissions Summary

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Winter

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.6898	1.1000e-004	0.0123	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0263	0.0263	7.0000e-005		0.0281
Energy	0.0743	0.6756	0.5675	4.0500e-003		0.0514	0.0514		0.0514	0.0514		810.7583	810.7583	0.0155	0.0149	815.5763
Mobile	1.1971	5.2974	17.6312	0.0692	6.4585	0.0512	6.5096	1.7270	0.0476	1.7747		7,020.6141	7,020.6141	0.2880		7,027.8138
Offroad	0.7760	7.0748	7.0071	9.1700e-003		0.5022	0.5022		0.4620	0.4620		888.1850	888.1850	0.2873		895.3664
Stationary	1.2933	5.7565	23.0448	0.1411		1.7872	1.7872		1.7872	1.7872		28,218.1217	28,218.1217	0.5409		28,231.6429
Total	6.0305	18.8044	48.2630	0.2235	6.4585	2.3919	8.8503	1.7270	2.3482	4.0752		36,937.7055	36,937.7055	1.1317	0.0149	36,970.4275

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Winter

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.6898	1.1000e-004	0.0123	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0263	0.0263	7.0000e-005		0.0281
Energy	0.0743	0.6756	0.5675	4.0500e-003		0.0514	0.0514		0.0514	0.0514		810.7583	810.7583	0.0155	0.0149	815.5763
Mobile	1.1971	5.2974	17.6312	0.0692	6.4585	0.0512	6.5096	1.7270	0.0476	1.7747		7,020.6141	7,020.6141	0.2880		7,027.8138
Offroad	0.7760	7.0748	7.0071	9.1700e-003		0.5022	0.5022		0.4620	0.4620		888.1850	888.1850	0.2873		895.3664
Stationary	1.2933	5.7565	23.0448	0.1411		1.7872	1.7872		1.7872	1.7872		28,218.1217	28,218.1217	0.5409		28,231.6429
Total	6.0305	18.8044	48.2630	0.2235	6.4585	2.3919	8.8503	1.7270	2.3482	4.0752		36,937.7055	36,937.7055	1.1317	0.0149	36,970.4275

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	6/1/2021	6/14/2021	5	10	

Acres of Grading (Site Preparation Phase): 0

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Winter

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 180,530; Non-Residential Outdoor: 60,177; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Winter

3.2 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	111.5677					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	111.7866	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0409	0.0240	0.2803	1.0000e-003	0.1118	7.2000e-004	0.1125	0.0296	6.7000e-004	0.0303		99.5832	99.5832	2.1300e-003		99.6365
Total	0.0409	0.0240	0.2803	1.0000e-003	0.1118	7.2000e-004	0.1125	0.0296	6.7000e-004	0.0303		99.5832	99.5832	2.1300e-003		99.6365

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Winter

3.2 Architectural Coating - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	111.5677					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	111.7866	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0409	0.0240	0.2803	1.0000e-003	0.1118	7.2000e-004	0.1125	0.0296	6.7000e-004	0.0303		99.5832	99.5832	2.1300e-003		99.6365
Total	0.0409	0.0240	0.2803	1.0000e-003	0.1118	7.2000e-004	0.1125	0.0296	6.7000e-004	0.0303		99.5832	99.5832	2.1300e-003		99.6365

4.0 Operational Detail - Mobile

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Winter

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.1971	5.2974	17.6312	0.0692	6.4585	0.0512	6.5096	1.7270	0.0476	1.7747		7,020.614 1	7,020.614 1	0.2880		7,027.813 8
Unmitigated	1.1971	5.2974	17.6312	0.0692	6.4585	0.0512	6.5096	1.7270	0.0476	1.7747		7,020.614 1	7,020.614 1	0.2880		7,027.813 8

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Manufacturing	420.90	687.58	545.14	2,111,172	2,111,172
Total	420.90	687.58	545.14	2,111,172	2,111,172

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3
Manufacturing	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Winter

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.558976	0.043534	0.209821	0.113949	0.016111	0.005791	0.025447	0.016654	0.001713	0.001553	0.004896	0.000590	0.000966
Manufacturing	0.558976	0.043534	0.209821	0.113949	0.016111	0.005791	0.025447	0.016654	0.001713	0.001553	0.004896	0.000590	0.000966

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
NaturalGas Mitigated	0.0743	0.6756	0.5675	4.0500e-003		0.0514	0.0514		0.0514	0.0514		810.7583	810.7583	0.0155	0.0149	815.5763
NaturalGas Unmitigated	0.0743	0.6756	0.5675	4.0500e-003		0.0514	0.0514		0.0514	0.0514		810.7583	810.7583	0.0155	0.0149	815.5763

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Winter

5.2 Energy by Land Use - Natural Gas

Unmitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	758.87	8.1800e-003	0.0744	0.0625	4.5000e-004		5.6500e-003	5.6500e-003		5.6500e-003	5.6500e-003		89.2789	89.2789	1.7100e-003	1.6400e-003	89.8094
Manufacturing	6132.58	0.0661	0.6012	0.5050	3.6100e-003		0.0457	0.0457		0.0457	0.0457		721.4795	721.4795	0.0138	0.0132	725.7668
Total		0.0743	0.6756	0.5675	4.0600e-003		0.0513	0.0513		0.0513	0.0513		810.7583	810.7583	0.0155	0.0149	815.5763

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0.75887	8.1800e-003	0.0744	0.0625	4.5000e-004		5.6500e-003	5.6500e-003		5.6500e-003	5.6500e-003		89.2789	89.2789	1.7100e-003	1.6400e-003	89.8094
Manufacturing	6.13258	0.0661	0.6012	0.5050	3.6100e-003		0.0457	0.0457		0.0457	0.0457		721.4795	721.4795	0.0138	0.0132	725.7668
Total		0.0743	0.6756	0.5675	4.0600e-003		0.0513	0.0513		0.0513	0.0513		810.7583	810.7583	0.0155	0.0149	815.5763

6.0 Area Detail

6.1 Mitigation Measures Area

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.6898	1.1000e-004	0.0123	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0263	0.0263	7.0000e-005		0.0281
Unmitigated	2.6898	1.1000e-004	0.0123	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0263	0.0263	7.0000e-005		0.0281

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3057					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.3830					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.1500e-003	1.1000e-004	0.0123	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0263	0.0263	7.0000e-005		0.0281
Total	2.6898	1.1000e-004	0.0123	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0263	0.0263	7.0000e-005		0.0281

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Winter

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3057					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.3830					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.1500e-003	1.1000e-004	0.0123	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0263	0.0263	7.0000e-005		0.0281
Total	2.6898	1.1000e-004	0.0123	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0263	0.0263	7.0000e-005		0.0281

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	6	8.00	260	89	0.20	Electrical

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Winter

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Forklifts	0.7760	7.0748	7.0071	9.1700e-003		0.5022	0.5022		0.4620	0.4620		888.1850	888.1850	0.2873		895.3664
Total	0.7760	7.0748	7.0071	9.1700e-003		0.5022	0.5022		0.4620	0.4620		888.1850	888.1850	0.2873		895.3664

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
Boiler	5	47.97	17511.24	1.999	CNG

User Defined Equipment

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

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Winter

10.1 Stationary Sources

Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Boiler - CNG (0 - 2 MMBTU)	1.2933	5.7565	23.0448	0.1411		1.7872	1.7872		1.7872	1.7872		28,218.12 17	28,218.12 17	0.5409		28,231.64 29
Total	1.2933	5.7565	23.0448	0.1411		1.7872	1.7872		1.7872	1.7872		28,218.12 17	28,218.12 17	0.5409		28,231.64 29

11.0 Vegetation

Appendix B

Annual Emission Calculations Output
(CalEEMod)

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Annual

Applied Medical L203 Building Expansion Construction Emission Analysis

Orange County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Manufacturing	33.93	1000sqft	0.78	33,931.00	0
General Light Industry	13.25	1000sqft	0.30	13,253.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	30
Climate Zone	8			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - The project is expected to expand the existing L203 building by approximately 33,931 square feet of manufacturing unit. The project is also expected to construct an equipment platform (bridge) building of approximately 13,253 square feet.

Construction Phase -

Vehicle Trips - No operational mobile emission are calculated.

Energy Use - No operational emission are calculated in this analysis.

Water And Wastewater - No operational emission are calculated in this analysis.

Solid Waste - No operational emission are calculated in this analysis.

Construction Off-road Equipment Mitigation - The project will be required to comply with SCAQMD Rule 403 regarding fugitive dust control.

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Annual

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	PhaseEndDate	8/10/2022	7/13/2022
tblConstructionPhase	PhaseEndDate	7/13/2022	6/15/2022
tblConstructionPhase	PhaseEndDate	10/6/2021	9/8/2021
tblConstructionPhase	PhaseEndDate	7/27/2022	6/29/2022
tblConstructionPhase	PhaseEndDate	9/30/2021	9/2/2021
tblConstructionPhase	PhaseStartDate	7/28/2022	6/30/2022
tblConstructionPhase	PhaseStartDate	10/7/2021	9/9/2021
tblConstructionPhase	PhaseStartDate	10/1/2021	9/3/2021
tblConstructionPhase	PhaseStartDate	7/14/2022	6/16/2022
tblConstructionPhase	PhaseStartDate	9/29/2021	9/1/2021
tblEnergyUse	NT24E	3.83	0.00
tblEnergyUse	NT24E	3.83	0.00
tblEnergyUse	T24E	1.63	0.00
tblEnergyUse	T24E	1.63	0.00
tblSolidWaste	SolidWasteGenerationRate	16.43	0.00
tblSolidWaste	SolidWasteGenerationRate	42.07	0.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	ST_TR	1.49	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	SU_TR	0.62	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblVehicleTrips	WD_TR	3.82	0.00
tblWater	IndoorWaterUseRate	3,064,062.50	0.00
tblWater	IndoorWaterUseRate	7,846,312.50	0.00

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Annual

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0824	0.6385	0.5821	1.1100e-003	0.0270	0.0302	0.0572	0.0111	0.0291	0.0402	0.0000	94.0798	94.0798	0.0154	0.0000	94.4644
2022	0.3260	0.8239	0.8500	1.6200e-003	0.0169	0.0371	0.0539	4.5400e-003	0.0357	0.0403	0.0000	136.7431	136.7431	0.0217	0.0000	137.2862
Maximum	0.3260	0.8239	0.8500	1.6200e-003	0.0270	0.0371	0.0572	0.0111	0.0357	0.0403	0.0000	136.7431	136.7431	0.0217	0.0000	137.2862

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0824	0.6385	0.5821	1.1100e-003	0.0173	0.0302	0.0475	6.1200e-003	0.0291	0.0352	0.0000	94.0797	94.0797	0.0154	0.0000	94.4643
2022	0.3260	0.8239	0.8500	1.6200e-003	0.0169	0.0371	0.0539	4.5400e-003	0.0357	0.0403	0.0000	136.7430	136.7430	0.0217	0.0000	137.2861
Maximum	0.3260	0.8239	0.8500	1.6200e-003	0.0173	0.0371	0.0539	6.1200e-003	0.0357	0.0403	0.0000	136.7430	136.7430	0.0217	0.0000	137.2861

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	22.02	0.00	8.69	31.67	0.00	6.14	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	9-1-2021	11-30-2021	0.5317	0.5317
2	12-1-2021	2-28-2022	0.4971	0.4971
3	3-1-2022	5-31-2022	0.4926	0.4926
4	6-1-2022	8-31-2022	0.3448	0.3448
		Highest	0.5317	0.5317

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1924	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1700e-003	1.1700e-003	0.0000	0.0000	1.2500e-003
Energy	5.3200e-003	0.0483	0.0406	2.9000e-004		3.6700e-003	3.6700e-003		3.6700e-003	3.6700e-003	0.0000	97.5757	97.5757	2.8600e-003	1.3500e-003	98.0492
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.1977	0.0484	0.0412	2.9000e-004	0.0000	3.6700e-003	3.6700e-003	0.0000	3.6700e-003	3.6700e-003	0.0000	97.5768	97.5768	2.8600e-003	1.3500e-003	98.0504

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Annual

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1924	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1700e-003	1.1700e-003	0.0000	0.0000	1.2500e-003
Energy	5.3200e-003	0.0483	0.0406	2.9000e-004		3.6700e-003	3.6700e-003		3.6700e-003	3.6700e-003	0.0000	97.5757	97.5757	2.8600e-003	1.3500e-003	98.0492
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.1977	0.0484	0.0412	2.9000e-004	0.0000	3.6700e-003	3.6700e-003	0.0000	3.6700e-003	3.6700e-003	0.0000	97.5768	97.5768	2.8600e-003	1.3500e-003	98.0504

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	9/1/2021	9/2/2021	5	2	
2	Grading	Grading	9/3/2021	9/8/2021	5	4	
3	Building Construction	Building Construction	9/9/2021	6/15/2022	5	200	
4	Paving	Paving	6/16/2022	6/29/2022	5	10	
5	Architectural Coating	Architectural Coating	6/30/2022	7/13/2022	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 70,776; Non-Residential Outdoor: 23,592; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	6.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	20.00	8.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Annual

3.1 Mitigation Measures Construction

- Use Soil Stabilizer
- Replace Ground Cover
- Water Exposed Area
- Water Unpaved Roads
- Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.8000e-003	0.0000	5.8000e-003	2.9500e-003	0.0000	2.9500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5600e-003	0.0174	7.5600e-003	2.0000e-005		7.7000e-004	7.7000e-004		7.0000e-004	7.0000e-004	0.0000	1.5118	1.5118	4.9000e-004	0.0000	1.5241
Total	1.5600e-003	0.0174	7.5600e-003	2.0000e-005	5.8000e-003	7.7000e-004	6.5700e-003	2.9500e-003	7.0000e-004	3.6500e-003	0.0000	1.5118	1.5118	4.9000e-004	0.0000	1.5241

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Annual

3.2 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.3000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0734	0.0734	0.0000	0.0000	0.0734
Total	3.0000e-005	2.0000e-005	2.3000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0734	0.0734	0.0000	0.0000	0.0734

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.2200e-003	0.0000	2.2200e-003	1.1300e-003	0.0000	1.1300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5600e-003	0.0174	7.5600e-003	2.0000e-005		7.7000e-004	7.7000e-004		7.0000e-004	7.0000e-004	0.0000	1.5118	1.5118	4.9000e-004	0.0000	1.5241
Total	1.5600e-003	0.0174	7.5600e-003	2.0000e-005	2.2200e-003	7.7000e-004	2.9900e-003	1.1300e-003	7.0000e-004	1.8300e-003	0.0000	1.5118	1.5118	4.9000e-004	0.0000	1.5241

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Annual

3.2 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.3000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0734	0.0734	0.0000	0.0000	0.0734
Total	3.0000e-005	2.0000e-005	2.3000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0734	0.0734	0.0000	0.0000	0.0734

3.3 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.8300e-003	0.0000	9.8300e-003	5.0500e-003	0.0000	5.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5800e-003	0.0287	0.0127	3.0000e-005		1.2800e-003	1.2800e-003		1.1700e-003	1.1700e-003	0.0000	2.4767	2.4767	8.0000e-004	0.0000	2.4968
Total	2.5800e-003	0.0287	0.0127	3.0000e-005	9.8300e-003	1.2800e-003	0.0111	5.0500e-003	1.1700e-003	6.2200e-003	0.0000	2.4767	2.4767	8.0000e-004	0.0000	2.4968

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Annual

3.3 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	4.6000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1468	0.1468	0.0000	0.0000	0.1468
Total	6.0000e-005	4.0000e-005	4.6000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1468	0.1468	0.0000	0.0000	0.1468

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.7600e-003	0.0000	3.7600e-003	1.9300e-003	0.0000	1.9300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5800e-003	0.0287	0.0127	3.0000e-005		1.2800e-003	1.2800e-003		1.1700e-003	1.1700e-003	0.0000	2.4767	2.4767	8.0000e-004	0.0000	2.4968
Total	2.5800e-003	0.0287	0.0127	3.0000e-005	3.7600e-003	1.2800e-003	5.0400e-003	1.9300e-003	1.1700e-003	3.1000e-003	0.0000	2.4767	2.4767	8.0000e-004	0.0000	2.4968

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Annual

3.3 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	4.6000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1468	0.1468	0.0000	0.0000	0.1468
Total	6.0000e-005	4.0000e-005	4.6000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1468	0.1468	0.0000	0.0000	0.1468

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0743	0.5591	0.5289	9.0000e-004		0.0281	0.0281		0.0271	0.0271	0.0000	74.4345	74.4345	0.0133	0.0000	74.7667
Total	0.0743	0.5591	0.5289	9.0000e-004		0.0281	0.0281		0.0271	0.0271	0.0000	74.4345	74.4345	0.0133	0.0000	74.7667

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Annual

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.9000e-004	0.0313	8.7600e-003	8.0000e-005	2.0600e-003	6.0000e-005	2.1300e-003	6.0000e-004	6.0000e-005	6.6000e-004	0.0000	7.9156	7.9156	6.4000e-004	0.0000	7.9316
Worker	3.0000e-003	2.0200e-003	0.0236	8.0000e-005	9.0000e-003	6.0000e-005	9.0600e-003	2.3900e-003	5.0000e-005	2.4500e-003	0.0000	7.5210	7.5210	1.6000e-004	0.0000	7.5250
Total	3.8900e-003	0.0333	0.0323	1.6000e-004	0.0111	1.2000e-004	0.0112	2.9900e-003	1.1000e-004	3.1100e-003	0.0000	15.4365	15.4365	8.0000e-004	0.0000	15.4566

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0743	0.5591	0.5289	9.0000e-004		0.0281	0.0281		0.0271	0.0271	0.0000	74.4344	74.4344	0.0133	0.0000	74.7667
Total	0.0743	0.5591	0.5289	9.0000e-004		0.0281	0.0281		0.0271	0.0271	0.0000	74.4344	74.4344	0.0133	0.0000	74.7667

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Annual

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.9000e-004	0.0313	8.7600e-003	8.0000e-005	2.0600e-003	6.0000e-005	2.1300e-003	6.0000e-004	6.0000e-005	6.6000e-004	0.0000	7.9156	7.9156	6.4000e-004	0.0000	7.9316
Worker	3.0000e-003	2.0200e-003	0.0236	8.0000e-005	9.0000e-003	6.0000e-005	9.0600e-003	2.3900e-003	5.0000e-005	2.4500e-003	0.0000	7.5210	7.5210	1.6000e-004	0.0000	7.5250
Total	3.8900e-003	0.0333	0.0323	1.6000e-004	0.0111	1.2000e-004	0.0112	2.9900e-003	1.1000e-004	3.1100e-003	0.0000	15.4365	15.4365	8.0000e-004	0.0000	15.4566

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0973	0.7377	0.7509	1.3000e-003		0.0347	0.0347		0.0336	0.0336	0.0000	107.1304	107.1304	0.0187	0.0000	107.5969
Total	0.0973	0.7377	0.7509	1.3000e-003		0.0347	0.0347		0.0336	0.0336	0.0000	107.1304	107.1304	0.0187	0.0000	107.5969

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Annual

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2100e-003	0.0425	0.0122	1.1000e-004	2.9700e-003	8.0000e-005	3.0500e-003	8.6000e-004	8.0000e-005	9.3000e-004	0.0000	11.2784	11.2784	8.9000e-004	0.0000	11.3007
Worker	4.0900e-003	2.6300e-003	0.0316	1.2000e-004	0.0130	8.0000e-005	0.0130	3.4400e-003	8.0000e-005	3.5200e-003	0.0000	10.4222	10.4222	2.1000e-004	0.0000	10.4274
Total	5.3000e-003	0.0451	0.0438	2.3000e-004	0.0159	1.6000e-004	0.0161	4.3000e-003	1.6000e-004	4.4500e-003	0.0000	21.7005	21.7005	1.1000e-003	0.0000	21.7281

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0973	0.7377	0.7509	1.3000e-003		0.0347	0.0347		0.0336	0.0336	0.0000	107.1303	107.1303	0.0187	0.0000	107.5967
Total	0.0973	0.7377	0.7509	1.3000e-003		0.0347	0.0347		0.0336	0.0336	0.0000	107.1303	107.1303	0.0187	0.0000	107.5967

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Annual

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2100e-003	0.0425	0.0122	1.1000e-004	2.9700e-003	8.0000e-005	3.0500e-003	8.6000e-004	8.0000e-005	9.3000e-004	0.0000	11.2784	11.2784	8.9000e-004	0.0000	11.3007
Worker	4.0900e-003	2.6300e-003	0.0316	1.2000e-004	0.0130	8.0000e-005	0.0130	3.4400e-003	8.0000e-005	3.5200e-003	0.0000	10.4222	10.4222	2.1000e-004	0.0000	10.4274
Total	5.3000e-003	0.0451	0.0438	2.3000e-004	0.0159	1.6000e-004	0.0161	4.3000e-003	1.6000e-004	4.4500e-003	0.0000	21.7005	21.7005	1.1000e-003	0.0000	21.7281

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.4400e-003	0.0339	0.0440	7.0000e-005		1.7400e-003	1.7400e-003		1.6000e-003	1.6000e-003	0.0000	5.8848	5.8848	1.8700e-003	0.0000	5.9315
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	3.4400e-003	0.0339	0.0440	7.0000e-005		1.7400e-003	1.7400e-003		1.6000e-003	1.6000e-003	0.0000	5.8848	5.8848	1.8700e-003	0.0000	5.9315

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Annual

3.5 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3000e-004	1.5000e-004	1.7400e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5741	0.5741	1.0000e-005	0.0000	0.5744
Total	2.3000e-004	1.5000e-004	1.7400e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5741	0.5741	1.0000e-005	0.0000	0.5744

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.4400e-003	0.0339	0.0440	7.0000e-005		1.7400e-003	1.7400e-003		1.6000e-003	1.6000e-003	0.0000	5.8848	5.8848	1.8700e-003	0.0000	5.9314
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	3.4400e-003	0.0339	0.0440	7.0000e-005		1.7400e-003	1.7400e-003		1.6000e-003	1.6000e-003	0.0000	5.8848	5.8848	1.8700e-003	0.0000	5.9314

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Annual

3.5 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3000e-004	1.5000e-004	1.7400e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5741	0.5741	1.0000e-005	0.0000	0.5744
Total	2.3000e-004	1.5000e-004	1.7400e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5741	0.5741	1.0000e-005	0.0000	0.5744

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2187					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0200e-003	7.0400e-003	9.0700e-003	1.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787
Total	0.2197	7.0400e-003	9.0700e-003	1.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Annual

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	4.0000e-005	5.4000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1767	0.1767	0.0000	0.0000	0.1767
Total	7.0000e-005	4.0000e-005	5.4000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1767	0.1767	0.0000	0.0000	0.1767

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2187					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0200e-003	7.0400e-003	9.0700e-003	1.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787
Total	0.2197	7.0400e-003	9.0700e-003	1.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Annual

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	4.0000e-005	5.4000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1767	0.1767	0.0000	0.0000	0.1767
Total	7.0000e-005	4.0000e-005	5.4000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1767	0.1767	0.0000	0.0000	0.1767

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Manufacturing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3
Manufacturing	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.563406	0.043070	0.209298	0.109958	0.015015	0.005784	0.026182	0.017546	0.001775	0.001524	0.004941	0.000598	0.000904
Manufacturing	0.563406	0.043070	0.209298	0.109958	0.015015	0.005784	0.026182	0.017546	0.001775	0.001524	0.004941	0.000598	0.000904

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Annual

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	44.9512	44.9512	1.8600e-003	3.8000e-004	45.1120
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	44.9512	44.9512	1.8600e-003	3.8000e-004	45.1120
NaturalGas Mitigated	5.3200e-003	0.0483	0.0406	2.9000e-004		3.6700e-003	3.6700e-003		3.6700e-003	3.6700e-003	0.0000	52.6245	52.6245	1.0100e-003	9.6000e-004	52.9372
NaturalGas Unmitigated	5.3200e-003	0.0483	0.0406	2.9000e-004		3.6700e-003	3.6700e-003		3.6700e-003	3.6700e-003	0.0000	52.6245	52.6245	1.0100e-003	9.6000e-004	52.9372

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Annual

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	276988	1.4900e-003	0.0136	0.0114	8.0000e-005		1.0300e-003	1.0300e-003		1.0300e-003	1.0300e-003	0.0000	14.7811	14.7811	2.8000e-004	2.7000e-004	14.8690
Manufacturing	709158	3.8200e-003	0.0348	0.0292	2.1000e-004		2.6400e-003	2.6400e-003		2.6400e-003	2.6400e-003	0.0000	37.8434	37.8434	7.3000e-004	6.9000e-004	38.0683
Total		5.3100e-003	0.0483	0.0406	2.9000e-004		3.6700e-003	3.6700e-003		3.6700e-003	3.6700e-003	0.0000	52.6245	52.6245	1.0100e-003	9.6000e-004	52.9372

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	276988	1.4900e-003	0.0136	0.0114	8.0000e-005		1.0300e-003	1.0300e-003		1.0300e-003	1.0300e-003	0.0000	14.7811	14.7811	2.8000e-004	2.7000e-004	14.8690
Manufacturing	709158	3.8200e-003	0.0348	0.0292	2.1000e-004		2.6400e-003	2.6400e-003		2.6400e-003	2.6400e-003	0.0000	37.8434	37.8434	7.3000e-004	6.9000e-004	38.0683
Total		5.3100e-003	0.0483	0.0406	2.9000e-004		3.6700e-003	3.6700e-003		3.6700e-003	3.6700e-003	0.0000	52.6245	52.6245	1.0100e-003	9.6000e-004	52.9372

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Annual

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	39626.5	12.6258	5.2000e-004	1.1000e-004	12.6710
Manufacturing	101454	32.3253	1.3300e-003	2.8000e-004	32.4410
Total		44.9512	1.8500e-003	3.9000e-004	45.1120

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	39626.5	12.6258	5.2000e-004	1.1000e-004	12.6710
Manufacturing	101454	32.3253	1.3300e-003	2.8000e-004	32.4410
Total		44.9512	1.8500e-003	3.9000e-004	45.1120

6.0 Area Detail

6.1 Mitigation Measures Area

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1924	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1700e-003	1.1700e-003	0.0000	0.0000	1.2500e-003
Unmitigated	0.1924	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1700e-003	1.1700e-003	0.0000	0.0000	1.2500e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0219					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1705					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.0000e-005	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1700e-003	1.1700e-003	0.0000	0.0000	1.2500e-003
Total	0.1924	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1700e-003	1.1700e-003	0.0000	0.0000	1.2500e-003

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Annual

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0219					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1705					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.0000e-005	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1700e-003	1.1700e-003	0.0000	0.0000	1.2500e-003
Total	0.1924	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1700e-003	1.1700e-003	0.0000	0.0000	1.2500e-003

7.0 Water Detail

7.1 Mitigation Measures Water

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Manufacturing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Annual

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Manufacturing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Annual

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Manufacturing	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Manufacturing	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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Applied Medical L203 Building Expansion Construction Emission Analysis - Orange County, Annual

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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11.0 Vegetation

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Annual

Applied Medical Building L203 Expansion Operational Emission Analysis
Orange County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	13.25	1000sqft	0.30	13,253.00	0
Manufacturing	107.10	1000sqft	2.46	107,100.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	30
Climate Zone	8			Operational Year	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	702.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Annual

Project Characteristics -

Land Use - The project is expected to operate an approximately 107,099 square feet of manufacturing unit. The project is also expected to operate an equipment platform (bridge) building. The equipment platform is not expected to generate any traffic, water usage or waste. The equipment platform building (General Light Industrial) is used to estimate the electricity consumption.

Construction Phase - Construction emission are estimated in a separate file.

Vehicle Trips - The trip generation rates are based of Applied Medical Resources Building L203 Expansion Focused Traffic Analysis, by RK Engineering Group, February 2021.

Water And Wastewater - The equipment platform is not expected to generate any water consumption.

Solid Waste - The equipment platform is not expected to generate solid waste.

Operational Off-Road Equipment - The project is expected to operate 6 electric forklifts at L203 building.

Stationary Sources - Process Boilers - The project is proposing to instal three (3) boilers and two (2) micro turbines. For the purpose of this analysis, microturbines are modelled as boilers. Boiler specification is provided by the applicant.

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	13,250.00	13,253.00
tblOperationalOffRoadEquipment	OperFuelType	Diesel	Electrical
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	6.00
tblSolidWaste	SolidWasteGenerationRate	16.43	0.00
tblStationaryBoilersUse	NumberOfEquipment	0.00	5.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	ST_TR	1.49	6.42
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	SU_TR	0.62	5.09
tblVehicleTrips	WD_TR	6.97	0.00
tblVehicleTrips	WD_TR	3.82	3.93
tblWater	IndoorWaterUseRate	3,064,062.50	0.00

2.0 Emissions Summary

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Annual

2.1 Overall Construction
Unmitigated Construction

Year	tons/yr														MT/yr	
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
2021	0.5591	7.7600e-003	0.0105	2.0000e-005	5.5000e-004	4.7000e-004	1.0200e-003	1.5000e-004	4.7000e-004	6.2000e-004	0.0000	1.7352	1.7352	1.0000e-004	0.0000	1.7377
Maximum	0.5591	7.7600e-003	0.0105	2.0000e-005	5.5000e-004	4.7000e-004	1.0200e-003	1.5000e-004	4.7000e-004	6.2000e-004	0.0000	1.7352	1.7352	1.0000e-004	0.0000	1.7377

Mitigated Construction

Year	tons/yr														MT/yr	
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
2021	0.5591	7.7600e-003	0.0105	2.0000e-005	5.5000e-004	4.7000e-004	1.0200e-003	1.5000e-004	4.7000e-004	6.2000e-004	0.0000	1.7352	1.7352	1.0000e-004	0.0000	1.7377
Maximum	0.5591	7.7600e-003	0.0105	2.0000e-005	5.5000e-004	4.7000e-004	1.0200e-003	1.5000e-004	4.7000e-004	6.2000e-004	0.0000	1.7352	1.7352	1.0000e-004	0.0000	1.7377

Percent Reduction

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

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0.00

0.00

0.00

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-1-2021	8-31-2021	0.5669	0.5669
		Highest	0.5669	0.5669

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4908	1.0000e-005	1.5400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.9900e-003	2.9900e-003	1.0000e-005	0.0000	3.1900e-003
Energy	0.0136	0.1233	0.1036	7.4000e-004		9.3700e-003	9.3700e-003		9.3700e-003	9.3700e-003	0.0000	458.2627	458.2627	0.0160	5.2300e-003	460.2196
Mobile	0.1474	0.6805	2.2609	8.8300e-003	0.8007	6.4300e-003	0.8071	0.2144	5.9900e-003	0.2204	0.0000	813.3172	813.3172	0.0330	0.0000	814.1409
Offroad	0.1009	0.9197	0.9109	1.1900e-003		0.0653	0.0653		0.0601	0.0601	0.0000	104.7472	104.7472	0.0339	0.0000	105.5942
Stationary	0.2361	1.0507	4.2062	0.0258		0.3262	0.3262		0.3262	0.3262	0.0000	4,672.4109	4,672.4109	0.0896	0.0000	4,674.6497
Waste						0.0000	0.0000		0.0000	0.0000	26.9572	0.0000	26.9572	1.5931	0.0000	66.7853
Water						0.0000	0.0000		0.0000	0.0000	7.8574	102.7521	110.6094	0.8113	0.0199	136.8314
Total	0.9887	2.7743	7.4831	0.0365	0.8007	0.4073	1.2080	0.2144	0.4016	0.6161	34.8146	6,151.4930	6,186.3076	2.5767	0.0252	6,258.2242

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Annual

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4908	1.0000e-005	1.5400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.9900e-003	2.9900e-003	1.0000e-005	0.0000	3.1900e-003
Energy	0.0136	0.1233	0.1036	7.4000e-004		9.3700e-003	9.3700e-003		9.3700e-003	9.3700e-003	0.0000	458.2627	458.2627	0.0160	5.2300e-003	460.2196
Mobile	0.1474	0.6805	2.2609	8.8300e-003	0.8007	6.4300e-003	0.8071	0.2144	5.9900e-003	0.2204	0.0000	813.3172	813.3172	0.0330	0.0000	814.1409
Offroad	0.1009	0.9197	0.9109	1.1900e-003		0.0653	0.0653		0.0601	0.0601	0.0000	104.7472	104.7472	0.0339	0.0000	105.5942
Stationary	0.2361	1.0507	4.2062	0.0258		0.3262	0.3262		0.3262	0.3262	0.0000	4,672.4109	4,672.4109	0.0896	0.0000	4,674.6497
Waste						0.0000	0.0000		0.0000	0.0000	26.9572	0.0000	26.9572	1.5931	0.0000	66.7853
Water						0.0000	0.0000		0.0000	0.0000	7.8574	102.7521	110.6094	0.8113	0.0199	136.8314
Total	0.9887	2.7743	7.4831	0.0365	0.8007	0.4073	1.2080	0.2144	0.4016	0.6161	34.8146	6,151.4930	6,186.3076	2.5767	0.0252	6,258.2242

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	6/1/2021	6/14/2021	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 180,530; Non-Residential Outdoor: 60,177; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Annual

3.2 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5578					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0900e-003	7.6300e-003	9.0900e-003	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	1.2766	1.2766	9.0000e-005	0.0000	1.2788
Total	0.5589	7.6300e-003	9.0900e-003	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	1.2766	1.2766	9.0000e-005	0.0000	1.2788

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.2000e-004	1.4400e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4586	0.4586	1.0000e-005	0.0000	0.4588
Total	1.8000e-004	1.2000e-004	1.4400e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4586	0.4586	1.0000e-005	0.0000	0.4588

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Annual

3.2 Architectural Coating - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5578					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0900e-003	7.6300e-003	9.0900e-003	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	1.2766	1.2766	9.0000e-005	0.0000	1.2788
Total	0.5589	7.6300e-003	9.0900e-003	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	1.2766	1.2766	9.0000e-005	0.0000	1.2788

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.2000e-004	1.4400e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4586	0.4586	1.0000e-005	0.0000	0.4588
Total	1.8000e-004	1.2000e-004	1.4400e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4586	0.4586	1.0000e-005	0.0000	0.4588

4.0 Operational Detail - Mobile

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Annual

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1474	0.6805	2.2609	8.8300e-003	0.8007	6.4300e-003	0.8071	0.2144	5.9900e-003	0.2204	0.0000	813.3172	813.3172	0.0330	0.0000	814.1409
Unmitigated	0.1474	0.6805	2.2609	8.8300e-003	0.8007	6.4300e-003	0.8071	0.2144	5.9900e-003	0.2204	0.0000	813.3172	813.3172	0.0330	0.0000	814.1409

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Manufacturing	420.90	687.58	545.14	2,111,172	2,111,172
Total	420.90	687.58	545.14	2,111,172	2,111,172

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3
Manufacturing	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Annual

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.558976	0.043534	0.209821	0.113949	0.016111	0.005791	0.025447	0.016654	0.001713	0.001553	0.004896	0.000590	0.000966
Manufacturing	0.558976	0.043534	0.209821	0.113949	0.016111	0.005791	0.025447	0.016654	0.001713	0.001553	0.004896	0.000590	0.000966

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	324.0325	324.0325	0.0134	2.7700e-003	325.1918
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	324.0325	324.0325	0.0134	2.7700e-003	325.1918
NaturalGas Mitigated	0.0136	0.1233	0.1036	7.4000e-004		9.3700e-003	9.3700e-003		9.3700e-003	9.3700e-003	0.0000	134.2301	134.2301	2.5700e-003	2.4600e-003	135.0278
NaturalGas Unmitigated	0.0136	0.1233	0.1036	7.4000e-004		9.3700e-003	9.3700e-003		9.3700e-003	9.3700e-003	0.0000	134.2301	134.2301	2.5700e-003	2.4600e-003	135.0278

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Annual

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	276988	1.4900e-003	0.0136	0.0114	8.0000e-005		1.0300e-003	1.0300e-003		1.0300e-003	1.0300e-003	0.0000	14.7811	14.7811	2.8000e-004	2.7000e-004	14.8690
Manufacturing	2.23839e+006	0.0121	0.1097	0.0922	6.6000e-004		8.3400e-003	8.3400e-003		8.3400e-003	8.3400e-003	0.0000	119.4490	119.4490	2.2900e-003	2.1900e-003	120.1588
Total		0.0136	0.1233	0.1036	7.4000e-004		9.3700e-003	9.3700e-003		9.3700e-003	9.3700e-003	0.0000	134.2301	134.2301	2.5700e-003	2.4600e-003	135.0278

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	276988	1.4900e-003	0.0136	0.0114	8.0000e-005		1.0300e-003	1.0300e-003		1.0300e-003	1.0300e-003	0.0000	14.7811	14.7811	2.8000e-004	2.7000e-004	14.8690
Manufacturing	2.23839e+006	0.0121	0.1097	0.0922	6.6000e-004		8.3400e-003	8.3400e-003		8.3400e-003	8.3400e-003	0.0000	119.4490	119.4490	2.2900e-003	2.1900e-003	120.1588
Total		0.0136	0.1233	0.1036	7.4000e-004		9.3700e-003	9.3700e-003		9.3700e-003	9.3700e-003	0.0000	134.2301	134.2301	2.5700e-003	2.4600e-003	135.0278

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Annual

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	111988	35.6817	1.4700e-003	3.0000e-004	35.8094
Manufacturing	904995	288.3508	0.0119	2.4600e-003	289.3824
Total		324.0325	0.0134	2.7600e-003	325.1918

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	111988	35.6817	1.4700e-003	3.0000e-004	35.8094
Manufacturing	904995	288.3508	0.0119	2.4600e-003	289.3824
Total		324.0325	0.0134	2.7600e-003	325.1918

6.0 Area Detail

6.1 Mitigation Measures Area

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4908	1.0000e-005	1.5400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.9900e-003	2.9900e-003	1.0000e-005	0.0000	3.1900e-003
Unmitigated	0.4908	1.0000e-005	1.5400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.9900e-003	2.9900e-003	1.0000e-005	0.0000	3.1900e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0558					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4349					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.4000e-004	1.0000e-005	1.5400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.9900e-003	2.9900e-003	1.0000e-005	0.0000	3.1900e-003
Total	0.4908	1.0000e-005	1.5400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.9900e-003	2.9900e-003	1.0000e-005	0.0000	3.1900e-003

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Annual

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0558					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4349					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.4000e-004	1.0000e-005	1.5400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.9900e-003	2.9900e-003	1.0000e-005	0.0000	3.1900e-003
Total	0.4908	1.0000e-005	1.5400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.9900e-003	2.9900e-003	1.0000e-005	0.0000	3.1900e-003

7.0 Water Detail

7.1 Mitigation Measures Water

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	110.6094	0.8113	0.0199	136.8314
Unmitigated	110.6094	0.8113	0.0199	136.8314

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Manufacturing	24.7669 / 0	110.6094	0.8113	0.0199	136.8314
Total		110.6094	0.8113	0.0199	136.8314

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Annual

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Manufacturing	24.7669 / 0	110.6094	0.8113	0.0199	136.8314
Total		110.6094	0.8113	0.0199	136.8314

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	26.9572	1.5931	0.0000	66.7853
Unmitigated	26.9572	1.5931	0.0000	66.7853

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Annual

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Manufacturing	132.8	26.9572	1.5931	0.0000	66.7853
Total		26.9572	1.5931	0.0000	66.7853

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Manufacturing	132.8	26.9572	1.5931	0.0000	66.7853
Total		26.9572	1.5931	0.0000	66.7853

9.0 Operational Offroad

Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Annual

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	6	8.00	260	89	0.20	Electrical

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Forklifts	0.1009	0.9197	0.9109	1.1900e-003		0.0653	0.0653		0.0601	0.0601	0.0000	104.7472	104.7472	0.0339	0.0000	105.5942
Total	0.1009	0.9197	0.9109	1.1900e-003		0.0653	0.0653		0.0601	0.0601	0.0000	104.7472	104.7472	0.0339	0.0000	105.5942

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
Boiler	5	47.97	17511.24	1.999	CNG

User Defined Equipment

Equipment Type	Number
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Applied Medical Building L203 Expansion Operational Emission Analysis - Orange County, Annual

10.1 Stationary Sources

Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Boiler - CNG (0 - 2 MMBTU)	0.2361	1.0507	4.2062	0.0258		0.3262	0.3262		0.3262	0.3262	0.0000	4,672.4109	4,672.4109	0.0896	0.0000	4,674.6497
Total	0.2361	1.0507	4.2062	0.0258		0.3262	0.3262		0.3262	0.3262	0.0000	4,672.4109	4,672.4109	0.0896	0.0000	4,674.6497

11.0 Vegetation
