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TECHNICAL MEMORANDUM

Date: May 14, 2020

To: Nicole Greenfield, Associate Environmental Planner
GPA Consulting

From: Kurt Legleiter, Principal

Subject: **Air Quality & Greenhouse Gas Impact Assessment for the Proposed Diamond Bar Golf Course Renovation Project, Diamond Bar, CA**

INTRODUCTION

The purpose of this report is to evaluate potential air quality and greenhouse gas (GHG) impacts associated with the proposed Diamond Bar Golf Course Renovation Project (Project). Emissions modeling assumptions and output files are included in Appendix A.

PROPOSED PROJECT SUMMARY

The San Gabriel Valley Council of Governments (SGVCOG) with the Los Angeles County Department of Parks and Recreation (DPR) and Metropolitan Transportation Authority (Metro) propose to renovate the Diamond Bar Golf Course ("Golf Course") in Los Angeles County. Grand Avenue divides the existing Golf Course into two parts. There are currently six existing holes on the western part of the course and 12 holes on the eastern part of the course (See Figure 2-2). An existing golf cart tunnel beneath Grand Avenue connects the two parts (i.e., west and east).

Planned freeway improvements to the State Route 57 (SR-57)/State Route 60 (SR-60) confluence at the Grand Avenue interchange as approved by Caltrans in December 2013 (SCH #2009081062) would permanently incorporate 9.4 acres of the Golf Course, reducing the Golf Course from 171.3 acres to 161.9 acres and require the demolition of an existing maintenance facility. The Final EIR/FONSI for the SR-57/SR-60 Confluence at Grand Avenue Project included mitigation measures to reconfigure the Golf Course so that it continues to function as an 18-hole golf course and the user experience is not diminished.

The proposed project would realign and reconfigure six holes in the western part of the course and three in the eastern part of the course. This includes reconstructing bunkers and tee and green complexes for all holes. The proposed project would increase the overall existing course yardage from 6,801 yards to 6,848 yards. The total course par would remain unchanged at par 72.

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Figure 1. Project Site Location & Nearby Land Uses

Night work is not anticipated. Construction is anticipated to begin in January 2021 for a duration of approximately 17 months, during which time the Golf Course would be closed to the public.

The proposed project would not require the acquisition of any right-of-way. A new Los Angeles County Flood Control District easement and relocation of Southern California Edison utility easements are needed within the Golf Course. All construction activities, including staging, would occur within the boundaries of the existing Golf Course. Construction staging would be located west of Grand Avenue at the existing Hole 8 and east of Grand Avenue at the existing maintenance facility. Construction activities for the SR-57/SR-60 Confluence at Grand Avenue Project is scheduled to begin in 2022 after completion of the proposed project.

AIR QUALITY

EXISTING ENVIRONMENT

GEOGRAPHY

The City of Diamond Bar is located in the South Coast Air Basin (SCAB or basin). The SCAB consists of an approximate 6,600-square mile area bound by the Pacific Ocean to the west and the San Gabriel, San Bernardino and San Jacinto Mountains to the north and east. The Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, in addition to the San Gorgonio Pass area of Riverside County. The Basin's terrain and geographical location (i.e., a coastal plain with connecting broad valleys and low hills) contributes to its distinctive climate.

CLIMATE

The regional climate significantly influences the air quality in the Basin. Temperature, wind, humidity, precipitation and even the amount of sunshine influence the quality of the air. Within the SCAB, annual average temperatures, in degrees Fahrenheit (°F), generally range from the low to mid 60's. January is the coldest month throughout the Basin, with average minimum temperatures of 47° F in downtown Los Angeles and 36° F in San Bernardino. All portions of the Basin have recorded maximum temperatures above 100° F. The annual average relative humidity within SCAB generally ranges from 71 percent along the coast to 59 percent inland. More than 90 percent of the Basin's rainfall occurs between the months of November and April. Monthly and yearly rainfall totals are extremely variable within the SCAB. On average, annual rainfall varies from approximately nine inches in Riverside to 14 inches in downtown Los Angeles. The importance of wind to air pollution is considerable. The direction and speed of the wind determines the horizontal dispersion and transport of air pollutants. During the late autumn to early spring rainy season, the Basin is subjected to wind flows associated with traveling storms moving through the region from the northwest.

In the general Project area, average temperatures can range from the upper 30's during winter months to the low 90's during the summer months. The warmest months of the year are typically July and August, with average maximum temperatures of approximately 91° F; while the coldest months of the year are December and January, with average minimum temperatures of approximately 38° F. The annual average precipitation is approximately 14 inches. The highest rainfall generally occurs between the months of November and April.[1]

Temperature Inversions

Under normal meteorological conditions, the temperature of the atmosphere decreases with increased altitude. However, when the temperature of the atmosphere increases with altitude, the phenomenon is termed an inversion. These inversions can restrict the vertical mixing of air and pollutants, which can contribute to increased ground-level pollutant concentrations.

In the SCAB, two distinct temperature inversion types commonly occur. The first type of inversion typically occurs during the warmer summer months when high-pressure descending (subsiding) air is undercut by a shallow layer of cool marine air. The boundary between these two layers of air is a persistent marine subsidence/inversion. The second inversion type primarily occurs in the winter, when nights are longer and onshore air flow is weakest. This inversion occurs in conjunction with the nighttime drainage of cool air off the surrounding mountains followed by the seaward drift of this pool of cool air. In general, inversions in the Basin are lower before sunrise than during the daylight hours. As the day progresses, the mixing height normally increases as the warming of the ground heats the surface air layer. The breakup of inversion layers frequently occurs during mid- to late-afternoon on hot summer days. Winter inversions usually break up by mid-morning.[2,3]

Air Pollutants of Concern

Criteria Air Pollutants

For the protection of public health and welfare, the Federal Clean Air Act (FCAA) required that the United States Environmental Protection Agency (U.S. EPA) establish National Ambient Air Quality Standards (NAAQS) for various pollutants. These pollutants are referred to as "criteria" pollutants because the U.S. EPA publishes criteria documents to justify the choice of standards. These standards define the maximum amount of an air pollutant that can be present in ambient air. An ambient air quality standard is generally specified as a concentration averaged over a specific time period, such as one hour, eight hours, 24 hours,

[1] Western Regional Climate Center. Accessed: January 6, 2020. *Western U.S. Climate Historical Summaries*. Website url: https://wrcc.dri.edu/Climsum.html.

[2] South Coast Air Quality Management District (SCAQMD). November 1980. *A Climatological/Air Quality Profile, California South Coast Air Basin*.

[3] South Coast Air Quality Management District (SCAQMD). January 2002. Valley Generating Station Final EIR. Available at website url: http://www.aqmd.gov/docs/default-source/ceqa/documents/permit-projects/2002/ladwp/ch3.pdf.

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or one year. The different averaging times and concentrations are meant to protect against different exposure effects. Standards established for the protection of human health are referred to as primary standards; whereas, standards established for the prevention of environmental and property damage are called secondary standards. The FCAA allows states to adopt additional or more health-protective standards. The following provides a summary discussion of the criteria air pollutants of primary concern.

Ozone (O_3) is a reactive gas consisting of three atoms of oxygen. In the troposphere, it is a product of the photochemical process involving the sun's energy. It is a secondary pollutant that is formed when oxides of nitrogen (NO_X) and volatile organic compounds (VOC), also referred to as reactive organic gases (ROG) react in the presence of sunlight. It is a major component of smog. In the stratosphere, ozone exists naturally and shields Earth from harmful incoming ultraviolet radiation.

High concentrations of ground level ozone can adversely affect the human respiratory system and aggravate cardiovascular disease and many respiratory ailments. Ozone also damages natural ecosystems such as forests and foothill communities, agricultural crops, and some man-made materials, such as rubber, paint, and plastics.

Reactive Organic Gas (ROG) is a reactive chemical gas, composed of hydrocarbon compounds that may contribute to the formation of smog by their involvement in atmospheric chemical reactions. No separate health standards exist for ROG as a group. Because some compounds that make up ROG are also toxic, like the carcinogen benzene, they are often evaluated as part of a toxic risk assessment. Total Organic Gases (TOGs) includes all of the ROGs, in addition to low reactivity organic compounds like methane and acetone. ROGs and VOC are subsets of TOG.

Volatile Organic Compounds (VOC) are hydrocarbon compounds that exist in the ambient air. VOCs contribute to the formation of smog and may also be toxic. VOC emissions are a major precursor to the formation of ozone. VOCs may also be odorous. VOCs are found in gasoline, alcohol, and in some paints.

Oxides of Nitrogen (NO_X) are a family of gaseous nitrogen compounds and is a precursor to the formation of ozone and particulate matter. The major component of NO_X, nitrogen dioxide (NO_2), is a reddish-brown gas that is toxic at high concentrations. NO_X results primarily from the combustion of fossil fuels under high temperature and pressure. On-road and off-road motor vehicles and fuel combustion are the major sources of this air pollutant.

Particulate Matter (PM), also known as particle pollution, is a complex mixture of extremely small particles and liquid droplets. Particle pollution is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is causally linked to the potential for causing health problems. U.S. EPA is concerned about particles that are 10 micrometers in diameter or smaller because those are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and

cause serious health effects. U.S. EPA groups particle pollution into three categories based on their size and where they are deposited:

- "Inhalable coarse particles ($PM_{2.5}$- PM_{10})," such as those found near roadways and dusty industries, are between 2.5 and 10 micrometers in diameter. $PM_{2.5-10}$ is deposited in the thoracic region of the lungs.
- "Fine particles ($PM_{2.5}$)," such as those found in smoke and haze, are 2.5 micrometers in diameter and smaller. These particles can be directly emitted from sources such as forest fires, or they can form when gases emitted from power plants, industries and automobiles react in the air. They penetrate deeply into the thoracic and alveolar regions of the lungs.
- "Ultrafine particles (UFP)," are very small particles less than 0.1 micrometers in diameter largely resulting from the combustion of fossils fuels, meat, wood, and other hydrocarbons. While UFP mass is a small portion of $PM_{2.5}$, its high surface area, deep lung penetration, and transfer into the bloodstream can result in disproportionate health impacts relative to their mass.

PM_{10}, $PM_{2.5}$, and UFP include primary pollutants (emitted directly to the atmosphere) as well as secondary pollutants (formed in the atmosphere by chemical reactions among precursors). Generally speaking, $PM_{2.5}$ and UFP are emitted by combustion sources like vehicles, power generation, industrial processes, and wood burning, while PM_{10} sources include these same sources plus roads and farming activities. Fugitive windblown dust and other area sources also represent a source of airborne dust.

Numerous scientific studies have linked both long- and short-term particle pollution exposures to a variety of health problems. Long-term exposures, such as those experienced by people living for many years in areas with high particle levels, have been associated with problems such as reduced lung function and the development of chronic bronchitis and even premature death. Short-term exposures to particles (hours or days) can aggravate lung disease, causing asthma attacks and also acute (short-term) bronchitis, and may also increase susceptibility to respiratory infections. In people with heart disease, short-term exposures have been linked to heart attacks and arrhythmias. Healthy children and adults have not been reported to suffer serious effects from short term exposures, although they may experience temporary minor irritation when particle levels are elevated.[4]

Carbon Monoxide (CO) is an odorless, colorless gas that is highly toxic. It is formed by the incomplete combustion of fuels and is emitted directly into the air (unlike ozone). The main source of CO is on-road motor vehicles. Other CO sources include other mobile sources, miscellaneous processes, and fuel combustion from stationary sources. Because of the local nature of CO problems, California Air Resources Board (ARB) and U.S. EPA designate urban areas as CO nonattainment areas instead of the entire basin as

[4] U.S. Environmental Protection Agency (U.S. EPA). Accessed: October 23, 2017. *Particulate Matter (PM) Pollution, Health and Environmental Effects of Particulate Matter (PM)*. Website url: https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm.

with ozone and PM_{10}. Motor vehicles are by far the largest source of CO emissions. Emissions from motor vehicles have been declining since 1985, despite increases in vehicle miles traveled, with the introduction of new automotive emission controls and fleet turnover.

Sulfur Dioxide (SO_2) is a colorless, irritating gas with a "rotten egg" smell formed primarily by the combustion of sulfur-containing fossil fuels. However, like airborne NO_X, suspended Sulfur Oxide (SO_X) particles contribute to the poor visibility. These SO_X particles can also combine with other pollutants to form $PM_{2.5}$. The prevalence of low-sulfur fuel use has minimized problems from this pollutant.

Lead (Pb) is a metal that is a natural constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. The health effects of lead poisoning include loss of appetite, weakness, apathy, and miscarriage. Lead can also cause lesions of the neuromuscular system, circulatory system, brain, and gastrointestinal tract. Gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels. The use of leaded fuel has been mostly phased out, with the result that ambient concentrations of lead have dropped dramatically.

Hydrogen Sulfide (H_2S) is associated with geothermal activity, oil and gas production, refining, sewage treatment plants, and confined animal feeding operations. Hydrogen sulfide is extremely hazardous in high concentrations; especially in enclosed spaces (800 parts per million [ppm] can cause death). The Occupational Safety & Health Administration (OSHA) regulates workplace exposure to H_2S.

Other Pollutants

The State of California has established air quality standards for some pollutants not addressed by Federal standards. The ARB has established State standards for hydrogen sulfide, sulfates, vinyl chloride, and visibility reducing particles. The following section summarizes these pollutants and provides a description of the pollutants' physical properties, health and other effects, sources, and the extent of the problems.

Sulfates (SO_4^{2-}) are the fully oxidized ionic form of sulfur. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to SO_2 during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features.

The ARB sulfates standard is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilator function, aggravation of asthmatic symptoms, and an increased risk of cardio-pulmonary disease. Sulfates are particularly effective in degrading visibility, and, due to the fact that they are usually acidic, can harm ecosystems and damage materials and property.

Visibility Reducing Particles are a mixture of suspended particulate matter consisting of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. The standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

Vinyl Chloride (C_2H_3Cl or **VCM)** is a colorless gas that does not occur naturally. It is formed when other substances such as trichloroethane, trichloroethylene, and tetrachloroethylene are broken down. Vinyl chloride is used to make polyvinyl chloride which is used to make a variety of plastic products, including pipes, wire and cable coatings, and packaging materials.

Odors

Typically, odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from the psychological (i.e. irritation, anger, or anxiety) to the physiological, including circulatory and respiratory effects, nausea, vomiting, and headache.

The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell very minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor and in fact an odor that is offensive to one person may be perfectly acceptable to another (e.g., fast food restaurant). It is important to also note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word strong to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

Toxic Air Contaminants

Toxic air contaminants (TACs) are air pollutants that may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air, but due to their high toxicity, they may pose a threat to public health even at very low concentrations. Because there is no threshold level below which adverse health impacts are

not expected to occur, TACs differ from criteria pollutants for which acceptable levels of exposure can be determined and for which state and federal governments have set ambient air quality standards. TACs are not considered criteria pollutants in that the FCAA and CCAA do not address them specifically through the setting of NAAQS or CAAQS. Instead, the U.S. EPA and ARB regulate Hazardous Air Pollutants (HAPs) and TACs, respectively, through statutes and regulations that generally require the use of the maximum or best available control technology to limit emissions. In conjunction with District rules, these federal and state statutes and regulations establish the regulatory framework for TACs. At the national levels, the U.S. EPA has established National Emission Standards for HAPs (NESHAPs), in accordance with the requirements of the FCAA and subsequent amendments. These are technology-based source-specific regulations that limit allowable emissions of HAPs.

Within California, TACs are regulated primarily through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal procedure for ARB to designate substances as TACs. This includes research, public participation, and scientific peer review before ARB designates a substance as a TAC. Existing sources of TACs that are subject to the Air Toxics Hot Spots Information and Assessment Act are required to: (1) prepare a toxic emissions inventory; (2) prepare a risk assessment if emissions are significant; (3) notify the public of significant risk levels; and (4) prepare and implement risk reduction measures.

At the state level, the ARB has authority for the regulation of emissions from motor vehicles, fuels, and consumer products. Most recently, Diesel-exhaust particulate matter (DPM) was added to the ARB list of TACs. DPM is the primary TACs of concern for mobile sources. Of all controlled TACs, emissions of DPM are estimated to be responsible for about 70 percent of the total ambient TAC risk. The ARB has made the reduction of the public's exposure to DPM one of its highest priorities, with an aggressive plan to require cleaner diesel fuel and cleaner diesel engines and vehicles[5]

At the local level, air districts have the authority over stationary or industrial sources. All projects that require air quality permits from the South Coast Air Quality Management District (SCAQMD) are evaluated for TAC emissions. The SCAQMD limits emissions and public exposure to TACs through a number of programs. The SCAQMD prioritizes TAC-emitting stationary sources, based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors. The SCAQMD requires a comprehensive health risk assessment for facilities that are classified in the significant-risk category, pursuant to AB 2588.

[5] California Air Resources Board (ARB). 2005. *Air Quality and Land Use Handbook: A Community Health Perspective.*

Asbestos

Naturally occurring asbestos (NOA) areas are identified based on the type of rock found in the area. Asbestos-containing rocks found in California are ultramafic rocks, including serpentine rocks. Asbestos has been designated a toxic air contaminant by the ARB. According to the California Geologic Survey the project site is not located in an area of naturally occurring asbestos.[6]

EXISTING REGULATORY ENVIRONMENT

Air quality within the project area is regulated by several jurisdictions including the U.S. EPA, ARB, and the SCAQMD. Each of these jurisdictions develops rules, regulations, and policies to attain the goals or directives imposed upon them through legislation. Although U.S. EPA regulations may not be superseded, both state and local regulations may be more stringent.

FEDERAL

U.S. Environmental Protection Agency

The U.S. EPA's air quality mandates are drawn primarily from the FCAA, which was signed into law in 1970. Congress substantially amended the FCAA in 1977 and again in 1990.

Federal Clean Air Act

The FCAA required the U.S. EPA to establish NAAQS, and also set deadlines for their attainment. Two types of NAAQS have been established: primary standards, which protect public health, and secondary standards, which protect public welfare from non-health-related adverse effects, such as visibility restrictions. NAAQS are summarized in Table 1. The FCAA also requires each State to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The FCAA Amendments of 1990 added requirements for states with non-attainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. The U.S. EPA must review all SIPs to determine whether they conform to the mandates of the FCAA and the amendments thereof, and to determine whether implementing them will achieve air quality goals. If the U.S. EPA determines a SIP to be inadequate, a Federal Implementation Plan that imposes additional control measures may be prepared for the non-attainment area. Failure to submit an approvable SIP or to implement the plan within the mandated time frame may cause sanctions to be applied to transportation funding and stationary air pollution sources in the air basin.

[6] State of California. Department of Conservation. August 2000. A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos.

Table 1. Summary of Ambient Air Quality Standards & Attainment Designations

Pollutant	Averaging Time	California Standards		National Standards	
		Concentration	Attainment Status	Primary	Attainment Status
Ozone (O_3)	1-hour	0.09 ppm	Non-Attainment	–	Non-Attainment (Extreme)
	8-hour	0.070 ppm		0.070 ppm	
Particulate Matter (PM_{10})	AAM	20 µg/m³	Non-Attainment	–	Attainment/ Maintenance
	24-hour	50 µg/m³		150 µg/m³	
Fine Particulate Matter ($PM_{2.5}$)	AAM	12 µg/m³	Non-Attainment	12 µg/m³	Non-Attainment (Serious)
	24-hour	No Standard		35 µg/m³	
Carbon Monoxide (CO)	1-hour	20 ppm	Attainment	35 ppm	Attainment/ Maintenance
	8-hour	9 ppm		9 ppm	
Nitrogen Dioxide (NO_2)	AAM	0.030 ppm	Attainment	0.053 ppm	Unclassified/ Attainment
	1-hour	0.18 ppm		0.100 ppb[b]	
Sulfur Dioxide (SO_2)	AAM	–	Attainment	0.03 ppm	Unclassified/ Attainment
	24-hour	0.04 ppm		0.14 ppm	
	3-hour	–		--	
	1-hour	0.25 ppm		75 ppb	
Lead	30-day Average	1.5 µg/m³	Attainment	–	Non-Attainment (Partial)
	Calendar Quarter	–		1.5 µg/m³	
	Rolling 3-Mo. Avg.	–		0.15 µg/m³	
Sulfates	24-hour	25 µg/m³	Attainment	No Federal Standards	
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m³)	Unclassified		
Vinyl Chloride	24-hour	0.01 ppm (26 µg/m³)	Attainment		
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient: 0.23/kilometer-visibility of 10 miles or more (0.07-30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70%.	Unclassified		

µg/m³ = micrograms per cubic meter
ppm = parts per million
AAM = Annual Arithmetic Mean
Source: South Coast Air Quality Management District (SCAQMD). Accessed: January 6, 2020. NAAQS and CAAQS Attainment Status for South Coast Air Basin. Website url: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/naaqs-caaqs-feb2016.pdf?sfvrsn=14.

Toxic Substances Control Act

The Toxic Substances Control Act first authorized the U.S. EPA to regulate asbestos in schools and Public and Commercial buildings under Title II of the law, which is also known as the Asbestos Hazard Emergency Response Act (AHERA). AHERA requires Local Education Agencies to inspect their schools for asbestos-

containing building materials (ACBM) and to prepare management plans to reduce the asbestos hazard. The Act also established a program for the training and accreditation of individuals performing certain types of asbestos work.

National Emission Standards for Hazardous Air Pollutants

Pursuant to the FCAA, the U.S. EPA established the National Emission Standards for Hazardous Air Pollutants. These are technology-based source-specific regulations that limit allowable emissions of HAPs. Among these sources include ACBM. NESHAPs include requirements pertaining to the inspection, notification, handling, and disposal of ACBM associated with the demolition and renovation of structures.

STATE

California Air Resources Board

The ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the CCAA. Other ARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control districts and air quality management districts) establishing the California Ambient Air Quality Standards (CAAQS), which in many cases are more stringent than the NAAQS; and setting emissions standards for new motor vehicles. The CAAQS are summarized in Table 1. The emission standards established for motor vehicles differ depending on various factors including the model year, and the type of vehicle, fuel and engine used.

California Clean Air Act

The CCAA requires that all air districts in the state endeavor to achieve and maintain CAAQS for Ozone, CO, SO_2, and NO_2 by the earliest practical date. The CCAA specifies that districts focus particular attention on reducing the emissions from transportation and area-wide emission sources, and the act provides districts with authority to regulate indirect sources. Each district plan is required to either (1) achieve a 5 percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each non-attainment pollutant or its precursors, or (2) to provide for implementation of all feasible measures to reduce emissions. Any planning effort for air quality attainment would thus need to consider both state and federal planning requirements.

Assembly Bills 1807 & 2588 - Toxic Air Contaminants

Within California, TACs are regulated primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics Hot Spots Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for ARB to designate substances as TACs. This includes research, public participation, and scientific peer review before ARB designates a substance as a TAC. Existing sources of TACs that are subject to the Air Toxics Hot Spots Information and Assessment Act are required to: (1) prepare a toxic emissions

inventory; (2) prepare a risk assessment if emissions are significant; (3) notify the public of significant risk levels; and (4) prepare and implement risk reduction measures.

In-Use Off-Road Diesel Vehicle Regulation

On July 26, 2007, the ARB adopted the *In-Use Off-Road Diesel Fueled Fleets Regulation* to reduce DPM and NO_X emissions from in-use (existing) off-road heavy-duty diesel vehicles in California. The regulation applies to self-propelled diesel-fueled vehicles that cannot be registered and licensed to drive on-road, as well as two-engine vehicles that drive on road, with the limited exception of two-engine sweepers. Examples include loaders, crawler tractors, skid steers, backhoes, forklifts, airport ground support equipment, water well drilling rigs, and two-engine cranes. Such vehicles are used in construction, mining, and industrial operations. The regulation does not apply to stationary equipment or portable equipment such as generators. The off-road vehicle regulation establishes emissions performance requirements, establishes reporting, disclosure, and labeling requirements for off-road vehicles, and limits unnecessary idling.

REGIONAL

South Coast Air Quality Management District

Because Southern California has one of the worst air quality problems in the nation, the SCAQMD was created by the 1977 Lewis Air Quality Management Act. Four county air pollution control agencies were merged into one regional district to better address the issue of improving air quality in Southern California. Under the Lewis-Presley Air Quality Management Act, the SCAQMD is the agency principally responsible for comprehensive air pollution control in the SCAB. Specifically, the SCAQMD is responsible for monitoring air quality and planning, implementing, and enforcing programs designed to attain and maintain state and federal ambient air quality standards in the SCAQMD. Programs developed include air quality rules and regulations that regulate stationary source emissions, including area and point sources and certain mobile source emissions. The SCAQMD is also responsible for establishing permitting requirements and issuing permits for stationary sources and ensuring that new, modified, or relocated stationary sources do not create net emissions increases. The SCAQMD enforces air quality rules and regulations through a variety of means, including inspections, educational and training programs, and fines. Specific SCAQMD rules applicable to the construction of the proposed Project may include, but are not limited to:

- *Rule 401 – Visible Emissions*. A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is as dark or darker in shade as that designated No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines.
- *Rule 402 – Nuisance*. 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. The provisions of this rule do not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

- *Rule 403 – Fugitive Dust*. This rule is intended to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (man-made) fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. Rule 403 applies to any activity or man-made condition capable of generating fugitive dust.
- *Rule 1113 – Architectural Coatings*. No person shall apply or solicit the application of any architectural coating within the SCAQMD, with a VOC content in excess of the values specified in a table incorporated in the Rule.

The SCAQMD is also the lead agency in charge of developing the Air Quality Management Plan (AQMP), with input from the SCAG and ARB. The AQMP is a comprehensive plan that includes control strategies for stationary and area sources, as well as for on-road and off-road mobile sources. SCAG has the primary responsibility for providing future growth projections and the development and implementation of transportation control measures. ARB in coordination with federal agencies provides the control element for mobile sources. The AQMP includes the integrated strategies and measures necessary to demonstrate attainment of ambient air quality standards.

Regulatory Attainment Designations

Under the CCAA, the ARB is required to designate areas of the state as attainment, nonattainment-transitional, nonattainment, or unclassified with respect to applicable standards. An "attainment" designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A "nonattainment" designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. Depending on the frequency and severity of pollutants exceeding applicable standards, the nonattainment designation can be further classified as serious nonattainment, severe nonattainment, or extreme nonattainment, with extreme nonattainment being the most severe of the classifications. An "unclassified" designation signifies that the data does not support either an attainment or nonattainment designation. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category. In accordance with the FCAA, areas are designated attainment, nonattainment, or maintenance.

The U.S. EPA designates areas for ozone, CO, and NO_2 as "does not meet the primary standards," "cannot be classified," or "better than national standards." For SO_2, areas are designated as "does not meet the primary standards," "does not meet the secondary standards," "cannot be classified," or "better than national standards." However, the ARB terminology of attainment, nonattainment, and unclassified is more frequently used. The U.S. EPA uses the same sub-categories for nonattainment status: serious, severe, and extreme; as well as, moderate and marginal. In 1991, U.S. EPA assigned new nonattainment designations to areas that had previously been classified as Group I, II, or III for PM_{10} based on the likelihood that they would violate national PM_{10} standards. All other areas are designated "unclassified."

The state and national attainment status designations for the SCAB are summarized in Table 1. The SCAB is currently designated as a nonattainment area with respect to the state ozone, PM_{10}, and $PM_{2.5}$ standards, as well as the national 8-hour ozone and $PM_{2.5}$ standards. In addition, based on monitoring data obtained near a lead acid battery reclamation facility, Los Angeles County is currently designated nonattainment for the federal lead standard. With the exception of Los Angeles County, the remainder of the SCAB is designated attainment for the lead standards. The Basin is designated attainment or unclassified for the remaining State and Federal standards.

SENSITIVE RECEPTORS

One of the most important reasons for air quality standards is the protection of those members of the population who are most sensitive to the adverse health effects of air pollution, termed "sensitive receptors." The term “sensitive receptors” refers to specific population groups, as well as the land uses where individuals would reside for long periods. Commonly identified sensitive population groups are children, the elderly, the acutely ill, and the chronically ill. Commonly identified sensitive land uses would include facilities that house or attract children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Residential dwellings, schools, parks, playgrounds, childcare centers, convalescent homes, and hospitals are examples of sensitive land uses.

Land uses in the project vicinity generally consist of a mix of residential, recreational, public, and commercial land uses. The nearest sensitive land uses consist predominantly of residential land uses located adjacent to and east of the project site along Golden Prados Drive. Additional residential land uses are located east of the project site, across Golden Springs Drive, and north of the project site, across S. Prospectors Road. Sycamore Canyon Park, Calvary Chapel Golden Springs, and La Petite Academy of Diamond Bar are also located east of the project site, across Golden Springs Drive. Ayres Suites Diamond Bar is located adjacent to and south of the project site, along Golden Springs Drive, and Best Western Diamond Bar Hotel & Suites is located north of the project site, along S. Prospectors Road. In addition, the Mt. Calvary Lutheran School and Lorbeer Middle School are located east of the site, near the intersection of Golden Springs Drive and S. Diamond Bar Boulevard. Nearby land uses are depicted in Figure 1.

IMPACT ANALYSIS

SIGNIFICANCE THRESHOLD CRITERIA

According to Appendix G of the CEQA Guidelines, a project would normally have a significant impact on the environment if the project would:

a. Conflict with or obstruct implementation of the applicable air quality plan?
b. 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?
c. Expose sensitive receptors to substantial pollutant concentrations?
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

The proposed project would not result in the relocation of major on-site emission sources nor long-term changes in vehicle trip generation or traffic distribution along area roadways. As a result, long-term air quality impacts associated with the proposed Project would be considered less than significant and are not discussed further in this report.

South Coast Air Quality Management District Thresholds

The following significance criteria, as recommended by the SCAQMD, have been relied upon for the assessment of project-related air quality impacts.

Regional Air Quality Impacts

Regional significance thresholds recommended by SCAQMD are summarized in Table 2. Project-generated emissions that exceed these mass emissions thresholds would be considered to have a potentially significant impact, which could interfere with regional air quality attainment plans.

Table 2. SCAQMD-Recommended CEQA Significance Thresholds

Pollutant	Construction Emissions (lbs/day)	Operational Emissions (lbs/day)
VOC	75	55
NO_X	100	55
CO	550	550
PM_{10}	150	150
$PM_{2.5}$	55	55
SO_X	150	150
lbs/day = pounds per day		

Exposure to Localized Pollutant Concentrations

In addition to the mass emissions thresholds identified above, the SCAQMD has established the following threshold criteria to determine if a project has the potential to contribute to a localized exceedance of the CAAQS in the immediate vicinity of the site:

- California State 1-hour CO standard of 20.0 ppm
- California State 8-hour CO standard of 9.0 ppm
- California State 1-hour NO_2 standard of 0.25 ppm
- SCAQMD 24-hour construction PM_{10} LST of 10.4 µg/m^3
- SCAQMD 24-hour construction $PM_{2.5}$ LST of 10.4 µg/m^3
- SCAQMD 24-hour operational PM_{10} LST of 2.5 µg/m^3
- SCAQMD 24-hour operational $PM_{2.5}$ LST of 2.5 µg/m^3

The SCAQMD provides screening criteria that can be relied upon to determine if the daily emissions associated with Project construction would have a potential to exceed the Localized Significance Thresholds (LSTs). LSTs represent the maximum emissions at a project site that are not expected to cause or contribute to an exceedance of the most stringent federal or state AAQS. LSTs are based on the ambient concentrations of that pollutant within the project area and the distance to the nearest sensitive receptor. An LST analysis for construction activities is applicable to projects five acres, or less, in size; but can be used to screen larger projects to determine whether or not dispersion modeling may be required. If calculated daily emissions are below the LST screening levels the project would be considered to have a less than significant impact.[7]

In addition to the above criteria for evaluation of localized air quality impacts, projects that would result in emissions of carcinogenic or toxic contaminants that exceed the maximum individual cancer risk of 10 in one million or a hazard index of one would be considered to have a potentially significant impact.

METHODOLOGY

Short-term Construction

Short-term emissions associated with construction activities are largely dependent on the type of activities conducted, area of ground disturbance, amount of material to be imported and exported, equipment required, and construction schedules. Construction emissions of criteria air pollutants were calculated using the California Emissions Estimator Model (CalEEMod), version 2016.3.2 computer program. Modeling was conducted for the proposed Project based on estimated material to be imported and exported, off-road equipment usage, and construction schedules provided by the project engineer. Other construction modeling assumptions, including mobile-source emission factors and usage rates, were based on default parameters contained in the model for Los Angeles County. Estimated construction-generated emissions of fugitive dust included the application of dust control measures in accordance with SCAQMD Rule 403 (Fugitive Dust), which identifies measures to be implemented for the control of fugitive dust generated during onsite ground-disturbance activities. Emissions modeling assumptions and output files are provided in Appendix A.

Increased exposure of sensitive land uses to localized pollutant concentrations were assessed in accordance with the methodology promulgated by SCAQMD in its *Localized Significance Threshold (LST) Methodology for CEQA Evaluations*.[8] Based on the estimated equipment usage and information provided by the project engineers, construction of the proposed Project would result in an estimated temporary disturbance of approximately two acres per day, during excavation and grading of the site. As previously

[7] South Coast Air Quality Management District (SCAQMD). 2018. *Localized Significance Thresholds*. Website url: http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/localized-significance-thresholds.

[8] SCAQMD. 2003. 2018b. *Fact Sheet for Applying CalEEMod to Localized Significance Thresholds*. Website url: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/caleemod-guidance.pdf?sfvrsn=2.

noted, the nearest existing sensitive land uses include residential dwellings located adjacent to and east of the Project site. In accordance with SCAQMD's LST methodology, localized construction emissions were evaluated based on a calculated area of disturbance of two acres/day and assuming an average minimum distance to the nearest sensitive land uses of 25 meters. Emissions modeling assumptions and output files are provided in Appendix A.

IMPACT DISCUSSION

IMPACT AQ-A: CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF THE APPLICABLE AIR QUALITY PLAN?

The AQMP is based on assumptions provided by CARB and SCAG related to the most recent motor vehicle and demographic information. The AQMP projections are based, in part, on land use designations and growth forecasts identified in land use plans from cities and counties located in the SCAB. Projects that would be considered to conflict with existing or future growth projections or that would exceed SCAQMD-recommended project-level significance thresholds would, therefore, be considered to potentially conflict with the AQMP.

As noted Impact AQ-B, the proposed Project would not result in overall increases in emissions of ozone-precursor pollutants (VOC and NO_X) or PM that would exceed SCAQMD's recommended significance thresholds. In addition, implementation of the proposed project would not result in changes in long-term increases in operational emissions, nor would the project result in changes in population or employment growth projections, For these reasons, long-term operation of the proposed Project would not conflict with or obstruct air quality planning efforts. This impact would be considered ***less than significant***.

IMPACT AQ-B: 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?

Implementation of the proposed project would result in short-term emissions associated with project construction. As previously noted, construction-generated emissions were quantified using the CalEEMod, version 2016.3.2 computer program based on the estimated amount of material to be imported and exported, off-road equipment usage, and construction schedules provided by the project engineers. Other construction modeling assumptions, including mobile-source emission factors and usage rates, were based on default parameters contained in the model for Los Angeles County. Construction emissions are summarized in Table 3. Emissions modeling assumptions and results are included in Appendix A.

As noted in Table 3, combined on-site and off-site emissions associated with Project construction would generate maximum-daily emissions of approximately 7.2 lbs/day of VOCs, 49.8 lbs/day of NO_X, 59.3 lbs/day of CO, 0.2 lbs/day of SO_X, 14.9 lbs/day of PM_{10}, and 4.4 lbs/day of $PM_{2.5}$. Construction-generated

emissions would not exceed SCAQMD's significance threshold. As a result, this impact would be considered ***less than significant***.

Table 3. Daily On-Site & Off-Site Construction Emissions

Construction Activity	Emissions (lbs/day)[1]					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Demolition	0.9	8.3	11.5	<0.1	0.7	0.4
Site Preparation	0.9	8.1	11.5	<0.1	0.5	0.5
Grading	4.2	86.7	32.7	0.2	6.6	2.4
Construction	6.5	45.2	54.5	0.2	14.5	4.1
Paving	0.7	4.6	4.8	<0.1	0.4	0.3
Maximum Daily Emissions[2]:	7.2	49.8	59.3	0.2	14.9	4.4
SCAQMD Daily Significance Thresholds:	75	100	550	150	150	55
Exceeds Daily Significance Thresholds?	No	No	No	No	No	No

1. Emissions were quantified using the CalEEMod, v2016.3.2, computer program. Includes onsite and offsite sources. Includes reductions in fugitive dust associated with compliance with SCAQMD's Rule 403. VOC and ROG emissions were considered equivalent. Totals may not sum due to rounding.
2. Maximum daily emissions assumes some activities, such as construction and paving, could potentially occur simultaneously.
lbs/day = pounds per day
Refer to Appendix A for emissions modeling assumptions and results.

IMPACT AQ-C: EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL POLLUTANT CONCENTRATIONS?

Localized air quality impacts associated with construction of the proposed project are discussed, as follows:

Localized Pollutant Concentrations from Onsite Sources

Construction projects can result in short-term increases of TACs, as well as, emissions of airborne fugitive dust. The SCAQMD has developed localized significance thresholds (LSTs) for the evaluation of short-term localized air quality impacts. The LSTs are based on CAAQS, which have been established to provide a margin of safety regarding the protection of public health and welfare.

Project-generated construction emissions in comparison to SCAQMD's LSTs are summarized in Table 4. As noted in Table 4, on-site emissions would total approximately 2.2 lbs/day of ROG, 24.2 lbs/day of NO_X, 16.9 lbs/day of CO, 2.2 lbs/day of PM_{10}, and 1.1 lbs/day of $PM_{2.5}$. On-site emissions of NO_X, CO, PM_{10} and $PM_{2.5}$ would not exceed SCAQMD's LSTs. As a result, a more detailed analysis of localized air quality impacts would not be warranted.

Table 4. Daily On-Site Construction Emissions

Construction Activity	Emissions (lbs/day)[1]					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Demolition	0.8	8.1	11.1	<0.1	0.6	0.4
Site Preparation	0.8	8.1	11.1	<0.1	0.4	0.4
Grading	2.2	24.2	16.9	<0.1	2.2	1.1
Construction	0.3	2.7	2.5	<0.1	0.2	0.1
Paving	0.7	4.6	4.4	<0.1	0.3	0.3
Maximum On-Site Construction Emissions[2]:	2.2	24.2	16.9	<0.1	2.2	1.1
SCAQMD Localized Significance Thresholds[3]:	None	149	885	None	6	4
Exceeds Thresholds?	-	No	No	-	No	No

1. Emissions were quantified using the CalEEMod, v2016.3.2 computer program. Includes implementation of dust control measures in compliance with SCAQMD Rule 403. Totals may not sum due to rounding.
2. Maximum daily emissions assume some activities, such as construction and paving, could occur simultaneously.
3. LSTs are based on a two-acre area of daily disturbance, based on maximum equipment usage anticipated to occur during the grading phase, as provided by the project engineer, and an average receptor distance of 25 meters.
lbs/day = pounds per day
Refer to Appendix A for emissions modeling assumptions and results.

Asbestos

Naturally occurring asbestos (NOA) areas are identified based on the type of rock found in the area. Asbestos-containing rocks found in California are ultramafic rocks, including serpentine rocks. Asbestos has been designated a toxic air contaminant by the ARB. According to the California Geologic Survey the project site is not located in an area of naturally occurring asbestos.[6] In addition, the proposed Project would not involve the demolition of structures having asbestos-containing materials. As a result, exposure to asbestos would be considered a less-than-significant impact.

Particulate Matter

Diesel-exhaust particulate matter (DPM) was identified by the ARB as a TAC in 1998. Health risks associated with DPM are primarily associated with potential cancer risks. The dose to which receptors are exposed is the primary factor used to determine carcinogenic health risks. Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. The calculation of cancer risk associated with exposure to TACs are typically calculated based on a 25- to 30-year period of exposure. However, such assessments should be limited to the period and duration during which exposure occurs. Assuming that construction activities involving the use of diesel-fueled equipment would occur over an approximate 17-month period, project-related construction activities would constitute less than six percent of the typical exposure period. As a result, because the use of off-road heavy-duty diesel equipment would be temporary and episodic occurring over a relatively large area, and the highly dispersive properties of DPM, project construction would not expose sensitive receptors to substantial emissions of DPM in excess of applicable thresholds.

Furthermore, as discussed above and noted in Table 4, on-site emissions of PM_{10} and $PM_{2.5}$ are not predicted to exceed SCACMD's LSTs. With compliance with SCAQMD Rule 403, which includes measures for the control of fugitive dust, localized concentrations of PM would not be anticipated to exceed applicable ambient air quality standards. However, given the proximity of sensitive land uses to the project site, localized increases of fugitive dust may result in increased nuisance to occupants of nearby land uses. For this reason, localized emissions of PM associated with Project construction would be considered ***potentially significant*** without mitigation.

Mitigation Measures

MM AQ-1: The following measures shall be implemented to help ensure consistency with SCAQMD rules and regulations, including (but not limited to) Rule 403 for the control of fugitive dust.

a. All active portions of the construction site shall be watered twice daily to prevent excessive amounts of dust.
b. Non-toxic soil stabilizers shall be applied to all inactive construction areas (previously graded areas inactive for 20 days or more, assuming no rain, according to manufacturers' specifications.
c. All excavating and grading operations shall be suspended when wind gusts (as instantaneous gust) exceed 25 miles per hour.
d. On-site off-road equipment and on-road vehicles used on-site shall be limited to 15 miles per hour.
e. All on-site roads shall be paved as soon as feasible, watered twice daily, or chemically stabilized.
f. Visible dust beyond the property line which emanates from the project shall be prevented to the maximum extent feasible.
g. All material transported off-site shall be either sufficiently watered or securely covered to prevent excessive amounts of dust prior to departing the job site.
h. Track-out devices shall be used at all construction site access points.
i. All delivery truck tires shall be watered down and/or scraped down prior to departing the job site.
j. Streets shall be swept at the end of the day if visible soil material is carried onto adjacent paved public roads in compliance with SCAQMD Rule 1186 and 1186.1.
k. Replace ground cover in disturbed areas as quickly as possible.
l. All trucks that are to haul excavated or graded material on-site shall comply with State Vehicle Code Section 23114 (Spilling Loads on Highways), with special attention to Sections 23114(b)(F), (e)(4) as amended, regarding the prevention of such material spilling onto public streets and roads.

MM AQ-2: The following additional measures are recommended to reduce construction-generated PM emissions from off-road equipment and on-road haul trucks:

a. Include in all construction contracts the requirement to use 2007 and newer diesel haul trucks (e.g., material delivery trucks and soil import/export).
b. Include in all construction contracts the requirement that all off-road diesel-fueled construction equipment greater than 50 horsepower shall meet Tier 4 off-road emission standards. In addition, if not already supplied with a factory-equipped diesel particulate filter, all construction equipment

shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations. To the extent locally available, construction equipment shall incorporate emissions savings technology such as hybrid drives. In the event that any equipment required under this mitigation measure is not available, provide documentation as information becomes available. A copy of each unit's certified tier specification, BACT documentation, and CARB or SCAQMD operating permit at the time of mobilization of each applicable unit of equipment shall be provided.

c. Maintain construction equipment by conducting regular tune-ups according to the manufacturers' recommendations.
d. When not in use, the idling of off-road equipment and haul trucks shall be prohibited. Signs shall be posted in the designated queuing areas and or job sites to remind drivers and the idling prohibition.
e. Staging and queuing areas shall be located at the furthest distance possible from nearby residential land uses.
f. Truck haul routes shall be located along roadways that would minimize potential impacts to nearby sensitive land uses.
g. Use alternatively-fueled (e.g., compressed natural gas (CNG), liquefied natural gas (LNG), propane), gasoline-fueled, or electrified construction equipment in place of diesel-fueled equipment to the extent locally available.

Significance after Mitigation

With the use of off-road equipment meeting Tier 4 emission standards, maximum daily emissions of PM associated with mobile-source operations would be reduced by approximately 85 percent. Localized emissions of fugitive dust associated with ground-disturbing activities and vehicle travel on unpaved surfaces would be reduced by approximately 50 percent, or more. With mitigation, this impact would be considered ***less than significant***.

IMPACT AQ-D: RESULT IN OTHER EMISSIONS (SUCH AS THOSE LEADING TO ODORS) ADVERSELY AFFECTING A SUBSTANTIAL NUMBER OF PEOPLE?

The occurrence and severity of odor impacts depends on numerous factors, including: the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the receptors. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and regulatory agencies.

No major sources of odors have been identified in the project area. In addition, the proposed Project would not include the installation of any major sources of odors. However, construction of the proposed Project would involve the use of a variety of gasoline or diesel-powered equipment that would emit exhaust fumes. Exhaust fumes, particularly diesel-exhaust, may be considered objectionable by some people. In addition, pavement coatings used during project construction would also emit temporary odors. However, construction-generated emissions would occur intermittently throughout the workday and would dissipate rapidly within increasing distance from the source. As a result, short-term construction activities would not expose a substantial number of people to frequent odorous emissions. This impact would be considered less than significant.

GREENHOUSE GAS

EXISTING SETTING

To fully understand global climate change, it is important to recognize the naturally occurring "greenhouse effect" and to define the greenhouse gases (GHGs) that contribute to this phenomenon. Various gases in the earth's atmosphere, classified as atmospheric GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space and a portion of the radiation is absorbed by the earth's surface. The earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation. Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Primary GHGs attributed to global climate change, are discussed, as follows:

- **Carbon Dioxide**. Carbon dioxide (CO_2) is a colorless, odorless gas. CO_2 is emitted in a number of ways, both naturally and through human activities. The largest source of CO_2 emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. A number of specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to CO_2 emissions.

- **Methane**. Methane (CH_4) is a colorless, odorless gas that is not flammable under most circumstances. CH_4 is the major component of natural gas, about 87 percent by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. Methane is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (enteric fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management.

These activities release significant quantities of methane to the atmosphere. Natural sources of methane include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires.

- **Nitrous Oxide**. Nitrous oxide (N_2O) is a clear, colorless gas with a slightly sweet odor. N_2O is produced by both natural and human-related sources. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, acid production, and nitric acid production. N_2O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests.

- **Hydrofluorocarbons.** Hydrofluorocarbons (HFCs) are man-made chemicals, many of which have been developed as alternatives to ozone-depleting substances for industrial, commercial, and consumer products. The only significant emissions of HFCs before 1990 were of the chemical HFC-23, which is generated as a byproduct of the production of HCFC-22 (or Freon 22, used in air conditioning applications).

- **Perfluorocarbons.** Perfluorocarbons (PFCs) are colorless, highly dense, chemically inert, and nontoxic. There are seven PFC gases: perfluoromethane (CF_4), perfluoroethane (C_2F_6), perfluoropropane (C_3F_8), perfluorobutane (C_4F_{10}), perfluorocyclobutane (C_4F_8), perfluoropentane (C_5F_{12}), and perfluorohexane (C_6F1_4). Natural geological emissions have been responsible for the PFCs that have accumulated in the atmosphere in the past; however, the largest current source is aluminum production, which releases CF_4 and C_2F_6 as byproducts.

- **Nitrogen Trifluoride**. Nitrogen trifluoride (NF_3) is an inorganic, colorless, odorless, toxic, nonflammable gas used as an etchant in microelectronics. Nitrogen trifluoride is predominantly employed in the cleaning of the plasma-enhanced chemical vapor deposition chambers in the production of liquid crystal displays and silicon-based thin film solar cells. It has a global warming potential of 16,100 carbon dioxide equivalents (CO_2e). While NF_3 may have a lower global warming potential than other chemical etchants, it is still a potent GHG. In 2009, NF_3 was listed by California as a high global warming potential GHG to be listed and regulated under Assembly Bill (AB) 32 (Section 38505 Health and Safety Code).

- **Sulfur Hexafluoride**. Sulfur hexafluoride (SF_6) is an inorganic compound that is colorless, odorless, nontoxic, and generally nonflammable. SF_6 is primarily used as an electrical insulator in high voltage equipment. The electric power industry uses roughly 80 percent of all SF_6 produced worldwide. Leaks of SF_6 occur from aging equipment and during equipment maintenance and servicing.

- **Black Carbon**. Black carbon is the strongest light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. Black carbon contributes to climate change both directly by absorbing sunlight and indirectly by depositing on snow and by interacting

with clouds and affecting cloud formation. Black carbon is considered a short-lived species, which can vary spatially and, consequently, it is very difficult to quantify associated global-warming potentials. The main sources of black carbon in California are wildfires, off-road vehicles (locomotives, marine vessels, tractors, excavators, dozers, etc.), on-road vehicles (cars, trucks, and buses), fireplaces, agricultural waste burning, and prescribed burning (planned burns of forest or wildlands).

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. Often, estimates of GHG emissions are presented in CO_2e, which weight each gas by its global warming potential (GWP). Expressing GHG emissions in CO_2e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted. Methane traps over 25 times more heat per molecule than CO_2, and N_2O absorbs roughly 298 times more heat per molecule than CO_2. Additional GHG with high GWP include Nitrogen trifluoride, Sulfur hexafluoride, Perfluorocarbons, and Black Carbon.

SOURCES OF GHG EMISSIONS

On a global scale, GHG emissions are predominantly associated with activities related to energy production; changes in land use, such as deforestation and land clearing; industrial sources; agricultural activities; transportation; waste and wastewater generation; and commercial and residential land uses. World-wide, energy production including the burning of coal, natural gas, and oil for electricity and heat is the largest single source of global GHG emissions.

In 2016, GHG emissions within California totaled 429.4 million metric tons (MMT) of CO_2e. GHG emissions, by sector, are summarized in Figure 2. Within California, the transportation sector is the largest contributor, accounting for approximately 41 percent of the total state-wide GHG emissions. Emissions associated with industrial uses are the second largest contributor, totaling roughly 23 percent. Electricity generation totaled roughly 16 percent. Other sectors, including agriculture, residential and commercial uses, comprised the remaining approximately 20 percent.[9]

Short-Lived Climate Pollutants

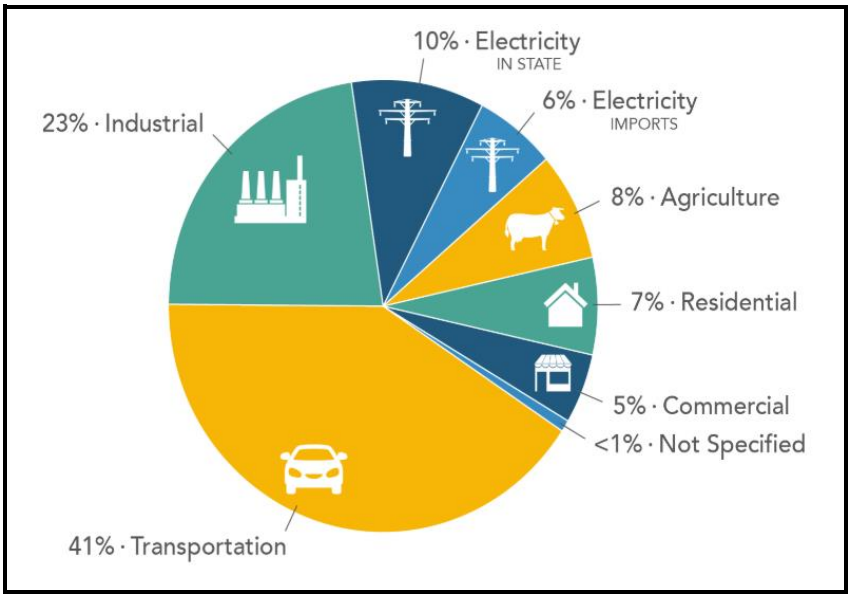
Short-lived climate pollutants (SLCPs), such as black carbon, fluorinated gases, and methane also have a dramatic effect on climate change. Though short lived, these pollutants create a warming influence on the climate that is many times more potent than that of carbon dioxide.

As part of the ARB's efforts to address SLCPs, the ARB has developed a statewide emission inventory for black carbon. The black carbon inventory will help support implementation of the SLCP Strategy, but it is not part of the State's GHG Inventory that tracks progress towards the State's climate targets. The most recent inventory for year 2013 conditions is depicted in Figure 3. As depicted, off-road mobile sources

[9] California Air Resources Board (ARB). 2019. *California Greenhouse Gas Emission Inventory – 2018 Edition*. Available at website url: https://www.arb.ca.gov/cc/inventory/data/data.htm

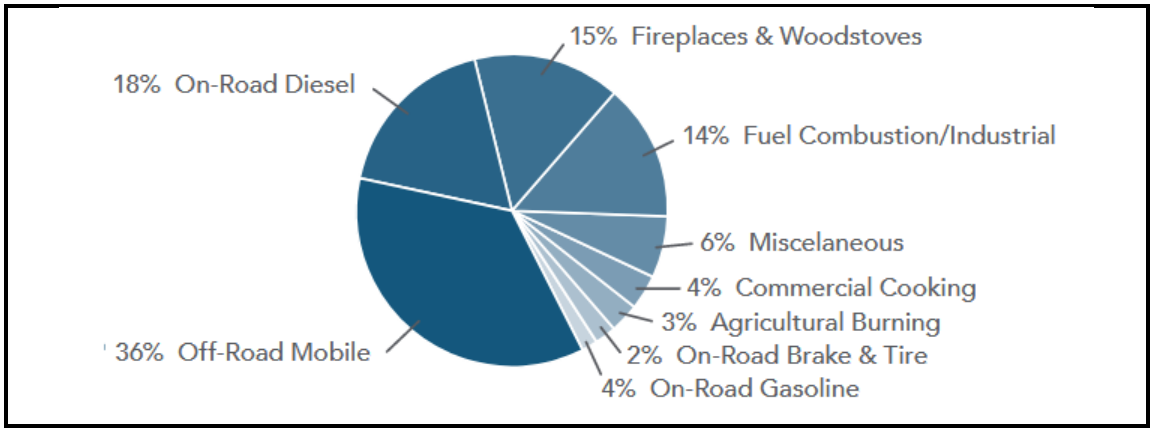
account for a majority of black carbon emissions totaling roughly 36 percent of the inventory. Other major anthropogenic sources of black carbon include on-road transportation, residential wood burning, fuel combustion, and industrial processes.[10]

Figure 2. California GHG Emissions Inventory by Sector



Source: ARB 2019

Figure 3. California Black Carbon Emissions Inventory (Year 2013)



Source: ARB 2017

[10] California Air Resources Board (ARB). 2017. *California's 2017 Climate Change Scoping Plan*. Available at website url: https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf.

EFFECTS OF GLOBAL CLIMATE CHANGE

There are uncertainties as to exactly what the climate changes will be in various local areas of the earth. There are also uncertainties associated with the magnitude and timing of other consequences of a warmer planet: sea level rise, spread of certain diseases out of their usual geographic range, the effect on agricultural production, water supply, sustainability of ecosystems, increased strength and frequency of storms, extreme heat events, increased air pollution episodes, and the consequence of these effects on the economy.

Within California, climate changes would likely alter the ecological characteristics of many ecosystems throughout the state. Such alterations would likely include increases in surface temperatures and changes in the form, timing, and intensity of precipitation. For instance, historical records are depicting an increasing trend toward earlier snowmelt in the Sierra Nevada. This snowpack is a principal supply of water for the state, providing roughly 50 percent of state's annual runoff. If this trend continues, some areas of the state may experience an increased danger of floods during the winter months and possible exhaustion of the snowpack during spring and summer months. An earlier snowmelt would also impact the State's energy resources. Currently, approximately 20 percent of California's electricity comes from hydropower. An early exhaustion of the Sierra snowpack, may force electricity producers to switch to more costly or non-renewable forms of electricity generation during spring and summer months. A changing climate may also impact agricultural crop yields, coastal structures, and biodiversity. As a result, resultant changes in climate will likely have detrimental effects on some of California's largest industries, including agriculture, wine, tourism, skiing, recreational and commercial fishing, and forestry.[11]

REGULATORY FRAMEWORK

FEDERAL

To date, the federal government has not established GHG-reduction targets, nor have any regulations or legislation been adopted that specifically address GHG emissions at the project level. Various efforts have, however, been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects. The most important of these was the Energy Policy and Conservation Act of 1975 (42 USC Section 6201) and Corporate Average Fuel Economy (CAFE) Standards. This act establishes fuel economy standards for on-road motor vehicles sold in the United States. In addition, the Energy Policy Act of 2005 established an energy research and development program. This program addressed energy efficiency; renewable energy, and climate change technology.

[11] Planning and Conservation League (PCL). Accessed: April 12, 2018. *Climate Change and the California Environmental Quality Act*. Website url: https://www.pcl.org/media/CEQA-Climate-Change-and-CEQA-full-memo.pdf.

STATE

Assembly Bill 1493

AB 1493 (Pavley) of 2002 (Health and Safety Code Sections 42823 and 43018.5) requires the ARB to develop and adopt the nation's first GHG emission standards for automobiles. These standards are also known as Pavley I. The California Legislature declared in AB 1493 that global warming is a matter of increasing concern for public health and the environment. It cites several risks that California faces from climate change, including a reduction in the state's water supply; an increase in air pollution caused by higher temperatures; harm to agriculture; an increase in wildfires; damage to the coastline; and economic losses caused by higher food, water, energy, and insurance prices. The bill also states that technological solutions to reduce GHG emissions would stimulate California's economy and provide jobs. In 2004, the State of California submitted a request for a waiver from federal clean air regulations, as the State is authorized to do under the FCAA, to allow the State to require reduced tailpipe emissions of CO_2. In late 2007, the U.S. EPA denied California's waiver request and declined to promulgate adequate federal regulations limiting GHG emissions. In early 2008, the State brought suit against the U.S. EPA related to this denial.

In January 2009, President Obama instructed the U.S. EPA to reconsider the Bush Administration's denial of California's and 13 other states' requests to implement global warming pollution standards for cars and trucks. In June 2009, the U.S. EPA granted California's waiver request, enabling the State to enforce its GHG emissions standards for new motor vehicles beginning with the current model year.

In 2009, President Obama announced a national policy aimed at both increasing fuel economy and reducing GHG pollution for all new cars and trucks sold in the US. The new standards would cover model years 2012 to 2016 and would raise passenger vehicle fuel economy to a fleet average of 35.5 miles per gallon by 2016. When the national program takes effect, California has committed to allowing automakers who show compliance with the national program to also be deemed in compliance with state requirements. California is committed to further strengthening these standards beginning in 2017 to obtain a 45 percent GHG reduction from the 2020 model year vehicles.

Executive Order No. S-3-05

Executive Order S-3-05 (State of California) proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra's snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the Executive Order established total GHG emission targets. Specifically, emissions are to be reduced to the 2000 level by 2010, to the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

The Executive Order directed the secretary of the California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The secretary will also submit biannual reports to the governor and state legislature describing (1) progress made toward

reaching the emission targets, (2) impacts of global warming on California's resources, and (3) mitigation and adaptation plans to combat these impacts. To comply with the Executive Order, the secretary of CalEPA created a Climate Action Team made up of members from various state agencies and commissions. The Climate Action Team released its first report in March 2006 and continues to release periodic reports on progress. The report proposed to achieve the targets by building on voluntary actions of California businesses, local government and community actions, as well as through state incentive and regulatory programs.

Assembly Bill 32 - California Global Warming Solutions Act of 2006

AB 32 (Health and Safety Code Sections 38500, 38501, 28510, 38530, 38550, 38560, 38561–38565, 38570, 38571, 38574, 38580, 38590, 38592–38599) requires that statewide GHG emissions be reduced to 1990 levels by the year 2020. The gases that are regulated by AB 32 include CO_2, CH_4, N_2O, HFCs, PFCs, NF_3, and SF_6. The reduction to 1990 levels will be accomplished through an enforceable statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs ARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then ARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires that ARB adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrives at the cap, institute a schedule to meet the emissions cap, and develop tracking, reporting, and enforcement mechanisms to ensure that the state achieves reductions in GHG emissions necessary to meet the cap. AB 32 also includes guidance to institute emissions reductions in an economically efficient manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions.

Climate Change Scoping Plan

In October 2008, ARB published its *Climate Change Proposed Scoping Plan*, which is the State's plan to achieve GHG reductions in California required by AB 32. This initial Scoping Plan contained the main strategies to be implemented in order to achieve the target emission levels identified in AB 32. The Scoping Plan included ARB-recommended GHG reductions for each emissions sector of the state's GHG inventory. The largest proposed GHG reduction recommendations were associated with improving emissions standards for light-duty vehicles, implementing the Low Carbon Fuel Standard program, implementation of energy efficiency measures in buildings and appliances, and the widespread development of combined heat and power systems, and developing a renewable portfolio standard for electricity production.

The Scoping Plan states that land use planning and urban growth decisions will play important roles in the state's GHG reductions because local governments have primary authority to plan, zone, approve, and

permit how land is developed to accommodate population growth and the changing needs of their jurisdictions. ARB further acknowledges that decisions on how land is used will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emissions sectors. With regard to land use planning, the Scoping Plan expects approximately 5.0 MMT CO_2e will be achieved associated with implementation of Senate Bill 375, which is discussed further below.

The initial Scoping Plan was first approved by ARB on December 11, 2008 and is updated every five years. The first update of the Scoping Plan was approved by the ARB on May 22, 2014, which looked past 2020 to set mid-term goals (2030-2035) on the road to reaching the 2050 goals., The most recent update released by ARB is the *2017 Climate Change Scoping Plan*, which was released In November 2017. The *2017 Climate Change Scoping Plan* incorporates strategies for achieving the 2030 GHG-reduction target established in SB 32 and EO B-30-15.

Senate Bill 1078 and Governor's Order S-14-08 (California Renewables Portfolio Standards)

Senate Bill 1078 (Public Utilities Code Sections 387, 390.1, 399.25 and Article 16) addresses electricity supply and requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide a minimum 20 percent of their supply from renewable sources by 2017. This Senate Bill will affect statewide GHG emissions associated with electricity generation. In 2008, Governor Schwarzenegger signed Executive Order S-14-08, which set the Renewables Portfolio Standard target to 33 percent by 2020. It directed state government agencies and retail sellers of electricity to take all appropriate actions to implement this target. Executive Order S-14-08 was later superseded by Executive Order S-21-09 on September 15, 2009. Executive Order S-21-09 directed the ARB to adopt regulations requiring 33 percent of electricity sold in the State come from renewable energy by 2020. Statute SB X1-2 superseded this Executive Order in 2011, which obligated all California electricity providers, including investor-owned utilities and publicly owned utilities, to obtain at least 33 percent of their energy from renewable electrical generation facilities by 2020.

ARB is required by current law, AB 32 of 2006, to regulate sources of GHGs to meet a state goal of reducing GHG emissions to 1990 levels by 2020 and an 80 percent reduction of 1990 levels by 2050. The California Energy Commissions and California Public Utilities Commission serve in advisory roles to help ARB develop the regulations to administer the 33 percent by 2020 requirement. ARB is also authorized to increase the target and accelerate and expand the time frame.

Mandatory Reporting of GHG Emissions

The California Global Warming Solutions Act (AB 32, 2006) requires the reporting of GHGs by major sources to the ARB. Major sources required to report GHG emissions include industrial facilities, suppliers of transportation fuels, natural gas, natural gas liquids, liquefied petroleum gas, and carbon dioxide, operators of petroleum and natural gas systems, and electricity retail providers and marketers.

Cap-and-Trade Regulation

The cap-and-trade regulation is a key element in California's climate plan. It sets a statewide limit on sources responsible for 85 percent of California's GHG emissions and establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The cap-and-trade rules came into effect on January 1, 2013, and apply to large electric power plants and large industrial plants. In 2015, fuel distributors, including distributors of heating and transportation fuels, also became subject to the cap-and-trade rules. At that stage, the program will encompass around 360 businesses throughout California and nearly 85 percent of the state's total GHG emissions.

Under the cap-and-trade regulation, companies must hold enough emission allowances to cover their emissions and are free to buy and sell allowances on the open market. California held its first auction of GHG allowances on November 14, 2012. California's GHG cap-and-trade system is projected to reduce GHG emissions to 1990 levels by the year 2020 and would achieve an approximate 80 percent reduction from 1990 levels by 2050.

Senate Bill 32

SB 32 was signed by Governor Brown on September 8, 2016. SB 32 effectively extends California's GHG emission-reduction goals from year 2020 to year 2030. This new emission-reduction target of 40 percent below 1990 levels by 2030 is intended to promote further GHG-reductions in support of the State's ultimate goal of reducing GHG emissions by 80 percent below 1990 levels by 2050. SB 32 also directs the ARB to update the Climate Change Scoping Plan to address this interim 2030 emission-reduction target.

Senate Bill 375

SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a sustainable communities strategy (SCS) or alternative planning strategy (APS) that will address land use allocation in that MPOs regional transportation plan. ARB, in consultation with MPOs, establishes regional reduction targets for GHGs emitted by passenger cars and light trucks for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. ARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, funding for transportation projects may be withheld.

California Building Code

The California Building Code (CBC) contains standards that regulate the method of use, properties, performance, or types of materials used in the construction, alteration, improvement, repair, or rehabilitation of a building or other improvement to real property. The California Building Code is adopted every three years by the Building Standards Commission (BSC). In the interim, the BSC also adopts annual updates to make necessary mid-term corrections. The CBC standards apply statewide; however, a local

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jurisdiction may amend a CBC standard if it makes a finding that the amendment is reasonably necessary due to local climatic, geological, or topographical conditions.

Green Building Standards

In essence, green buildings standards are indistinguishable from any other building standards. Both standards are contained in the California Building Code and regulate the construction of new buildings and improvements. The only practical distinction between the two is that whereas the focus of traditional building standards has been protecting public health and safety, the focus of green building standards is to improve environmental performance.

AB 32, which mandates the reduction of GHG emissions in California to 1990 levels by 2020, increased the urgency around the adoption of green building standards. In its scoping plan for the implementation of AB 32, ARB identified energy use as the second largest contributor to California's GHG emissions, constituting roughly 25 percent of all such emissions. In recommending a green building strategy as one element of the scoping plan, ARB estimated that green building standards would reduce GHG emissions by approximately 26 MMT of CO_2e by 2020.

Senate Bill 97

Senate Bill 97 (SB 97) was enacted in 2007. SB 97 required OPR to develop, and the Natural Resources Agency to adopt, amendments to the CEQA Guidelines addressing the analysis and mitigation of GHG emissions. Those CEQA Guidelines amendments clarified several points, including the following:

- Lead agencies must analyze the GHG emissions of proposed projects and must reach a conclusion regarding the significance of those emissions.
- When a project's GHG emissions may be significant, lead agencies must consider a range of potential mitigation measures to reduce those emissions.
- Lead agencies must analyze potentially significant impacts associated with placing projects in hazardous locations, including locations potentially affected by climate change.
- Lead agencies may significantly streamline the analysis of GHGs on a project level by using a programmatic GHG emissions reduction plan meeting certain criteria.
- CEQA mandates analysis of a proposed project's potential energy use (including transportation-related energy), sources of energy supply and ways to reduce energy demand, including through the use of efficient transportation alternatives.

As part of the administrative rulemaking process, the California Natural Resources Agency developed a Final Statement of Reasons explaining the legal and factual bases, intent, and purpose of the CEQA Guidelines amendments. The amendments to the CEQA Guidelines implementing SB 97 became effective on March 18, 2010.

Short-Lived Climate Pollutant Reduction Strategy

In March 2017, the ARB adopted the *Short-Lived Climate Pollutant Reduction Strategy* (*SLCP Strategy*) establishing a path to decrease GHG emissions and displace fossil-based natural gas use. Strategies include avoiding landfill methane emissions by reducing the disposal of organics through edible food recovery, composting, in-vessel digestion, and other processes; and recovering methane from wastewater treatment facilities, and manure methane at dairies, and using the methane as a renewable source of natural gas to fuel vehicles or generate electricity. The *SLCP Strategy* also identifies steps to reduce natural gas leaks from oil and gas wells, pipelines, valves, and pumps to improve safety, avoid energy losses, and reduce methane emissions associated with natural gas use. Lastly, the *SLCP Strategy* also identifies measures that can reduce hydrofluorocarbon emissions at national and international levels, in addition to State-level action that includes an incentive program to encourage the use of low-Global Warming Potential refrigerants, and limitations on the use of high-GWP refrigerants in new refrigeration and air-conditioning equipment.[10]

ENVIRONMENTAL IMPACTS

SIGNIFICANCE THRESHOLD CRITERIA

According to Appendix G of the CEQA Guidelines, a project would normally have a significant impact on the environment if the project would:

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 the emissions of greenhouse gases.

The City of Diamond Bar has not formally adopted quantitative significance thresholds for determination of whether or not a project would have a significant impact on the environment or conflict with an applicable GHG-reduction plan, policy, or regulation.

South Coast Air Quality Management District (SCAQMD)

At present time, the SCAQMD has not adopted a quantitative project-level GHG significance threshold for land use development projects (e.g., residential/commercial projects) subject to CEQA review. However, the SCAQMD did form a *GHG Significance Threshold Working Group* for the purpose of evaluating potential GHG significance thresholds. In October 2008, SCAQMD released a draft guidance document regarding interim CEQA GHG significance thresholds. Within this document, the SCAQMD proposed interim CEQA GHG indicators of significance using a tiered approach. Accordingly, under Tier 1, projects that would be considered exempt from CEQA would also be considered to have a less-than-significant GHG impact. Under Tier 2, projects that would be consistent with an adopted GHG-reduction plan would be considered to have a less-than-significant GHG impact. Under Tier 3, all non-industrial land use projects (e.g., residential, recreational, commercial) that would emit 3,000 $MTCO_2e$ per year, or less, would be

considered to have a less-than-significant GHG impact. Under Tier 4, projects that achieve an identified GHG-percent reduction below business as usual (BAU) conditions would also be considered to have a less-than-significant GHG impact. This recommended Tier 4 standard was subsequently amended in November 2009 and September 2010 to include a recommended service population metric for commercial/residential projects that emit greater than 3,000 $MTCO_2e$ per year. Projects that would not exceed these thresholds would be considered to have a less-than-significant impact on the environment and would not conflict with GHG-reduction planning efforts.

For land use development projects, the SCAQMD has not yet adopted the above-discussed GHG significance thresholds, as recommended by the *GHG Significance Threshold Working Group*. However, in December 2008, the SCAQMD Governing Board adopted an interim GHG significance threshold of 10,000 $MTCO_2e$ for stationary source/industrial projects where the SCAQMD is the lead agency. This threshold, however, does not apply to the proposed Project given that the project would not include the installation of permitted stationary sources.

SIGNIFICANCE THRESHOLDS

As noted above, the City of Diamond Bar has not formally adopted quantitative significance thresholds for determination of whether or not a project would have a significant impact on the environment or conflict with an applicable GHG-reduction plan, policy, or regulation. For purposes of this analysis, project-generated emissions were evaluated based on a threshold of 3,000 $MTCO_2e$/year, as recommended by the SCAQMD's *GHG Significance Threshold Working Group*. Project-generated emissions exceeding this threshold would also be considered to have a potentially significant impact on the environment and conflict with applicable regulatory plans and policies to reduce GHG emissions.

METHODOLOGY

Short-term emissions associated with construction activities are largely dependent on the type of development proposed, the amount of material to be imported and exported, equipment required, and construction schedules. Construction emissions of GHGs were calculated using the California Emissions Estimator Model (CalEEMod), version 2016.3.2 computer program. Modeling was conducted for the proposed Project based on estimated material to be imported and exported, off-road equipment usage, and construction schedules provided by the project engineers. Other construction modeling assumptions, including mobile-source emission factors and usage rates, were based on default parameters contained in the model for Los Angeles County. Emissions modeling assumptions and output files are provided in Appendix A.

IMPACT DISCUSSION

IMPACT GHG-A:	**GENERATE GREENHOUSE GAS EMISSIONS, EITHER DIRECTLY OR INDIRECTLY, THAT MAY HAVE A SIGNIFICANT IMPACT ON THE ENVIRONMENT? AND**
IMPACT GHG-B:	**CONFLICT WITH AN APPLICABLE PLAN, POLICY OR REGULATION ADOPTED FOR THE PURPOSE OF REDUCING THE EMISSIONS OF GREENHOUSE GASES?**

Annual construction-generated GHG emissions for the proposed Project are summarized in Table 5. As indicated, the highest annual emissions of GHGs associated with construction of the proposed Project would total approximately 1,670.2 $MTCO_2e$. In total, construction activities would generate approximately 2,725.6 $MTCO_2e$. A majority of construction-generated emissions, roughly 86%, would be associated with offsite motor vehicle trips, including worker and haul truck trips. The remaining approximately 14% would be associated with the operation of off-road equipment. There would also be a small amount of GHG emissions from waste generated during construction; however, this amount is speculative. Assuming that all emissions were to occur during a single year, construction emissions would not exceed the significance threshold of 3,000 $MTCO_2e$/year. It is also important to note that implementation of Air Quality Mitigation Measure AQ-2 (MM AQ-2) would require off-road equipment to meet Tier 4 emission standards, which would reduce emissions of diesel-exhaust PM by approximately 85 percent. Diesel-exhaust emissions from off-road equipment are a major source of Black Carbon emissions, which is considered a short-lived climate pollutant. Given that total GHG emissions would not exceed the significance threshold and that implementation of MM AQ-2 would significantly reduce emissions of Black Carbon, this impact would be considered ***less than significant***.

Table 5. Annual Construction-Generated GHG Emissions

Year	Total GHG Emissions ($MTCO_2e$)
Construction Year 1	1,670.2
Construction Year 2	1,055.4
Total:	2,725.6
Highest Annual Emissions:	1,670.2
Annual Significance Threshold:	3,000
Exceeds Significance Threshold?	No
Based on CalEEMod computer modeling. Refer to Appendix A for modeling results and assumptions.	

Appendix A
Emissions Modeling

CONSTRUCTION EMISSIONS SUMMARY

SUMMER - UNMITIGATED LBS/DAY *51420*

ACTIVITY	ROG	NOX	CO	SO2	PM10			PM2.5			CO2E
					FUG	EXH	TOT	FUG	EXH	TOT	
DEMOLITION											
ONSITE	0.83	8.10	11.10	0.02	0.05	0.43	0.56	0.01	0.40	0.41	
OFFSITE	0.05	0.19	0.44	0.00	0.12	0.00	0.12	0.03	0.00	0.03	
TOTAL	0.88	8.29	11.54	0.02	0.17	0.43	0.68	0.04	0.40	0.44	
SITE PREPARATION											
ONSITE	0.83	8.10	11.06	0.02	0.00	0.43	0.43	0.00	0.40	0.40	
OFFSITE	0.04	0.03	0.40	0.00	0.11	0.00	0.11	0.03	0.00	0.03	
TOTAL	0.87	8.13	11.46	0.02	0.11	0.43	0.54	0.03	0.40	0.43	
GRADING											
ONSITE	2.18	24.19	16.91	0.03	1.14	1.08	2.22	0.13	0.99	1.12	
OFFSITE	1.97	61.75	14.99	0.18	4.17	0.19	4.36	1.14	0.18	1.32	
TOTAL	4.15	85.94	31.90	0.21	5.31	1.27	6.58	1.27	1.17	2.44	
CONSTRUCTION - 2021											
ONSITE	0.31	2.66	2.50	0.00	0.00	0.15	0.15	0.00	0.14	0.14	
OFFSITE	5.67	42.28	51.98	0.22	14.17	0.17	14.34	3.82	0.16	3.98	
TOTAL	5.98	44.94	54.48	0.23	14.17	0.32	14.49	3.82	0.30	4.12	
CONSTRUCTION - 2022											
ONSITE	0.28	2.46	2.48	0.00	0.00	0.13	0.13	0.00	0.12	0.12	
OFFSITE	5.31	40.06	48.20	0.22	14.17	0.16	14.33	3.82	0.15	3.97	
TOTAL	5.59	42.52	50.68	0.22	14.17	0.29	14.46	3.82	0.27	4.09	
PAVING											
ONSITE	0.65	4.59	4.38	0.01	0.00	0.26	0.26	0.00	0.25	0.25	
OFFSITE	0.04	0.03	0.40	0.00	0.11	0.00	0.11	0.03	0.00	0.03	
TOTAL	0.69	4.62	4.78	0.01	0.11	0.26	0.38	0.03	0.25	0.28	
Highest Total Daily Emissions:	6.67	49.56	59.26	0.23			14.87			4.39	
Significance Threshold:	75	100	550	150			150			55	
Exceeds Threshold?:	No	No	No	No			No			No	

**Highest daily emissions assumes construction and paving could occur simultaneously on any given day. Does not include reductions for off-road equipment. Fugitive dust control included.*

Highest Onsite Daily Emissions:	2.2	24.2	16.9	0.0	1.1	1.1	2.2	0.1	1.0	1.1
Localized Significance Threshold:		149	885				6			4
Exceeds Threshold?:		No	No				No			No

WINTER - UNMITIGATED LBS/DAY *51420*

ACTIVITY	ROG	NOX	CO	SO2	PM10			PM2.5			CO2E
					FUG	EXH	TOT	FUG	EXH	TOT	
DEMOLITION											
ONSITE	0.83	8.10	11.10	0.02	0.05	0.43	0.56	0.01	0.40	0.41	
OFFSITE	0.05	0.19	0.44	0.00	0.12	0.00	0.12	0.03	0.00	0.03	
TOTAL	0.88	8.29	11.54	0.02	0.17	0.43	0.68	0.04	0.40	0.44	
SITE PREPARATION											
ONSITE	0.83	8.10	11.06	0.02	0.00	0.43	0.43	0.00	0.40	0.40	
OFFSITE	0.04	0.03	0.40	0.00	0.11	0.00	0.11	0.03	0.00	0.03	
TOTAL	0.87	8.13	11.46	0.02	0.11	0.43	0.54	0.03	0.40	0.43	
GRADING											
ONSITE	2.18	24.19	16.91	0.03	1.14	1.08	2.22	0.13	0.99	1.12	
OFFSITE	2.03	62.51	15.82	0.18	4.17	0.19	4.36	1.14	0.18	1.32	
TOTAL	4.21	86.70	32.73	0.21	5.31	1.27	6.58	1.27	1.17	2.44	
CONSTRUCTION - 2021											
ONSITE	0.31	2.66	2.50	0.00	0.00	0.15	0.15	0.00	0.14	0.14	
OFFSITE	6.22	42.52	49.49	0.22	14.17	0.17	14.34	3.82	0.16	3.98	
TOTAL	6.53	45.18	51.99	0.22	14.17	0.32	14.49	3.82	0.30	4.12	
CONSTRUCTION - 2022											
ONSITE	0.28	2.46	2.48	0.00	0.00	0.13	0.13	0.00	0.12	0.12	
OFFSITE	5.85	40.25	45.88	0.21	14.17	0.16	14.33	3.82	0.15	3.97	
TOTAL	6.13	42.71	48.36	0.21	14.17	0.29	14.46	3.82	0.27	4.09	
PAVING											
ONSITE	0.65	4.59	4.38	0.01	0.00	0.26	0.26	0.00	0.25	0.25	
OFFSITE	0.05	0.03	0.37	0.00	0.11	0.00	0.11	0.03	0.00	0.03	
TOTAL	0.70	4.62	4.75	0.01	0.11	0.26	0.38	0.03	0.25	0.28	
Highest Total Daily Emissions:	7.23	49.80	56.73	0.23			14.87			4.39	
Significance Threshold:	75	100	550	150			150			55	
Exceeds Threshold?:	No	No	No	No			No			No	

**Highest daily emissions assumes construction and paving could occur simultaneously on any given day. Does not include reductions for off-road equipment. Fugitive dust control included.*

Highest Onsite Daily Emissions:	2.2	24.2	16.9	0.0	1.1	1.1	2.2	0.1	1.0	1.1
Localized Significance Threshold:		149	885				6			4
Exceeds Threshold?:		No	No				No			No

ANNUAL - UNMITIGATED TONS/YEAR *51420*

ACTIVITY	ROG	NOX	CO	SO2	PM10			PM2.5			CO2E
					FUG	EXH	TOT	FUG	EXH	TOT	
DEMOLITION 2021											
ONSITE	0.03	0.28	0.39	0.00	0.00	0.02	0.02	0.00	0.01	0.01	51.28
OFFSITE	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.03
TOTAL	0.03	0.29	0.40	0.00	0.01	0.02	0.02	0.00	0.01	0.02	56.31
SITE PREPARATION											
ONSITE	0.02	0.16	0.22	0.00	0.00	0.01	0.01	0.00	0.01	0.01	29.31
OFFSITE	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.98
TOTAL	0.02	0.16	0.23	0.00	0.00	0.01	0.01	0.00	0.01	0.01	31.29
GRADING 2021											
ONSITE	0.12	1.33	0.93	0.00	0.16	0.06	0.22	0.02	0.05	0.07	162.85
OFFSITE	0.11	3.51	0.85	0.01	0.23	0.01	0.24	0.06	0.01	0.07	973.93
TOTAL	0.23	4.84	1.78	0.01	0.39	0.07	0.46	0.08	0.06	0.14	1136.78
CONSTRUCTION 2021											
ONSITE	0.01	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.64
OFFSITE	0.12	0.89	1.03	0.00	0.29	0.00	0.29	0.08	0.00	0.08	414.64
TOTAL	0.13	0.95	1.09	0.00	0.29	0.01	0.29	0.08	0.01	0.08	421.28
CONSTRUCTION 2022											
ONSITE	0.02	0.13	0.13	0.00	0.00	0.01	0.01	0.00	0.01	0.01	17.03
OFFSITE	0.28	2.15	2.43	0.01	0.73	0.01	0.74	0.20	0.01	0.21	1038.32
TOTAL	0.30	2.28	2.56	0.01	0.73	0.02	0.75	0.20	0.02	0.22	1055.35
PAVING 2021											
ONSITE	0.02	0.17	0.16	0.00	0.00	0.01	0.01	0.00	0.01	0.01	20.87
OFFSITE	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.71
TOTAL	0.02	0.17	0.17	0.00	0.00	0.01	0.01	0.00	0.01	0.01	24.58

**Does not include reductions for off-road equipment. Fugitive dust control included. Conservatively assumes paving could occur in 2021.*

Total Year 2021	0.44	6.40	3.67	0.02	0.69	0.11	0.79	0.16	0.10	0.26	1670.24
Total Year 2022	0.30	2.28	2.56	0.01	0.73	0.02	0.75	0.20	0.02	0.22	1055.35

Diamond Bar Golf Course Renovation Project (Const. Only)

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	4.30	Acre	4.30	187,308.00	0
Golf Course	52.30	Acre	52.30	2,278,188.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2025
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Diamond Bar Golf Course Renovation Project (Const. Only) - Los Angeles-South Coast County, Annual

Project Characteristics - Does not include operational emissions. Mitigated emissions are presented for informational purposes only.

Land Use - Total area graded 52.3 acres. Total area paved 4.3 acres.

Construction Phase - Based on information provided by project engineer. Assumes overall construction period of approximately 17 months.

Off-road Equipment - ...

Off-road Equipment - Offroad equipment is based on information provided by project engineer.

Off-road Equipment - ...

Off-road Equipment - ...

Off-road Equipment - ...

Trips and VMT - Worker/vendor trips are based on model defaults. Haul truck trips based on material to be imported/exported and assuming a capacity of 20cy/haul truck.

On-road Fugitive Dust - Onroad fugitive dust based on model defaults.

Demolition - 9,000 sf of bldg to be demolished. Based on information provided by project engineer.

Grading - 126,526.4 cy imported and exported based on information provided by project engineer. Acres graded based on model default.

Architectural Coating - Architectural coating does not apply.

Vehicle Trips - Operational emissions do not apply.

Energy Use -

Construction Off-road Equipment Mitigation - Limit onsite speeds to 15 mph. Water exposed surfaces/roadways. T3 equipment included for informational purposes only.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	1,110.00	146.00
tblGrading	AcresOfGrading	165.00	275.00
tblGrading	MaterialExported	0.00	126,526.40
tblGrading	MaterialImported	0.00	126,526.40
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblTripsAndVMT	HaulingTripNumber	31,632.00	25,306.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.4272	6.4046	3.6587	0.0175	0.6852	0.1101	0.7953	0.1600	0.1018	0.2619						1,669.6008
2022	0.2962	2.2825	2.5621	0.0113	0.7296	0.0152	0.7448	0.1969	0.0143	0.2111						1,055.3476
Maximum	**0.4272**	**6.4046**	**3.6587**	**0.0175**	**0.7296**	**0.1101**	**0.7953**	**0.1969**	**0.1018**	**0.2619**						**1,669.6008**

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	0.3102	5.9068	3.9048	0.0175	0.5849	0.0925	0.6774	0.1487	0.0918	0.2406						1,669.6005
2022	0.2847	2.2304	2.5362	0.0113	0.7296	0.0139	0.7435	0.1969	0.0134	0.2102						1,055.3476
Maximum	**0.3102**	**5.9068**	**3.9048**	**0.0175**	**0.7296**	**0.0925**	**0.7435**	**0.1969**	**0.0918**	**0.2406**						**1,669.6005**

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**17.78**	**6.33**	**-3.54**	**0.00**	**7.09**	**15.04**	**7.74**	**3.18**	**9.38**	**4.70**	**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	**1-1-2021**	**3-31-2021**	0.3784	0.3421
2	**4-1-2021**	**6-30-2021**	1.1906	1.0554
3	**7-1-2021**	**9-30-2021**	2.9602	2.6603
4	**10-1-2021**	**12-31-2021**	2.1892	2.0459
5	**1-1-2022**	**3-31-2022**	1.5701	1.5311
6	**4-1-2022**	**6-30-2022**	1.0139	0.9883
		Highest	2.9602	2.6603

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	0.0362	1.0000e-005	7.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000						1.5000e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						36.5879
Mobile	0.0609	0.2845	0.7346	2.8800e-003	0.2548	2.2300e-003	0.2570	0.0683	2.0700e-003	0.0704						267.5158
Waste						0.0000	0.0000		0.0000	0.0000						24.4611
Water						0.0000	0.0000		0.0000	0.0000						386.3813
Total	**0.0971**	**0.2845**	**0.7353**	**2.8800e-003**	**0.2548**	**2.2300e-003**	**0.2570**	**0.0683**	**2.0700e-003**	**0.0704**						**714.9477**

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	0.0362	1.0000e-005	7.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000						1.5000e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						36.5879
Mobile	0.0609	0.2845	0.7346	2.8800e-003	0.2548	2.2300e-003	0.2570	0.0683	2.0700e-003	0.0704						267.5158
Waste						0.0000	0.0000		0.0000	0.0000						24.4611
Water						0.0000	0.0000		0.0000	0.0000						386.3813
Total	**0.0971**	**0.2845**	**0.7353**	**2.8800e-003**	**0.2548**	**2.2300e-003**	**0.2570**	**0.0683**	**2.0700e-003**	**0.0704**						**714.9477**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	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

Diamond Bar Golf Course Renovation Project (Const. Only) - Los Angeles-South Coast County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2021	4/8/2021	5	70	
2	Site Preparation	Site Preparation	4/9/2021	6/3/2021	5	40	
3	Grading	Grading	6/4/2021	11/4/2021	5	110	
4	Building Construction	Building Construction	11/5/2021	5/29/2022	5	146	
5	Paving	Paving	2/16/2021	5/31/2021	5	75	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 275

Acres of Paving: 4.3

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Diamond Bar Golf Course Renovation Project (Const. Only) - Los Angeles-South Coast County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	2	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Excavators	2	8.00	158	0.38
Site Preparation	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Scrapers	1	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Trenchers	1	8.00	78	0.50
Building Construction	Cement and Mortar Mixers	2	8.00	9	0.56
Building Construction	Cranes	0	7.00	231	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Rollers	1	8.00	80	0.38
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	8.00	9	0.56
Paving	Pavers	0	8.00	130	0.42
Paving	Paving Equipment	0	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	41.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	5	13.00	0.00	25,306.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	3	1,036.00	404.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 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					4.4300e-003	0.0000	4.4300e-003	6.7000e-004	0.0000	6.7000e-004						0.0000
Off-Road	0.0292	0.2834	0.3872	5.8000e-004		0.0151	0.0151		0.0139	0.0139						51.2830
Total	**0.0292**	**0.2834**	**0.3872**	**5.8000e-004**	**4.4300e-003**	**0.0151**	**0.0196**	**6.7000e-004**	**0.0139**	**0.0146**						**51.2830**

3.2 Demolition - 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	1.7000e-004	5.6700e-003	1.3200e-003	2.0000e-005	3.5000e-004	2.0000e-005	3.7000e-004	1.0000e-004	2.0000e-005	1.1000e-004						1.5654
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	1.5100e-003	1.1700e-003	0.0132	4.0000e-005	3.8400e-003	3.0000e-005	3.8700e-003	1.0200e-003	3.0000e-005	1.0500e-003						3.4638
Total	**1.6800e-003**	**6.8400e-003**	**0.0146**	**6.0000e-005**	**4.1900e-003**	**5.0000e-005**	**4.2400e-003**	**1.1200e-003**	**5.0000e-005**	**1.1600e-003**						**5.0292**

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					1.7300e-003	0.0000	1.7300e-003	2.6000e-004	0.0000	2.6000e-004						0.0000
Off-Road	0.0142	0.2934	0.4382	5.8000e-004		0.0168	0.0168		0.0168	0.0168						51.2830
Total	**0.0142**	**0.2934**	**0.4382**	**5.8000e-004**	**1.7300e-003**	**0.0168**	**0.0185**	**2.6000e-004**	**0.0168**	**0.0171**						**51.2830**

3.2 Demolition - 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	1.7000e-004	5.6700e-003	1.3200e-003	2.0000e-005	3.5000e-004	2.0000e-005	3.7000e-004	1.0000e-004	2.0000e-005	1.1000e-004						1.5654
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	1.5100e-003	1.1700e-003	0.0132	4.0000e-005	3.8400e-003	3.0000e-005	3.8700e-003	1.0200e-003	3.0000e-005	1.0500e-003						3.4638
Total	**1.6800e-003**	**6.8400e-003**	**0.0146**	**6.0000e-005**	**4.1900e-003**	**5.0000e-005**	**4.2400e-003**	**1.1200e-003**	**5.0000e-005**	**1.1600e-003**						**5.0292**

3.3 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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Off-Road	0.0167	0.1620	0.2213	3.3000e-004		8.6500e-003	8.6500e-003		7.9600e-003	7.9600e-003						29.3046
Total	**0.0167**	**0.1620**	**0.2213**	**3.3000e-004**	**0.0000**	**8.6500e-003**	**8.6500e-003**	**0.0000**	**7.9600e-003**	**7.9600e-003**						**29.3046**

3.3 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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	8.6000e-004	6.7000e-004	7.5600e-003	2.0000e-005	2.1900e-003	2.0000e-005	2.2100e-003	5.8000e-004	2.0000e-005	6.0000e-004						1.9793
Total	**8.6000e-004**	**6.7000e-004**	**7.5600e-003**	**2.0000e-005**	**2.1900e-003**	**2.0000e-005**	**2.2100e-003**	**5.8000e-004**	**2.0000e-005**	**6.0000e-004**						**1.9793**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Off-Road	8.1200e-003	0.1676	0.2504	3.3000e-004		9.6100e-003	9.6100e-003		9.6100e-003	9.6100e-003						29.3046
Total	**8.1200e-003**	**0.1676**	**0.2504**	**3.3000e-004**	**0.0000**	**9.6100e-003**	**9.6100e-003**	**0.0000**	**9.6100e-003**	**9.6100e-003**						**29.3046**

3.3 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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	8.6000e-004	6.7000e-004	7.5600e-003	2.0000e-005	2.1900e-003	2.0000e-005	2.2100e-003	5.8000e-004	2.0000e-005	6.0000e-004						1.9793
Total	**8.6000e-004**	**6.7000e-004**	**7.5600e-003**	**2.0000e-005**	**2.1900e-003**	**2.0000e-005**	**2.2100e-003**	**5.8000e-004**	**2.0000e-005**	**6.0000e-004**						**1.9793**

3.4 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					0.1601	0.0000	0.1601	0.0179	0.0000	0.0179						0.0000
Off-Road	0.1200	1.3304	0.9301	1.8400e-003		0.0591	0.0591		0.0544	0.0544						162.8472
Total	**0.1200**	**1.3304**	**0.9301**	**1.8400e-003**	**0.1601**	**0.0591**	**0.2193**	**0.0179**	**0.0544**	**0.0723**						**162.8472**

3.4 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	0.1066	3.5027	0.8167	9.8000e-003	0.2175	0.0105	0.2280	0.0597	0.0100	0.0698						966.2071
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	3.0800e-003	2.4000e-003	0.0270	8.0000e-005	7.8300e-003	6.0000e-005	7.9000e-003	2.0800e-003	6.0000e-005	2.1400e-003						7.0760
Total	**0.1097**	**3.5051**	**0.8437**	**9.8800e-003**	**0.2253**	**0.0105**	**0.2359**	**0.0618**	**0.0101**	**0.0719**						**973.2830**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0625	0.0000	0.0625	6.9900e-003	0.0000	6.9900e-003						0.0000
Off-Road	0.0451	0.9032	1.1219	1.8400e-003		0.0421	0.0421		0.0421	0.0421						162.8470
Total	**0.0451**	**0.9032**	**1.1219**	**1.8400e-003**	**0.0625**	**0.0421**	**0.1045**	**6.9900e-003**	**0.0421**	**0.0490**						**162.8470**

3.4 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	0.1066	3.5027	0.8167	9.8000e-003	0.2175	0.0105	0.2280	0.0597	0.0100	0.0698						966.2071
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	3.0800e-003	2.4000e-003	0.0270	8.0000e-005	7.8300e-003	6.0000e-005	7.9000e-003	2.0800e-003	6.0000e-005	2.1400e-003						7.0760
Total	**0.1097**	**3.5051**	**0.8437**	**9.8800e-003**	**0.2253**	**0.0105**	**0.2359**	**0.0618**	**0.0101**	**0.0719**						**973.2830**

3.5 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	6.2900e-003	0.0545	0.0512	8.0000e-005		3.0000e-003	3.0000e-003		2.8100e-003	2.8100e-003						6.6474
Total	**6.2900e-003**	**0.0545**	**0.0512**	**8.0000e-005**		**3.0000e-003**	**3.0000e-003**		**2.8100e-003**	**2.8100e-003**						**6.6474**

3.5 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
Vendor	0.0257	0.8173	0.2216	2.1100e-003	0.0522	1.6700e-003	0.0538	0.0151	1.5900e-003	0.0167						204.4615
Worker	0.0914	0.0711	0.8031	2.3200e-003	0.2327	1.9200e-003	0.2346	0.0618	1.7700e-003	0.0636						210.1807
Total	**0.1171**	**0.8885**	**1.0247**	**4.4300e-003**	**0.2849**	**3.5900e-003**	**0.2885**	**0.0769**	**3.3600e-003**	**0.0802**						**414.6422**

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	1.3200e-003	0.0301	0.0407	8.0000e-005		2.1100e-003	2.1100e-003		2.1100e-003	2.1100e-003						6.6474
Total	**1.3200e-003**	**0.0301**	**0.0407**	**8.0000e-005**		**2.1100e-003**	**2.1100e-003**		**2.1100e-003**	**2.1100e-003**						**6.6474**

3.5 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
Vendor	0.0257	0.8173	0.2216	2.1100e-003	0.0522	1.6700e-003	0.0538	0.0151	1.5900e-003	0.0167						204.4615
Worker	0.0914	0.0711	0.8031	2.3200e-003	0.2327	1.9200e-003	0.2346	0.0618	1.7700e-003	0.0636						210.1807
Total	**0.1171**	**0.8885**	**1.0247**	**4.4300e-003**	**0.2849**	**3.5900e-003**	**0.2885**	**0.0769**	**3.3600e-003**	**0.0802**						**414.6422**

3.5 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	0.0149	0.1293	0.1301	2.1000e-004		6.7200e-003	6.7200e-003		6.3100e-003	6.3100e-003						17.0245
Total	**0.0149**	**0.1293**	**0.1301**	**2.1000e-004**		**6.7200e-003**	**6.7200e-003**		**6.3100e-003**	**6.3100e-003**						**17.0245**

3.5 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
Vendor	0.0618	1.9887	0.5370	5.3400e-003	0.1336	3.7300e-003	0.1373	0.0386	3.5700e-003	0.0421						519.0010
Worker	0.2195	0.1646	1.8951	5.7400e-003	0.5960	4.7600e-003	0.6008	0.1583	4.3800e-003	0.1627						519.3221
Total	**0.2813**	**2.1532**	**2.4321**	**0.0111**	**0.7296**	**8.4900e-003**	**0.7381**	**0.1969**	**7.9500e-003**	**0.2048**						**1,038.3231**

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	3.3800e-003	0.0771	0.1042	2.1000e-004		5.4000e-003	5.4000e-003		5.4000e-003	5.4000e-003						17.0245
Total	**3.3800e-003**	**0.0771**	**0.1042**	**2.1000e-004**		**5.4000e-003**	**5.4000e-003**		**5.4000e-003**	**5.4000e-003**						**17.0245**

3.5 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
Vendor	0.0618	1.9887	0.5370	5.3400e-003	0.1336	3.7300e-003	0.1373	0.0386	3.5700e-003	0.0421						519.0010
Worker	0.2195	0.1646	1.8951	5.7400e-003	0.5960	4.7600e-003	0.6008	0.1583	4.3800e-003	0.1627						519.3221
Total	**0.2813**	**2.1532**	**2.4321**	**0.0111**	**0.7296**	**8.4900e-003**	**0.7381**	**0.1969**	**7.9500e-003**	**0.2048**						**1,038.3231**

3.6 Paving - 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	0.0186	0.1719	0.1642	2.5000e-004		9.9000e-003	9.9000e-003		9.1900e-003	9.1900e-003						20.8737
Paving	5.6300e-003					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**0.0243**	**0.1719**	**0.1642**	**2.5000e-004**		**9.9000e-003**	**9.9000e-003**		**9.1900e-003**	**9.1900e-003**						**20.8737**

3.6 Paving - 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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	1.6100e-003	1.2600e-003	0.0142	4.0000e-005	4.1100e-003	3.0000e-005	4.1400e-003	1.0900e-003	3.0000e-005	1.1200e-003						3.7112
Total	**1.6100e-003**	**1.2600e-003**	**0.0142**	**4.0000e-005**	**4.1100e-003**	**3.0000e-005**	**4.1400e-003**	**1.0900e-003**	**3.0000e-005**	**1.1200e-003**						**3.7112**

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	4.8300e-003	0.1102	0.1488	2.5000e-004		7.7200e-003	7.7200e-003		7.7200e-003	7.7200e-003						20.8737
Paving	5.6300e-003					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**0.0105**	**0.1102**	**0.1488**	**2.5000e-004**		**7.7200e-003**	**7.7200e-003**		**7.7200e-003**	**7.7200e-003**						**20.8737**

3.6 Paving - 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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	1.6100e-003	1.2600e-003	0.0142	4.0000e-005	4.1100e-003	3.0000e-005	4.1400e-003	1.0900e-003	3.0000e-005	1.1200e-003						3.7112
Total	**1.6100e-003**	**1.2600e-003**	**0.0142**	**4.0000e-005**	**4.1100e-003**	**3.0000e-005**	**4.1400e-003**	**1.0900e-003**	**3.0000e-005**	**1.1200e-003**						**3.7112**

4.0 Operational Detail - Mobile

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	0.0609	0.2845	0.7346	2.8800e-003	0.2548	2.2300e-003	0.2570	0.0683	2.0700e-003	0.0704						267.5158
Unmitigated	0.0609	0.2845	0.7346	2.8800e-003	0.2548	2.2300e-003	0.2570	0.0683	2.0700e-003	0.0704						267.5158

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Golf Course	263.59	304.39	307.52	671,460	671,460
Parking Lot	0.00	0.00	0.00		
Total	263.59	304.39	307.52	671,460	671,460

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Golf Course	16.60	8.40	6.90	33.00	48.00	19.00	52	39	9
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Golf Course	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Parking Lot	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841

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						36.5879
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000						36.5879
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000

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					
Golf Course	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						**0.0000**

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					
Golf Course	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Golf Course	0				0.0000
Parking Lot	65557.8				36.5879
Total					**36.5879**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Golf Course	0				0.0000
Parking Lot	65557.8				36.5879
Total					**36.5879**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive 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	0.0362	1.0000e-005	7.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000						1.5000e-003
Unmitigated	0.0362	1.0000e-005	7.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000						1.5000e-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	2.6000e-003					0.0000	0.0000		0.0000	0.0000						0.0000
Consumer Products	0.0335					0.0000	0.0000		0.0000	0.0000						0.0000
Landscaping	7.0000e-005	1.0000e-005	7.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000						1.5000e-003
Total	**0.0362**	**1.0000e-005**	**7.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						**1.5000e-003**

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	2.6000e-003					0.0000	0.0000		0.0000	0.0000						0.0000
Consumer Products	0.0335					0.0000	0.0000		0.0000	0.0000						0.0000
Landscaping	7.0000e-005	1.0000e-005	7.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000						1.5000e-003
Total	**0.0362**	**1.0000e-005**	**7.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						**1.5000e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated				386.3813
Unmitigated				386.3813

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Golf Course	0 / 62.3145				386.3813
Parking Lot	0 / 0				0.0000
Total					**386.3813**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Golf Course	0 / 62.3145				386.3813
Parking Lot	0 / 0				0.0000
Total					**386.3813**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated				24.4611
Unmitigated				24.4611

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Golf Course	48.64				24.4611
Parking Lot	0				0.0000
Total					**24.4611**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Golf Course	48.64				24.4611
Parking Lot	0				0.0000
Total					**24.4611**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Diamond Bar Golf Course Renovation Project (Const. Only)

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	4.30	Acre	4.30	187,308.00	0
Golf Course	52.30	Acre	52.30	2,278,188.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2025
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Does not include operational emissions. Mitigated emissions are presented for informational purposes only.

Land Use - Total area graded 52.3 acres. Total area paved 4.3 acres.

Construction Phase - Based on information provided by project engineer. Assumes overall construction period of approximately 17 months.

Off-road Equipment - ...

Off-road Equipment - Offroad equipment is based on information provided by project engineer.

Off-road Equipment - ...

Off-road Equipment - ...

Off-road Equipment - ...

Trips and VMT - Worker/vendor trips are based on model defaults. Haul truck trips based on material to be imported/exported and assuming a capacity of 20cy/haul truck.

On-road Fugitive Dust - Onroad fugitive dust based on model defaults.

Demolition - 9,000 sf of bldg to be demolished. Based on information provided by project engineer.

Grading - 126,526.4 cy imported and exported based on information provided by project engineer. Acres graded based on model default.

Architectural Coating - Architectural coating does not apply.

Vehicle Trips - Operational emissions do not apply.

Energy Use -

Construction Off-road Equipment Mitigation - Limit onsite speeds to 15 mph. Water exposed surfaces/roadways. T3 equipment included for informational purposes only.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	1,110.00	146.00
tblGrading	AcresOfGrading	165.00	275.00
tblGrading	MaterialExported	0.00	126,526.40
tblGrading	MaterialImported	0.00	126,526.40
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblTripsAndVMT	HaulingTripNumber	31,632.00	25,306.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	5.9759	85.9376	54.4787	0.2264	14.1665	1.2659	14.4865	3.8158	1.1716	4.1155						23,285.3177
2022	5.5961	42.5209	50.6773	0.2212	14.1666	0.2889	14.4554	3.8158	0.2707	4.0865						22,772.1902
Maximum	**5.9759**	**85.9376**	**54.4787**	**0.2264**	**14.1666**	**1.2659**	**14.4865**	**3.8158**	**1.1716**	**4.1155**						**23,285.3177**

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	5.7332	78.1700	53.9654	0.2264	14.1665	0.9552	14.4432	3.8158	0.9469	4.0816						23,285.3177
2022	5.3766	41.5277	50.1839	0.2212	14.1666	0.2637	14.4303	3.8158	0.2535	4.0693						22,772.1902
Maximum	**5.7332**	**78.1700**	**53.9654**	**0.2264**	**14.1666**	**0.9552**	**14.4432**	**3.8158**	**0.9469**	**4.0816**						**23,285.3177**

Diamond Bar Golf Course Renovation Project (Const. Only) - Los Angeles-South Coast 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	N20	CO2e
Percent Reduction	**3.99**	**6.82**	**0.96**	**0.00**	**0.00**	**21.60**	**0.24**	**0.00**	**16.77**	**0.62**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	0.1985	5.0000e-005	5.7600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005						0.0132
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
Mobile	0.3969	1.6889	4.6431	0.0183	1.5923	0.0137	1.6059	0.4260	0.0127	0.4387						1,871.2399
Total	**0.5954**	**1.6890**	**4.6488**	**0.0183**	**1.5923**	**0.0137**	**1.6060**	**0.4260**	**0.0127**	**0.4387**						**1,871.2531**

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	0.1985	5.0000e-005	5.7600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005						0.0132
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
Mobile	0.3969	1.6889	4.6431	0.0183	1.5923	0.0137	1.6059	0.4260	0.0127	0.4387						1,871.2399
Total	**0.5954**	**1.6890**	**4.6488**	**0.0183**	**1.5923**	**0.0137**	**1.6060**	**0.4260**	**0.0127**	**0.4387**						**1,871.2531**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2021	4/8/2021	5	70	
2	Site Preparation	Site Preparation	4/9/2021	6/3/2021	5	40	
3	Grading	Grading	6/4/2021	11/4/2021	5	110	
4	Building Construction	Building Construction	11/5/2021	5/29/2022	5	146	
5	Paving	Paving	2/16/2021	5/31/2021	5	75	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 275

Acres of Paving: 4.3

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Diamond Bar Golf Course Renovation Project (Const. Only) - Los Angeles-South Coast County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	2	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Excavators	2	8.00	158	0.38
Site Preparation	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Scrapers	1	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Trenchers	1	8.00	78	0.50
Building Construction	Cement and Mortar Mixers	2	8.00	9	0.56
Building Construction	Cranes	0	7.00	231	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Rollers	1	8.00	80	0.38
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	8.00	9	0.56
Paving	Pavers	0	8.00	130	0.42
Paving	Paving Equipment	0	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	41.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	5	13.00	0.00	25,306.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	3	1,036.00	404.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 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					0.1266	0.0000	0.1266	0.0192	0.0000	0.0192						0.0000
Off-Road	0.8329	8.0984	11.0641	0.0166		0.4324	0.4324		0.3978	0.3978						1,615.1386
Total	**0.8329**	**8.0984**	**11.0641**	**0.0166**	**0.1266**	**0.4324**	**0.5590**	**0.0192**	**0.3978**	**0.4170**						**1,615.1386**

3.2 Demolition - 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	4.8800e-003	0.1571	0.0368	4.6000e-004	0.0102	4.8000e-004	0.0107	2.8100e-003	4.6000e-004	3.2700e-003						49.6617
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	0.0429	0.0295	0.4028	1.1400e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305						113.9609
Total	**0.0478**	**0.1866**	**0.4396**	**1.6000e-003**	**0.1220**	**1.3800e-003**	**0.1234**	**0.0325**	**1.2900e-003**	**0.0338**						**163.6226**

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					0.0494	0.0000	0.0494	7.4700e-003	0.0000	7.4700e-003						0.0000
Off-Road	0.4061	8.3822	12.5202	0.0166		0.4803	0.4803		0.4803	0.4803						1,615.1386
Total	**0.4061**	**8.3822**	**12.5202**	**0.0166**	**0.0494**	**0.4803**	**0.5296**	**7.4700e-003**	**0.4803**	**0.4877**						**1,615.1386**

3.2 Demolition - 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	4.8800e-003	0.1571	0.0368	4.6000e-004	0.0102	4.8000e-004	0.0107	2.8100e-003	4.6000e-004	3.2700e-003						49.6617
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	0.0429	0.0295	0.4028	1.1400e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305						113.9609
Total	**0.0478**	**0.1866**	**0.4396**	**1.6000e-003**	**0.1220**	**1.3800e-003**	**0.1234**	**0.0325**	**1.2900e-003**	**0.0338**						**163.6226**

3.3 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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Off-Road	0.8329	8.0984	11.0641	0.0166		0.4324	0.4324		0.3978	0.3978						1,615.1386
Total	**0.8329**	**8.0984**	**11.0641**	**0.0166**	**0.0000**	**0.4324**	**0.4324**	**0.0000**	**0.3978**	**0.3978**						**1,615.1386**

3.3 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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	0.0429	0.0295	0.4028	1.1400e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305						113.9609
Total	**0.0429**	**0.0295**	**0.4028**	**1.1400e-003**	**0.1118**	**9.0000e-004**	**0.1127**	**0.0296**	**8.3000e-004**	**0.0305**						**113.9609**

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Off-Road	0.4061	8.3822	12.5202	0.0166		0.4803	0.4803		0.4803	0.4803						1,615.1386
Total	**0.4061**	**8.3822**	**12.5202**	**0.0166**	**0.0000**	**0.4803**	**0.4803**	**0.0000**	**0.4803**	**0.4803**						**1,615.1386**

3.3 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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	0.0429	0.0295	0.4028	1.1400e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305						113.9609
Total	**0.0429**	**0.0295**	**0.4028**	**1.1400e-003**	**0.1118**	**9.0000e-004**	**0.1127**	**0.0296**	**8.3000e-004**	**0.0305**						**113.9609**

3.4 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					2.9114	0.0000	2.9114	0.3257	0.0000	0.3257						0.0000
Off-Road	2.1814	24.1886	16.9103	0.0334		1.0753	1.0753		0.9893	0.9893						3,263.7879
Total	**2.1814**	**24.1886**	**16.9103**	**0.0334**	**2.9114**	**1.0753**	**3.9867**	**0.3257**	**0.9893**	**1.3149**						**3,263.7879**

3.4 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	1.9182	61.7106	14.4694	0.1795	4.0226	0.1894	4.2120	1.1027	0.1812	1.2839						19,505.9187
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	0.0557	0.0383	0.5236	1.4900e-003	0.1453	1.1700e-003	0.1465	0.0385	1.0800e-003	0.0396						148.1491
Total	**1.9739**	**61.7489**	**14.9930**	**0.1810**	**4.1679**	**0.1906**	**4.3585**	**1.1412**	**0.1823**	**1.3235**						**19,654.0678**

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					1.1355	0.0000	1.1355	0.1270	0.0000	0.1270						0.0000
Off-Road	0.8207	16.4210	20.3989	0.0334		0.7646	0.7646		0.7646	0.7646						3,263.7879
Total	**0.8207**	**16.4210**	**20.3989**	**0.0334**	**1.1355**	**0.7646**	**1.9001**	**0.1270**	**0.7646**	**0.8916**						**3,263.7879**

3.4 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	1.9182	61.7106	14.4694	0.1795	4.0226	0.1894	4.2120	1.1027	0.1812	1.2839						19,505.9187
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	0.0557	0.0383	0.5236	1.4900e-003	0.1453	1.1700e-003	0.1465	0.0385	1.0800e-003	0.0396						148.1491
Total	**1.9739**	**61.7489**	**14.9930**	**0.1810**	**4.1679**	**0.1906**	**4.3585**	**1.1412**	**0.1823**	**1.3235**						**19,654.0678**

3.5 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	0.3070	2.6606	2.4972	4.0500e-003		0.1463	0.1463		0.1369	0.1369						357.4382
Total	**0.3070**	**2.6606**	**2.4972**	**4.0500e-003**		**0.1463**	**0.1463**		**0.1369**	**0.1369**						**357.4382**

3.5 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
Vendor	1.2280	39.2241	10.2542	0.1039	2.5865	0.0802	2.6667	0.7447	0.0767	0.8214						11,121.5334
Worker	4.4409	3.0525	41.7274	0.1184	11.5800	0.0936	11.6736	3.0711	0.0862	3.1573						11,806.3461
Total	**5.6689**	**42.2766**	**51.9816**	**0.2223**	**14.1665**	**0.1738**	**14.3403**	**3.8158**	**0.1629**	**3.9787**						**22,927.8795**

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	0.0643	1.4691	1.9838	4.0500e-003		0.1029	0.1029		0.1029	0.1029						357.4382
Total	**0.0643**	**1.4691**	**1.9838**	**4.0500e-003**		**0.1029**	**0.1029**		**0.1029**	**0.1029**						**357.4382**

3.5 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
Vendor	1.2280	39.2241	10.2542	0.1039	2.5865	0.0802	2.6667	0.7447	0.0767	0.8214						11,121.5334
Worker	4.4409	3.0525	41.7274	0.1184	11.5800	0.0936	11.6736	3.0711	0.0862	3.1573						11,806.3461
Total	**5.6689**	**42.2766**	**51.9816**	**0.2223**	**14.1665**	**0.1738**	**14.3403**	**3.8158**	**0.1629**	**3.9787**						**22,927.8795**

3.5 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	0.2838	2.4623	2.4773	4.0500e-003		0.1281	0.1281		0.1201	0.1201						357.4532
Total	**0.2838**	**2.4623**	**2.4773**	**4.0500e-003**		**0.1281**	**0.1281**		**0.1201**	**0.1201**						**357.4532**

3.5 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
Vendor	1.1525	37.3014	9.7021	0.1029	2.5865	0.0701	2.6566	0.7447	0.0671	0.8118						11,024.2232
Worker	4.1598	2.7572	38.4980	0.1142	11.5800	0.0907	11.6707	3.0711	0.0835	3.1546						11,390.5138
Total	**5.3123**	**40.0587**	**48.2001**	**0.2171**	**14.1666**	**0.1608**	**14.3273**	**3.8158**	**0.1506**	**3.9663**						**22,414.7369**

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	0.0643	1.4691	1.9838	4.0500e-003		0.1029	0.1029		0.1029	0.1029						357.4532
Total	**0.0643**	**1.4691**	**1.9838**	**4.0500e-003**		**0.1029**	**0.1029**		**0.1029**	**0.1029**						**357.4532**

3.5 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
Vendor	1.1525	37.3014	9.7021	0.1029	2.5865	0.0701	2.6566	0.7447	0.0671	0.8118						11,024.2232
Worker	4.1598	2.7572	38.4980	0.1142	11.5800	0.0907	11.6707	3.0711	0.0835	3.1546						11,390.5138
Total	**5.3123**	**40.0587**	**48.2001**	**0.2171**	**14.1666**	**0.1608**	**14.3273**	**3.8158**	**0.1506**	**3.9663**						**22,414.7369**

3.6 Paving - 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	0.4965	4.5849	4.3776	6.6700e-003		0.2639	0.2639		0.2451	0.2451						613.5815
Paving	0.1502					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**0.6467**	**4.5849**	**4.3776**	**6.6700e-003**		**0.2639**	**0.2639**		**0.2451**	**0.2451**						**613.5815**

3.6 Paving - 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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	0.0429	0.0295	0.4028	1.1400e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305						113.9609
Total	**0.0429**	**0.0295**	**0.4028**	**1.1400e-003**	**0.1118**	**9.0000e-004**	**0.1127**	**0.0296**	**8.3000e-004**	**0.0305**						**113.9609**

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	0.1287	2.9382	3.9676	6.6700e-003		0.2059	0.2059		0.2059	0.2059						613.5815
Paving	0.1502					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**0.2789**	**2.9382**	**3.9676**	**6.6700e-003**		**0.2059**	**0.2059**		**0.2059**	**0.2059**						**613.5815**

3.6 Paving - 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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	0.0429	0.0295	0.4028	1.1400e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305						113.9609
Total	**0.0429**	**0.0295**	**0.4028**	**1.1400e-003**	**0.1118**	**9.0000e-004**	**0.1127**	**0.0296**	**8.3000e-004**	**0.0305**						**113.9609**

4.0 Operational Detail - Mobile

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	0.3969	1.6889	4.6431	0.0183	1.5923	0.0137	1.6059	0.4260	0.0127	0.4387						1,871.2399
Unmitigated	0.3969	1.6889	4.6431	0.0183	1.5923	0.0137	1.6059	0.4260	0.0127	0.4387						1,871.2399

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Golf Course	263.59	304.39	307.52	671,460	671,460
Parking Lot	0.00	0.00	0.00		
Total	263.59	304.39	307.52	671,460	671,460

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Golf Course	16.60	8.40	6.90	33.00	48.00	19.00	52	39	9
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Golf Course	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Parking Lot	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841

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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000

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					
Golf Course	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						**0.0000**

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					
Golf Course	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.1985	5.0000e-005	5.7600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005						0.0132
Unmitigated	0.1985	5.0000e-005	5.7600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005						0.0132

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	0.0143					0.0000	0.0000		0.0000	0.0000						0.0000
Consumer Products	0.1837					0.0000	0.0000		0.0000	0.0000						0.0000
Landscaping	5.3000e-004	5.0000e-005	5.7600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005						0.0132
Total	**0.1985**	**5.0000e-005**	**5.7600e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**						**0.0132**

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	0.0143					0.0000	0.0000		0.0000	0.0000						0.0000
Consumer Products	0.1837					0.0000	0.0000		0.0000	0.0000						0.0000
Landscaping	5.3000e-004	5.0000e-005	5.7600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005						0.0132
Total	**0.1985**	**5.0000e-005**	**5.7600e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**						**0.0132**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Diamond Bar Golf Course Renovation Project (Const. Only)

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	4.30	Acre	4.30	187,308.00	0
Golf Course	52.30	Acre	52.30	2,278,188.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2025
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Diamond Bar Golf Course Renovation Project (Const. Only) - Los Angeles-South Coast County, Winter

Project Characteristics - Does not include operational emissions. Mitigated emissions are presented for informational purposes only.

Land Use - Total area graded 52.3 acres. Total area paved 4.3 acres.

Construction Phase - Based on information provided by project engineer. Assumes overall construction period of approximately 17 months.

Off-road Equipment - ...

Off-road Equipment - Offroad equipment is based on information provided by project engineer.

Off-road Equipment - ...

Off-road Equipment - ...

Off-road Equipment - ...

Trips and VMT - Worker/vendor trips are based on model defaults. Haul truck trips based on material to be imported/exported and assuming a capacity of 20cy/haul truck.

On-road Fugitive Dust - Onroad fugitive dust based on model defaults.

Demolition - 9,000 sf of bldg to be demolished. Based on information provided by project engineer.

Grading - 126,526.4 cy imported and exported based on information provided by project engineer. Acres graded based on model default.

Architectural Coating - Architectural coating does not apply.

Vehicle Trips - Operational emissions do not apply.

Energy Use -

Construction Off-road Equipment Mitigation - Limit onsite speeds to 15 mph. Water exposed surfaces/roadways. T3 equipment included for informational purposes only.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	1,110.00	146.00
tblGrading	AcresOfGrading	165.00	275.00
tblGrading	MaterialExported	0.00	126,526.40
tblGrading	MaterialImported	0.00	126,526.40
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblTripsAndVMT	HaulingTripNumber	31,632.00	25,306.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	6.5360	86.6976	51.9915	0.2166	14.1665	1.2688	14.4891	3.8158	1.1743	4.1180						22,573.0336
2022	6.1336	42.7137	48.3530	0.2117	14.1666	0.2912	14.4577	3.8158	0.2729	4.0887						21,804.5893
Maximum	**6.5360**	**86.6976**	**51.9915**	**0.2166**	**14.1666**	**1.2688**	**14.4891**	**3.8158**	**1.1743**	**4.1180**						**22,573.0336**

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	6.2934	78.9300	51.4782	0.2166	14.1665	0.9581	14.4458	3.8158	0.9497	4.0841						22,573.0336
2022	5.9142	41.7206	47.8596	0.2117	14.1666	0.2660	14.4326	3.8158	0.2557	4.0715						21,804.5893
Maximum	**6.2934**	**78.9300**	**51.4782**	**0.2166**	**14.1666**	**0.9581**	**14.4458**	**3.8158**	**0.9497**	**4.0841**						**22,573.0336**

Diamond Bar Golf Course Renovation Project (Const. Only) - Los Angeles-South Coast 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	N20	CO2e
Percent Reduction	**3.65**	**6.77**	**1.00**	**0.00**	**0.00**	**21.53**	**0.24**	**0.00**	**16.71**	**0.62**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	0.1985	5.0000e-005	5.7600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005						0.0132
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
Mobile	0.3838	1.7157	4.4499	0.0174	1.5923	0.0137	1.6060	0.4260	0.0127	0.4388						1,780.9423
Total	**0.5823**	**1.7157**	**4.4556**	**0.0174**	**1.5923**	**0.0137**	**1.6060**	**0.4260**	**0.0128**	**0.4388**						**1,780.9555**

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	0.1985	5.0000e-005	5.7600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005						0.0132
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
Mobile	0.3838	1.7157	4.4499	0.0174	1.5923	0.0137	1.6060	0.4260	0.0127	0.4388						1,780.9423
Total	**0.5823**	**1.7157**	**4.4556**	**0.0174**	**1.5923**	**0.0137**	**1.6060**	**0.4260**	**0.0128**	**0.4388**						**1,780.9555**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2021	4/8/2021	5	70	
2	Site Preparation	Site Preparation	4/9/2021	6/3/2021	5	40	
3	Grading	Grading	6/4/2021	11/4/2021	5	110	
4	Building Construction	Building Construction	11/5/2021	5/29/2022	5	146	
5	Paving	Paving	2/16/2021	5/31/2021	5	75	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 275

Acres of Paving: 4.3

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Diamond Bar Golf Course Renovation Project (Const. Only) - Los Angeles-South Coast County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	2	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Excavators	2	8.00	158	0.38
Site Preparation	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Scrapers	1	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Trenchers	1	8.00	78	0.50
Building Construction	Cement and Mortar Mixers	2	8.00	9	0.56
Building Construction	Cranes	0	7.00	231	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Rollers	1	8.00	80	0.38
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	8.00	9	0.56
Paving	Pavers	0	8.00	130	0.42
Paving	Paving Equipment	0	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	41.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	5	13.00	0.00	25,306.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	3	1,036.00	404.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 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					0.1266	0.0000	0.1266	0.0192	0.0000	0.0192						0.0000
Off-Road	0.8329	8.0984	11.0641	0.0166		0.4324	0.4324		0.3978	0.3978						1,615.1386
Total	**0.8329**	**8.0984**	**11.0641**	**0.0166**	**0.1266**	**0.4324**	**0.5590**	**0.0192**	**0.3978**	**0.4170**						**1,615.1386**

3.2 Demolition - 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	5.0000e-003	0.1590	0.0391	4.5000e-004	0.0102	4.9000e-004	0.0107	2.8100e-003	4.7000e-004	3.2800e-003						48.8058
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	0.0477	0.0326	0.3683	1.0800e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305						107.3040
Total	**0.0527**	**0.1917**	**0.4073**	**1.5300e-003**	**0.1220**	**1.3900e-003**	**0.1234**	**0.0325**	**1.3000e-003**	**0.0338**						**156.1098**

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					0.0494	0.0000	0.0494	7.4700e-003	0.0000	7.4700e-003						0.0000
Off-Road	0.4061	8.3822	12.5202	0.0166		0.4803	0.4803		0.4803	0.4803						1,615.1386
Total	**0.4061**	**8.3822**	**12.5202**	**0.0166**	**0.0494**	**0.4803**	**0.5296**	**7.4700e-003**	**0.4803**	**0.4877**						**1,615.1386**

3.2 Demolition - 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	5.0000e-003	0.1590	0.0391	4.5000e-004	0.0102	4.9000e-004	0.0107	2.8100e-003	4.7000e-004	3.2800e-003						48.8058
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	0.0477	0.0326	0.3683	1.0800e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305						107.3040
Total	**0.0527**	**0.1917**	**0.4073**	**1.5300e-003**	**0.1220**	**1.3900e-003**	**0.1234**	**0.0325**	**1.3000e-003**	**0.0338**						**156.1098**

3.3 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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Off-Road	0.8329	8.0984	11.0641	0.0166		0.4324	0.4324		0.3978	0.3978						1,615.1386
Total	**0.8329**	**8.0984**	**11.0641**	**0.0166**	**0.0000**	**0.4324**	**0.4324**	**0.0000**	**0.3978**	**0.3978**						**1,615.1386**

3.3 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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	0.0477	0.0326	0.3683	1.0800e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305						107.3040
Total	**0.0477**	**0.0326**	**0.3683**	**1.0800e-003**	**0.1118**	**9.0000e-004**	**0.1127**	**0.0296**	**8.3000e-004**	**0.0305**						**107.3040**

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Off-Road	0.4061	8.3822	12.5202	0.0166		0.4803	0.4803		0.4803	0.4803						1,615.1386
Total	**0.4061**	**8.3822**	**12.5202**	**0.0166**	**0.0000**	**0.4803**	**0.4803**	**0.0000**	**0.4803**	**0.4803**						**1,615.1386**

3.3 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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	0.0477	0.0326	0.3683	1.0800e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305						107.3040
Total	**0.0477**	**0.0326**	**0.3683**	**1.0800e-003**	**0.1118**	**9.0000e-004**	**0.1127**	**0.0296**	**8.3000e-004**	**0.0305**						**107.3040**

3.4 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					2.9114	0.0000	2.9114	0.3257	0.0000	0.3257						0.0000
Off-Road	2.1814	24.1886	16.9103	0.0334		1.0753	1.0753		0.9893	0.9893						3,263.7879
Total	**2.1814**	**24.1886**	**16.9103**	**0.0334**	**2.9114**	**1.0753**	**3.9867**	**0.3257**	**0.9893**	**1.3149**						**3,263.7879**

3.4 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	1.9644	62.4666	15.3431	0.1764	4.0226	0.1923	4.2149	1.1027	0.1840	1.2866						19,169.7505
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	0.0620	0.0424	0.4787	1.4000e-003	0.1453	1.1700e-003	0.1465	0.0385	1.0800e-003	0.0396						139.4952
Total	**2.0263**	**62.5090**	**15.8218**	**0.1778**	**4.1679**	**0.1935**	**4.3614**	**1.1412**	**0.1850**	**1.3262**						**19,309.2457**

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					1.1355	0.0000	1.1355	0.1270	0.0000	0.1270						0.0000
Off-Road	0.8207	16.4210	20.3989	0.0334		0.7646	0.7646		0.7646	0.7646						3,263.7879
Total	**0.8207**	**16.4210**	**20.3989**	**0.0334**	**1.1355**	**0.7646**	**1.9001**	**0.1270**	**0.7646**	**0.8916**						**3,263.7879**

3.4 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	1.9644	62.4666	15.3431	0.1764	4.0226	0.1923	4.2149	1.1027	0.1840	1.2866						19,169.7505
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	0.0620	0.0424	0.4787	1.4000e-003	0.1453	1.1700e-003	0.1465	0.0385	1.0800e-003	0.0396						139.4952
Total	**2.0263**	**62.5090**	**15.8218**	**0.1778**	**4.1679**	**0.1935**	**4.3614**	**1.1412**	**0.1850**	**1.3262**						**19,309.2457**

3.5 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	0.3070	2.6606	2.4972	4.0500e-003		0.1463	0.1463		0.1369	0.1369						357.4382
Total	**0.3070**	**2.6606**	**2.4972**	**4.0500e-003**		**0.1463**	**0.1463**		**0.1369**	**0.1369**						**357.4382**

3.5 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
Vendor	1.2892	39.1431	11.3431	0.1011	2.5865	0.0828	2.6692	0.7447	0.0792	0.8239						10,818.1908
Worker	4.9399	3.3789	38.1513	0.1115	11.5800	0.0936	11.6736	3.0711	0.0862	3.1573						11,116.6933
Total	**6.2290**	**42.5219**	**49.4944**	**0.2126**	**14.1665**	**0.1764**	**14.3429**	**3.8158**	**0.1654**	**3.9811**						**21,934.8841**

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	0.0643	1.4691	1.9838	4.0500e-003		0.1029	0.1029		0.1029	0.1029						357.4382
Total	**0.0643**	**1.4691**	**1.9838**	**4.0500e-003**		**0.1029**	**0.1029**		**0.1029**	**0.1029**						**357.4382**

3.5 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
Vendor	1.2892	39.1431	11.3431	0.1011	2.5865	0.0828	2.6692	0.7447	0.0792	0.8239						10,818.1908
Worker	4.9399	3.3789	38.1513	0.1115	11.5800	0.0936	11.6736	3.0711	0.0862	3.1573						11,116.6933
Total	**6.2290**	**42.5219**	**49.4944**	**0.2126**	**14.1665**	**0.1764**	**14.3429**	**3.8158**	**0.1654**	**3.9811**						**21,934.8841**

3.5 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	0.2838	2.4623	2.4773	4.0500e-003		0.1281	0.1281		0.1201	0.1201						357.4532
Total	**0.2838**	**2.4623**	**2.4773**	**4.0500e-003**		**0.1281**	**0.1281**		**0.1201**	**0.1201**						**357.4532**

3.5 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
Vendor	1.2102	37.2000	10.7371	0.1001	2.5865	0.0724	2.6589	0.7447	0.0693	0.8140						10,721.6184
Worker	4.6396	3.0515	35.1387	0.1076	11.5800	0.0907	11.6707	3.0711	0.0835	3.1546						10,725.5176
Total	**5.8498**	**40.2515**	**45.8758**	**0.2077**	**14.1666**	**0.1631**	**14.3296**	**3.8158**	**0.1527**	**3.9685**						**21,447.1361**

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	0.0643	1.4691	1.9838	4.0500e-003		0.1029	0.1029		0.1029	0.1029						357.4532
Total	**0.0643**	**1.4691**	**1.9838**	**4.0500e-003**		**0.1029**	**0.1029**		**0.1029**	**0.1029**						**357.4532**

3.5 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
Vendor	1.2102	37.2000	10.7371	0.1001	2.5865	0.0724	2.6589	0.7447	0.0693	0.8140						10,721.6184
Worker	4.6396	3.0515	35.1387	0.1076	11.5800	0.0907	11.6707	3.0711	0.0835	3.1546						10,725.5176
Total	**5.8498**	**40.2515**	**45.8758**	**0.2077**	**14.1666**	**0.1631**	**14.3296**	**3.8158**	**0.1527**	**3.9685**						**21,447.1361**

3.6 Paving - 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	0.4965	4.5849	4.3776	6.6700e-003		0.2639	0.2639		0.2451	0.2451						613.5815
Paving	0.1502					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**0.6467**	**4.5849**	**4.3776**	**6.6700e-003**		**0.2639**	**0.2639**		**0.2451**	**0.2451**						**613.5815**

3.6 Paving - 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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	0.0477	0.0326	0.3683	1.0800e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305						107.3040
Total	**0.0477**	**0.0326**	**0.3683**	**1.0800e-003**	**0.1118**	**9.0000e-004**	**0.1127**	**0.0296**	**8.3000e-004**	**0.0305**						**107.3040**

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	0.1287	2.9382	3.9676	6.6700e-003		0.2059	0.2059		0.2059	0.2059						613.5815
Paving	0.1502					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**0.2789**	**2.9382**	**3.9676**	**6.6700e-003**		**0.2059**	**0.2059**		**0.2059**	**0.2059**						**613.5815**

3.6 Paving - 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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	0.0477	0.0326	0.3683	1.0800e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305						107.3040
Total	**0.0477**	**0.0326**	**0.3683**	**1.0800e-003**	**0.1118**	**9.0000e-004**	**0.1127**	**0.0296**	**8.3000e-004**	**0.0305**						**107.3040**

4.0 Operational Detail - Mobile

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	0.3838	1.7157	4.4499	0.0174	1.5923	0.0137	1.6060	0.4260	0.0127	0.4388						1,780.9423
Unmitigated	0.3838	1.7157	4.4499	0.0174	1.5923	0.0137	1.6060	0.4260	0.0127	0.4388						1,780.9423

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Golf Course	263.59	304.39	307.52	671,460	671,460
Parking Lot	0.00	0.00	0.00		
Total	263.59	304.39	307.52	671,460	671,460

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Golf Course	16.60	8.40	6.90	33.00	48.00	19.00	52	39	9
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Golf Course	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Parking Lot	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841

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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000

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					
Golf Course	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						**0.0000**

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					
Golf Course	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.1985	5.0000e-005	5.7600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005						0.0132
Unmitigated	0.1985	5.0000e-005	5.7600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005						0.0132

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	0.0143					0.0000	0.0000		0.0000	0.0000						0.0000
Consumer Products	0.1837					0.0000	0.0000		0.0000	0.0000						0.0000
Landscaping	5.3000e-004	5.0000e-005	5.7600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005						0.0132
Total	**0.1985**	**5.0000e-005**	**5.7600e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**						**0.0132**

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	0.0143					0.0000	0.0000		0.0000	0.0000						0.0000
Consumer Products	0.1837					0.0000	0.0000		0.0000	0.0000						0.0000
Landscaping	5.3000e-004	5.0000e-005	5.7600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005						0.0132
Total	**0.1985**	**5.0000e-005**	**5.7600e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**						**0.0132**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation