Appendix A
Air Quality and Greenhouse Gas Memo

Memorandum

To:	Mr. Dallas Pugh, Land Use Environmental Planner County of San Diego Department of Parks and Recreation
Date:	April 5, 2019
Re:	**Air Quality and Greenhouse Gas Technical Memorandum for the Lakeside Equestrian Facility**

The purpose of this memorandum is to support the County of San Diego (County) Department of Parks and Recreation (DPR) environmental review process and provide information regarding potential effects of air quality and greenhouse gas (GHG) emissions associated with the proposed Lakeside Equestrian Facility (proposed Project). The proposed Project includes arenas, corrals, a trail and warm up track, restrooms, meeting room, kitchen, and parking area. A detailed description of the Project is provided below. The analysis provided in this memorandum evaluates the potential for short- and long-term air quality and GHG impacts associated with Project construction and operation. This report summarizes the regulations and environmental setting applicable to air quality and GHG emissions, describes the methodology used to estimate emissions and the applicable California Environmental Quality Act (CEQA) significance thresholds, and presents the findings used to evaluate the impacts. Modeling output sheets are provided in Attachment A to this report.

Project Description

The proposed Project is an equestrian facility with two arenas that would be available to serve local residents, equestrian owners, and visitors. It would be located on a 13.91-acre site at the corner of Willow Road and Moreno Avenue on County-owned land in the community of Lakeside within unincorporated San Diego County. The General Plan land use designation for the site is Open Space-Recreation (OS-R). Zoning for the site is S80 (Open Space).

The proposed Project site encompasses the parcels identified by Assessor's Parcel Numbers (APNs) 392-030-370-0 and 760-141-190-0. Access to the Project site would be from two driveways, one on the south end of Moreno Avenue near the day use trail staging area, and one off Moreno Avenue near the outside arena. The proposed development on the Project site is generally concentrated to the north and to the east; with the outside arena and livestock corrals located in the northern portion of the proposed site, and the covered arena in the eastern portion.

The northern portion of the Project site would consist of an outside arena (150' x 300'), bleachers, announcer's booth, livestock corrals that include a shade structure (40' x 150'), compost area, and water truck filling station. The eastern portion of the site would consist of a covered arena (150' x 300'), bleachers, announcer's booth, electric scoreboard, patio area, meeting room with concession/kitchen (40' x 80' max.), dumpster area (20' x 10'), shop/storage (30' x 60'), restroom and showers, volunteer pad with built in shade structure (50' x 50'), wash racks and 5 overnight recreational vehicle camping sites with utility hookups, and trash receptacle. Sewer and water connections will occur along the southern border of the site along Moreno Avenue. Electric and natural gas connection points are to be determined.

In the center of the site there would be an open decomposed granite parking area (2,400 cubic yards) capable of accommodating approximately 74 trucks/trailers and approximately 35 single vehicle spaces with 30 solar powered parking lot lights. Within the parking area and main entrance off Moreno Avenue, a paved fire lane will be constructed within the facility to accommodate emergency vehicles. The estimated square footage of the paved fire lane or emergency vehicle lane is 42,000 sf of pervious pavement (concrete, asphalt, pavers). A publicly accessible multi-use trail will be developed around the perimeter of the site between the southeast property corner and the northwest property corner (with a fence on the perimeter). A separate equestrian warm up track would also be developed around the facility. A water truck/fire emergency vehicle fill-up station will be located east of the warm up track fence.

The equestrian facility will generate an estimated 170 cubic feet (about six cubic yards) of manure and soiled bedding per week, or 130 tons per year. The exact amount of manure generated will depend on the number of animals, frequency of events, and types of stall beddings used.

An onsite composting area will manage manure and other compostable materials generated at the facility. At times manure and soiled bedding may be hauled offsite for processing or beneficial reuse. Due to anticipated manure volumes and uses, the proposed Project would likely not require composting permits. It will be the leaseholder's responsibility to comply with all regulations and obtain all composting permits, if required.

The manure will be sustainably managed utilizing both manure management and composting best management practices (BMPs) that will virtually eliminate negative environmental impacts and nuisances. BMPs will be listed in the Facility Manure Management Plan and will include practices to minimize odors and vectors and protect receiving water quality. The Facility Manure Management Plan BMPs may include (not limited to) the following:

- The facility, including animal stalls, warmup and training areas, will be cleaned at least once per day including the removal of manure and soiled bedding.
- Manure and soiled bedding will either be incorporated into composting by the end of the day or temporarily stockpiled prior to incorporation into the composting system.
- Stockpiled material in containment vessels will be covered with a lid or tarp. Containment vessels will be located at the furthest feasible distance from nearby residents and/or sensitive receptors.

Compost will undergo processes to further reduce pathogens that results in a beneficial soil amendment that is free of pathogens, parasites and weed seeds. The composting process also destroys fly larvae.

The manure storage and composting area will be located in the northeast corner of the Project site. The manure storage and composting area will be contained in a semi-open structure with roof, which will help minimize odor migration and runoff from stormwater flows. The area is located at the highest elevation of the property and design features such as berms and grading will be incorporated to direct any oncoming stormwater flows around the manure storage and composting area. BMPs will be implemented to minimize leachate generation and runoff from the manure storage and composting area.

The proposed Project will also include educational interpretive and informational signage to inform facility users about the benefits of sustainable manure management and the BMPs being implemented. A contact and phone number will be listed in case of complaints or emergencies.

A day-use public equestrian trail staging area with a shade pavilion (24' x 24') will be provided in the southwestern portion of the site. This area will be improved with picnic tables, hitching posts, temporary irrigation, trash receptacles and drought tolerant landscape.

All permanent exterior lighting would be installed such that lamps and reflectors are not visible from beyond the Project site; lighting does not cause excessive reflective glare; directed lighting does not illuminate the nighttime sky, except for required FAA aircraft safety lighting; illumination of the Project facility and its immediate vicinity is minimized; and the lighting plan complies with local policies and ordinances.

The community facility would be used for a variety of equestrian and livestock related activities such as practices, training, and contests, including shows, and non-equestrian events such as dog shows, weddings, etc. A typical equestrian event would likely draw between 50 and 125 attendees, with large events attracting as many as 300 attendees (spectators and participants). The large events are anticipated to take place a few times each year. A three-way stop will be installed at the corner of Willow Road and Moreno Avenue to ensure the safety of patrons and users of the perimeter trails.

Construction would occur over eleven to twelve months. Construction equipment would include tractors, excavators, backhoes, water truck, drill rig, bobcat, fork lift, rollers, a rubber tire loader, wheel tractor scrapers, an air compressor, a generator set, a crane, and a concrete truck. Approximately 12,700 cubic yards of material will be imported to the Project site for the public trail, parking lot, biofiltration basin and arenas. No material will be transported offsite. Offsite improvements include paving two driveways entering the site from Moreno Avenue and the three-way stop at Willow Road and Moreno Avenue.

County DPR will contract with a third-party operator for managing daily operations and maintaining the equestrian facility. One supervising park ranger will be available and there will be one point of contact from the County that will act as a liaison between the County and the property tenant. The facility will be open from approximately sunrise to sunset, and 10:00 p.m. when large events take place. The facility will follow all standard County rules and regulations, including, but not limited to:

- No smoking allowed anywhere in County Parks per section 41.118.5.
- No person is allowed to use, transport, carry, fire, or discharge any fireworks, firearm, weapon, air gun, archery device, slingshot, or explosive of any kind across, in or into a County park.

The proposed Project is in the northern portion of the community of Lakeside, west of the Lake Jennings/Wildcat Canyon–El Cajon Mountain Multiple Species Conservation Program Core Resource Area and approximately 0.25 mile north of the San Diego River. The Project site is specifically northeast of the Moreno Avenue and Willow Road intersection. Surrounding land uses include commercial and industrial development to the west, El Capitan Equestrian Center and semi-rural residential development to the south, a mix of agricultural and semi-rural residential development to the north and east, and rural lands and open space beyond the semi-rural development to the east. The topography of the equestrian site is relatively flat, with elevations ranging from 403 to 410 feet above mean sea level. The site is 0.5 mile east of Highway 67.

Background

Overview of Regulations

The Project is subject to air quality regulations developed and implemented at the federal, state, and local levels. At the federal level, the U.S. Environmental Protection Agency (EPA) is responsible for implementation of the Clean Air Act (CAA). Some portions of the CAA (e.g., certain mobile-source and other requirements) are implemented directly by EPA. Other portions (e.g., stationary-source requirements) are implemented by state and local agencies. Both the EPA (National Ambient Air Quality Standards [NAAQS]) and the California Air Resources Board (CARB) (California Ambient Air Quality Standards [CAAQS]) have established ambient air quality standards for various common pollutants (see below). The EPA and CARB designate areas as either attainment or nonattainment for each criteria pollutant based on whether the appropriate ambient NAAQS (and CAAQS in California) have been achieved. Through the CAA, the EPA grants CARB authority to govern air quality in California, and CARB has granted regional governing authority to the various air districts. San Diego Air Pollution Control District (SDAPCD) is the local agency responsible for the administration and enforcement of air quality regulations in San Diego County. SDAPCD' s primary roles include controlling air pollution from stationary sources, developing and monitoring the County's portion of the State Implementation Plan (SIP), and developing rules for attaining NAAQS and CAAQS. SDAPCD is responsible for establishing and enforcing local air quality rules and regulations in order to attain air quality standards, and SDAPCD has adopted numerous rules and regulations to reduce emission from sources under its control.

Pollutants of Concern

The analysis focuses on the following pollutants that are of greatest concern for the proposed Project:

Criteria pollutants

Pollutants for which the federal and state governments have set ambient air quality standards or that are chemical precursors to compounds for which ambient standards have been set. The criteria pollutants associated with the Project are ozone (O_3) and the precursors thereof (reactive organic gasses [ROG] and nitrogen oxides [NO_X]), particulate matter (PM) (PM_{10} is PM smaller than or equal to 10 microns in diameter, and $PM_{2.5}$ is PM smaller than or equal than 2.5 microns in diameter), carbon monoxide (CO), and sulfur dioxide (SO_2).

All criteria pollutants can have human health and environmental effects at certain concentrations. The ambient air quality standards for these pollutants are set by federal and state agencies to protect public health and the environment within an adequate margin of safety (CAA Section 109). Epidemiological, controlled human exposure, and toxicology studies evaluate potential health and environmental effects of criteria pollutants, and form the scientific basis for new and revised ambient air quality standards. Most health studies have focused on two key pollutants: ozone and $PM_{2.5}$.

- **Ozone**. Ozone, or smog, is photochemical oxidant that is formed when ROG and NO_X (both by-products of the internal combustion engine) react with sunlight. ROG are compounds made up primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of hydrocarbons. Other sources of ROG are emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. The two major forms of NO_X are nitric oxide (NO) and NO_2. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. NO_2 is a reddish-brown irritating gas formed by the combination of NO and oxygen. In addition to serving as an integral participant in ozone formation, NO_X also directly acts as an acute respiratory irritant and increases susceptibility to respiratory pathogens.

  Ozone poses a higher risk to those who already suffer from respiratory diseases (e.g., asthma), children, older adults, and people who are active outdoor. Exposure to ozone at certain concentrations can make breathing more difficult, cause shortness of breath and coughing, inflame and damage the airways, aggregate lung diseases, increase the frequency of asthma attacks, and cause chronic obstructive pulmonary disease. Studies show associations between short-term ozone exposure and non-accidental mortality, including deaths from respiratory issues. Studies also suggest long-term exposure to ozone may increase the risk of respiratory-related deaths (U.S. Environmental Protection Agency 2019a). The concentration of ozone at which health effects are observed depends on an individual's sensitivity, level of exertion (i.e., breathing rate), and duration of exposure. Studies show large individual differences in the intensity of symptomatic responses, with one study finding no symptoms to the least responsive individual after a 2-hour exposure to 400 parts per billion of ozone and a 50% decrement in forced airway volume in the most responsive individual. Although the results vary, evidence suggest that sensitive populations (e.g., asthmatics) may be affected on days when the 8-hour maximum ozone concentration reaches 80 parts per billion (U.S. Environmental Protection Agency 2019b).

In addition to human health effect, ozone has been tied to crop damage, typically in the form of stunted growth, leaf discoloration, cell damage, and premature death. Ozone can also act as a corrosive and oxidant, resulting in property damage such as the degradation of rubber products and other materials. Between 2013 and 2017, there were 18 days that exceeded the federal 8-hour ozone standard and two days that exceeded the state 1-hour ozone standard at the El Cajon- Lexington Elementary School ambient air quality monitoring station (6 miles south of the proposed Project site) (SDAPCD n.d).

- **Carbon Monoxide**. Carbon monoxide is a colorless, odorless, toxic gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. In the study area, high CO levels are of greatest concern during the winter, when periods of light winds combine with the formation of ground-level temperature inversions from evening through early morning. These conditions trap pollutants near the ground, reducing the dispersion of vehicle emissions. Moreover, motor vehicles exhibit increased CO emission rates at low air temperatures. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation. Exposure to CO at high concentrations can also cause fatigue, headaches, confusion, dizziness, and chest pain. There are no ecological or environmental effects to ambient CO (California Air Resources Board 2019). Carbon monoxide is considered a local pollutant since it tends to accumulate in the air locally.
- **Particulate Matter**. Particulate matter consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of particulates are now generally considered: inhalable course particles, or PM_{10}, and inhalable fine particles, or $PM_{2.5}$. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. However, wind or arid landscapes also contributes substantially to local particulate loading.

  Particulate pollution can be transported over long distances and may adversely affect the human, especially for people who are naturally sensitive or susceptible to breathing problems. Numerous studies have linked PM exposure to premature death in people with preexisting heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lunch function, and increased respiratory symptoms. In 2008, CARB estimated that annual $PM_{2.5}$ emissions for the entire Sacramento Metropolitan Area[1] causes 90 premature deaths, 20 hospital admissions, 1,200 asthma and lower respiratory symptom cases, 110 acute bronchitis cases, 7,900 lost work days, and 42,000 minor restricted activity days (Sacramento Metropolitan Air Quality Management District 2013a). Depending on its composition, both PM_{10} and $PM_{2.5}$ can also affect water quality and acidity, deplete soil nutrients, damage sensitive forests and crops, affect ecosystem diversity, and contribute to acid rain (U.S. Environmental Protection Agency 2019c). PM is considered both a local and a regional pollutant. Between 2013 and 2017, The 24-hour $PM_{2.5}$ federal standard was exceeded in 2014 and the annual 24-hour PM_{10} state standard was exceeded each year at the El Cajon- Lexington Elementary School ambient air quality monitoring station (6 miles south of the proposed Project site) (SDAPCD n.d).

[1] Sacramento Metropolitan Area includes: El Dorado, Sacramento, Yolo counties and portions of Placer and Solano counties.

Toxic air contaminants (TACs)

A defined set of airborne pollutants that may pose a present or potential hazard to human health. TACs are separated into carcinogenic and non-carcinogenic. The primary TAC of concern associated with construction and operation of the proposed Project is diesel particulate matter (DPM), which is a special class of particulates and a subset of $PM_{2.5}$.

Greenhouse gases

According to State CEQA Guidelines (Section 15364.5), the principal GHGs that contribute to global climate change include carbon dioxide (CO_2), methane (CH_4), and nitrous oxides (N_2O), perfluorinated carbons, sulfur hexafluoride, and hydrofluorocarbons. Water vapor, the most abundant GHG, is not included in this list because its natural concentrations and fluctuations far outweigh its anthropogenic (human-made) sources. The primary GHGs of concern associated with the Project are CO_2, CH_4, and N_2O, which are primarily associated with fuel combustion in on- and off-road motor vehicles.

Thresholds of Significance

Air Quality

The following significance criteria are based on Appendix G of the State CEQA Guidelines and provide the basis for determining significance of impacts associated with air quality and GHG emissions resulting from the proposed Project. The determination of whether an air quality or GHG impact would be significant is based on the applicable thresholds and the professional judgment of the County of San Diego as Lead Agency. The State CEQA Guidelines state that the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the significance determination of whether a project would violate or impede attainment of air quality standards. Attainment status for each pollutant is assigned for the entire air basin. In San Diego, the San Diego Air Basin (SDAB) is defined as "all of San Diego County" (see 17 CCR 60110). Therefore, the current attainment status for the entire San Diego region, which includes nonattainment status for ozone NAAQS and ozone CAAQS, PM_{10} CAAQS, and $PM_{2.5}$ CAAQS, applies to the entire county.

Although SDAPCD has not developed specific thresholds of significance to evaluate construction and operational impacts within CEQA documents, SDAPCD's Regulation II, Rules 20.2 and 20.3 (new source review for non-major and major stationary sources, respectively), outline AQIA Trigger Levels for criteria pollutants for new or modified sources. Based on SDAPCD's AQIA Trigger Levels, as well as EPA rulemaking and CEQA thresholds adopted by the South Coast Air Quality Management District (SCAQMD), San Diego County has established screening-level thresholds (SLTs) to assist lead agencies in determining the significance of project-level air quality impacts within the county (as shown in Table 1). Although SDAPCD does not have VOC or $PM_{2.5}$ AQIA Trigger Levels, the County has adopted a $PM_{2.5}$ SLT based on EPA's "Proposed Rule to Implement the Fine

Particle National Ambient Air Quality Standards" published on September 8, 2005,[2] which is also consistent with SCAQMD's Air Quality Significance Thresholds (SCAQMD 2015), and a VOC SLT based on the threshold of significance for VOCs from the SCAQMD for the Coachella Valley. Emissions in excess of San Diego County's SLTs, shown in Table 1, would be expected to have a significant impact on air quality because an exceedance of the SLTs is anticipated to contribute to CAAQS and NAAQS violations in the county.

The County's SLTs are based on SDAPCD AQIA Trigger Levels, and these AQIA Trigger Levels are based on emissions levels identified under the "New Source Review" (NSR) program, which is a permitting program established by Congress as part of the CAA Amendments of 1990 to ensure that air quality is not significantly degraded by new or modified sources of emissions. The NSR program requires that stationary sources receive permits before construction begins and/or the use of equipment. By permitting large stationary sources, the NSR program ensures that new emissions would not slow regional progress toward attaining the NAAQS. SDAPCD implements the NSR program through Rules 20.2 and 20.3, and has concluded that the stationary pollutants described under the NSR program are equally significant as those pollutants generated with land use projects. SDAPCD's Trigger Levels were set as the total emission thresholds associated with the NSR program to help attain and maintain the NAAQS from new and modified non-major stationary sources.[3] SDAPCD's Trigger Levels take into account the region's attainment status, emission profile, inventory, and projections, and represent levels above which project-generated emissions could affect SDAPCD's and SANDAG's commitment to attain the state and federal standards in the region. Consistent with Section 15064.7(c) of the State CEQA Guidelines,[4] the evidence in support of the air quality thresholds shown in Table 1 is deemed appropriate for their use in this analysis and in this location within the greater SDAB.

[2] To derive the 55 pounds per day threshold, SCAQMD converted the annual rate in EPA's proposed rulemaking of 10 tons per year into a daily rate of approximately 55 pounds per day (10 tons x 2,000 pounds per ton divided by 365 days per year).

[3] San Diego Air Pollution Control District, Rule 20.2, Table 20.2-1, hereby incorporated by reference: http://www.sdapcd.org/rules/Reg2pdf/R20-2.pdf.

[4] "When adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence."

Table 1. San Diego County Screening-Level Thresholds

Air Contaminant	Emission Rate (pounds per hour)	(pounds per day)[a]	(tons per year)
Respirable Particulate Matter (PM_{10})	--	100	15
Fine Particulate Matter ($PM_{2.5}$)[b]	--	55	10
Nitrogen Oxides (NO_X)	25	250	40
Sulfur Oxides (SO_X)	25	250	40
Carbon Monoxide (CO)	100	550	100
Lead (Pb)[c]	--	3.2	0.6
Volatile Organic Compounds (VOC)[d]	--	75	13.7[e]

Source: County of San Diego 2007.

[a] The County's Guidelines for Determining Significance for Air Quality states that daily SLTs are most appropriate when assessing impacts from standard construction and operational emissions. Therefore, daily SLTs are used to evaluate project significance, while hourly and annual SLTs are provided for informational purposes only.

[b] Based on EPA's "Proposed Rule to Implement the Fine Particle National Ambient Air Quality Standards" published September 8, 2005, and also SCAQMD's Air Quality Significance Thresholds (SCAQMD 2015).

[c] Lead and lead compounds.

[d] County SLTs for VOCs were originally based on the threshold of significance for VOCs from SCAQMD for the Coachella Valley. The terms VOC and ROG are used interchangeably, although VOC is used in this table because the City and County use the term VOC.

[e] 13.7 tons per year threshold is based on 75 pounds per day multiplied by 365 days per year and divided by 2,000 pounds per ton.

The following County of San Diego criteria were used to determine whether the Project would expose sensitive receptors to substantial pollutant concentrations.

- Would the project place sensitive receptors near CO "hotspots" or create CO "hotspots" near sensitive receptors?
- Would the project result in exposure to TACs resulting in a maximum incremental cancer risk greater than 1 in 1 million without application of Toxics Best Available Control Technology, or a health hazard index greater than 1, and thus be deemed as having a potentially significant impact?
- Would the project either generate objectionable odors or place sensitive receptors next to existing objectionable odors, which would affect a considerable number of persons or the public?

The following County of San Diego criteria were used to determine whether the project would result in cumulative air quality impacts.

- A project that has a significant direct impact on air quality with regard to emissions of PM_{10}, $PM_{2.5}$, NO_X, and/or VOCs would also have a significant cumulatively considerable net increase.
- In the event direct impacts from the proposed project are less than significant, a project may still have a cumulatively considerable impact on air quality if the emissions of concern from the proposed project, in combination with the emissions of concern from other past, present, or reasonably foreseeable future projects within the proximity relevant to the pollutants of concern, are in excess of direct air quality impact thresholds.

Health-Based Thresholds for Project-Generated Pollutants of Human Health Concern

In December 2018, the California Supreme Court issued its decision in *Sierra Club v. County of Fresno* (226 Cal.App.4th 704) (hereafter referred to as the Friant Ranch Decision). The case reviewed the long-term, regional air quality analysis contained in the environmental impact report (EIR) for the proposed Friant Ranch development. The Friant Ranch project is a 942-acre master-plan development in unincorporated Fresno County within the San Joaquin Valley Air Basin, an air basin currently in nonattainment for the ozone and $PM_{2.5}$ NAAQS and CAAQS. The Court found that the air quality analysis was inadequate because it failed to provide enough detail "for the public to translate the bare [criteria pollutant emissions] numbers provided into adverse health impacts or to understand why such a translation is not possible at this time." The Court's decision clarifies that environmental documents must connect a project's air quality impacts to specific health effects or explain why it is not technically feasible to perform such an analysis.

As discussed above, all criteria pollutants that would be generated by the proposed Project are associated with some form of health risk (e.g., asthma). Criteria pollutants can be classified as either regional or localized pollutants. Regional pollutants can be transported over long distances and affect ambient air quality far from the emissions source. Localized pollutants affect ambient air quality near the emissions source. Ozone and NO_2 are considered regional criteria pollutants, whereas CO, SO_2, and Pb are localized pollutants. PM can be both a local and a regional pollutant, depending on its composition. As discussed above, the primary criteria pollutants of concern in the study area are ozone (including ROG and NO_X) and PM (including DPM).

Regional Project-Generated Criteria Pollutants (Ozone Precursors and Regional PM)

Adverse health effects induced by regional criteria pollutant emissions generated by the proposed Project are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, the number and character of exposed individuals [e.g., age, gender]). For these reasons, ozone precursors (ROG and NO_X) contribute to the formation of ground-borne ozone on a regional scale, where emissions of ROG and NO_X generated in one area may not equate to a specific ozone concentration in that same area. Similarly, some types of particulate pollutant may be transported over long-distances or formed through atmospheric reactions. As such, the magnitude and locations of specific health effects from exposure to increased ozone or regional PM concentrations are the product of emissions generated by numerous sources throughout a region, as opposed to a single individual project. While models and tools have been developed to correlate regional criteria pollutant emissions to potential community health impacts, these tools were developed to support regional planning and policy analysis and have limited sensitivity to small changes in criteria pollutant concentrations induced by individual projects. Therefore, translating project-generated criteria pollutants to the locations where specific health effects could occur or the resultant number of additional days of nonattainment cannot be estimated with a high degree of accuracy.

Technical limitations of existing models to correlate project-level regional emissions to specific health consequences are recognized by air quality management districts throughout the state, including the SJVAPCD and South Coast Air Quality Management District (SCAQMD), who provided

amici curiae briefs for the Friant Ranch legal proceedings. In its brief, SJVAPCD (2015) acknowledges that while health risk assessments for localized air toxics, such as DPM, are commonly prepared, "it is not feasible to conduct a similar analysis for criteria air pollutants because currently available computer modeling tools are not equipped for this task." The air district further notes that emissions solely from the Friant Ranch project (which equate to less than one-tenth of one percent of the total NOx and VOC in the Valley) is not likely to yield valid information," and that any such information should not be "accurate when applied at the local level." SCAQMD (2015) presents similar information in their brief, stating that "it takes a large amount of additional precursor emissions to cause a modeled increase in ambient ozone levels".[5]

As discussed above, air districts develop region-specific CEQA thresholds of significance in consideration of existing air quality concentrations and attainment or nonattainment designations under the NAAQS and CAAQS. The NAAQS and CAAQS are informed from the findings of a wide range of scientific evidence that demonstrates "safe" exposure to criteria pollutants. While recognizing that air quality is a cumulative problem, air districts typically consider projects that generate criteria pollutant and ozone precursor emissions below these thresholds to be minor in nature and would not adversely affect air quality such that the NAAQS or CAAQS would be exceeded. Emissions generated by the proposed Project could increase photochemical reactions and the formation of tropospheric ozone and secondary PM, which at certain concentrations could lead to increased incidence of specific health consequences. Although these health effects are associated with ozone and particulate pollution, they are a result of cumulative and regional emissions. As such, a project's incremental contribution cannot be traced to specific health outcomes on a regional scale, and a quantitative correlation of project-generated regional criteria pollutant emissions to specific human health impacts is not included in this analysis. As discussed below, emissions from project construction and operations are minor and are far below thresholds. Therefore, the proposed Project would not adversely affect air quality such that the NAAQS or CAAQS would be exceeded.

Localized Project-Generated Criteria Pollutants (PM and CO) and Air Toxics (DPM)

Localized pollutants generated by a project are deposited or affect populations near the emissions source. Because these pollutants are not transported over long distances and do not undergo complex photochemical or atmospheric reactions (notwithstanding secondary $PM_{2.5}$ formation), emissions from individual projects can result in direct and material health impacts to adjacent sensitive receptors. Models and thresholds are readily available to quantify these potential health effects and evaluate their significance (CAPCOA 2009, OEHHA 2015, CARB 2000). Thus, the discussion below related to localized pollutants focuses on pollutants with adopted thresholds, specifically DPM and CO.[6]

[5] For example, SCAQMD's analysis of their 2012 Air Quality Attainment Plan showed that modeled NOx and ROG reductions of 432 and 187 tons per day, respectively, only reduced ozone levels by 9 parts per billion. Analysis of SCAQMD's Rule 1315 showed that emissions of NOx and ROG of 6,620 and 89,180 pounds per day, respectively, contributed to 20 premature deaths per year and 89,947 school absence (South Coast Air Quality Management District 2015).

[6] Although SO_2 and lead may also concentrate locally, the Project does not represent a significant source of these pollutants. Accordingly, they are not discussed or evaluated further.

Greenhouse Gases

The section below includes a summary of the State CEQA Guidelines regarding GHG analyses, rulings and direction from relevant and recent case law, a summary of threshold types and their applicability, and a summary of the recommended threshold approach for the proposed Project. Note that the discussion below and analysis herein is based on the state of the GHG practice at the time of analysis, and the approach proposed may change for each project implemented by County DPR in the future.

State CEQA Guidelines

The State CEQA Guidelines, Appendix G (14 CCR 15000 et seq.), identify significance criteria to be considered for determining whether a project could have significant impacts on existing GHG emissions and climate change. A project impact would be considered significant if construction or operation of the proposed Project would cause either of the following:

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

The State CEQA Guidelines do not indicate what amount of GHG emissions would constitute a significant impact on the environment. Instead, they authorize the lead agency to consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence (State CEQA Guidelines Sections 15064.4(a) and 15064.7(c)). CEQA offers two paths to evaluating GHG emissions impacts in CEQA documents:

1. Projects can tier off a "qualified" GHG Reduction Plan (State CEQA Guidelines Section 15183.5), and
2. Projects can determine significance by utilizing a model to calculate GHG emissions and assess their significance (CEQA Guidelines Section 15064.4).

Several agencies throughout the state, including multiple air districts, have drafted and/or adopted varying threshold approaches and guidelines for assessing the significance of GHG emissions in CEQA documents. However, none of these are binding; they are only recommendations for consideration by CEQA lead agencies.

Regardless of the threshold chosen, the lead agency must provide substantial evidence to support determinations. The term *substantial evidence* is defined in the CEQA statute to mean "fact, a reasonable assumption predicated upon fact, or expert opinion supported by fact. Substantial evidence is not argument, speculation, unsubstantiated opinion or narrative, evidence that is clearly inaccurate or erroneous, or evidence of social or economic impacts that do not contribute to, or are not caused by, physical impacts on the environment" (Section 21080 [d]). Substantial evidence in this case should consist of a logical explanation of how a given project's compliance with a particular threshold would result in GHG emissions consistent with statewide GHG reduction targets over time.

Case Law

The Courts have ruled on various matters related to GHG analyses in CEQA documents. The various Court rulings have established legal requirements for adequate analysis of GHG emissions under CEQA, including setting thresholds, properly defining the level of significance, and identifying mitigation measures. Overall, the Courts have reaffirmed lead agency discretion in setting appropriate thresholds in determining impacts under CEQA, provided that the use of the threshold in question is based on substantial evidence, that the threshold is appropriate and fits with a particular project, and that the analysis is in line with the state of the science. Both the *Newhall Ranch*[7] and *Golden Door*[8] decisions made it clear that the thresholds that rely on statewide data must be justified for use at the project level in a given location and based on the project type. In its rulings, the courts have made it clear the Scoping Plan does not include a requirement or recommendation for individual projects, while stating that it "seems that new development must be more GHG-efficient than average" to meet statewide reduction goals. Thus, while the Courts have validated the use of "consistency with statewide reduction targets" (e.g., Assembly Bill [AB] 32 and Senate Bill [SB] 32) as a CEQA criterion, they have made it clear the Scoping Plan does not include a requirement or recommendation for individual projects, further stating that it "seems that new development must be more GHG-efficient than average" to meet statewide reduction goals. Further, the Court re-affirmed in SANDAG case that CEQA analyses need to stay in step with evolving scientific knowledge and state regulatory schemes. Moreover, the SANDAG ruling reaffirmed that a lead agency may choose to review a project's environmental impacts using more than one threshold of significance so long as this review adequately informs readers of potential GHG and climate change impacts.[9]

Applicability of Available Thresholds

As noted above, CEQA leaves it up to the lead agency to adopt or recommend the appropriate threshold approach, which can vary on a project-by-project basis. Several threshold approaches have been adopted, drafted, or recommended throughout the state by lead agencies or by air districts. However, none of these are legally binding, and each has distinct advantages and disadvantages in terms of legal defensibility and practical application. Some commonly used threshold approaches include (1) consistency with a qualified GHG reduction plan, (2) performance-based reductions,[10] (3) numeric "bright-line" thresholds, (4) efficiency-based thresholds, and (5) compliance with regulations. The applicability of these thresholds is discussed below.

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[7] *Center for Biological Diversity et al. vs. California Department of Fish and Wildlife, the Newhall Land and Farming Company* (November 30, 2015, Case No. S217763)

[8] *Golden Door Properties LLC vs. County of San Diego* (September 28, 2018, Appeals Case No. D075328

[9] *Cleveland National Forest Foundation v. San Diego Assn. of Governments* (July 13, 2017, Case No. S223603).

[10] Performance-based reductions include the "percentage below business-as-usual" threshold approach and are generally based solely on statewide targets, which has been used widely in the past. This approach was the subject of the *Newhall Ranch* case.

Compliance with a Qualified GHG Reduction Plan

CEQA promotes the tiering or streamlining of environmental review from previously adopted programmatic documents. According to the state's Office of Planning and Research (OPR), the Legislature has made it clear that lead agencies should tier or streamline their environmental documents whenever feasible, and that GHG emission resulting from individual projects may be best analyzed and mitigated at a programmatic level through a GHG emission reduction plan, such as a climate action plan (OPR 2018). A GHG reduction plan that is consistent with the criteria established under State CEQA Guidelines Sections 15183.5 (b) and 15064.4 is considered "qualified" for tiering, and later project-specific environmental documents may tier from and/or incorporate by reference the GHG plan in question. The County Board of Supervisors adopted the County's Climate Action Plan (CAP) and its EIR on February 14, 2018. The CAP and EIR are consistent with requirements of State CEQA Guidelines Section 15183.5. The CAP is a comprehensive plan outlining the specific activities that the County will undertake to reduce GHG emissions in its unincorporated communities. The CAP will also help the County meet GHG reduction targets established by State Regulations including AB 32, SB 32, and Executive Orders B-30-15 and S-3-05. To meet these reduction targets, the County will need to reduce their emissions to levels specified in the County's CAP. Table 2 provides a summary of the County's GHG emissions inventory, projections, and the reduction targets from the CAP for baseline (2014) and CAP horizon years (2020, 2030, and 2050). The CAP's reduction targets are as follows:

- 2% below 2014 levels by 2020 (equivalent to achieving 1990 levels per AB 32);
- 40% below 2014 levels by 2030 (equivalent to achieving 40% below 1990 levels per SB 32); and
- 77% below 2014 levels by 2050 (equivalent to achieving or demonstrating progress towards 80% below 1990 levels per EO-S-3-05).

Table 2. County of San Diego Emissions Inventory, Projections, and Reduction Targets

Scenario	Annual $MTCO_2e$			
	2014	2020	2030	2050
Total Without Any Legislative Reductions (BAU Total)	3,211,505	3,407,168	3,723,596	4,220,560
Total With Legislative Reductions	3,211,505	3,018,671	2,824,049	2,991,507
Total With CAP Measures	--	2,886,465	1,926,903	2,165,367
Reduction Targets	--	3,147,275	1,926,903	738,646
Additional Reductions Needed	--	0	0	1,426,721

$MTCO_2e$ = metric tons of CO_2 equivalent
BAU = business as usual

The CAP relies on 11 strategies and 26 measures to reduce GHG emissions to the specified targets from all sources of emissions in the County, including vehicle, building energy, water consumption, agriculture, and open space, among others. The CAP includes measures that are applicable to privately-initiated and/or County-sponsored projects.

Measures relevant to the proposed County-sponsored Project include the following:

- T-2.3: Reduce County Employee Vehicle Miles Traveled
- T-3.2: Use Alternative Fuels in County Projects
- T-3.4: Reduce the County's Fleet Emissions
- Measure E-1.4: Reduce Energy Use Intensity at County Facilities
- Measure E-2.4: Increase Use of On-Site Renewable Electricity Generation for County Operations
- Measure W-1.3: Reduce Potable Water Consumption at County FacilitiesA-2.2: Increase County Tree Planting

Generally, proposed projects are found to have a less-than-significant cumulatively considerable contribution to climate change impacts if the project is found to be consistent with the County's CAP (County 2018c). For discretionary development projects, consistency with the CAP is determined through the CAP Consistency Review Checklist, which is included as Appendix A of the Guidelines for Determining Significance CAP document (County 2018b).

While the CAP checklist is specifically designed for discretionary development projects, and not for County-sponsored projects, the CAP checklist does provide the basic criteria for determining consistency with the assumptions and strategies in the CAP. The CAP Consistency Checklist is the County's significance threshold utilized to ensure project-by-project consistency with the underlying assumptions in the CAP and to ensure that the County would achieve its emission reduction targets identified in the CAP. The CAP Consistency Checklist includes a two-step process to determine if the project would result in a GHG impact. Step 1 consists of an evaluation to determine the project's consistency with existing General Plan, land use designations, and zoning designations for the site. Step 2 consists of an evaluation of the project's design features' compliance with the CAP strategies. Again, while the checklist is intended for discretionary development projects, the same criteria for determining significance can be applied to County-sponsored projects.

The County's CAP does not provide separate criteria or measures for GHG emissions associated with project construction. Construction emissions are often short-term and are typically a small percentage of a project's total GHG emissions. To achieve the state's GHG reduction goals, GHG emissions from a project's operational and land uses components will need to be the focus of discrete actions to reduce emissions. As such, the County does not recommend a quantitative construction GHG threshold at this time. Regardless, the analysis below includes quantification and evaluation of construction-related GHG emissions.

Note that the Superior Court ruled that mitigation measure (MM) GHG-1 of the CAP was inconsistent with the General Plan. An injunction was declared that forbids any project that relies on MM-GHG-1 from moving forward, but further states that projects that do not rely on the MM-GHG-1 program can proceed. MM-GHG-1 applies only to in-process or future General Plan Amendments (GPAs). The proposed Project does not rely on the requirement of MM-GHG-1 in that it is does not require a GPA. Therefore, the CAP and CAP checklist remain a valid means of analyzing the cumulatively considerable contribution of the project to climate change. Note that the County has appealed this decision.

However, because of the CAP lawsuit, and the constantly-evolving direction from the Courts on other cases, the analysis herein includes a good faith effort to consider all potential significance

criteria under the current state of the CEQA practice. Therefore, the discussion below includes a summary of other threshold approaches and their applicability to the proposed Project.

Numerical Bright-Line

In general, numerical bright-line thresholds identify the point at which additional analysis and mitigation of project-related GHG emission impacts is necessary. Bright-line thresholds have been developed for commercial projects, residential projects, and stationary sources by various agencies and air districts throughout the state. Commercial and residential bright-line thresholds are typically based on a market capture rate or a gap analysis,[11] which is tied back to AB 32 reduction targets (1990 levels by 2020). These bright-line thresholds reflect local or regional land use conditions, particularly residential and commercial density and access to transit. For example, the Bay Area Air Quality Management District's (BAAQMD) bright-line threshold of 1,100 $MTCO_2e$ captures land use conditions present in the Bay Area at the time of analysis and does not necessarily reflect conditions in other areas of the state, that may display varying land use patterns and density. In addition to BAAQMD, other air districts that have adopted or drafted bright-line thresholds for land use development projects include SCAQMD (3,000 $MTCO_2e$ for residential/commercial or mixed use; 3,500 $MTCO_2e$ for residential only; 1,400 $MTCO_2e$ for commercial only; never adopted), San Luis Obispo Air Pollution Control District (SLOAPCD) (1,150 $MTCO_2e$; adopted) and Sacramento Metropolitan Air Quality Management District (SMAQMD) (1,100 $MTCO_2e$; adopted, with an updated expected in 2019)(AEP 2016).

As shown, there is considerable variation in the bright line significance threshold throughout the state. Air districts and lead agencies consider emissions from the type and number of local projects implemented in their region or jurisdiction when setting the mass emissions threshold. Also, of note is that each of these numerical thresholds are currently designed to capture or fill in the gap to ensure statewide targets for 2020 are met. These thresholds do not yet take into account the capture or gap that needs to be filled to achieve post-2020 targets. Regardless, they can serve as a reasonable conservative screening criterion to evaluate project-generated emissions during both the 2020 and post-2020 timeframe.

Another threshold that has been historically used by various lead agencies in the region is the 900 $MTCO_2e$ screening level threshold that first appeared in the California Air Pollution Control Officers Association (CAPCOA) 2008 *CEQA & Climate Change* White Paper. The 900 $MTCO_2e$ level served as a theoretical approach to identify commercial or residential projects that require further analysis and potential mitigation; projects above this screening level required further analysis, and projects below this screening level would result in sufficiently low GHG emissions to be less than cumulatively considerable without mitigation. Both the County and City of San Diego previously recommended this 900 $MTCO_2e$ threshold level. This 900 $MTCO_2e$ screening level is based on emission sources associated with typical land use development projects (e.g., on-road passenger vehicle and trucks, electricity consumption). Emission sources associated with park and recreational uses are similar in that emissions are primarily associated with on-road passenger vehicles.

[11] The gap analysis demonstrates the reductions needed at the residential and commercial land use levels to achieve state targets. Capture is the process of estimating the portion of projects that would result in emissions that exceed a significance threshold and would be subject to mitigation.

Accordingly, the 900 $MTCO_2e$ threshold is applicable to the proposed Project and meets the criteria identified in recent case law related to appropriately analyzing project-level GHG emissions using a threshold that is appropriate for a particular project (e.g., the threshold is based on similar math and emission sources as the project).

Air districts have permitting authority as the lead agency for stationary sources and can therefore enforce stationary source GHG emissions thresholds. Based on this, many air districts have adopted rules and bright-line thresholds for stationary sources. The most common stationary source bright-line threshold is 10,000 $MTCO_2e$, which has been adopted by multiple air districts and other agencies as part of the permitting process, including BAAQMD, Monterey Bay Unified Air Pollution Control District, Placer County Air Pollution Control District, SCAQMD, SLOAPCD, and SMAQMD. In addition, other stationary source thresholds include the 100,000 $MTCO_2e$ threshold adopted by both the Antelope Valley Air Quality Management District and Mojave Desert Air Quality Management District; and the 25,000 $MTCO_2e$ threshold adopted by East Kern Air Pollution Control District. However, while many of these thresholds have been adopted, thresholds used for CEQA evaluation need to apply to the type of project being evaluated. Because stationary source thresholds were developed for the evaluation of permitted stationary sources, their use on the proposed Project would be inappropriate.

Efficiency-Based

Efficiency thresholds are quantitative thresholds that are based on a measurement of GHG efficiency for a given project, regardless of the amount of mass emissions. Projects that attain the efficiency target, with or without mitigation, would achieve California's GHG emissions target established under AB 32 and SB 32. While recent case law has not specifically recommended the efficiency-based approach, the rulings have noted that numerical threshold approaches may be appropriate for determining significance of GHG emissions and to emphasize the consideration of GHG efficiency, but that its use must be substantiated by explaining why the efficiency metric in question is appropriate for a given project in a given location.

GHG efficiency thresholds for CEQA analyses have traditionally been developed based on service population (residents+ jobs) methodology, and have been targeted to residential, commercial, and mixed-use projects. These types of projects include GHG emissions resulting from a mixture of building energy, transportation, solid waste, and other emissions similar in proportion to that of the overall land use sector and that occur in a roughly linear relationship to the number of employees and/or residential population. No efficiency threshold has been developed for park uses.

CARB's Scoping Plan includes a recommendation for local governments to support the statewide target efficiency of no more than six $MTCO_2e$ per capita by 2030 and no more than two $MTCO_2e$ per capita by 2050. These per capita estimates are based on 2030 and 2050 targets divided by total population projections from California Department of Finance. CARB notes that these goals are appropriate for the plan level (city, county, subregional, or regional level, as appropriate) analyses, but are not appropriate for specific individual projects because the targets include all emissions sectors in the state, and that local governments should evaluate and adopt robust and quantitative locally-appropriate goals that align with and support the statewide per capita targets. Thus, consistent with case law and CARB's recommendation, reference to or use of these statewide per

capita targets must be substantiated explaining why CARB's efficiency metric is appropriate for a given project in a given location.

As noted, efficiency-based thresholds are most appropriate for development projects that include some form of occupancy by which to benchmark emissions (e.g., the number of residences or jobs) or at the plan level (e.g., the number of population a plan serves). Park uses do not generate significant direct employment or other forms of meaningful output to easily benchmark emissions. Accordingly, efficiency thresholds are not applicable to the proposed Project.

Performance-Based Reductions (e.g., BAU)

Performance-based thresholds are based on a percentage reduction from a projected future condition. For example, reducing future BAU emissions by the AB 32 target of 29% (below 2020 BAU levels) through a combination of state measures, project design features (e.g., renewable energy), or mitigation is a performance-based threshold. The performance-based approach is based on the project's reduction in emissions from an unmitigated condition. Various lead agencies have adopted performance-based targets that are all tied to the AB 32 target of achieving 1990 levels by 2020, but the prescribed percentage reduction can vary depending on the version of the Scoping Plan and targets therein that were used. For example, San Joaquin Valley Air Pollution Control District recommends a 29% reduction, which is based on the 2008 Scoping Plan, while Sacramento Metro Air Quality Management District previously recommended a 21.7% reduction from a projected no action taken (NAT) scenario,[12] which is based on the 2011 re-adopted Scoping Plan, whose emission targets vary slightly from 2008 to account for revised estimates for future fuel and energy demand.

With the *Newhall Ranch* decision, relating a given project to the achievement of state reduction targets likely requires adjustments to CARB's statewide BAU model not only to isolate new development emissions but also to consider unique geographic conditions and operational characteristics that would be required to use the BAU performance-based methodology for a specific project. To date, this type of adjustment to the statewide BAU target has not been formulated and, therefore, is not appropriate for the project's analysis. The primary value of a performance-based target, as indicated in *Newhall Ranch*, is that it can provide a scenario by which to evaluate the effectiveness of a project's efficiency and conservation measures to reduce GHG emissions. As such, future year targets can be used to benchmark performance, using either statewide or regional emission targets, to determine a project's fair share of mitigation.

Compliance with Regulatory Programs

Another approach for determining whether a project would result in significant GHG emission impacts is determining whether a proposed Project is in compliance with regulatory programs designed to reduce GHG emissions from particular activities. To the extent a project complies with or exceeds those programs adopted by CARB or other regional or state agencies, a lead agency could rely on this compliance to demonstrate less-than-significant impacts. However, such analysis is only applicable within the area governed by the regulations. For example, consistency with regulations

[12] The NAT scenario does not include any state regulations designed to reduce GHG emissions, including improvements to the Title 24 standards, Renewable Portfolio Standard, Low Carbon Fuel Standard, or Pavley Rules.

addressing building efficiency would not suffice to determine that the Project would not have significant GHG emissions from transportation. The proposed Project's compliance with regulatory programs adopted by CARB or other regional or state agencies is used, in part, for the proposed Project's GHG emission analysis.

Chosen Threshold Approach

Based on the available threshold concepts recommended by expert agencies and recognized by the Courts, and based on the fact that the proposed Project is a park project that will be built out around the 2020 timeframe, the GHG analysis is based on the following approach:

1) Consistent with CEQA Guidelines Section 15064.4(a), which requires that lead agencies make a good faith effort to describe, calculate, or estimate GHG emissions for a project, emissions directly and indirectly related to project construction and operations are quantified. For purposes of CEQA analysis, sources of direct emissions occur at or near the project site, and include on-road transportation, natural gas combustion, construction and operational equipment use, and any land cover changes, while sources of indirect emissions occur away from the project site but result from project uses, such as electricity, water/wastewater, and solid waste.

2) Consistent with State CEQA Guidelines Section 15064.4(b)(1) and (2), the analysis discusses the following in terms of determining significance:

    i. whether project emissions exceed a threshold of significance that the lead agency determines applies to the project, and

    ii. the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

Project emissions are first compared to the threshold of significance that the lead agency determines applies to the project. A numerical bright-line value based solely on County-sponsored, equestrian, and/or park projects does not exist. Moreover, no bright-line threshold has been formally adopted by an air district or other lead agencies for use in the San Diego region. Both the City and County of San Diego have in the past recommended an interim 900 $MTCO_2e$ screening level as a theoretical approach to identify projects that require further analysis and potential mitigation, but both agencies no longer provide any numerical bright-line recommendations. While most guidance and case law encourage CEQA analyses to focus on the GHG efficiency of a proposed project, some projects are sufficiently small such that it is highly unlikely they would generate a level of GHGs that would be cumulatively considerable. This screening level identifies the point at which additional analysis and mitigation of project-related GHG emission impacts is necessary. Projects below this 900 $MTCO_2e$ level are sufficiently small enough that it is highly unlikely they would generate a level of GHGs that would be cumulatively considerable. Projects above this 900 $MTCO_2e$ level require further analysis and identification of project design features or potential mitigation measures with regard to GHG emissions. This 900 $MTCO_2e$ level is the lowest numerical threshold developed in the state, so it serves as a reasonably worst-case and conservative criterion. In addition, the analysis below analyzes Project consistency with regulations or requirements adopted to implement a

statewide, regional, or local plan for the reduction or mitigation of GHG emissions. Relevant statewide, regional, or local plans include but are not limited to CARB's Scoping Plan and supporting plans and strategies; SANDAG's Regional Plan and other plans and strategies at the regional level; as well as the County's General Plan, CAP, and associated plans and strategies. Note that while the CAP ruling is currently being appealed, the CAP itself does contain various mitigation strategies that are relevant to the proposed Project and all County-sponsored projects. In the event that the CAP is implemented, the County will ensure it is doing its fair share towards statewide reductions. In the event that the CAP is not implemented or requires revisions based on direction from the Courts, projects such as the proposed Project that do not tier from the CAP can still use the CAP and its mitigation measures to mitigate project-related impacts regardless of the status of the CAP.

The analysis for compliance with regulatory programs only applies to the individual area or source category addressed by the regulatory program. For example, project-generated on-road transportation sources and emissions are discussed within the context of statewide, regional, and local strategies to reduce vehicle miles traveled (VMT) and overall mobile source emissions only.

Methodology

Air quality and GHG impacts associated with construction and operation of the Project were assessed and quantified using industry standard and accepted software tools, techniques, and emission factors. A summary of the methodology is provided below.

Construction Emissions

Construction associated with the Project would result in the short-term generation of criteria pollutant and GHG emissions from the following activities: (1) site preparation; (2) grading; (3) construction workers traveling to and from Project site; (4) delivering construction supplies to the Project site; (5) fuel combustion by on-site construction equipment; and (6) structure construction. The amount of emissions generated on a daily basis would vary, depending on the intensity and types of construction activities occurring simultaneously.

Emissions estimates were based on a combination of County DPR input and model defaults, as described below.

- **Off-Road Equipment**: Off-road equipment would include typical heavy-duty equipment (e.g., loaders, tractors, forklifts) to grade and prepare the site and construct project uses. Emissions associated with construction equipment were estimated based on emission factors and load factors for diesel-powered off-road construction equipment (e.g., loaders, graders, bulldozers) obtained from the CalEEMod (version 2016.3.2) User's Guide appendix, which provides fleet-average emission factor values per unit of activity (in grams per horsepower-hour) by calendar year (BREEZE Software 2017).
- **On-road Vehicles**: On-road employee vehicles and trucks (e.g., pickup trucks, flatbed trucks, passenger vehicles) would be required for material and equipment hauling, on-site crew and material movement, employee commuting, and material disposal. Combustion exhaust and re-entrained paved road dust (PM_{10} and $PM_{2.5}$) were estimated using a combination of emission factors and methodologies from CalEEMod, version 2016.3.2, CARB's EMFAC2017 (v1.0.2) web-

based model, and paved road dust methodology from CARB as well as the U.S. EPA's AP-42 *Compilations of Air Pollutant Emission Factors* and project-specific construction data (e.g., schedule, vehicle types and numbers) provided by the County staff and CalEEMod default assumptions for trip distance. A description of the assumptions and methods used for each vehicle and trip type is provided below.

- Emissions associated on-road heavy-duty trucks would include dump trucks for material movement, water trucks for dust control, and concrete trucks. The hours of operation, truck type, and phasing was provided by the County. Emission factors are based on aggregated-speed emission rates for the following EMFAC categories: T7 single construction (for dump trucks), T6 utility (for concrete trucks), and T6 instate heavy (for water trucks). The CalEEMod default hauling trip length of 20 miles was assumed for off-site material hauling. It was assumed that approximately 800 trucks would be required to import 12,700 cubic yards (CY) of soil material assuming a 16 CY truck capacity.
- Emissions associated with construction material delivery trucks were estimated using CalEEMod assumptions for daily vendor trips for non-residential projects, aggregated-speed emission rates for EMFAC's T7 single construction vehicle type, and CalEEMod default vendor trip length of 7.3 miles per trip.
- Emissions associated with worker commute vehicles were estimated based on a weighted average of light duty auto (LDA), light duty truck 1 (LDT1), and light duty truck 2 (LDT2) aggregated-speed emission rates from CARB's EMFAC 2017 web tool, similar to the vehicle split used in CalEEMod (e.g., LDA = 50%, LDT1 = 25%, LDT2 = 25%). Employee trip generation and travel distance was based on CalEEMod defaults 10.8 miles per trip, two trips per employee, CalEEMod default estimate for the number of workers based on the number of pieces of construction equipment.

- **Site Disturbance and Paving**: Fugitive PM_{10} and $PM_{2.5}$ emissions from material handling (i.e., site grading, dozing, and truck loading) were quantified using emission factors from CalEEMod and EPA's (1998) AP-42, Section 11.9. It was assumed that the entire approximately 14-acre site would require grading. Construction would require the import of approximately 12,700 cubic yards of material per County estimates[13]. It was assumed that no material would be exported from the Project site. Offsite improvements would include paving the two small driveways between the Project site and Moreno Avenue, totaling 3,320 square feet. Emissions of ROG from installation of the pavement were quantified using default emission factors from CalEEMod.

While a specific construction schedule is not known at this time, County DPR provided anticipated project construction phasing, and duration. Because the emissions intensity of equipment and trucks varies by year and trend down over time due to fleet turnover (i.e., emission factors are higher in 2019 than in 2020), it was conservatively assumed that construction would commence in March 2019 and continue over an approximate 10-month period before ending in December 2019. If construction occurs in later years (e.g. in 2020 or beyond), then emissions are likely to be lower than those presented herein, since emission factors per unit of activity are likely to be lower than assumed herein.

[13] Provided by Dallas Pugh via email on October 26, 2018.

Construction activities are expected to occur during daytime hours Monday through Friday. Table 3 presents the construction phases, start and stop dates assumed in modeling, and the estimated phase duration. Additional construction details including equipment type and number of workers by phase assumed in the analysis are included in Attachment A to the memorandum.

Table 3. Anticipated Project Construction Schedule

Phases	Start	Finish	Duration (work days)
1. General Grading	03/01/2019	03/27/2019	19
2. Utility Improvements	03/29/2019	04/26/2019	21
3. D/G Import and Paving	04/30/2019	05/31/2019	24
4. Fencing	06/04/2019	08/02/2019	44
5. Arena Foundations + Frame + Roofing	04/30/2019	09/04/2019	92
6. Covered Arena Amenities	09/06/2019	10/15/2019	28
7. Outdoor Arena	10/17/2019	11/28/2019	31
8. Meeting Room/Concession/Restroom	12/02/2019	12/24/2019	17
9. Corrals	12/02/2019	12/06/2019	5
10. Shade Structures	12/10/2019	12/23/2019	10
11. Landscaping Improvements	12/10/2019	12/16/2019	5

Operational Emissions

Once operational, the proposed Project could result in the long-term generation of criteria pollutant and GHG emissions in different quantities than existing conditions. The Project's operational emission sources would be associated with area sources, such as natural gas consumption (for space and water heating), energy and water consumption, wastewater and solid waste removal, landscaping activities, applications of architectural coatings, use of consumer products, and operational mobile sources. Mobile source emissions would also include the periodic removal of horse manure to the local Miramar Landfill. For purposes of analysis, it was assumed the Project would be fully operational in 2020.

The Project's operational regional emissions of criteria air pollutants and precursors, and GHG pollutants, including mobile- and area-source emissions, were quantified using CalEEMod (version 2016.3.2). The indoor and outdoor arena facilities were modeled in CalEEMod together as recreational Arena uses (2.07 acres), the meeting room/kitchen facility was modeled as a 3,200 square-foot Quality Restaurant, and the recreational vehicle uses were modeled as five dwelling units of a mobile home park. The emission sources associated with these uses are outlined below. Changes to CalEEMod default assumptions are indicated where necessary.

- **Area-sources**: Area source emissions, which are widely distributed and composed of many small emissions sources (e.g., landscaping equipment, consumer products, periodic painting operations,), were modeled using CalEEMod default consumption factors for the specified land use types.

- **Energy**: Emissions include electricity used for lighting, building heating, cooling units and other general appliances for the meeting room/kitchen, as well as lighting for the outdoor and indoor arena facilities, while emissions from natural gas include on-site consumption for space and water heating.

  Because of the unique land uses proposed here, some changes to energy consumption defaults were made. Default CalEEMod assumptions for natural gas were assumed for the meeting room/kitchen and recreational vehicle uses, but it was assumed that the indoor and outdoor arenas would not require natural gas for space heating. For electricity, default CalEEMod assumptions for electricity consumption for the meeting room/kitchen and recreational vehicle were assumed. However, it was assumed that the only electrical usage for the arena areas would be associated with lighting. All other electricity and natural gas values were assumed to be zero.
- **Water and Wastewater**: Water and wastewater emissions would be associated with the meeting room/kitchen and overnight vehicle activities. It was assumed that there would be no water or wastewater uses associated with the indoor or outdoor arena.
- **Solid Waste:** Emissions associated with solid waste removal were estimated using CalEEMod defaults for all uses at the Project site.
- **Motor Vehicles:** Modeling of mass mobile-source emissions was based on the number of daily vehicle trips that would result from the Project's new equestrian uses. Project trip generation rates for the equestrian center was obtained from the Transportation Impact Analysis (TIA) prepared for the Project.[14] According to the TIA, development of the equestrian center would result in a net increase of 266 vehicle trips per day when compared with existing conditions. These trips were assigned to the arena uses at the Project site in CalEEMod, which amounts to approximately 129 trips per acre[15] on weekdays and Sundays. Because manure generated onsite would be hauled offsite, emissions from these additional truck trips was also estimated assuming one 12 CY truck per week to remove manure. This weekly trip was assumed to occur every Saturday throughout the year, making the Saturday trip rate approximately 130 trips per acre[16].
- **Manure sources**: Annual manure production was estimated using event schedule assumptions including the type of events, number of each event per year, number of attendees per event, and the duration of each event in hours. Given these assumptions, the facility is expected to generate an estimated 170 cubic feet (or six cubic yards) of manure and soiled bedding per week, or 130 tons per year.[17] Given this estimate, eighteen trucks (assuming a 12 CY capacity) would be required on an annual basis to remove the manure. Therefore, the one truck per week (or 52 trucks per year) assumption is conservative, and likely overestimates the actual number of annual truck trips that will occur.

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[14] Chen Ryan. 2019. *Lakeside Equestrian Facility Transportation Impact Analysis Final Report.* March 29, 2019.

[15] CalEEMod requires trip rate input. The average daily trips (266) was divided by the total arena acreage (2.07 acres) for a rate of 128.7 trips per acre.

[16] The one weekly manure trip was divided by the total arena acreage for 0.484 trips per acre. This manure trip rate was added to the ADT rate for a total of 129.2 trips per acre on Saturdays.

[17] Rate of manure generation provided by Hidden Resources Composting Consultants on March 18, 2019.

During operation of the proposed Project, GHG emissions would also result from animal waste, including both manure[18] and enteric fermentation.[19] However, because the proposed facility is only an event space and would not including the boarding any horses, it is not anticipated that the proposed Project would result in the addition of new horses to the County. Therefore, the emissions from manure management and enteric fermentation included in the County's CAP is inclusive of the emissions expected at the proposed Project site and no further analysis is warranted. As noted in the Project Description (see above), the manure from the equestrian facility would be composted onsite or hauled offsite for processing or beneficial reuse. Manure onsite would be managed using best management practices (BMPs) listed in the Facility Management Plan.

Impact Analysis

Air Quality

A significant impact on air quality would occur if the proposed Project conflicted with applicable air quality plans, violated any air quality standard, exposed sensitive receptors to substantial pollutant concentrations, or created objectionable odors. Each of these issues is evaluated below. The analysis below is based on the evaluation guidance and threshold recommendations with the County's *Guidelines for Determining Significance for Air Quality.*[20]

Conflict with or obstruct implementation of the San Diego Regional Air Quality Strategy or applicable portions of the State Implementation Plan.

San Diego County is currently designated as a nonattainment area for the federal 8-hour O_3 standard and the state O_3, PM_{10}, and $PM_{2.5}$ standards. San Diego County is required, pursuant to the federal and California Clean Air Acts, to reduce emissions of criteria pollutants for which the County and air basin are in nonattainment. The most recent air quality attainment plans are the 2016 San Diego Regional Air Quality Strategy (RAQS) and the 2016 O_3 attainment plan. The RAQS is the region's plan for improving air quality and attaining the state air quality standards, while the O_3 attainment plan is the region's plan for attaining the federal standard for O_3. Both the RAQS and attainment plan rely on information from CARB and SANDAG to project future emissions and determine appropriate emissions reduction strategies. SDAPCD has also adopted an ozone maintenance plan.

The proposed Project does not include any amendments to the existing Zoning Ordinance, and no changes in land use would occur as the proposed Project would remain consistent with the existing land use designation as delineated in the County General Plan. Therefore, because the proposed Project includes development that is consistent with the uses allowed by the Land Use Element and

[18] Organic matter derived from animal feces.

[19] Enteric fermentation is the breakdown of carbohydrates by microorganisms during digestion. Methane is produced during this process and released when an animal belches or passes it out as flatulence.

[20] County of San Diego. 2007. *Guidelines for Determining Significance and Report Format and Content Requirements for Air Quality.* March 19, 2007. Available at: https://www.sandiegocounty.gov/content/dam/sdc/pds/ProjectPlanning/docs/AQ-Guidelines.pdf

Zoning Ordinance, the new development was anticipated in SANDAG growth projections used in establishing the RAQS and SIP. Consequently, it conforms to the forecast and would not conflict or obstruct implementation of the air quality plans. **Impacts related to implementation of the Regional Air Quality Strategy or the SIP would be less than significant, and no mitigation measures are required**.

Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Potential violation of air quality standards is analyzed separately for construction and operations.

Project Construction

Table 4 summarizes the modeled peak daily emissions of criteria air pollutants and ozone precursors associated with construction of the Project. Construction of the proposed Project is expected to stagger over the course of the 10-month construction period. However, for purposes of presenting a conservative analysis, it was assumed that the maximum day from each construction phase would overlap on single day. As shown, the maximum level of daily construction emissions generated by the Project would not exceed the County's SLT for any criteria pollutants on this peak concurrent day. As such, these emissions levels would not be expected to contribute a significant level of air pollution such that regional air quality within the SDAB would be degraded. **Therefore, impacts related to construction-phase emissions would be less-than-significant, and no mitigation measures are required.**

Table 4. Summary of Construction Criteria Pollutant Emission Estimates (pounds per day)

Construction Phase	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_X
General Grading	1	9	5	7	3	<1
Utility Improvements	1	6	5	1	<1	<1
D/G Import and Paving	5	49	23	9	5	<1
Fencing	1	11	7	<1	<1	<1
Arena Foundations + Frame + Roofing	3	38	18	2	2	<1
Covered Arena Amenities	2	15	8	1	1	<1
Outdoor Arena	1	9	6	1	<1	<1
Meeting Room/Concession/Restroom	1	7	3	<1	<1	<1
Corrals	1	5	4	<1	<1	<1
Shade Structures	1	6	3	<1	<1	<1
Landscaping Improvements	<1	2	3	<1	<1	<1
Daily Concurrent Emissions[a]	**16**	**157**	**84**	**22**	**13**	**<1**
County SLTs	*75*	*250*	*550*	*100*	*55*	*250*
Exceed SLT?	No	No	No	No	No	No

Source: Modeling outputs provided in Attachment A. Values may not add up due to rounding

[a] Peak daily emissions estimates conservatively assumes that all construction activities will occur at the same time.

Project Operation

Table 5 below presents estimated daily operational emissions generated by the Project broken down by source. As shown in Table 5, the proposed Project would result in long-term regional emissions of criteria air pollutants and ozone precursors that would be below the County's SLTs. As such, these emissions levels would not be expected to contribute a significant level of air pollution such that regional air quality within the SDAB would be degraded. **Therefore, impacts related to the Project's operational emissions would be less than significant, and no mitigation measures are required**.

Table 5. Summary of Operational Criteria Pollutant Emission Estimates (pounds per day)

Element	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_X
Area Sources	10	<1	10	1	1	<1
Energy	<1	<1	<1	<1	<1	<1
Vehicles	<1	2	4	1	<1	<1
Daily Emissions	**11**	**2**	**14**	**2**	**2**	**<1**
County SLTs	*75*	*250*	*550*	*100*	*55*	*250*
Exceed SLT?	No	No	No	No	No	No

Source: Modeling outputs are provided in Attachment A. Values may not add up due to rounding.

Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

Project activities would not result in a cumulatively considerable net increase of criteria pollutants in a nonattainment region. The Project site is within the SDAB, which is classified as a nonattainment area for the federal O_3 standard and for the state O_3, PM_{10}, and $PM_{2.5}$ standards. Construction and operation of the proposed Project would result in emissions of PM_{10}, $PM_{2.5}$, as well as NO_x and ROG, which are precursors to O_3. However, because neither construction nor operation of the proposed Project would result in emissions that exceed the County's SLTs, emissions would not be in amounts that would result in a cumulatively considerable increase in criteria pollutants for which the Project region is a nonattainment area, and the emissions levels would not be expected to contribute a significant level of air pollution such that regional air quality within the SDAB would be degraded. The proposed Project would also comply with all SDAPCD control measures, including fugitive dust control during construction. Compliance with these measures would ensure that the cumulative contribution of criteria pollutants during construction would be less than significant. **Impacts related to a cumulatively considerable net increase of ozone, PM_{10} and $PM_{2.5}$ would be less-than-significant, and no mitigation measures are required**.

Expose sensitive receptors to substantial pollutant concentrations.

The analysis of Project-related impacts on human health focuses on those localized pollutants with the greatest potential to result in a significant, material impact on human health. This is consistent

with the current state-of-practice and published guidance by the California Air Pollution Control Officers Association (2009), Office of Environmental Health Hazard Assessment (2015), and CARB (2005). These pollutants are locally concentrated DPM and CO.

Diesel Particulate Matter

As mentioned above, DPM is classified as a carcinogenic toxic air contaminant by CARB, and is the primary pollutant of concern with regard to health risks to sensitive receptors. Diesel-powered construction equipment as well as heavy duty truck movement and hauling both on- and off-site would emit DPM that could potentially expose nearby sensitive receptors to pollutant concentrations. Health risks related to DPM are assessed qualitatively based on anticipated Project emissions and proximity to sensitive receptors, which include low density residential uses in all directions.

According to the Project schedule, construction is expected to last 10-months, which is much shorter than the assumed 70-year exposure period used to estimate lifetime cancer risks. DPM emitted by these sources can remain airborne for several days, but dissipate as a function of distance from the emissions source. Receptors at the private residences adjacent to the facility would have limited exposure to diesel exhaust, with exposure limited to visitation that coincides with weekday construction activities. Also, construction activities would be sporadic, transitory, and short-term in nature. Once construction activities have ceased, so too will the source emissions. Diesel activity occurring on-site would be short-term and occur at distances not expected to expose sensitive receptor locations to substantial pollutant concentrations. Once operational, the Project would result in increased visitation to the facility, but vehicle emissions generated by these visits would mostly be generated by gasoline-powered passenger vehicles and pickups, which do not emit DPM. No new stationary sources or major sources of emissions are expected to be associated with the proposed equestrian uses. Therefore, operation of the Project would not result in an increase in DPM emissions.

In addition, SDAPCD Rule 1200 establishes acceptable risk levels and emission control requirements for new and modified facilities that may emit operational TACs, including DPM.[21] Under Rule 1200, permits to operate may not be issued when emissions of TACs result in an incremental cancer risk greater than 1 in 1 million without application of best available control technology or a health hazard index (chronic and acute) greater than one.

Given the brief construction schedule, the nature of Project operations, and the required compliance with SDAPCD Rule 1200, implementation of the Project is not anticipated to expose sensitive receptors to substantial DPM concentrations. **Impacts related to sensitive receptor exposure to substantial DPM concentrations would be less than significant, and no mitigation measures are required**.

[21] Specifically, Rule 1200 applies to any new, relocated, or modified emission unit that may increase emissions of one or more TAC and for which an Authority to Construct or Permit to Operate is required pursuant to Rule 10, or for which a Notice of Intention or Application for Certification has been accepted by the California Energy Commission.

Carbon Monoxide Hot-Spots

A CO hot spot is a localized concentration of CO that is above the state or national 1-hour or 8-hour ambient air standards for the pollutant. Projects that do not generate CO concentrations in excess of the health-based CAAQS would not contribute a significant level of CO such that localized air quality and human health would be substantially degraded. The potential for the Project to result in localized CO impacts at intersections resulting from addition of its traffic volumes is assessed based on SDAPCD's suggested criteria, which recommends performing a localized CO impact analysis for intersections operating at or below level of service (LOS) E.[22] According to the TIA, the proposed Project would result in one intersection operating at LOS E and two intersections operating at LOS F.

Since the last update of the SDAPCD's guidance (2007), the County has evaluated the potential for the growth anticipated under the General Plan Update to result in CO "hot spots" throughout the County[23]. To do this, the County reviewed the CO "hot spot" analysis conducted by the South Coast Air Quality Management District (SCAQMD) for their request to the USEPA for resignation as a CO attainment area[24]. In SCAQMD's analysis, they modeled the four most congested intersections identified in their basin (South Coast Air Basin [SCAB]), which included the following:

- Long Beach Boulevard and Imperial Highway – proximity to the Lynwood monitoring station, which consistently records the highest 8-hour CO concentrations in the SCAB each year.
- Wilshire Boulevard and Veteran Avenue – the most congested intersection in Los Angeles County, with an average daily traffic volume of 100,000 vehicles/day.
- Highland Avenue and Sunset Boulevard – one of the most congested intersections in the City of Los Angeles.
- Century Boulevard and La Cienega Boulevard – one of the most congested intersections in the City of Los Angeles.

The SCAQMD's analysis found that these intersections had an average 7.7 ppm 1-hour CO concentrations predicted by the models, which is only 38.5% of the 1-hour CO CAAQS of 20 ppm. Therefore, even the most congested intersections in SCAQMD's air basin would not experience a CO "hot spot". For the County of San Diego, there are no roadways/segments identified as deficient facilities under the worst-case traffic scenario that have an ADT greater than the 100,000 that was anticipated for the most congested intersection analyzed by SCAQMD. The most congested intersection in the County is Campo Road/SR-94 between Jamacha Blvd and Jamacha Rd in Valle De Oro. According to Table 5.23 of the Traffic and Circulation Assessment: County of San Diego General

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[22] County of San Diego. 2007. *Guidelines for Determining Significance and Report Format and Content Requirements for Air Quality.* March 19, 2007. Available at: https://www.sandiegocounty.gov/content/dam/sdc/pds/ProjectPlanning/docs/AQ-Guidelines.pdf

[23] County of San Diego. 2009. *Air Quality Technical Report for the San Diego County General Plan Update.* May 11, 2009. Available at: https://www.sandiegocounty.gov/content/dam/sdc/pds/gpupdate/docs/BOS_Aug2011/EIR/Appn_B_Air.pdf

[24] South Coast Air Quality Management District. 2003. *2003 Air Quality Management Plan*. August 1, 2003. Available at: https://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/2003-aqmp.

Plan Update[25], this intersection has an ADT of 79,200, which is only 79% of the most congested intersection in the SCAB.

In addition, the CO "hot spot" analysis performed by the SCAQMD included emissions for 1997 and 2002. Both running exhaust emission factors and idling emission factors predicted by the EMFAC model decreased from 1997 through 2002 as outlined in Table 6 below. This decrease in CO emission factors is indicative of a phase-out of older vehicles and increasingly strict emissions standards implemented by CARB. Emission factors for San Diego County from the EMFAC2007 Model, which were used in the General Plan Update analysis, indicated that running exhaust emissions of CO would be less than 6.708 g CO per mile in 2010.

Table 6. Carbon Monoxide Emission Factors Predicted by the EMFAC Model

	CO Emission Factors (grams CO/mile)	
Year	**Running Exhaust**	**Idling Exhaust**
1997	13.13	2.43
2002	7.98	1.30

Source: South Coast Air Quality Management District 2003

The County of San Diego, in the General Plan Update (2011) concluded that because the most congested intersections in San Diego are less congested than those from the SCAB, and because emissions of CO would be lower than those used in the SCAQMD analysis, CO concentrations would be lower within San Diego County, and no CO "hot spots" are anticipated as was concluded in the SCAQMD analysis. Because the proposed Lakeside Equestrian Facility will not result in traffic that exceeds traffic volumes considered in the General Plan Update analysis, the Project will also not result in CO "hot spots". Consequently, implementation of the proposed Project would not result in CO concentrations in excess of the health protective CAAQS or NAAQS, and as such, would not expose sensitive receptors to significant pollutant concentrations or health effects. **Therefore, impacts related to sensitive receptor exposure to substantial CO concentrations would be less than significant, and no mitigation measures are required.**

Create objectionable odors affecting a substantial number of people?

The proposed Project involves the construction and operation of an equestrian facility within the County of San Diego. During construction of the proposed Project, exhaust from equipment and activities associated with the application of architectural coatings may produce discernible odors typical of most construction sites. Such odors would be a temporary source of nuisance to adjacent uses but would not affect a substantial number of people. During operation, the equestrian facility has a high potential to generate nuisance odors due to animal waste generated and stockpiled on site. It was estimated that given the amount of events and horses at the future Equestrian Facility, approximately 130 tons of manure would be produced on site per year. As mentioned in the project description, manure produced as a result of Project operations would be composted on-site utilizing

[25] Wilson and Company. 2009. *Traffic and Circulation Assessment: County of San Diego General Plan Update.* May 20, 2009. Available at: https://www.sandiegocounty.gov/content/dam/sdc/pds/gpupdate/docs/BOS_Aug2011/EIR/Appn_G_Traffic.pdf

both manure management and composting BMPs, which would be listed in the Facility Manure Management Plan. These BMPs will ensure that negative environmental impacts and nuisances such as odors will be virtually eliminated. BMPs include; daily cleaning of animal stalls, warmup and training areas; incorporating or stockpiling by the end of each day for incorporation of manure and soiled bedding into composting; storing stockpiled material in covered containment vessels located at the furthest feasible distance from sensitive receptors. As a result of these measures, the number of people exposed to potential odors is anticipated to be minimal. **Therefore, impacts related to creation of objectionable odors would be less than significant, and no mitigation measures are required.**

Greenhouse Gas Emissions

A significant impact related to GHG emissions would occur if the proposed Project would exceed a threshold of significance or conflict with plans, policies, and regulatory programs adopted for the purpose of reducing the emissions of GHGs. Both issue areas are evaluated together. The analysis below is adapted from the evaluation guidance from the County's *Guidelines for Determining Significance for Climate Change* (County 2018c).

Exceed a GHG threshold of significance and/or conflict with plans, policies, and regulatory programs adopted for the purpose of reducing the emissions of GHGs

Table 7 summarizes the anticipated GHG emissions from construction of the Project. As shown in Table 7, the Project would generate approximately 257 $MTCO_2e$ over the entire construction period. These construction-related GHG emissions were amortized over a 30-year period and presented with the total operational emissions, as discussed below.

Table 8 summarizes estimated GHG emissions from operation of the proposed Project. As shown, operational emissions are estimated to equal approximately 439 $MTCO_2e$ annually at opening year. When combined with amortized construction, Project emissions are estimated to equal approximately 448 $MTCO_2e$ annually. This is far below the 900 $MTCO_2e$ numerical criteria discussed herein. As such, it is highly likely that the proposed Project is sufficiently small that it would not generate a level of GHGs that would be cumulatively considerable. Regardless, additional analysis is provided to discuss project consistency with plans, policies, and regulatory programs adopted for the purpose of reducing the emissions of GHGs.

Table 7. Estimated Greenhouse Gas Emissions from Project Construction (metric tons)

Construction Phase	CO_2	CH_4	N_2O	CO_2e
General Grading	8	<1	<1	8
Utility Improvements	4	<1	<1	4
D/G Import and Paving	80	<1	<1	84
Fencing	14	<1	<1	14
Arena Foundations + Frame + Roofing	112	<1	<1	114
Covered Arena Amenities	13	<1	<1	13
Outdoor Arena	7	<1	<1	7
Meeting Room/Concession/Restroom	6	<1	<1	6
Corrals	2	<1	<1	2
Shade Structures	4	<1	<1	4
Landscaping Improvements	1	<1	<1	1
Total Construction Emissions	**250**	**<1**	**<1**	**257**
Amortized Construction (averaged over a 30-year period)	---	---	---	9

Source: Modeling outputs provided in Attachment A. Values may not add up due to rounding.

Table 8. Estimated Annual Greenhouse Gas Emissions from Project Operations (metric tons per year)

Element	CO_2	CH_4	N_2O	CO_2e
Area Sources	7	<1	<1	8
Energy	135	<1	<1	135
Vehicles	222	<1	<1	222
Waste & Manure	27	2	<1	68
Water	5	<1	<1	7
Total Annual Operation Emissions	**396**	**2**	**<1**	**439**
Amortized Construction	---	---	---	9
Total Annual Emissions	**---**	**---**	**---**	**448**

Source: Modeling outputs provided in Attachment A. Values may not add up due to rounding.

As discussed above, the proposed Project is an equestrian center that would provide recreational opportunities for residents. Construction would be required for installation of the arenas and corrals, the trail and warm-up track that would surround the perimeter, and to provide amenities including parking, restrooms, meeting room, and kitchen. The Project is not expected to result in population, employment, or development growth that is currently unplanned.

The most relevant plan, policy, and regulatory program adopted for the purpose of reducing the emissions of GHGs is the County's CAP. Given the current legal status of the CAP, the discussion herein also analyzes consistency with the County's General Plan as well as CARB's Scoping Plan, which is the state's GHG reduction plan.

The proposed Project's consistency with relevant CAP measures is provided in Table 9. As shown in Table 9, the Project would be consistent with all but one relevant County-specific measure prior to mitigation. Mitigation would ensure compliance with the CAP. Specifically, **MM-GHG-1** would require best practices during construction to ensure compliance with CAP measure T-3.2, which directs the County to use alternative fuels in 100% of construction equipment by 2030. In addition, **MM-GHG-2** requires compliance with Board Policy Number G-15, which aims to reduce energy consumption related to facility planning, design, construction, maintenance, operation, and replacement, as well as relevant CAP measures. The Project would be consistent with and/or not hinder other measures relevant to County operations. Therefore, after mitigation, the proposed Project would be consistent with the CAP. Despite the CAP's current legal status, it remains the most relevant plan, policy, and regulatory program adopted for the purpose of reducing the emissions of GHGs.

The County's General Plan lays out the long-term land use planning framework for future growth and development patterns within the unincorporated areas of the County. As discussed in the *Land Use and Planning* section of the Initial Study for this Project, the Project would be consistent with the County's General Plan because an equestrian facility is anticipated by the site's Land Use Designation—Open Space- Recreation (OS-R).

The Project is also consistent with the County of San Diego Parks and Recreation Strategic Plan 2012-2017, the Community Trails Master Plan and Trail Construction Guidelines, and the 5-year forecast, which is designed to present a long-range plan for the development and management of parks and recreational spaces in the County.

The Project would be consistent with goals and policies within the Lakeside Community Plan, including that flood plains are utilized for recreation, open space, agriculture, and planned extraction of natural resources; design the use of floodways where public access is available so that all modes of recreational transportation will have an opportunity to enjoy the space; and that a high level of recreational programs and services appropriate to Lakeside is maintained to obtain maximum benefit from parks and recreational facilities.

In addition, at the state level, CARB's SB 32 Scoping Plan outlines the framework and strategies the state will take to achieve its emission reduction targets. The SB 32 Scoping Plan Update proposes to meet the 2030 goal by accelerating the focus on zero and near-zero technologies for moving freight, continued investment in renewables, greater use of low-carbon fuels including electricity and hydrogen, stronger efforts to reduce emissions of short-lived climate pollutants, further efforts to create walkable communities with expanded mass transit and other alternatives to traveling by car, continuing the cap-and-trade program, and ensuring that natural lands become carbon sinks to provide additional emissions reductions and flexibility in meeting the target (CARB 2017).

For all measures in the Scoping Plan, the Project would be consistent without implementation of mitigation. In each case, the state program requires no action at the project level, and benefits to project-related emission sources will be realized over time. For example, the Scoping Plan incorporates SB 350, which extends the Renewable Portfolio Standard to a 50% target by 2030 while doubling the energy efficiency savings expected statewide. In addition, CARB expanded the Low Carbon Fuel Standard, aiming to achieve an 18% reduction in the carbon intensity of transportation fuels. Further, the Mobile Source Strategy aims to support the transition to 1.5

million zero emission vehicles (plug-in hybrid electric, battery-electric, and hydrogen fuel cell) by 2025 and 4.2 million by 2030, while also ramping up GHG stringency for all light-duty vehicles. Each of these measures will be implemented over time, and benefits to project-related emission sources will be realized over time.

Table 9. Project Consistency with Applicable CAP Measures

Measure Number	Measure Name	Measure Summary	Applicability/Consistency
T-2.3	Reduce County Employee Vehicle Miles Traveled	Reduce County employee commute Vehicle Miles Traveled (VMT) by 20% by 2030	**This policy is not applicable**. The goal of this measure is to encourage participation in alternative work schedules or telecommute options. The County currently subsidizes monthly transit passes, vanpool, and carpool services for employees. The Project would result in one ranger stationed at the Project site to act as a liaison between the County and the property tenant. Alternative work schedules or telecommute options are not an option for this Project as the ranger must be present at the site. However, the Project would not hinder implementation at other County locations.
T-3.2	Use Alternative Fuels in County Projects	Require County projects to use alternative fuels in 100% of construction equipment during construction by 2030	**Consistent After Mitigation**. **MM-GHG-1** requires the County to utilize best practices to reduce GHG emissions during construction.
T-3.4	Reduce the County's Fleet Emissions	Reduce the County fleet GHG emissions levels, including on-road and non-construction off-road vehicles, by 10% by 2020 and 20% by 2030	**This policy is not applicable**. The County has already accomplished this 10% reduction in fleet emissions.[a] This is a County-wide program that requires no action at the project level. Benefits will be realized, and the Project would not hinder its implementation.
E-1.4	Reduce Energy Use Intensity at County Facilities	Reduce energy use intensity at County facilities by 10% below 2014 levels by 2020 and by 20% below 2014 levels by 2030	**Consistent After Mitigation.** The County adopted Board Policy Number G-15, which establishes design standards for County facilities. Specifically, this policy requires the County to evaluate and incorporate cost-effective technologies to reduce energy consumption during facility planning, design, construction, maintenance, operation, and replacement.[b] As discussed above, total annual GHG emissions from energy consumption (electricity and natural gas) during Project operation is estimated to be 135 $MTCO_2e$. **MM-GHG-2** requires compliance with Board Policy Number G-15 to reduce energy consumption related to the proposed Project. Implementation of this mitigation measure would ensure the Project would be consistent with CAP measure E-1.4.

Table 9. Project Consistency with Applicable CAP Measures

Measure Number	Measure Name	Measure Summary	Applicability/Consistency
E-2.4	Increase Use of On-Site Renewable Electricity Generation for County Operations	Generate 10% of the County's operational electricity on site with renewables by 2020 and 20% by 2030	**Consistent After Mitigation.** The County currently generates almost 2.9 megawatts of renewable energy each year, which provides clean and renewable energy for 2.6% of the County's annual energy usage. The County is expected to add a total of 13 megawatts at 8 sites by the end of 2019.[c] As discussed above, total annual GHG emissions from energy consumption during project operation is estimated to be 135 $MTCO_2e$. **MM-GHG-2** requires compliance with Board Policy Number G-15, which aims to reduce energy consumption related to facility planning, design, construction, maintenance, operation, and replacement. Implementation of this mitigation measure would ensure the Project would be consistent with CAP measure E-2.4.
W-1.3	Reduce Potable Water Consumption at County Facilities	Reduce potable water consumption at County facilities by 15% below 2014 levels by 2020 and 20% below 2014 levels by 2030	**Consistent After Mitigation.** Board Policy Number G-15 requires the County to evaluate and incorporate cost-effective technologies to reduce water consumption during facility planning, design, construction, maintenance, operation, and replacement. Operation of the proposed Project would result in an increase in water consumption, due to use of the meeting room/kitchen, and the addition of overnight recreational vehicles at the site. As discussed above, **MM-GHG-2** requires compliance with Board Policy Number G-15, which aims to reduce energy consumption related to facility planning, design, construction, maintenance, operation, and replacement. Implementation of this mitigation measure would ensure the Project would be consistent with CAP measure W-1.3.

Table 9. Project Consistency with Applicable CAP Measures

Measure Number	Measure Name	Measure Summary	Applicability/Consistency
A-2.2	Increase County Tree Planting	Prepare and implement a tree planting program for the unincorporated county to plant a minimum of 3,500 trees annually starting in 2017	**Consistent Prior to Mitigation.** DPR has a Tree Program. The vision of this program is to have no-net-loss in tree canopy within County Park properties. Trees that are removed are replanted at a 3:1 ratio to accomplish not only no-net-loss, but a net gain in tree canopy. Since January 2017, DPR has planted 10,281 trees in County-wide in park facilities. As noted in the *Biological Resources* section of the Initial Study for this Project, tree species serving as habitat for tree-nesting raptors do not occur on the Project site. The closest trees occur offsite approximately 100 feet to the south of the Project site, and 75 feet to the west of the Project site. It is not anticipated that the Project would result in direct and permanent impacts on plant species within the Project area. Thus, the Project would not hinder implementation of this measure.

[a] Available at: https://www.sandiegocounty.gov/content/sdc/general_services/Energy/Energy_Vehicle.html

[b] Available at: https://www.sandiegocounty.gov/content/dam/sdc/cob/docs/policy/G-15.pdf

[c] Available at: https://www.sandiegocounty.gov/content/sdc/general_services/Energy/Energy_Renew_Energy.html

The Project would not exceed the 900 $MTCO_2e$ threshold used for discussion and would be consistent with and not hinder implementation of the County CAP, County General Plan, and State Scoping Plan after mitigation by providing for uses that are consistent with the County's General Plan and relevant Community Plans. Mitigation would ensure compliance with Board of Supervisors policy regarding County-owned facilities, and would ensure the County is doing its fair share to reduce emission from its operations. These uses would not hinder the state's ability to meet the reduction goals of SB 32 and would not hinder implementation of countywide reduction goals specified in the CAP.

For the reasons given above, impacts related to exceeding a GHG threshold of significance and/or conflicting with plans, policies, and regulatory programs adopted for the purpose of reducing the emissions of GHGs would be potentially significant. Mitigation measures MM-GHG-1 and MM-GHG-2 would be necessary to reduce the impact related to GHG emissions to less than significant.

Mitigation Measures

MM-GHG-1: Construction Best Management Practices. The County shall ensure implementation of the following measures during Project construction:

- Require equipment to be maintained in good tune and to reduce excessive idling time.
- Utilize alternative fueled equipment and vehicles, such as renewable diesel, renewable natural gas, compressed natural gas, or electric.
- Require older equipment be retrofitted with advanced engine controls, such as diesel particulate filters, selective catalytic reduction, or cooled exhaust gas recirculation, where feasible.
- Make efficient use of finite natural resources. Use building and finishing products that contain locally-sourced and recycled materials, where feasible.

MM-GHG-2: Implement Sustainability Features Consistent with County of San Diego Board of Supervisors Policy Number G-15, *Design Standards for County Facilities and Property*. Prior to finalizing the design plans, the County shall incorporate GHG-reducing measures such as those listed in the County's Board Policy G-15 and the Climate Action Plan specific to County-sponsored projects into the design, and shall demonstrate in the plans where these measures will be located. Measures that may be included in the project design include (but are not limited to):

- Evaluate and incorporate cost-effective technologies to reduce water consumption, including but not limited to ultra-high efficiency plumbing fixtures, cooling tower water treatment equipment, irrigation devices and controllers, and other applicable technologies, where feasible. This will ensure that the Project is consistent with Climate Action Plan target of reducing water consumption at County facilities by 15% below 2014 levels by 2020 and by 20% below 2014 levels by 2030.
- Compare alternative heating, ventilation, and air-conditioning (HVAC) systems based on life-cycle cost analysis. Use passive ventilation, evaporative cooling, envelope thermal mass (heat

storage in walls, roof and flooring), shading and/or other strategies to reduce energy consumption, where applicable and effective.

- Incorporate state-of-the-art lighting systems and automated controls, based on space function and occupancy, where feasible and/or effective. Substitute natural daylighting for artificial lighting, where feasible.
- Install Energy Star rated appliances in the kitchen, where feasible and effective.
- Install solar-powered lighting in parking and walking areas, where feasible.
- Ensure all new buildings are ready for the installation of photovoltaic systems incorporated as part of the design and construction of the building.
- Demonstrate recycling and waste reduction best practices. Compliance with the County's Construction and Demolition Ordinance shall be mandatory. This measure shall be applied during construction and operation of the proposed Project.

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Attachment A
Air Quality and Greenhouse Gas
Calculation Sheets

Construction Emission Calculation Sheets

	ECEF Equipment List									
	Item	**Production Per Day**	**Start Work Day No.**	**Stop Work Day No.**	**Equipment Used**	**Equipment Avg. Hrs Per Day**	**Equipment Duration (Days Used)**	**Total Hours Equipment type Used**	No. of Equipment	No. of Employees
Phase 1	**General Grading**									
Phase1a	General Grading		1	20	D6 Dozer	7	19	**133**	1	2
Phase1b			1	20	Water Truck	4	19	**76**	1	2
Phase 2	**Utility Improvements to all structures**									
Phase2a	Utilitities Trenching		21	31	Back Hoe	7	10	**70**	1	2
Phase2b			21	31	Forklift	6	10	**60**	1	2
Phase2c	Backfill and Compact		32	42	Backhoe w/vib. Plate	6	10	**60**	1	2
Phase2d			31	42	Water Truck	4	11	**44**	1	2
Phase 3	**D/G import**									
Phase3a	Material Import (D/G) - 8 Acres	200 yards per day	43	67	Dump Truck	8	24	**192**	1	2
Phase3b	Grading/Compaction		43	67	D6 Dozer	6	24	**144**	1	2
Phase3c			43	67	Grader/Blade	4	24	**96**	1	2
Phase3d			43	67	Water Truck	6	24	**144**	1	2
Phase3e			43	67	Roller	4	24	**96**	1	2
Phase3f	Paving		62	67	Cement and Mortar Mixers (4)	6	5	**30**	4	5
Phase3g			62	67	Paver	7	5	**35**	1	2
Phase3h			62	67	Roller	7	5	**35**	1	2
Phase3i			62	67	Tractor/Loader/Backhoe	7	5	**35**	1	2
Phase 4	**Fencing (Lodge Pole & Chain Link)**									
Phase4a	Warm up Track (2,745 LF)	1 Post Hole per 15' (183 Holes)	68	80	Bobcat w/Auger	6	12	**72**	1	2
Phase4b	Community Trail (3220 LF)	1 Post Hole per 15' (215 Holes)	81	97	Bobcat w/Auger	6	16	**96**	1	2
Phase4c	Landscaped Areas		98	106	Bobcat w/Auger	6	8	**48**	1	2
Phase4d	Chain Link Fencing		107	112	Bobcat w/Auger	6	5	**30**	1	2
Phase 5	**Arena Foundations + Frame + Roofing**									
Phase5a	Foundation Work (CIDH Piles)	6 Holes per Day (52 Total)	43	63	Drill Rig	7	20	**140**	1	2
Phase5b			43	63	Loader	6	20	**120**	1	2
Phase5c			60	64	Semi-end dump	7	4	**28**	1	2
Phase5d			55	64	Concrete Trucks	4	9	**36**	1	2
Phase5e	Arena Steel Framing + Roof	Building Forms	65	135	Fork Lift	6	70	**420**	1	2
Phase5f		Setting Materials	65	135	40 Ton Crane	7	70	**490**	1	2
Phase5g			65	135	40 Ton Crane	7	70	**490**	1	2
Phase5h			65	135	4x4 JLG Manlift	7	70	**490**	1	2
Phase5i			65	135	4x4 JLG Manlift	7	70	**490**	1	2
Phase5j			65	135	4x4 JLG Manlift	7	70	**490**	1	2
Phase 6	**Covered Arena Amenities**									
Phase6a	Lighting/wiring		136	156	4x4 JLG Manlift	7	20	**140**	1	2
Phase6b	Bleachers		136	139	Fork Lift	5	3	**15**	1	2
Phase6c	Fans		157	164	4x4 JLG Manlift	7	7	**49**	1	2
Phase6d	Arena Panels and Chutes		140	155	Fork Lift	7	15	**105**	1	2
Phase6e			136	164	Air Compressor	3	28	**84**	1	2
Phase 7	**Outdoor Arena**									
Phase7a	Install Arena Posts		165	179	Air Compressor	7	14	**98**	1	2
Phase7b	Set Arena Panels on Posts		180	185	Fork Lift	7	5	**35**	1	2

Phase7c	Set Chutes and Gates		186	196	Fork Lift	7	10	**70**	1	2
Phase 8	**Meeting Room/Concession/Restroom**									
Phase8a	Unload Set Materials		197	214	Fork Lift	7	17	**119**	1	2
Phase8b			197	211	Crane (10 Ton)	7	14	**98**	1	2
Phase8c			197	207	Concrete Truck	6	10	**60**	1	2
Phase 9	**Corrals**									
Phase9a	Set panels on posts		197	202	Fork Lift	7	5	**35**	1	2
Phase9b			197	202	Air Compressor	7	5	**35**	1	2
Phase 10	**Shade Structures**									
Phase10a	Shade Structure General		203	213	Fork Lift	6	10	**60**	1	2
Phase10b			203	213	Concrete Truck	6	10	**60**	1	2
Phase10c			203	213	4x4 JLG Manlift	6	10	**60**	1	2
Phase 11	**Landscaping Improvements**									
Phase11a	Irrigation Trenching		203	208	Trencher	6	5	**30**	1	2

Summary by Phase

SchCode	Pounds per day									
	2019									
	ROG	NOX	CO	PM10 Ex	PM10 D	PM10 T	PM2.5 Ex	PM2.5 D	PM2.5 T	SOX
Phase1a	0.7	7.6	4.8	0.4	6.1	6.5	0.4	3.0	3.4	0.0
Phase1b	0.2	1.0	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Phase2a	0.2	2.0	2.1	0.1	0.0	0.2	0.1	0.0	0.1	0.0
Phase2b	0.1	1.1	1.0	0.1	0.0	0.1	0.1	0.0	0.1	0.0
Phase2c	0.2	1.8	1.8	0.1	0.0	0.2	0.1	0.0	0.1	0.0
Phase2d	0.2	1.0	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Phase3a	2.4	27.1	5.5	0.7	1.7	2.3	0.6	0.2	0.8	0.1
Phase3b	0.6	6.5	4.1	0.4	4.9	5.3	0.3	2.5	2.9	0.0
Phase3c	0.4	4.1	2.5	0.2	0.0	0.3	0.2	0.0	0.2	0.0
Phase3d	0.2	1.0	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Phase3e	0.3	1.2	1.3	0.1	0.0	0.1	0.1	0.0	0.1	0.0
Phase3f	0.2	1.1	1.1	0.0	0.1	0.1	0.0	0.0	0.1	0.0
Phase3g	0.4	3.9	3.1	0.3	0.0	0.3	0.3	0.0	0.3	0.0
Phase3h	0.5	2.2	2.3	0.2	0.0	0.2	0.1	0.0	0.2	0.0
Phase3i	0.2	2.0	2.1	0.1	0.0	0.2	0.1	0.0	0.1	0.0
Phase4a	0.2	2.8	1.6	0.1	0.0	0.1	0.1	0.0	0.1	0.0
Phase4b	0.2	2.8	1.6	0.1	0.0	0.1	0.1	0.0	0.1	0.0
Phase4c	0.2	2.8	1.6	0.1	0.0	0.1	0.1	0.0	0.1	0.0
Phase4d	0.2	2.8	1.6	0.1	0.0	0.1	0.1	0.0	0.1	0.0
Phase5a	0.3	4.4	2.1	0.1	0.1	0.2	0.1	0.0	0.1	0.0
Phase5b	0.4	3.8	3.4	0.2	0.0	0.2	0.2	0.0	0.2	0.0
Phase5c	0.1	0.8	0.2	0.0	0.1	0.1	0.0	0.0	0.0	0.0
Phase5d	0.0	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Phase5e	0.2	2.2	1.2	0.1	0.1	0.2	0.1	0.0	0.1	0.0
Phase5f	0.4	5.2	2.1	0.2	0.0	0.3	0.2	0.0	0.2	0.0
Phase5g	0.4	5.2	2.1	0.2	0.0	0.3	0.2	0.0	0.2	0.0
Phase5h	0.4	5.2	2.1	0.2	0.0	0.3	0.2	0.0	0.2	0.0
Phase5i	0.4	5.2	2.1	0.2	0.0	0.3	0.2	0.0	0.2	0.0
Phase5j	0.4	5.2	2.1	0.2	0.0	0.3	0.2	0.0	0.2	0.0
Phase6a	0.4	5.2	2.1	0.2	0.0	0.3	0.2	0.0	0.2	0.0
Phase6b	0.1	0.9	0.8	0.1	0.0	0.1	0.1	0.0	0.1	0.0
Phase6c	0.4	5.2	2.1	0.2	0.0	0.3	0.2	0.0	0.2	0.0
Phase6d	0.1	1.3	1.1	0.1	0.0	0.1	0.1	0.0	0.1	0.0
Phase6e	0.4	2.3	1.6	0.1	0.1	0.2	0.1	0.0	0.1	0.0
Phase7a	0.8	3.8	3.4	0.2	0.1	0.3	0.2	0.0	0.2	0.0
Phase7b	0.2	2.4	1.4	0.1	0.1	0.2	0.1	0.0	0.1	0.0
Phase7c	0.2	2.4	1.4	0.1	0.1	0.2	0.1	0.0	0.1	0.0
Phase8a	0.2	1.6	1.2	0.1	0.1	0.2	0.1	0.0	0.1	0.0
Phase8b	0.4	5.2	2.1	0.2	0.0	0.3	0.2	0.0	0.2	0.0
Phase8c	0.0	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Phase9a	0.2	2.0	1.3	0.1	0.1	0.2	0.1	0.0	0.1	0.0
Phase9b	0.7	2.6	3.1	0.2	0.0	0.2	0.2	0.0	0.2	0.0
Phase10a	0.1	1.4	1.1	0.1	0.1	0.2	0.1	0.0	0.1	0.0
Phase10b	0.0	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Phase10c	0.4	4.5	1.7	0.2	0.0	0.2	0.2	0.0	0.2	0.0
Phase11a	0.5	2.5	2.6	0.2	0.0	0.2	0.2	0.0	0.2	0.0
Total	16.0	157.0	84.3	7.0	14.8	21.7	6.5	6.0	12.5	0.2

	2019					
	ROG	NOX	CO	PM10 T	PM2.5 T	SOX
Phase1	1	9	5	7	3	0
Phase2	1	6	5	1	0	0
Phase3	5	49	23	9	5	0
Phase4	1	11	7	0	0	0
Phase5	3	38	18	2	2	0
Phase6	2	15	8	1	1	0
Phase7	1	9	6	1	0	0
Phase8	1	7	3	0	0	0
Phase9	1	5	4	0	0	0
Phase10	1	6	3	0	0	0
Phase11	0	2	3	0	0	0
Total	**16**	**157**	**84**	**22**	**13**	**0**

Offroad Calculations Location Onsite

									2019												
									3	4	5	6	7	8						9	10	11	
Code	Equip	#/day	hrs/day	CMOD	HP Bin	HP	LF	Fuel	Pounds per day						Tons per year						Metric tons per year			
									ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2	CO2	CH4	N2O	CO2e
Phase1a	D6 Dozer	1	7	Crawler Tractors	175	212	0.43	Diesel	0.7	7.6	4.7	0.4	0.4	0.0	0.0	0.1	0.0	0.0	0.0	0.0	5.8	0.0	0.0	5.9
Phase2a	Back Hoe	1	7	Tractors/Loaders/Backhoes	120	97	0.37	Diesel	0.2	2.0	2.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	1.2
Phase2b	Forklift	1	6	Forklifts	120	89	0.20	Diesel	0.1	1.1	0.9	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.5
Phase2c	Backhoe w/vib. Plate	1	6	Tractors/Loaders/Backhoes	120	97	0.37	Diesel	0.2	1.7	1.7	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.1
Phase3b	D6 Dozer	1	6	Crawler Tractors	175	212	0.43	Diesel	0.6	6.5	4.1	0.4	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	6.3	0.0	0.0	6.4
Phase3c	Grader/Blade	1	4	Graders	175	187	0.41	Diesel	0.4	4.1	2.5	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	0.0	0.0	3.6
Phase3e	Roller	1	4	Rollers	50	80	0.38	Diesel	0.3	1.2	1.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	1.6
Phase3f	Cement and Mortar Mixers	4	6	Cement and Mortar Mixers	15	9	0.56	Diesel	0.2	1.1	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3
Phase3g	Paver	1	7	Pavers	120	130	0.42	Diesel	0.4	3.9	3.0	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.9
Phase3h	Roller	1	7	Rollers	50	80	0.38	Diesel	0.5	2.2	2.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.6
Phase3i	Tractor/Loader/Backhoe	1	7	Tractors/Loaders/Backhoes	120	97	0.37	Diesel	0.2	2.0	2.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.6
Phase4a	Bobcat w/Auger	1	6	Bore/Drill Rigs	250	221	0.50	Diesel	0.2	2.8	1.6	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	0.0	0.0	3.9
Phase4b	Bobcat w/Auger	1	6	Bore/Drill Rigs	250	221	0.50	Diesel	0.2	2.8	1.6	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.1	0.0	0.0	5.2
Phase4c	Bobcat w/Auger	1	6	Bore/Drill Rigs	250	221	0.50	Diesel	0.2	2.8	1.6	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0	2.6
Phase4d	Bobcat w/Auger	1	6	Bore/Drill Rigs	250	221	0.50	Diesel	0.2	2.8	1.6	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	1.6
Phase5a	Drill Rig	1	7	Bore/Drill Rigs	250	221	0.50	Diesel	0.2	3.2	1.8	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.4	0.0	0.0	7.5
Phase5b	Loader	1	6	Rubber Tired Loaders	175	203	0.36	Diesel	0.4	3.7	3.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2	0.0	0.0	4.3
Phase5e	Fork Lift	1	6	Forklifts	120	89	0.20	Diesel	0.1	1.1	0.9	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	0.0	0.0	3.7
Phase5f	40 Ton Crane	1	7	Cranes	250	231	0.29	Diesel	0.4	5.2	2.0	0.2	0.2	0.0	0.0	0.2	0.1	0.0	0.0	0.0	15.8	0.0	0.0	16.0
Phase5g	40 Ton Crane	1	7	Cranes	250	231	0.29	Diesel	0.4	5.2	2.0	0.2	0.2	0.0	0.0	0.2	0.1	0.0	0.0	0.0	15.8	0.0	0.0	16.0
Phase5h	4x4 JLG Manlift	1	7	Cranes	250	231	0.29	Diesel	0.4	5.2	2.0	0.2	0.2	0.0	0.0	0.2	0.1	0.0	0.0	0.0	15.8	0.0	0.0	16.0
Phase5i	4x4 JLG Manlift	1	7	Cranes	250	231	0.29	Diesel	0.4	5.2	2.0	0.2	0.2	0.0	0.0	0.2	0.1	0.0	0.0	0.0	15.8	0.0	0.0	16.0
Phase5j	4x4 JLG Manlift	1	7	Cranes	250	231	0.29	Diesel	0.4	5.2	2.0	0.2	0.2	0.0	0.0	0.2	0.1	0.0	0.0	0.0	15.8	0.0	0.0	16.0
Phase6a	4x4 JLG Manlift	1	7	Cranes	250	231	0.29	Diesel	0.4	5.2	2.0	0.2	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	4.5	0.0	0.0	4.6
Phase6b	Fork Lift	1	5	Forklifts	120	89	0.20	Diesel	0.1	0.9	0.8	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
Phase6c	4x4 JLG Manlift	1	7	Cranes	250	231	0.29	Diesel	0.4	5.2	2.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	1.6
Phase6d	Fork Lift	1	7	Forklifts	120	89	0.20	Diesel	0.1	1.3	1.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.9
Phase6e	Air Compressor	1	3	Air Compressors	50	78	0.48	Diesel	0.3	1.1	1.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0	1.8
Phase7a	Air Compressor	1	7	Air Compressors	50	78	0.48	Diesel	0.7	2.6	3.1	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	0.0	0.0	2.1
Phase7b	Fork Lift	1	7	Forklifts	120	89	0.20	Diesel	0.1	1.3	1.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3
Phase7c	Fork Lift	1	7	Forklifts	120	89	0.20	Diesel	0.1	1.3	1.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.6
Phase8a	Fork Lift	1	7	Forklifts	120	89	0.20	Diesel	0.1	1.3	1.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0
Phase8b	Crane (10 Ton)	1	7	Cranes	250	231	0.29	Diesel	0.4	5.2	2.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	0.0	0.0	3.2
Phase9a	Fork Lift	1	7	Forklifts	120	89	0.20	Diesel	0.1	1.3	1.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3
Phase9b	Air Compressor	1	7	Air Compressors	50	78	0.48	Diesel	0.7	2.6	3.1	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.8
Phase10a	Fork Lift	1	6	Forklifts	120	89	0.20	Diesel	0.1	1.1	0.9	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.5
Phase10c	4x4 JLG Manlift	1	6	Cranes	250	231	0.29	Diesel	0.4	4.5	1.7	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0	2.0
Phase11a	Trencher	1	6	Trenchers	50	78	0.50	Diesel	0.5	2.5	2.5	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.6

Employee Calculations Offsite

2019

Code	Vehicles/ day	Single Trips/day	Hrs/Trip/Day	Miles/day	Vehicle	Vehicle Type	Fuel	Pounds per day								Tons per year								Metric tons per year			
								ROG	NOX	CO	PM10	PM2.5	PM10 D	PM2.5 D	SO2	ROG	NOX	CO	PM10	PM2.5	PM10 D	PM2.5 D	SO2	CO2	CH4	N2O	CO2e
Phase1a	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3
Phase1b	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3
Phase2a	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
Phase2b	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
Phase2c	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
Phase2d	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
Phase3a	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3
Phase3b	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3
Phase3c	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3
Phase3d	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3
Phase3e	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3
Phase3f	5	10	0.2	108	Employee	LDA-LDT	Gas	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2
Phase3g	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
Phase3h	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
Phase3i	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
Phase4a	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2
Phase4b	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2
Phase4c	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
Phase4d	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
Phase5a	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3
Phase5b	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3
Phase5c	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
Phase5d	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
Phase5e	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.9
Phase5f	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.9
Phase5g	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.9
Phase5h	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.9
Phase5i	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.9
Phase5j	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.9
Phase6a	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3
Phase6b	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Phase6c	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
Phase6d	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2
Phase6e	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.4
Phase7a	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2
Phase7b	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
Phase7c	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
Phase8a	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2
Phase8b	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2
Phase8c	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
Phase9a	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
Phase9b	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
Phase10a	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
Phase10b	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
Phase10a	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
Phase11a	2	4	0.2	43	Employee	LDA-LDT	Gas	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1

Earthmoving/Paving Calculations Location Onsite **2019**

Code	Air Basin	Strip (acres/day)	Borrow/Excavate (cy/day)	Dozing hr/day	Paving (sf/day)	Pounds per day PM10 D	Pounds per day PM2.5 D
Phase1a	SDAB	0.7368	0	7	0	6.1	3.0
Phase3a	SDAB	0.0000	529	0	0	0.3	0.0
Phase3b	SDAB	0.3333	0	6	0	4.9	2.5
Phase3f	SDAB	0.0000	0	0	664	0.0	0.0

Phase	Activity	Total	Unit	Total days	Unit/day
Phase1a	Grading	14.0	acres	19	0.74
Phase3a	D/G import	12700.0	CY	24	529.17
Phase3b	Grading	8.0	acres	24	0.33
Phase3f	Paving	3320.0	SF	5	664.00

Routine & As-Needed Onroad Calculations Location Onsite and Offsite

2019

24 25 26 27 28 29 30 31 32 33 34
13 14 15 16 17 18 19 20 21 22 23
2 3 4 5 7 6 8 9 10 11 12

Code	Air Basin	Vehicles/ day	Single Trips/day	Hrs/Veh/Day	Miles/day	Vehicle	Vehicle Type	Fuel	Pounds per day								Metric tons per year			
									ROG	NOX	CO	PM10	PM2.5	PM10 D	PM2.5 D	SO2	CO2	CH4	N2O	CO2e
Phase1b	SDAB	1	2	8.0	40	Water Truck	T6HeavyOnsite	Diesel	0.2	1.0	0.3	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0	1.9
Phase2d	SDAB	1	2	8.0	40	Water Truck	T6HeavyOnsite	Diesel	0.2	1.0	0.3	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	1.1
Phase3a	SDAB	34	68	24.7	1360	Dump Truck	T7Hwy	Gas	2.4	27.1	5.4	0.7	0.6	1.3	0.1	0.1	62.4	0.0	0.0	65.3
Phase3d	SDAB	1	2	8.0	40	Water Truck	T6HeavyOnsite	Gas	0.2	1.0	0.3	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.0	2.4
Phase5c	SDAB	1	2	0.7	40	Semi-end dump	T7Hwy	Gas	0.1	0.8	0.2	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3
Phase5d	SDAB	1	2	8.0	40	Concrete Truck	T6UtilityOnsite	Diesel	0.0	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.9
Phase8c	SDAB	1	2	8.0	40	Concrete Truck	T6UtilityOnsite	Diesel	0.0	0.5	0.1	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0
Phase10b	SDAB	1	2	8.0	40	Concrete Truck	T6UtilityOnsite	Diesel	0.0	0.5	0.1	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0
Phase5a	SDAB	1	8	1.1	58	Material Transport	T7Hwy	Gas	0.1	1.2	0.2	0.0	0.0	0.1	0.0	0.0	2.2	0.0	0.0	2.3
Phase5e	SDAB	1	8	1.1	58	Material Transport	T7Hwy	Gas	0.1	1.2	0.2	0.0	0.0	0.1	0.0	0.0	7.8	0.0	0.0	8.2
Phase6e	SDAB	1	8	1.1	58	Material Transport	T7Hwy	Gas	0.1	1.2	0.2	0.0	0.0	0.1	0.0	0.0	3.1	0.0	0.0	3.3
Phase7a	SDAB	1	8	1.1	58	Material Transport	T7Hwy	Gas	0.1	1.2	0.2	0.0	0.0	0.1	0.0	0.0	1.6	0.0	0.0	1.6
Phase7b	SDAB	1	8	1.1	58	Material Transport	T7Hwy	Gas	0.1	1.2	0.2	0.0	0.0	0.1	0.0	0.0	0.6	0.0	0.0	0.6
Phase7c	SDAB	1	8	1.1	58	Material Transport	T7Hwy	Gas	0.1	1.2	0.2	0.0	0.0	0.1	0.0	0.0	1.1	0.0	0.0	1.2
Phase8a	SDAB	1	2	0.3	15	Material Transport	T7Hwy	Gas	0.0	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.5
Phase9a	SDAB	1	5	0.7	37	Material Transport	T7Hwy	Gas	0.1	0.7	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.4
Phase10a	SDAB	1	2	0.3	15	Material Transport	T7Hwy	Gas	0.0	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3

Source: EMFAC2017. Offsite emission factors for aggregate speeds.

				1	2	3	4	5	6	7	8	9	10	11	12
				RUNEX, PMBW, PMTW, and MDDIURN (grams/mile)											
Year	**Air Basin**	**VehType**	**Lookup**	**ROG**	**NOx**	**CO**	**PM10 Ex**	**PM10 D**	**PM2.5 Ex**	**PM2.5 D**	**SO2**	**CO2**	**CH4**	**N2O**
2018	SDAB	LDA-LDT	2018SDABLDA-LDT	0.02	0.09	1.01	0.00	0.39	0.00	0.07	0.00	320	0.01	0.01
2019	SDAB	LDA-LDT	2019SDABLDA-LDT	0.02	0.08	0.89	0.00	0.39	0.00	0.07	0.00	311	0.01	0.01
2018	SDAB	T7Hwy	2018SDABT7Hwy	0.91	9.66	2.04	0.27	0.44	0.26	0.09	0.02	1,929	0.04	0.30
2019	SDAB	T7Hwy	2019SDABT7Hwy	0.79	9.02	1.80	0.23	0.44	0.22	0.04	0.02	1,910	0.03	0.30
2018	SDAB	T6HeavyOnsite	2018SDABT6HeavyOnsite	2.37	12.54	3.41	0.44	0.00	0.42	0.00	0.02	2,410	0.10	0.38
2019	SDAB	T6HeavyOnsite	2019SDABT6HeavyOnsite	1.92	11.42	2.95	0.33	0.00	0.32	0.00	0.02	2,390	0.08	0.38
2018	SDAB	T6UtilityOnsite	2018SDABT6UtilityOnsite	0.19	6.58	0.79	0.02	0.00	0.02	0.00	0.02	2,483	0.01	0.39
2019	SDAB	T6UtilityOnsite	2019SDABT6UtilityOnsite	0.17	6.15	0.77	0.01	0.00	0.01	0.00	0.02	2,464	0.01	0.39

Source: CalEEMod version 2016.3.2

OFFROAD Equipment Type	Horsepower	CMOD High	Carl Moyer LF
Aerial Lifts	63	50	0.31
Air Compressors	78	120	0.48
Bore/Drill Rigs	221	250	0.50
Cement and Mortar Mixers	9	15	0.56
Concrete/Industrial Saws	81	120	0.73
Cranes	231	250	0.29
Crawler Tractors	212	250	0.43
Crushing/Proc. Equipment	85	120	0.78
Dumpers/Tenders	16	15	0.38
Excavators	158	175	0.38
Forklifts	89	120	0.20
Generator Sets	84	120	0.74
Graders	187	175	0.41
Off-Highway Tractors	124	120	0.44
Off-Highway Trucks	402	500	0.38
Other Construction Equipment	172	175	0.42
Other General Industrial Equipment	88	120	0.34
Other Material Handling Equipment	168	175	0.40
Pavers	130	120	0.42
Paving Equipment	132	120	0.36
Plate Compactors	8	15	0.43
Pressure Washers	13	15	0.30
Pumps	84	120	0.74
Rollers	80	120	0.38
Rough Terrain Forklifts	100	120	0.40
Rubber Tired Dozers	247	250	0.40
Rubber Tired Loaders	203	250	0.36
Scrapers	367	500	0.48
Signal Boards	6	15	0.82
Skid Steer Loaders	65	75	0.37
Surfacing Equipment	263	250	0.30
Sweepers/Scrubbers	64	75	0.46
Tractors/Loaders/Backhoes	97	120	0.37
Trenchers	78	120	0.50
Welders	46	50	0.45

Calculation Details in CalEEMod Users Guide, Appendix A

Paving ROG EF	2.6200	lbs/acre	CalEEMod (no mitigation)
Grading PM10 EF	1.0605	lbs/acre	CalEEMod (no mitigation)
Grading PM2.5 EF	0.1145	lbs/acre	CalEEMod (no mitigation)
Bulldozing PM10 EF	0.7528	lbs/hr	CalEEMod (no mitigation)
Bulldozing PM2.5 EF	0.4138	lbs/hr	CalEEMod (no mitigation)
Truck loading PM10 EF @12%	0.000467	lb/ton	CalEEMod (no mitigation)
Truck loading PM2.5 EF @12%	0.000071	lb/ton	CalEEMod (no mitigation)
Demo PM10 EF	0.0235	lb/ton	CalEEMod (no mitigation)
Demo PM2.5 EF	0.0036	lb/ton	CalEEMod (no mitigation)

Operational Emission
Calculation Sheets

Lakeside Operations Update 2019

San Diego Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Arena	2.07	Acre	2.07	90,000.01	0
Quality Restaurant	3.20	1000sqft	0.07	3,200.00	0
Mobile Home Park	5.00	Dwelling Unit	0.63	6,000.00	14

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	535.7	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Lakeside Operations Update 2019 - San Diego Air Basin, Annual

Project Characteristics - 2017 SDG&E CO2e EF, based on 2019 Electric Procurement Revenue Require Forecasts and GHG-Related Forecasts, November 2018. (0.243 MTCO2e/MWh) 1 MT = 2204.62 lbs, 0.243 MT = 535.7 lbs CO2e/MWh

Land Use - Covered Arena 150' x 300' + Outside Arena 150' x 300' = 90,000 sq-ft = 2.07 acres.
Meeting Room/Kitchen = 40' x 80' = 3,200 sq-ft = 0.07 acres
5 overnight recreational vehicle camping sites = 5 dwelling units = 6,000 sq-ft = 0.63 acres

Construction Phase - Construction not modeled in CalEEMod. Operational emissions only.

Off-road Equipment - Construction not modeled in CalEEMod. Operational emissions only.

Trips and VMT - Construction not modeled in CalEEMod. Operational emissions only.

Vehicle Trips - Vehicle Trips - Average Daily Trips from Lakeside TIA (3/29/2019) = 266
Assigned all trips to the arena uses = 2.07 acres
Weekdays, and Sunday trip rate = 266/2.07 = 128.744 trips per acre.
1 trip per week was included to account for potential removal of manure.
Trip rate for manure = 1/2.07 = 0.484 trips per acre
Saturday trip rate = 128.744 + 0.484 = 129.228 trips per acre.

Energy Use - The only electrical usuage for the Arenas would be lighting. All other energy use zeroed out for the Arenas.

Water And Wastewater - No water or wastewater associated with the Arenas.

Solid Waste - 130 tons of manure per year estimate was provided by the County.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	220.00	0.00
tblEnergyUse	NT24E	4.27	0.00
tblEnergyUse	NT24NG	7.25	0.00
tblEnergyUse	T24E	1.21	0.00
tblEnergyUse	T24NG	4.31	0.00
tblLandUse	LandUseSquareFeet	90,169.20	90,000.01
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

tblProjectCharacteristics	CH4IntensityFactor	0.029	0
tblProjectCharacteristics	CO2IntensityFactor	720.49	535.7
tblProjectCharacteristics	N2OIntensityFactor	0.006	0
tblSolidWaste	SolidWasteGenerationRate	0.18	130.00
tblTripsAndVMT	VendorTripNumber	16.00	0.00
tblTripsAndVMT	WorkerTripNumber	43.00	0.00
tblVehicleTrips	ST_TR	0.00	129.23
tblVehicleTrips	ST_TR	5.00	0.00
tblVehicleTrips	ST_TR	94.36	0.00
tblVehicleTrips	SU_TR	0.00	128.74
tblVehicleTrips	SU_TR	4.36	0.00
tblVehicleTrips	SU_TR	72.16	0.00
tblVehicleTrips	WD_TR	33.33	128.74
tblVehicleTrips	WD_TR	4.99	0.00
tblVehicleTrips	WD_TR	89.95	0.00
tblWater	IndoorWaterUseRate	2,786,544.20	0.00
tblWater	OutdoorWaterUseRate	177,864.52	0.00

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					
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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					
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

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	0.8197	6.5600e-003	0.4246	7.0000e-004		0.0545	0.0545		0.0545	0.0545	5.1648	2.2268	7.3916	4.8300e-003	4.1000e-004	7.6333
Energy	3.6300e-003	0.0327	0.0252	2.0000e-004		2.5100e-003	2.5100e-003		2.5100e-003	2.5100e-003	0.0000	134.5122	134.5122	6.9000e-004	6.6000e-004	134.7258
Mobile	0.0758	0.3158	0.7986	2.4100e-003	0.1952	2.4600e-003	0.1976	0.0523	2.3100e-003	0.0546	0.0000	221.5629	221.5629	0.0128	0.0000	221.8838
Waste						0.0000	0.0000		0.0000	0.0000	27.4484	0.0000	27.4484	1.6222	0.0000	68.0023
Water						0.0000	0.0000		0.0000	0.0000	0.4115	4.8257	5.2372	0.0423	1.0000e-003	6.5913
Total	**0.8992**	**0.3550**	**1.2484**	**3.3100e-003**	**0.1952**	**0.0595**	**0.2546**	**0.0523**	**0.0593**	**0.1116**	**33.0247**	**363.1275**	**396.1523**	**1.6828**	**2.0700e-003**	**438.8365**

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	0.8197	6.5600e-003	0.4246	7.0000e-004		0.0545	0.0545		0.0545	0.0545	5.1648	2.2268	7.3916	4.8300e-003	4.1000e-004	7.6333
Energy	3.6300e-003	0.0327	0.0252	2.0000e-004		2.5100e-003	2.5100e-003		2.5100e-003	2.5100e-003	0.0000	134.5122	134.5122	6.9000e-004	6.6000e-004	134.7258
Mobile	0.0758	0.3158	0.7986	2.4100e-003	0.1952	2.4600e-003	0.1976	0.0523	2.3100e-003	0.0546	0.0000	221.5629	221.5629	0.0128	0.0000	221.8838
Waste						0.0000	0.0000		0.0000	0.0000	27.4484	0.0000	27.4484	1.6222	0.0000	68.0023
Water						0.0000	0.0000		0.0000	0.0000	0.4115	4.8257	5.2372	0.0423	1.0000e-003	6.5913
Total	**0.8992**	**0.3550**	**1.2484**	**3.3100e-003**	**0.1952**	**0.0595**	**0.2546**	**0.0523**	**0.0593**	**0.1116**	**33.0247**	**363.1275**	**396.1523**	**1.6828**	**2.0700e-003**	**438.8365**

	ROG	NOx	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	Building Construction	Building Construction	4/11/2019	4/10/2019	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	0	8.00	231	0.29
Building Construction	Forklifts	0	7.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2019

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

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

3.2 Building Construction - 2019

Mitigated Construction On-Site

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

Mitigated Construction Off-Site

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

4.0 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	0.0758	0.3158	0.7986	2.4100e-003	0.1952	2.4600e-003	0.1976	0.0523	2.3100e-003	0.0546	0.0000	221.5629	221.5629	0.0128	0.0000	221.8838
Unmitigated	0.0758	0.3158	0.7986	2.4100e-003	0.1952	2.4600e-003	0.1976	0.0523	2.3100e-003	0.0546	0.0000	221.5629	221.5629	0.0128	0.0000	221.8838

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Arena	266.49	267.51	266.49	517,792	517,792
Mobile Home Park	0.00	0.00	0.00		
Quality Restaurant	0.00	0.00	0.00		
Total	266.49	267.51	266.49	517,792	517,792

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
Arena	9.50	7.30	7.30	0.00	81.00	19.00	66	28	6
Mobile Home Park	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3
Quality Restaurant	9.50	7.30	7.30	12.00	69.00	19.00	38	18	44

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Arena	0.588316	0.042913	0.184449	0.110793	0.017294	0.005558	0.015534	0.023021	0.001902	0.002024	0.006181	0.000745	0.001271
Mobile Home Park	0.588316	0.042913	0.184449	0.110793	0.017294	0.005558	0.015534	0.023021	0.001902	0.002024	0.006181	0.000745	0.001271
Quality Restaurant	0.588316	0.042913	0.184449	0.110793	0.017294	0.005558	0.015534	0.023021	0.001902	0.002024	0.006181	0.000745	0.001271

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	98.5716	98.5716	0.0000	0.0000	98.5716
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	98.5716	98.5716	0.0000	0.0000	98.5716
NaturalGas Mitigated	3.6300e-003	0.0327	0.0252	2.0000e-004		2.5100e-003	2.5100e-003		2.5100e-003	2.5100e-003	0.0000	35.9405	35.9405	6.9000e-004	6.6000e-004	36.1541
NaturalGas Unmitigated	3.6300e-003	0.0327	0.0252	2.0000e-004		2.5100e-003	2.5100e-003		2.5100e-003	2.5100e-003	0.0000	35.9405	35.9405	6.9000e-004	6.6000e-004	36.1541

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					
Arena	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile Home Park	115484	6.2000e-004	5.3200e-003	2.2600e-003	3.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	6.1627	6.1627	1.2000e-004	1.1000e-004	6.1993
Quality Restaurant	558016	3.0100e-003	0.0274	0.0230	1.6000e-004		2.0800e-003	2.0800e-003		2.0800e-003	2.0800e-003	0.0000	29.7779	29.7779	5.7000e-004	5.5000e-004	29.9548
Total		**3.6300e-003**	**0.0327**	**0.0252**	**1.9000e-004**		**2.5100e-003**	**2.5100e-003**		**2.5100e-003**	**2.5100e-003**	**0.0000**	**35.9405**	**35.9405**	**6.9000e-004**	**6.6000e-004**	**36.1541**

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					
Arena	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile Home Park	115484	6.2000e-004	5.3200e-003	2.2600e-003	3.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	6.1627	6.1627	1.2000e-004	1.1000e-004	6.1993
Quality Restaurant	558016	3.0100e-003	0.0274	0.0230	1.6000e-004		2.0800e-003	2.0800e-003		2.0800e-003	2.0800e-003	0.0000	29.7779	29.7779	5.7000e-004	5.5000e-004	29.9548
Total		**3.6300e-003**	**0.0327**	**0.0252**	**1.9000e-004**		**2.5100e-003**	**2.5100e-003**		**2.5100e-003**	**2.5100e-003**	**0.0000**	**35.9405**	**35.9405**	**6.9000e-004**	**6.6000e-004**	**36.1541**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Arena	254700	61.8894	0.0000	0.0000	61.8894
Mobile Home Park	27122.2	6.5904	0.0000	0.0000	6.5904
Quality Restaurant	123840	30.0918	0.0000	0.0000	30.0918
Total		**98.5716**	**0.0000**	**0.0000**	**98.5716**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Arena	254700	61.8894	0.0000	0.0000	61.8894
Mobile Home Park	27122.2	6.5904	0.0000	0.0000	6.5904
Quality Restaurant	123840	30.0918	0.0000	0.0000	30.0918
Total		**98.5716**	**0.0000**	**0.0000**	**98.5716**

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	0.8197	6.5600e-003	0.4246	7.0000e-004		0.0545	0.0545		0.0545	0.0545	5.1648	2.2268	7.3916	4.8300e-003	4.1000e-004	7.6333
Unmitigated	0.8197	6.5600e-003	0.4246	7.0000e-004		0.0545	0.0545		0.0545	0.0545	5.1648	2.2268	7.3916	4.8300e-003	4.1000e-004	7.6333

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1174					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3874					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.3137	6.1300e-003	0.3873	7.0000e-004		0.0543	0.0543		0.0543	0.0543	5.1648	2.1660	7.3308	4.7700e-003	4.1000e-004	7.5710
Landscaping	1.1400e-003	4.3000e-004	0.0373	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	0.0607	0.0607	6.0000e-005	0.0000	0.0622
Total	**0.8197**	**6.5600e-003**	**0.4246**	**7.0000e-004**		**0.0545**	**0.0545**		**0.0545**	**0.0545**	**5.1648**	**2.2268**	**7.3916**	**4.8300e-003**	**4.1000e-004**	**7.6333**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1174					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3874					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.3137	6.1300e-003	0.3873	7.0000e-004		0.0543	0.0543		0.0543	0.0543	5.1648	2.1660	7.3308	4.7700e-003	4.1000e-004	7.5710
Landscaping	1.1400e-003	4.3000e-004	0.0373	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	0.0607	0.0607	6.0000e-005	0.0000	0.0622
Total	**0.8197**	**6.5600e-003**	**0.4246**	**7.0000e-004**		**0.0545**	**0.0545**		**0.0545**	**0.0545**	**5.1648**	**2.2268**	**7.3916**	**4.8300e-003**	**4.1000e-004**	**7.6333**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	5.2372	0.0423	1.0000e-003	6.5913
Unmitigated	5.2372	0.0423	1.0000e-003	6.5913

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Arena	0 / 0	0.0000	0.0000	0.0000	0.0000
Mobile Home Park	0.32577 / 0.205377	1.6885	0.0106	2.5000e-004	2.0286
Quality Restaurant	0.971308 / 0.0619984	3.5487	0.0317	7.5000e-004	4.5627
Total		**5.2372**	**0.0423**	**1.0000e-003**	**6.5913**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Arena	0 / 0	0.0000	0.0000	0.0000	0.0000
Mobile Home Park	0.32577 / 0.205377	1.6885	0.0106	2.5000e-004	2.0286
Quality Restaurant	0.971308 / 0.0619984	3.5487	0.0317	7.5000e-004	4.5627
Total		**5.2372**	**0.0423**	**1.0000e-003**	**6.5913**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	27.4484	1.6222	0.0000	68.0023
Unmitigated	27.4484	1.6222	0.0000	68.0023

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Arena	130	26.3888	1.5595	0.0000	65.3772
Mobile Home Park	2.3	0.4669	0.0276	0.0000	1.1567
Quality Restaurant	2.92	0.5927	0.0350	0.0000	1.4685
Total		**27.4484**	**1.6222**	**0.0000**	**68.0023**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Arena	130	26.3888	1.5595	0.0000	65.3772
Mobile Home Park	2.3	0.4669	0.0276	0.0000	1.1567
Quality Restaurant	2.92	0.5927	0.0350	0.0000	1.4685
Total		**27.4484**	**1.6222**	**0.0000**	**68.0023**

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

Lakeside Operations Update 2019

San Diego Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Arena	2.07	Acre	2.07	90,000.01	0
Quality Restaurant	3.20	1000sqft	0.07	3,200.00	0
Mobile Home Park	5.00	Dwelling Unit	0.63	6,000.00	14

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	535.7	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Lakeside Operations Update 2019 - San Diego Air Basin, Winter

Project Characteristics - 2017 SDG&E CO2e EF, based on 2019 Electric Procurement Revenue Require Forecasts and GHG-Related Forecasts, November 2018. (0.243 MTCO2e/MWh) 1 MT = 2204.62 lbs, 0.243 MT = 535.7 lbs CO2e/MWh

Land Use - Covered Arena 150' x 300' + Outside Arena 150' x 300' = 90,000 sq-ft = 2.07 acres.
Meeting Room/Kitchen = 40' x 80' = 3,200 sq-ft = 0.07 acres
5 overnight recreational vehicle camping sites = 5 dwelling units = 6,000 sq-ft = 0.63 acres

Construction Phase - Construction not modeled in CalEEMod. Operational emissions only.

Off-road Equipment - Construction not modeled in CalEEMod. Operational emissions only.

Trips and VMT - Construction not modeled in CalEEMod. Operational emissions only.

Vehicle Trips - Vehicle Trips - Average Daily Trips from Lakeside TIA (3/29/2019) = 266
Assigned all trips to the arena uses = 2.07 acres
Weekdays, and Sunday trip rate = 266/2.07 = 128.744 trips per acre.
1 trip per week was included to account for potential removal of manure.
Trip rate for manure = 1/2.07 = 0.484 trips per acre
Saturday trip rate = 128.744 + 0.484 = 129.228 trips per acre.

Energy Use - The only electrical usuage for the Arenas would be lighting. All other energy use zeroed out for the Arenas.

Water And Wastewater - No water or wastewater associated with the Arenas.

Solid Waste - 130 tons of manure per year estimate was provided by the County.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	220.00	0.00
tblEnergyUse	NT24E	4.27	0.00
tblEnergyUse	NT24NG	7.25	0.00
tblEnergyUse	T24E	1.21	0.00
tblEnergyUse	T24NG	4.31	0.00
tblLandUse	LandUseSquareFeet	90,169.20	90,000.01
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

tblProjectCharacteristics	CH4IntensityFactor	0.029	0
tblProjectCharacteristics	CO2IntensityFactor	720.49	535.7
tblProjectCharacteristics	N2OIntensityFactor	0.006	0
tblSolidWaste	SolidWasteGenerationRate	0.18	130.00
tblTripsAndVMT	VendorTripNumber	16.00	0.00
tblTripsAndVMT	WorkerTripNumber	43.00	0.00
tblVehicleTrips	ST_TR	0.00	129.23
tblVehicleTrips	ST_TR	5.00	0.00
tblVehicleTrips	ST_TR	94.36	0.00
tblVehicleTrips	SU_TR	0.00	128.74
tblVehicleTrips	SU_TR	4.36	0.00
tblVehicleTrips	SU_TR	72.16	0.00
tblVehicleTrips	WD_TR	33.33	128.74
tblVehicleTrips	WD_TR	4.99	0.00
tblVehicleTrips	WD_TR	89.95	0.00
tblWater	IndoorWaterUseRate	2,786,544.20	0.00
tblWater	OutdoorWaterUseRate	177,864.52	0.00

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					
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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					
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	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**

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	10.4307	0.1542	9.8600	0.0171		1.3266	1.3266		1.3266	1.3266	138.8587	58.9792	197.8379	0.1289	0.0109	204.3145
Energy	0.0199	0.1790	0.1383	1.0900e-003		0.0138	0.0138		0.0138	0.0138		217.0831	217.0831	4.1600e-003	3.9800e-003	218.3731
Mobile	0.4304	1.7336	4.4815	0.0131	1.1016	0.0136	1.1153	0.2945	0.0128	0.3073		1,332.6064	1,332.6064	0.0792		1,334.5854
Total	**10.8810**	**2.0669**	**14.4798**	**0.0314**	**1.1016**	**1.3540**	**2.4556**	**0.2945**	**1.3532**	**1.6476**	**138.8587**	**1,608.6687**	**1,747.5274**	**0.2122**	**0.0149**	**1,757.2730**

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	10.4307	0.1542	9.8600	0.0171		1.3266	1.3266		1.3266	1.3266	138.8587	58.9792	197.8379	0.1289	0.0109	204.3145
Energy	0.0199	0.1790	0.1383	1.0900e-003		0.0138	0.0138		0.0138	0.0138		217.0831	217.0831	4.1600e-003	3.9800e-003	218.3731
Mobile	0.4304	1.7336	4.4815	0.0131	1.1016	0.0136	1.1153	0.2945	0.0128	0.3073		1,332.6064	1,332.6064	0.0792		1,334.5854
Total	**10.8810**	**2.0669**	**14.4798**	**0.0314**	**1.1016**	**1.3540**	**2.4556**	**0.2945**	**1.3532**	**1.6476**	**138.8587**	**1,608.6687**	**1,747.5274**	**0.2122**	**0.0149**	**1,757.2730**

	ROG	NOx	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	Building Construction	Building Construction	4/11/2019	4/10/2019	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	0	8.00	231	0.29
Building Construction	Forklifts	0	7.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2019

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 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	0.4304	1.7336	4.4815	0.0131	1.1016	0.0136	1.1153	0.2945	0.0128	0.3073		1,332.6064	1,332.6064	0.0792		1,334.5854
Unmitigated	0.4304	1.7336	4.4815	0.0131	1.1016	0.0136	1.1153	0.2945	0.0128	0.3073		1,332.6064	1,332.6064	0.0792		1,334.5854

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Arena	266.49	267.51	266.49	517,792	517,792
Mobile Home Park	0.00	0.00	0.00		
Quality Restaurant	0.00	0.00	0.00		
Total	266.49	267.51	266.49	517,792	517,792

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
Arena	9.50	7.30	7.30	0.00	81.00	19.00	66	28	6
Mobile Home Park	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3
Quality Restaurant	9.50	7.30	7.30	12.00	69.00	19.00	38	18	44

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Arena	0.588316	0.042913	0.184449	0.110793	0.017294	0.005558	0.015534	0.023021	0.001902	0.002024	0.006181	0.000745	0.001271
Mobile Home Park	0.588316	0.042913	0.184449	0.110793	0.017294	0.005558	0.015534	0.023021	0.001902	0.002024	0.006181	0.000745	0.001271
Quality Restaurant	0.588316	0.042913	0.184449	0.110793	0.017294	0.005558	0.015534	0.023021	0.001902	0.002024	0.006181	0.000745	0.001271

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	0.0199	0.1790	0.1383	1.0900e-003		0.0138	0.0138		0.0138	0.0138		217.0831	217.0831	4.1600e-003	3.9800e-003	218.3731
NaturalGas Unmitigated	0.0199	0.1790	0.1383	1.0900e-003		0.0138	0.0138		0.0138	0.0138		217.0831	217.0831	4.1600e-003	3.9800e-003	218.3731

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					
Arena	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile Home Park	316.395	3.4100e-003	0.0292	0.0124	1.9000e-004		2.3600e-003	2.3600e-003		2.3600e-003	2.3600e-003		37.2230	37.2230	7.1000e-004	6.8000e-004	37.4442
Quality Restaurant	1528.81	0.0165	0.1499	0.1259	9.0000e-004		0.0114	0.0114		0.0114	0.0114		179.8601	179.8601	3.4500e-003	3.3000e-003	180.9289
Total		**0.0199**	**0.1790**	**0.1383**	**1.0900e-003**		**0.0138**	**0.0138**		**0.0138**	**0.0138**		**217.0831**	**217.0831**	**4.1600e-003**	**3.9800e-003**	**218.3731**

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					
Arena	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile Home Park	0.316395	3.4100e-003	0.0292	0.0124	1.9000e-004		2.3600e-003	2.3600e-003		2.3600e-003	2.3600e-003		37.2230	37.2230	7.1000e-004	6.8000e-004	37.4442
Quality Restaurant	1.52881	0.0165	0.1499	0.1259	9.0000e-004		0.0114	0.0114		0.0114	0.0114		179.8601	179.8601	3.4500e-003	3.3000e-003	180.9289
Total		**0.0199**	**0.1790**	**0.1383**	**1.0900e-003**		**0.0138**	**0.0138**		**0.0138**	**0.0138**		**217.0831**	**217.0831**	**4.1600e-003**	**3.9800e-003**	**218.3731**

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	10.4307	0.1542	9.8600	0.0171		1.3266	1.3266		1.3266	1.3266	138.8587	58.9792	197.8379	0.1289	0.0109	204.3145
Unmitigated	10.4307	0.1542	9.8600	0.0171		1.3266	1.3266		1.3266	1.3266	138.8587	58.9792	197.8379	0.1289	0.0109	204.3145

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	0.6432					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.1229					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	7.6520	0.1494	9.4455	0.0171		1.3244	1.3244		1.3244	1.3244	138.8587	58.2353	197.0940	0.1281	0.0109	203.5524
Landscaping	0.0127	4.7900e-003	0.4144	2.0000e-005		2.2800e-003	2.2800e-003		2.2800e-003	2.2800e-003		0.7439	0.7439	7.3000e-004		0.7621
Total	**10.4307**	**0.1542**	**9.8600**	**0.0171**		**1.3266**	**1.3266**		**1.3266**	**1.3266**	**138.8587**	**58.9792**	**197.8379**	**0.1289**	**0.0109**	**204.3145**

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	0.6432					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.1229					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	7.6520	0.1494	9.4455	0.0171		1.3244	1.3244		1.3244	1.3244	138.8587	58.2353	197.0940	0.1281	0.0109	203.5524
Landscaping	0.0127	4.7900e-003	0.4144	2.0000e-005		2.2800e-003	2.2800e-003		2.2800e-003	2.2800e-003		0.7439	0.7439	7.3000e-004		0.7621
Total	**10.4307**	**0.1542**	**9.8600**	**0.0171**		**1.3266**	**1.3266**		**1.3266**	**1.3266**	**138.8587**	**58.9792**	**197.8379**	**0.1289**	**0.0109**	**204.3145**

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