APPENDIX A

COMMUNITY HEALTH RISK ASSESSMENT

COMMUNITY HEALTH RISK ASSESSMENT 3666, 3672, & 3682 MT. DIABLO BLVD. PROJECT LAFAYETTE, CALIFORNIA

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INTRODUCTION

This report presents the results of the air quality and greenhouse gas (GHG) emissions assessment of the Mixed-Use Residential development proposed at the northwest corner of the Mt. Diablo Boulevard and Delores Drive intersection in Lafayette, California. The project proposes three levels of multi-family residential living, underground parking, a restaurant and flexible commercial space at the Mt. Diablo Blvd street frontage and a separate common outdoor use area. The project site is located on the western side of Dolores Drive, between Highway 24 to the north and Mt. Diablo Blvd the south. The site and generally slopes to the south away from the Highway, which is elevated as it passes over Dolores Drive. The property is currently developed with commercial and office uses, and is bisected by a parcel owned and used by East Bay Municipal Utility District (EBMUD) as a storage and staging area. Parcels to the east, south, and west include multifamily residential, commercial, and office uses, and Hwy 24 forms the northern edge of the site. The project site in relation to its surroundings is shown in Figure 1.

Figure 1: Project Site and Vicinity

The Bay Area Air Quality Management District (BAAQMD) published their 2011 *California Environmental Quality Act (CEQA) Air Quality Guidelines*[1] that provides guidance for evaluating air quality impacts from land-sue type project. This guidance was used to evaluate air quality and GHG emissions from this project.

This air quality analysis includes a health risk assessment to address exposure of existing sensitive receptors to project construction activities and a health risk assessment of nearby sources of air pollutants to new sensitive receptors that would be part of the project. The health

[1] BAAQMD, 2011. *BAAQMD CEQA Air Quality Guidelines.* May.

risk assessment included the modeling of construction emissions using the California Emissions Estimator Model Version 2013.2.2 (CalEEMod). A dispersion model was used to predict the off-site diesel particulate matter (DPM) concentrations resulting from project construction so that lifetime cancer risks could be predicted. Stationary sources of air pollutant emissions were identified and their potential impacts upon the project site were evaluated using screening tools and dispersion modeling techniques. The CalEEMod model predicted both construction period operational emissions of GHG. In terms of construction and operational emissions, the project is well below the screening sizes contained in the BAAQMD *CEQA Air Quality Guidelines* used to identify the potential for significant emissions of criteria air pollutants. Therefore, emissions of criteria air pollutants from construction and operation of the project were not modeled.

This analysis focuses on impacts from toxic air contaminants (TACs) both from project construction and existing sources affecting the project and project emissions of greenhouse gases.

IMPACTS ASSOCIATED WITH TACs

Discussion of TACs

TACs are a broad class of compounds known to cause morbidity or mortality (usually because they cause cancer or serious illness) and include, but are not limited to, criteria air pollutants. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter near a highway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, state, and federal level. The identification, regulation, and monitoring of TACs is relatively new compared to that for criteria air pollutants that have established ambient air quality standards. TACs are regulated or evaluated on the basis of risk to human health rather than comparison to an ambient air quality standard or emission-based threshold.

Diesel Particulate Matter

Diesel exhaust, in the form of DPM, is the predominant TAC in urban air with the potential to cause cancer. It is estimated to represent about two-thirds of the cancer risk from TACs (based on the statewide average). According to the California Air Resources Board (CARB), diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the State's Proposition 65 or under the federal Hazardous Air Pollutants programs. California has adopted a comprehensive diesel risk reduction program. The U.S. Environmental Protection Agency (EPA) and the CARB have adopted low-sulfur diesel fuel standards in 2006 that reduces diesel particulate matter substantially. The CARB recently adopted new regulations requiring the retrofit and/or replacement of construction equipment, on-highway diesel trucks, and diesel buses in order to lower fine particulate matter ($PM_{2.5}$) emissions and reduce statewide cancer risk from diesel exhaust.

Fine Particulate Matter ($PM_{2.5}$)

Particulate matter in excess of state and federal standards represents another challenge for the Bay Area. Elevated concentrations of $PM_{2.5}$ are the result of both region-wide (or cumulative) emissions and localized emissions. High particulate matter levels aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 14, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, elementary schools, and parks. For cancer risk assessments, children are the most sensitive receptors, since they are more susceptible to cancer causing TACs. Residential locations are assumed to include infants and small children. The closest sensitive receptors to the project site are existing residential land uses to the south and west of the site.

TAC Thresholds of Significance

BAAQMD identified significance thresholds for exposure to TACs and $PM_{2.5}$ as part of its May 2011 *CEQA Air Quality Guidelines*[2]. This report uses the thresholds and methodologies from BAAQMD's May 2011 *CEQA Air Quality Guidelines* to determine whether there would be any project health risk impacts.

Single Source Impacts

If emissions of TACs or $PM_{2.5}$ exceed any of the thresholds of significance listed below, the proposed project would result in a significant impact and mitigation would be required.

- An excess cancer risk level of more than 10 in 1 million, or a non-cancer (chronic or acute) hazard index greater than 1.0.
- An incremental increase of more than 0.3 micrograms per cubic meter ($\mu g/m^3$) annual average $PM_{2.5}$.

Cumulative Source Impacts

A project would have a cumulatively considerable impact if the aggregate total of all past, present, and foreseeable future sources within a 1,000 foot radius of the fence line of a source or from the location of a receptor, plus the contribution from the project, exceeds the following thresholds:

- An excess cancer risk levels of more than 100 in one million or a chronic non-cancer hazard index (from all local sources) greater than 10.0.

[2] BAAQMD, 2011. *BAAQMD CEQA Air Quality Guidelines.* May.

- 0.8 $\mu g/m^3$ annual average $PM_{2.5}$.

TAC Sources Considered

Community health risk assessments typically look at all substantial sources of TACs located within 1,000 feet of project sites. These sources include freeways or State highways, busy surface streets, and stationary sources identified by BAAQMD. A review of the project are indicates that traffic on Highway 24 and two nearby stationary sources (i.e., a nearby emergency diesel generator and a gasoline station). A review of BAAQMD's Google Earth map tool, used to identify stationary sources and associated estimated risk and hazard impacts, did not reveal any other sources near the project site.

This health risk assessment evaluated impacts of Highway 24 traffic by utilizing emissions computed using traffic data reported by Caltrans, the CARB's EMFAC2011 model, the U.S. EPA's ISCST3 dispersion model, and BAAQMD methods to compute excess lifetime cancer risk. The construction emissions impact from the project upon existing sensitive receptors was also evaluated using the CalEEMod model to compute emissions and the ISCST3 model along with BAAQMD risk computation methods.

Roadway Community Risk Impacts

Traffic on high volume roadways is a source of TAC emissions that may adversely affect sensitive receptors in close proximity the roadway. For roadways, BAAQMD has published screening tables and data to determine if roadways with traffic volumes of over 10,000 vehicles per day may have a significant effect on a proposed project. In the vicinity of the project area, Highway 24 has 167,000 average daily trips (ADT), as reported by Caltrans[3]. A refined analysis of the impacts of TAC and $PM_{2.5}$ to new sensitive receptors is necessary to evaluate potential cancer risks and $PM_{2.5}$ concentrations from Highway 24. A review of the traffic information reported by Caltrans indicates that Highway 101 traffic includes about 2.5 percent trucks, of which 1.1 percent are considered heavy duty trucks and 1.4 percent are medium duty trucks. Note that this is a relatively low percentage of truck traffic when compared with other freeways in the Bay Area.

This analysis involved the development of DPM, organic TAC, and $PM_{2.5}$ emissions for traffic on Highway 24 using the CARB EMFAC2011 emission factor model and the traffic mix on Highway 24 developed from Caltrans traffic data. EMFAC2011 is the most recent version of the CARB motor vehicle emission factor model. DPM emissions are projected to decrease in the future and are reflected in the EMFAC2011 emissions data. New CARB regulations require on-road diesel trucks to be retrofitted with particulate matter controls or replaced to meet new 2010 engine standards that have much lower DPM and $PM_{2.5}$ emissions. This regulation will substantially reduce these emissions between 2013 and 2023, with the greatest reductions occurring in 2013 through 2015. While new trucks and buses will meet strict federal standards, this measure is intended to accelerate the rate at which the fleet either turns over so there are more cleaner vehicles on the road, or retrofitted to meet similar standards. With this

[3] California Department of Transportation. 2013. *2012 Traffic Volumes on the California State Highway System.*

regulation, older, more polluting trucks would be removed from the roads much quicker. CARB anticipates a 68 percent reduction in $PM_{2.5}$ (including DPM) emission from trucks in 2014 with this regulation.

Emission factors were developed for the year 2016 (first assumed full year of occupancy) using the calculated mix of cars and trucks on Highway 24. Default EMFAC2011 vehicle model year distributions for Contra Costa County were used in calculating emissions for 2016. Emissions were based on an average speed of 65 mph for all vehicles other than trucks which were assumed to travel at a speed of 60 mph. The number of vehicles per hour and emissions per vehicle mile traveled were assumed be constant throughout the day. Use of 2016 emissions as being representative of future conditions is a conservative assumption since, as discussed above, overall vehicle emissions, and in particular diesel truck emissions will decrease in the future.

Emissions of total organic gases (TOG) were also calculated for 2016 using the EMFAC2011 model. These TOG emissions were then used in the modeling the organic TACs. TOG emissions from exhaust and for running evaporative loses from gasoline vehicles were calculated using EMFAC2011 default model values for Contra Costa County along with the traffic volumes and vehicle mixes for Highway 24. The emission rates used in the analysis are shown in *Attachment 1*.

Dispersion Modeling

Dispersion modeling of DPM and organic TAC emissions was conducted using the EPA ISCST3 dispersion model, which is one of the models recommended by the BAAQMD for this type of analysis[4]. North and south bound traffic on Highway 101 within about 1,000 feet of the project site were evaluated with the model. A line source (modeled as a series of continuous volume sources along a path) was used for each direction of travel on Highway 24 to represent vehicle emissions in the model. The modeling used receptors spaced about every 23 feet (7 meters) within the residential area of the project site. Receptor heights of 1.5 meters (4.9 feet) and 4.5 meters (14.8 feet) were used in the modeling to represent first and second story residential areas. Figure 2 shows the roadway segments modeled and residential receptor locations used in the modeling.

Since representative historical meteorological data are not available for the area being modeled, the modeling relied upon screening meteorological data provided by the BAAQMD. The screening meteorological data, which are comprised of 54 combinations of wind speed and atmospheric stability that represent meteorological conditions that may exist over a 24-hour period (daytime and nighttime conditions), are based on the meteorological conditions used with by the SCREEN3 model. The screening meteorological conditions were used to model worst-case maximum 1-hour concentrations. These worst-hour concentrations were then converted to annual concentrations, needed to address cancer, non-cancer chronic health risk impacts, and annual $PM_{2.5}$ concentrations, by applying the BAAQMD recommended conversion factor of 0.1 to the 1-hour concentrations.

[4] BAAQMD, 2012. *Recommended Methods for Screening and Modeling Local Risks and Hazards*. May 2012.

Computed Cancer Risk

Using the modeled annual average DPM and TOG concentrations, the individual cancer risks were computed using the most recent methods recommended by BAAQMD[5]. The factors used to compute cancer risk are highly dependent on modeled concentrations, exposure period or duration, and the type of receptor. The exposure level is determined by the modeled concentration; however, it has to be averaged over a representative exposure period. The averaging period is dependent on many factors, but mostly the type of sensitive receptor being evaluated. The averaging period is dependent on many factors, but mostly the type of sensitive receptor that would reside at a site. This assessment conservatively assumed long-term residential exposures. BAAQMD has developed exposure assumptions for typical types of sensitive receptors. These include nearly continuous exposures of 70 years for residences. It should be noted that the cancer risk calculations for 70-year residential exposures reflect use of BAAQMD's most recent cancer risk calculation method, adopted in January 2010. This method applies BAAQMD recommended Age Sensitivity Factors to the cancer risks for residential exposures, accounting for age sensitivity to toxic air contaminants. Age-sensitivity factors reflect the greater sensitivity of infants and children to cancer causing TACs. The cancer risk calculations were based on applying the BAAQMD recommended 70 year average age sensitivity factor of 1.7 to the maximum modeled TAC concentrations based on 2016 emissions.

The maximum increased cancer risk was computed as 6.6 in one million. This was modeled at a receptor in the northern residential area closest to Highway 24, and is indicated on Figure 2. Cancer risks at other locations would be lower than the maximum risk. The maximum increased cancer risk is well below the BAAQMD's threshold of 10 in one million excess cancer cases per million.

Non-Cancer Health Effects

Potential non-cancer health effects due to chronic exposure to DPM were also evaluated. The chronic inhalation reference exposure level (REL) for DPM is 5 $\mu g/m^3$. The maximum predicted annual DPM concentration is 0.0095 $\mu g/m^3$, which is much lower than the REL. The Hazard Index (HI), which is the ratio of the annual DPM concentration to the REL, is 0.002. This HI is much lower than the BAAQMD significance criterion of a HI greater than 1.0. The modeling results and health risk calculations for the receptor with the maximum cancer risk from Highway 24 traffic are provided in *Attachment 1*.

$PM_{2.5}$ Concentrations from Highway 24 Traffic

In addition to evaluating the health risks from TACs, potential impacts from $PM_{2.5}$ emissions for vehicles traveling on Highway 24 were evaluated. $PM_{2.5}$ concentrations were modeled to evaluate the potential impact of chronic exposure to $PM_{2.5}$. To evaluate potential non-cancer health effects due to $PM_{2.5}$, the BAAQMD adopted a significance threshold of an annual average $PM_{2.5}$ concentration greater than 0.3 $\mu g/m^3$.

[5] BAAQMD, 2010. *Air Toxics NSR Program Health Risk Screening Analysis (HSRA) Guidelines*, January.

The same basic modeling approach that was used for assessing TAC impacts was used in the modeling of $PM_{2.5}$ concentrations. $PM_{2.5}$ emissions from all vehicles were used, rather than just the diesel powered vehicles, because all vehicle types (i.e., gasoline and diesel powered) produce $PM_{2.5}$. Additionally, $PM_{2.5}$ emissions from vehicle tire and brake wear were included in these emissions. The assessment involved, first, calculating $PM_{2.5}$ emission rates from traffic traveling on Highway 24. Then, dispersion modeling using emission factors and traffic volumes was conducted. The dispersion model provides estimated annual $PM_{2.5}$ concentrations. $PM_{2.5}$ emissions were calculated using the EMFAC2011 model for the 2016. Average hourly traffic volumes were calculated in the same manner as discussed earlier for the TAC modeling. The dispersion modeling of traffic using the ISCST3 model was conducted in the same manner as the TAC modeling.

Maximum annual average $PM_{2.5}$ concentrations occurred at the same location that had maximum cancer risks, the receptor located closest to highway 24. The maximum average annual concentration from I-580 traffic was 0.19 $\mu g/m^3$. This concentration is below the BAAQMD $PM_{2.5}$ threshold of greater than 0.3 $\mu g/m^3$.

Summary of Roadway Community Risk Impacts

The project would have a *less than significant impact* with respect to community risk caused by Highway 24 traffic.

Local Roadway Community Risk Impacts

According to the *City of Lafayette's Interactive Traffic Count Map*[6], Mt. Diablo Boulevard has a traffic volume of 12,400 vehicles per day in the area of Dolores Drive. This count was made in 2009, but it can be assumed that traffic volumes do not exceed 20,000 ADT on an annual basis. Using the BAAQMD *Roadway Screening Analysis Table* for Contra Costa County for north-south directional roadways and at a distance of approximately 50 feet and traffic volume of 20,000 ADT, estimated cancer risk from Mt. Diablo Boulevard at the project site would be 2.4 in one million or less, which is below the BAAQMD community risk significance threshold of 10 in one million. The estimated $PM_{2.5}$ concentration of 0.09 $\mu g/m^3$ or less and a HI of less than 0.03 associated with this source would be well below the BAAQMD community risk significance thresholds.

Stationary Sources

Stationary sources that emit TACs were searched using the BAAQMD Google Earth *Stationary Source Screening Analysis Tool*. Two sources within 1,000 of the project site were identified: a diesel generator and a Chevron fueling station. The *Stationary Source Screening Analysis Tool* and BAAQMD *Distance Adjustment Multiplier Tool for Diesel Internal Combustion (IC) Engines* were used to compute the screening level excess lifetime cancer risk, annual $PM_{2.5}$ concentration, and HI at the project that would result from these sources. The diesel generator (BAAQMD Source 13481), listed as operated by Pacific Bell at 3610 Happy Valley Road, is

[6] https://maps.google.com/maps/ms?msid=209410439490391350690.0004a8e809af2a624817b&msa=0&dg=feature – accessed April 9, 2014.

approximately 750 feet from planned residences. The Chevron fueling station (BAAQMD Source G8896) at 3632 Mt. Diablo Boulevard is approximately 560 feet from the project site. The excess cancer risk, annual $PM_{2.5}$ concentration, and HI associated with these sources are shown in Table 1.

The project would have a *less than significant impact* with respect to community risk caused by stationary sources.

Cumulative Risk

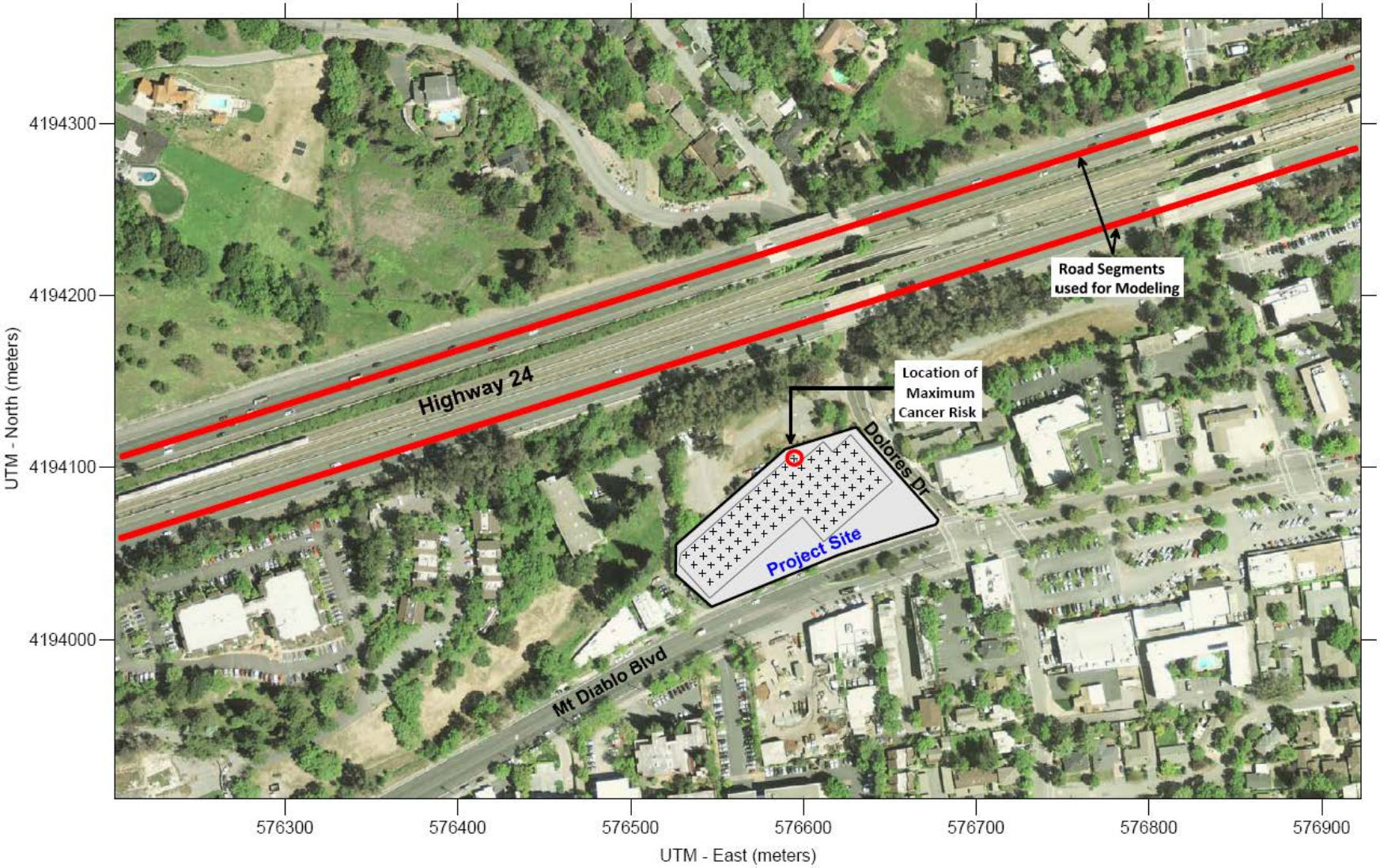
Cumulative TAC impacts to proposed sensitive receptors were evaluated by adding the cancer risk, HI, and $PM_{2.5}$ concentrations from each source and comparing those to the BAAQMD Community Risk significance thresholds for cumulative sources. Table 1 shows the community risk impacts from each source upon sensitive receptors. As shown in Table 1, cumulative risk to the project from nearby sources would be less than significant.

The project would have a *less than significant impact* with respect to community risk caused by cumulative sources (i.e., traffic and stationary sources).

Table 1. Impacts from Cumulative Sources within 1,000 feet

Source	Maximum Cancer Risk (per million)	Maximum Hazard Index	Maximum Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Highway 24 Traffic	6.6	0.00	0.19
Mt. Diablo Blvd Traffic at 50 feet	2.4	<0.03	0.09
Plant No. 13481 – listed as Pacific Bell Diesel Generator at 750 feet	5.1	0.00	0.00
Plant No. G8896 – Chevron Fueling Station at 560 feet	1.5	0.00	0.002
Maximum Single Source	6.6	<0.03	0.19
BAAQMD Threshold - Single Source	***10.0***	***1.0***	***0.3***
Cumulative Sources	16	<0.03	0.28
BAAQMD Threshold – Cumulative Sources	***100***	***10.0***	***0.8***

Figure 2. Project Site, Roadway Links, and Project Residential Receptor Locations



Construction TAC Impacts

Construction activity is anticipated to include demolition of existing buildings and paved areas, grading, building construction, paving, and application of architectural coatings. During demolition, grading, and some building construction activities, substantial amounts of dust could be generated. Most of the dust would result during grading activities. The amount of dust generated would be highly variable and would be dependent on the size of the area disturbed at any given time, amount of activity, soil conditions, and meteorological conditions. To address fugitive dust emissions that lead to elevated respirable particulate matter (PM_{10}) and $PM_{2.5}$ levels near construction sites, the BAAQMD *CEQA Air Quality Guidelines* identify best control measures. If included in construction projects, these impacts will be considered *less than significant*. **Mitigation Measure AQ-1** includes the BAAQMD recommended Best Management Practices to properly mitigate fugitive dust emissions.

Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a TAC. BAAQMD has developed screening tables for evaluating potential impacts from toxic air contaminants emitted at construction projects[7]. The screening tables are described by BAAQMD as "environmentally conservative interim guidance" and are meant to be used to identify potentially significant impacts that should be modeled using refined techniques. These screening tables indicate that construction activities similar to this project could have significant impacts at distances beyond 100 meters (330 feet), with the primary impact being excess cancer risk. Since project construction activities would include demolition, grading, and building construction that would last longer than 6 months and would be located within 330 feet of residences, a more refined- level study of community risk assessment was conducted. Because the gross analysis indicated that impacts were possible, a refined analysis was conducted to evaluate whether impact would be significant, and if so, identify any project features or mitigation measures that would be necessary to avoid significant impacts in terms of community risk impacts to nearby sensitive receptors (e.g., adjacent residences).

<u>On-Site Construction TAC Emissions</u>

The refined health risk assessment focused on modeling on-site construction activity using construction fleet information included in the project design features. For these reasons, construction period emissions were modeled using the California Emissions Estimator Model, Version 2013.2.2 (CalEEMod) along with projected construction activity. The number and types of construction equipment and diesel vehicles, along with the anticipated length of their use for different phases of construction were based on site-specific construction activity schedules. Construction of the project is expected to occur for about a 15 month period in 2015 and 2016, beginning in January 2015. The CalEEMod model provided total annual $PM_{2.5}$ exhaust emissions (assumed to be diesel particulate matter) for the off-road construction equipment and for exhaust emissions from on-road vehicles (haul trucks, vendor trucks, and worker vehicles), with total emissions of 0.0218 tons (44 pounds). The on-road emissions are a result of haul truck travel during demolition, site preparation, and construction activities, and from worker travel and vendor deliveries during building construction. A trip length of 0.3 miles was used to represent vehicle travel while at or near the construction site. It was assumed that these emissions from

[7] BAAQMD. 2010. *Screening Tables for Air Toxics Evaluation During Construction.* May.

on-road vehicles traveling at or near the site would occur at the construction site. Fugitive $PM_{2.5}$ dust emissions were calculated by CalEEMod as 0.0032 tons (6 pounds) for the overall construction period. The project emission calculations are provided in *Attachment 2*.

Dispersion Modeling

The U.S. EPA ISCST3 dispersion model was used to predict concentrations of DPM and $PM_{2.5}$ at existing sensitive receptors (residences) in the vicinity of the project site. The ISCST3 modeling utilized two area sources to represent the on-site construction emissions, one for DPM exhaust emissions and the other for fugitive $PM_{2.5}$ dust emissions. To represent the construction equipment exhaust emissions, an emission release height of 6 meters (20 feet) was used for the area source. The elevated source height reflects the height of the equipment exhaust pipes and buoyancy of the exhaust plume. For modeling fugitive $PM_{2.5}$ emissions, a near ground level release height of two meters (5.6 feet) was used for the area source. Emissions from truck travel around the project site were included in the modeled area sources. DPM and $PM_{2.5}$ concentrations were calculated at nearby residential locations. Receptor heights of 1.5 meters (4.9 feet) and 4.5 meters (14.8 feet) were used in the modeling to represent the first and second story levels of nearby multi-story apartments and other residences. Figure 3 shows the project location, the construction area used in the modeling, and locations of nearby residential receptors

Since representative historical meteorological data are not available for the area being modeled, the modeling relied upon screening meteorological data provided by the BAAQMD. The screening meteorological data, which are comprised of 54 combinations of wind speed and atmospheric stability that represent meteorological conditions that may exist over a 24-hour period (daytime and nighttime conditions), are based on the meteorological conditions used by the SCREEN3 model. The screening meteorological conditions were used to model worst-case maximum 1-hour concentrations. These worst-hour concentrations were then converted to annual concentrations, needed to address cancer, non-cancer chronic health risk impacts and annual $PM_{2.5}$ concentrations, by applying the BAAQMD recommended conversion factor of 0.1 to the 1-hour concentrations.

Cancer Risk and Hazards

The maximum-modeled DPM concentration occurred at a second level receptor (4.5 meters) in the apartment complex on Dolores Drive across from the project site. The location of this receptor is identified on Figure 3. Increased cancer risks were calculated using the annual concentration calculated based on the maximum 1-hour concentration from the modeling using screening meteorological data and BAAQMD recommended risk assessment methods for both a child exposure (3rd trimester through 2 years of age) and adult exposure[8]. Since the modeling was conducted under the conservative assumption that emissions occurred daily for a full year during each construction year, the default BAAQMD exposure period of 350 days per year was used[9].

[8] Bay Area Air Quality Management District (BAAQMD), 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards*, May.

[9] Bay Area Air Quality Management District (BAAQMD), 2010, *Air Toxics NSR Program Health Risk Screening Analysis Guidelines*, January.

Results of this assessment indicate that for project construction the incremental child cancer risk at the maximally exposed individual (MEI) receptor would be 8.0 in one million and the adult incremental cancer risk would be 0.4 in one million. These increased cancer risk for both the child and adult exposures would be lower than the BAAQMD significance threshold of a cancer risk of 10 in one million and would not be considered a significant impact.

The maximum annual $PM_{2.5}$ concentration was 0.10 $\mu g/m^3$ occurring at the same location where maximum cancer risk would occur. This $PM_{2.5}$ concentration is below the BAAQMD threshold of 0.3 $\mu g/m^3$ used to judge the significance of health impacts from $PM_{2.5}$.

Potential non-cancer health effects due to chronic exposure to DPM were also evaluated. The chronic inhalation REL for DPM is 5 $\mu g/m^3$. The maximum predicted annual DPM concentration was 0.09 $\mu g/m^3$, which is much lower than the REL. The HI, which is the ratio of the annual DPM concentration to the REL, is 0.02. This HI is much lower than the BAAQMD significance criterion of a HI greater than 1.0.

Attachment 1 also includes the emission calculations used for the area source modeling and the cancer risk calculations.

Summary of Construction TAC Impacts

The project would have a *less than significant impact* with respect to community risk caused by construction activities.

Figure 3 – Project Site, Construction Area, and Off-Site Residential Receptors

Mitigation Measure AQ-1: Implement BAAQMD Recommended Best Control Measures for reducing fugitive dust emissions.

The project design features for construction include BAAQMD recommended "Best Management Practices" along with construction equipment selection, techniques, and scheduling that reduce impacts. This construction design features is intended to establish a process that minimizes fugitive dust and exhaust emissions that protects the health and safety of nearby sensitive receptors such that temporary construction emissions would not exceed the BAAQMD significance thresholds for community risk and hazard impacts. These features will include some combination of the following:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 mph.
5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.
7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Greenhouse Gas Emissions

GHG Significance Thresholds

In 2010, BAAQMD adopted its updated CEQA Guidelines that contain methodology and thresholds of significance for evaluating GHG emissions from land use type projects. The BAAQMD thresholds were developed specifically for the Bay Area after considering the latest Bay Area GHG inventory and the effects of AB 32 scoping plan measures that would reduce regional emissions. BAAQMD intends to achieve GHG reductions from new land use developments to close the gap between projected regional emissions with AB 32 scoping plan measures and the AB 32 targets. The BAAQMD applies GHG efficiency thresholds to land use projects with annual emissions of 1,100 metric tons (MT) of CO_2e or greater. Projects that have emissions below 1,100 MT of CO_2e per year are considered to have less than significant

GHG emissions. For land use projects, the GHG efficiency threshold is 4.6 MT of CO_2e annually per capita, where capita is the sum of project residents and workers.

GHG emissions were computed for the full build out scenario of the proposed project using the CalEEMod model. Specifically, construction emissions were computed for an assumed 1.5-year construction period with the first full year of operational emissions beginning in 2017. Land use inputs to the CalEEMod model included 70 low-rise apartments, 4,500-square foot Quality Restaurant, 1,400-square foot Strip Mall, and a 166-space parking lot.

Construction Emissions

An approximate 1.5-year construction schedule, beginning in 2015, was assumed in the modeling. Construction phases included demolition, site grading and trenching, building construction, and paving. The construction schedule and equipment usage that were input to the model were provided by the applicant (see *Attachment 2*).

Most CO_2 emissions associated with construction would occur in 2015. Under this scenario, construction of the project would emit a total of 327 MT of CO_2. These would be temporary emissions. Neither the City of Lafayette nor the BAAQMD have quantified thresholds for construction activities.

Operational Emissions

Unless otherwise noted below, the CalEEMod model defaults for the San Francisco Bay Area were used. CalEEMod provides emissions for transportation, areas sources, electricity consumption, natural gas combustion, electricity usage associated with water usage and wastewater discharge, and solid waste land filling and transport.

Model Year

The model uses mobile emission factors from the CARB's EMFAC2011 model and adjusts these based on the effect of new regulations to reduce GHG emissions. These regulations include the Pavley Rule that increases fleet efficiency (reducing fuel consumption) and the low carbon fuel standard. This model is sensitive to the year selected, since vehicle emissions have and continue to be reduced due to fuel efficiency standards and low carbon fuels. The Year 2017 was analyzed since it is the first full year that the project could conceivably be occupied.

Traffic

CalEEMod allows the user to enter specific trip generation rates. *Fehr & Peers Transportation Consultants* provided trip generation rates for the proposed project by land use type[10]. No adjustments to the total trips generated by the project were made by *Fehr & Peers Transportation Consultants.*

[10] Email from Dan Hennessey of Fehr & Peers to James Reyff on April 7, 2014.

Area Sources (including Natural Gas and Electricity Consumption)

Natural gas, electricity usage and water usage were based on CalEEMod default rates. The proposed project would have to meet 2010 Title 24 standards that are approximately equivalent to LEED Silver certification. Energy efficiency of the project is likely to be greater than assumed in the CalEEMod model defaults; however, no adjustments were made in the CalEEMod model.

The project was assumed to only include natural gas fireplaces and no wood burning stoves.

Emissions rates associated with electricity consumption were adjusted to account for Pacific Gas & Electric utility's (PG&E) existing and projected 2017 CO_2 intensity rate. These rates are based, in part, on the requirement of a renewable energy portfolio standard of 33 percent by the year 2020. CalEEMod uses a default rate of 641.3 pounds of CO_2 per megawatt hour of electricity produced for PG&E. The derived 2016 rates for PG&E were estimated at 349 pounds of CO_2 per megawatt hour of electricity delivered, respectively, and are based on the California Public Utilities Commission (CPUC) GHG Calculator[11].

Solid waste generation was based on CalEEMod default generation rates and emissions rates.

Existing Emissions

Existing emissions from existing commercial activities at the project site were not computed for this assessment. However, there are some emissions occurring from the commercial buildings and the corresponding 350 daily trips that *Hexagon Transportation Consultants* estimates are occurring.

Computed GHG Emissions

Annual operational GHG emissions from the proposed project are shown in Table 2. Future GHG emissions were compared to the GHG significance thresholds of 1,100 metric tons per year and 4.6 metric tons per year per person established by BAAQMD. The annual emissions would not exceed 1,100 metric tons of CO_2e per year. As a result, the impact is considered less than significant. The CalEEMod model output is provided in *Attachment 2*.

[11] PG&E Greenhouse Gas Emission Factors: Guidance for PG&E Customers April 2013 accessed at http://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdfon April 10, 2014.

Table 2. Project GHG Emissions

Scenario	Annual GHG Emissions Reported as CO_2e in Metric Tons
Construction – 2015 to 2016	
Construction 2015	316
Construction 2016	11
Total construction in metric tons	327
Proposed Project - 2017	
Area	4
Energy	220
Mobile	597
Waste	17
Water	15
Total emissions in metric tons per year	853
BAAQMD Thresholds	*1,100*
Exceed?	***No***
Significant?	***No***

Attachment 1

Highway 24 Traffic Data and Emission Factors

Lafayette, CA - New Housing at Delores DR & Mt Diablo Blvd
Highway 24 Traffic Data and PM2.5 & TOG Emission Factors - 65 mph & 60 mph for Trucks

Analysis Year = ***2016***

Vehicle Type	2012 Caltrans Number Vehicles (veh/day)	2016 Number Vehicles (veh/day)	2016 Percent Diesel	Number Diesel Vehicles (veh/day)	Vehicle Speed (mph)	Emission Factors: Diesel Vehicles DPM (g/VMT)	All Vehicles: Total PM2.5 (g/VMT)	All Vehicles: Exhaust PM2.5 (g/VMT)	Gas Vehicles: Exhaust TOG (g/VMT)	Gas Vehicles: Running TOG (g/VMT)
LDA	111,693	116,161	0.42%	487	65	0.0192	0.0193	0.0016	0.0418	0.054
LDT	51,132	53,177	0.07%	38	65	0.0315	0.0198	0.0020	0.0656	0.108
MDT	2,396	2,492	8.09%	202	60	0.0245	0.0242	0.0049	0.0676	0.139
HDT	1,779	1,850	87.65%	1,621	60	0.1163	0.1496	0.0954	0.1439	0.188
Total	167,000	173,680	-	2,348	63	-	-		-	-
Mix Avg Emission Factor						**0.08687**	**0.02091**	**0.00275**	**0.04964**	**0.07191**
Increase From 2012		1.04								
Vehicles/Direction		86,840		1,174						
Avg Vehicles/Hour/Direction		**3,618**		**49**						

Traffic Data Year = ***2012***

Caltrans 2012 AADT Data		Total	Truck by Axle			
Caltrans 2012 Truck AADT Data	Total	Truck	2	3	4	5
Rte 24 B Lafayette, Oak Hill Rd/First St	167,000	4,175	2,396	559	188	1,031
Rte 580, B Pleasanton, Jct Rte. 680			57.40%	13.40%	4.50%	24.70%
Percent of Total Vehicles		2.50%	1.44%	0.34%	0.11%	0.62%

Traffic Increase per Year (%) = ***1.00%***

Lafayette, CA - New Housing at Delores DR & Mt Diablo Blvd
Highway 24
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2016

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Width (ft)	Link Width (m)	Release Height (m)	Diesel ADT	Average Speed (mph)	Average VPH Diesel Vehicles: Average Vehicles per Hour	LDA	LDT	LDA & LDT	MDT	HDT	Composite Average Emssions (g/mi)
EB-24	Eastbound Hwy 24	E	4	749	67.7	20.6	3.4	1,174	63	48.9	10	0.8	11	4	34	0.08687
WB-24	Westbound Hwy 24	W	4	746	67.7	20.6	3.4	1,174	63	48.9	10	0.8	11	4	34	0.08687

Lafayette, CA - New Housing at Delores DR & Mt Diablo Blvd
Highway 24
PM2.5 & TOG Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2016

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Width (ft)	Link Width (m)	Release Height (m)	ADT	Average Speed (mph)	Average VPH All Vehicles: Average Vehicles per Hour	LDA	LDT	LDA & LDT	MDT	HDT	Composite Average Emssions (g/mi)
EB-24	Eastbound Hwy 24	E	4	749	67.7	20.6	1.3	86,840	Variable	3,618	2,420	1,108	3,528	52	39	0.02091
WB-24	Westbound Hwy 24	W	4	746	67.7	20.6	1.3	86,840	Variable	3,618	2,420	1,108	3,528	52	39	0.02091

ISCST3 Risk Modeling Parameters and Maximum Cancer Risks
Lafayette Housing - Dolores Dr & Mt Diablo Blvd - DPM, PM2.5 & TOG TACs

Receptor Information

Number of Receptors 83
Receptor Height = 1.5 & 4.5 meters
Receptor distances = 7 meters (23 feet) spacing

Meteorological Conditions

Screening Meteorological Data (SCREEN3)
Land Use Classification urban
Wind speed = variable
Wind direction = variable

Cancer Risk Calculation Method

Inhalation Dose = C_{air} x DBR x A x EF x ED x 10^{-6} / AT

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
ED = Exposure duration (years)
AT = Averaging time period over which exposure is averaged.
10^{-6} = Conversion factor

Inhalation Dose Factors

Exposure Type	Value[1] DBR (L/kg BW-day)	A (-)	Exposure (hr/day)	Exposure (days/week)	Exposure (week/year)	EF (days/yr)	ED (Years)	AT (days)
Residential (70-Year)	302	1	24	7	50	350	70	25,550

[1] Default values recommended by OEHHA& Bay Area Air Quality Management District

Cancer Risk (per million) = Inhalation Dose x CRAF x CPF x 10^6
= URF x Cair

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
CRAF = Cancer Risk Adjustment Factor
URF =Unit risk factor (cancer risk per $\mu g/m^3$)

Unit Risk Factors (risk per million per µg/m^3) for DPM and Organic TACs from Vehicle TOG Exhaust & Evaporative Emissions

Exposure Type	CPF $(mg/kg\text{-}day)^{-1}$	CRAF (-)	Unit Risk *DPM*	Exhaust TOG TACs	Evaporative TOG TACs
Residential (70-Yr Exposure)	1.10E+00	1.7	541.5	3.1	0.182

MEI Cancer Risk Calculations - Receptor Height = 1.5 m

Averaging Period	Maximum DPM Concentration ($\mu g/m^3$)	Maximum Exhaust TOG Concentration ($\mu g/m^3$)	Maximum Evaporative TOG Concentration ($\mu g/m^3$)	Maximum PM2.5 Concentration ($\mu g/m^3$)
	2017	2017	2017	2017
Maximum 1-Hour	0.0950	4.4969	6.5271	1.8974
Annual Average [a]	***0.0095***	***0.4497***	***0.6527***	***0.190***
Cancer Risk[b]	5.14	1.38	0.12	

Total Risk From All TACs = 6.6 per million

Notes:

Receptor Heights = 1.5 m
Maximum DPM & PM2.5 concentrations occur at receptor in northern part of the residential area closest to Highway 24.

[a] Annual average = maximum 1-hour x 0.1

[b] Cancer risk (per million) calculated assuming constant 70-year exposure to concentration for year of analysis.

Construction TAC Health Risks

Lennar - Lafayette, CA

DPM Construction Emissions and Modeling Emission Rates

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2015	Construction	0.0203	CON_DPM	40.6	0.00463	5.84E-04	8,187	7.13E-08
2016	Construction	0.0014	CON_DPM	2.8	0.00032	4.08E-05	8,187	4.99E-09
Total		***0.0217***		***43***	***0.0050***	***0.0006***		

Notes:

Emissions assumed to be evenly distributed over each construction areas

hr/day =	24	Screening meteorological data
days/yr =	365	
hours/year =	8760	

PM2.5 Fugitive Dust Construction Emissions for Modeling

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate $g/s/m^2$
2015	Construction	CON_FUG	0.0031	6.2	0.00071	8.98E-05	8,187	1.10E-08
2016	Construction	CON_FUG	0.00004	0.1	0.00001	1.15E-06	8,187	1.41E-10
Total			***0.0032***	***6.3***	***0.0007***	***0.0001***		

Notes:

Emissions assumed to be evenly distributed over each construction areas

hr/day =	24	Screening meteorological data
days/yr =	365	
hours/year =	8760	

Lennar - Lafayette, CA - Construction Health Impact Summary

Construction Health Impact Summary

Construction Year	Maximum Concentrations		Cancer Risk (per million)		Hazard Index	Maximum Annual PM2.5 Concentration
	Exhaust PM2.5/DPM ($\mu g/m^3$)	Fugitive PM2.5 ($\mu g/m^3$)	Child	Adult	(-)	($\mu g/m^3$)
2015	0.0864	0.0174	7.6	0.4	0.017	0.104
2016	0.0052	0.0002	0.5	0.0	0.001	0.005
Total	-	-	**8.0**	**0.4**	-	-
Maximum Annual	0.0864	0.0174	-	-	**0.017**	**0.104**

Lennar - Lafayette, CA - Construction Impacts
Maximum DPM Cancer Risk Calculations From Construction
Off-Site Residential Receptor Locations - 4.5 meters

Cancer Risk (per million) = CPF x Inhalation Dose x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$

Inhalation Dose = C_{air} x DBR x A x EF x ED x 10^{-6} / AT

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
ED = Exposure duration (years)
AT = Averaging time period over which exposure is averaged.
10^{-6} = Conversion factor

Values

Parameter	Child	Adult
CPF =	1.10E+00	1.10E+00
DBR =	581	302
A =	1	1
EF =	350	350
AT =	25,550	25,550

Construction Cancer Risk by Year - Maximum Impact Receptor Location

		Child - Exposure Information				Adult - Exposure Information					
						Modeled					
Exposure	Exposure Duration	DPM Conc (ug/m3)		Exposure Adjust	Child Cancer Risk	DPM Conc (ug/m3)		Exposure Adjust	Adult Cancer Risk	Fugitive*	Total
Year	(years)	Year	Annual	Factor	(per million)	Year	Annual	Factor	(per million)	PM2.5	PM2.5
1	1	2015	0.0864	10	7.56	2015	0.0864	1	0.39	0.0174	0.104
2	1	2016	0.0052	10	0.46	2016	0.0052	1	0.02	0.00022	0.005
3	1		0.0000	4.75	0.00		0.0000	1	0.00		
4	1		0.0000	3	0.00		0.0000	1	0.00		
5	1		0.0000	3	0.00		0.0000	1	0.00		
6	1		0.0000	3	0.00		0.0000	1	0.00		
7	1		0.0000	3	0.00		0.0000	1	0.00		
8	1		0.0000	3	0.00		0.0000	1	0.00		
9	1		0.0000	3	0.00		0.0000	1	0.00		
10	1		0.0000	3	0.00		0.0000	1	0.00		
11	1		0.0000	3	0.00		0.0000	1	0.00		
12	1		0.0000	3	0.00		0.0000	1	0.00		
13	1		0.0000	3	0.00		0.0000	1	0.00		
14	1		0.0000	3	0.00		0.0000	1	0.00		
15	1		0.0000	3	0.00		0.0000	1	0.00		
16	1		0.0000	3	0.00		0.0000	1	0.00		
17	1		0.0000	1.5	0.00		0.0000	1	0.00		
18	1		0.0000	1	0.00		0.0000	1	0.00		
.•	.•	.•	.•	.•	.•	.•	.•	.•	.•		
.•	.•	.•	.•	.•	.•	.•	.•	.•	.•		
.•	.•	.•	.•	.•	.•	.•	.•	.•	.•		
65	1		0.0000	1	0.00		0.0000	1	0.00		
66	1		0.0000	1	0.00		0.0000	1	0.00		
67	1		0.0000	1	0.00		0.0000	1	0.00		
68	1		0.0000	1	0.00		0.0000	1	0.00		
69	1		0.0000	1	0.00		0.0000	1	0.00		
70	1		0.0000	1	0.00		0.0000	1	0.00		
Total Increased Cancer Risk					**8.02**				**0.42**		

* Maximum fugitive PM2.5 occurs at a receptor height of 1.5 meters.

ATTACHMENT 2

Project Name:		Lennar - Lafayette						
	See Equipment Type TAB for type, horsepower and load factor							
Qty	Description	HP	Load Factor	Hours/day	Total Work Days	CalEEMod Hrs	Annual Hours	Comments
	Demolition	**Start Date:**	**1/1/2015**					
		End Date:	**1/28/2015**					
1	Concrete/Industrial Saws	81	0.73	3	10	1.5	30	**Demolition Volume**
1	Excavators	162	0.3819	8	10	4	80	Square footage of buildings to be demolished
1	Rubber-Tired Loaders	199	0.36	9	10	4.5	90	(*or* total tons to be hauled)
								20,000 square feet *or*
								0 Hauling volume (tons)
	Site Preperation	**Start Date:**	**1/29/2015**					Any pavement demolished and hauled? **1,500 tons**
		End Date:	**2/2/2015**					
1	Cranes (Shoring)	226	0.29	8	10	8	80	
							0	
	Grading / Excavation	**Start Date:**	**2/3/2015**					
		End Date:	**3/2/2015**					**Soil Hauling Volume**
1	Excavators	162	0.3819	8	20	8	160	Export volume = **33,000** cubic yards
1	Rubber-Tired Loaders	199	0.36	4	20	4	80	Import volume = **0** cubic yards
1	Tractors/Loaders/Backhoes	97	0.3685	8	10	4	80	
1	Other construction equipment	171	0.42	8	1	0.4		
	Trenching	**Start Date:**	**2/3/2015**					
		End Date:	**2/9/2015**					
1	Tractor/Loader/Backhoe	97	0.3685	8	5	8	40	
								Cement
	Building - Exterior	**Start Date:**	**3/3/2015**					Cement Trucks? **75** Total Round-Trips
		End Date:	**1/4/2016**					or cement ____ cy
1	Aerial Lifts	62	0.31	8	60	2.181818182	480	Electric? (Y/N) N Otherwise assumed diesel
1	Forklifts	89	0.201	8	60	NA	480	Liquid Propane (LPG)? (Y/N) Y Otherwise Assumed diesel
1	Generator Sets	84	0.74	8	45	1.636363636	360	Or temporary line power? (Y/N) Temp line power after 45 days
1	Air Compressors	78	0.32	8	180	NA	1440	Electric? (Y/N) Y Otherwise assumed diesel
1	Welders	46	0.45	6	5	0.136363636	30	
Building - Interior/Architectural Coating		**Start Date:**	**12/30/2015**					
		End Date:	**3/22/2016**					
1	Cement and Mortar Mixers	9	0.56	8	45	6	360	
1	Aerial Lift	62	0.3	8	60	8	480	
	Paving	**Start Date:**	**12/16/2015**					
		Start Date:	**12/29/2015**					
1	Pavers	125	0.4154	8	2	1.6	16	Asphalt? **70** cy or _____ round trips
1	Paving Equipment	130	0.3551	8	2	1.6	16	
1	Rollers	80	0.3752	8	2	1.6	16	
1	Tractors/Loaders/Backhoes	97	0.37	8	1	0.8	8	

Lennar - Lafayette

Contra Costa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	70.00	Dwelling Unit	2.21	93,754.00	200
Quality Restaurant	4.50	1000sqft	0.00	4,500.00	0
Strip Mall	1.40	1000sqft	0.00	1,400.00	0
Enclosed Parking with Elevator	166.00	Space	0.00	66,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	348.86	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor (348.86 lb/MWh) for 2017 obtained from CPUC GHG Calculator version 3c.

Land Use - Lot acreage and res S.F. from project applicant.

Construction Phase - Phase durations based on CalEEMod defaults and information supplied by project applicant.

Off-road Equipment - Anticipated construction equipment list provided by project applicant.

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Off-road Equipment - Anticipated construction equipment list provided by project applicant.

Grading - 33,000 CY soil export.

Demolition - 20,000 SF demolition

Trips and VMT - 20,000 SF demolition (91 truck trips) + 1,500 tons pavement demolished (148 trucks trips) = 239. 150 cement truck trips. Approx. 9 asphalt truck trips for paving (70 CY/assume 16 truck volume*2)

Architectural Coating -

Vehicle Trips - Trip generation from Fehr & Peers.

Woodstoves - No woodstoves, possible gas-powered fireplaces.

Energy Use - no change

Construction Off-road Equipment Mitigation - Tier 2 mitigation scenario for equip >50 hp. BAAQMD fugitive dust control BMPs.

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	10.00	60.00
tblConstructionPhase	NumDays	6.00	20.00
tblConstructionPhase	PhaseEndDate	12/14/2015	1/4/2016
tblConstructionPhase	PhaseEndDate	1/18/2016	12/29/2015
tblConstructionPhase	PhaseEndDate	3/9/2015	2/9/2015
tblConstructionPhase	PhaseStartDate	2/10/2015	3/3/2015
tblConstructionPhase	PhaseStartDate	1/5/2016	12/16/2015
tblConstructionPhase	PhaseStartDate	3/3/2015	2/3/2015
tblFireplaces	FireplaceWoodMass	92.40	0.00
tblFireplaces	NumberGas	38.50	70.00
tblFireplaces	NumberNoFireplace	21.70	0.00
tblFireplaces	NumberWood	9.80	0.00
tblGrading	AcresOfGrading	0.00	3.00
tblGrading	AcresOfGrading	0.00	4.50
tblGrading	MaterialExported	0.00	33,000.00
tblLandUse	LandUseSquareFeet	70,000.00	93,754.00
tblLandUse	LotAcreage	1.84	2.21
tblLandUse	LotAcreage	0.10	0.00
tblLandUse	LotAcreage	0.03	0.00
tblLandUse	LotAcreage	1.49	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	8.00	1.50
tblOffRoadEquipment	UsageHours	8.00	1.60
tblOffRoadEquipment	UsageHours	8.00	1.60

tblOffRoadEquipment	UsageHours	8.00	1.60
tblOffRoadEquipment	UsageHours	8.00	1.60
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	8.00	0.80
tblOffRoadEquipment	UsageHours	8.00	0.10
tblProjectCharacteristics	CO2IntensityFactor	641.35	348.86
tblProjectCharacteristics	OperationalYear	2014	2017
tblTripsAndVMT	HaulingTripNumber	91.00	239.00
tblTripsAndVMT	HaulingTripNumber	0.00	150.00
tblTripsAndVMT	HaulingTripNumber	0.00	9.00
tblVehicleTrips	ST_TR	7.16	6.66
tblVehicleTrips	ST_TR	94.36	42.67
tblVehicleTrips	ST_TR	42.04	90.00
tblVehicleTrips	SU_TR	6.07	6.66
tblVehicleTrips	SU_TR	72.16	42.67
tblVehicleTrips	SU_TR	20.43	90.00
tblVehicleTrips	WD_TR	6.59	6.66
tblVehicleTrips	WD_TR	89.95	42.67
tblVehicleTrips	WD_TR	44.32	90.00
tblWoodstoves	NumberCatalytic	0.35	0.00
tblWoodstoves	NumberNoncatalytic	0.35	0.00
tblWoodstoves	WoodstoveDayYear	10.82	0.00
tblWoodstoves	WoodstoveWoodMass	954.80	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					
2015	0.1995	1.4427	1.7192	3.5800e-003	0.1500	0.0367	0.1867	0.0385	0.0345	0.0730	0.0000	316.1464	316.1464	0.0146	0.0000	316.4533
2016	1.0078	0.0412	0.0716	1.3000e-004	6.0400e-003	1.5700e-003	7.6100e-003	1.5900e-003	1.4800e-003	3.0700e-003	0.0000	10.6066	10.6066	1.7400e-003	0.0000	10.6432
Total	**1.2073**	**1.4838**	**1.7908**	**3.7100e-003**	**0.1560**	**0.0383**	**0.1943**	**0.0401**	**0.0360**	**0.0761**	**0.0000**	**326.7531**	**326.7531**	**0.0164**	**0.0000**	**327.0965**

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					
2015	0.1785	1.4244	1.7533	3.5800e-003	0.1350	0.0282	0.1632	0.0364	0.0269	0.0633	0.0000	316.1464	316.1464	0.0146	0.0000	316.4533
2016	1.0083	0.0614	0.0766	1.3000e-004	6.0400e-003	2.3400e-003	8.3800e-003	1.5900e-003	2.3400e-003	3.9300e-003	0.0000	10.6066	10.6066	1.7400e-003	0.0000	10.6432
Total	**1.1868**	**1.4858**	**1.8299**	**3.7100e-003**	**0.1410**	**0.0306**	**0.1716**	**0.0380**	**0.0293**	**0.0673**	**0.0000**	**326.7530**	**326.7530**	**0.0164**	**0.0000**	**327.0965**

	ROG	NOx	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	**1.70**	**-0.13**	**-2.18**	**0.00**	**9.60**	**20.11**	**11.68**	**5.24**	**18.65**	**11.59**	**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	tons/yr										MT/yr					
Area	0.7691	6.1300e-003	0.5266	3.0000e-005		3.0900e-003	3.0900e-003		3.0900e-003	3.0900e-003	0.0000	4.2174	4.2174	9.3000e-004	6.0000e-005	4.2559
Energy	8.2100e-003	0.0729	0.0504	4.5000e-004		5.6700e-003	5.6700e-003		5.6700e-003	5.6700e-003	0.0000	218.1133	218.1133	0.0129	3.8400e-003	219.5764
Mobile	0.4443	0.8586	4.1784	7.7800e-003	0.5443	0.0103	0.5546	0.1458	9.4400e-003	0.1552	0.0000	596.6668	596.6668	0.0264	0.0000	597.2216
Waste						0.0000	0.0000		0.0000	0.0000	7.6690	0.0000	7.6690	0.4532	0.0000	17.1867
Water						0.0000	0.0000		0.0000	0.0000	1.9132	6.8394	8.7525	0.1971	4.7600e-003	14.3658
Total	**1.2215**	**0.9377**	**4.7555**	**8.2600e-003**	**0.5443**	**0.0190**	**0.5634**	**0.1458**	**0.0182**	**0.1640**	**9.5822**	**825.8369**	**835.4190**	**0.6906**	**8.6600e-003**	**852.6065**

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	0.7691	6.1300e-003	0.5266	3.0000e-005		3.0900e-003	3.0900e-003		3.0900e-003	3.0900e-003	0.0000	4.2174	4.2174	9.3000e-004	6.0000e-005	4.2559
Energy	8.2100e-003	0.0729	0.0504	4.5000e-004		5.6700e-003	5.6700e-003		5.6700e-003	5.6700e-003	0.0000	218.1133	218.1133	0.0129	3.8400e-003	219.5764
Mobile	0.4443	0.8586	4.1784	7.7800e-003	0.5443	0.0103	0.5546	0.1458	9.4400e-003	0.1552	0.0000	596.6668	596.6668	0.0264	0.0000	597.2216
Waste						0.0000	0.0000		0.0000	0.0000	7.6690	0.0000	7.6690	0.4532	0.0000	17.1867
Water						0.0000	0.0000		0.0000	0.0000	1.9132	6.8394	8.7525	0.1970	4.7500e-003	14.3627
Total	**1.2215**	**0.9377**	**4.7555**	**8.2600e-003**	**0.5443**	**0.0190**	**0.5634**	**0.1458**	**0.0182**	**0.1640**	**9.5822**	**825.8369**	**835.4190**	**0.6905**	**8.6500e-003**	**852.6034**

	ROG	NOx	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**	**0.01**	**0.12**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2015	1/28/2015	5	20	
2	Site Preparation	Site Preparation	1/29/2015	2/2/2015	5	3	
3	Grading	Grading	2/3/2015	3/2/2015	5	20	
4	Trenching	Trenching	2/3/2015	2/9/2015	5	5	
5	Building Construction	Building Construction	3/3/2015	1/4/2016	5	220	
6	Paving	Paving	12/16/2015	12/29/2015	5	10	
7	Architectural Coating	Architectural Coating	12/30/2015	3/22/2016	5	60	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 3

Acres of Paving: 0

Residential Indoor: 189,852; Residential Outdoor: 63,284; Non-Residential Indoor: 108,450; Non-Residential Outdoor: 36,150

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	1.50	81	0.73
Demolition	Excavators	1	4.00	162	0.38
Demolition	Rubber Tired Dozers	0	8.00	255	0.40
Demolition	Rubber Tired Loaders	1	4.50	199	0.36
Demolition	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Cranes	1	8.00	226	0.29
Site Preparation	Graders	0	8.00	174	0.41
Site Preparation	Scrapers	0	8.00	361	0.48
Site Preparation	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	0	8.00	174	0.41
Grading	Other Construction Equipment	1	0.40	171	0.42
Grading	Rubber Tired Dozers	0	8.00	255	0.40
Grading	Rubber Tired Loaders	1	4.00	199	0.36
Grading	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Aerial Lifts	1	2.20	62	0.31
Building Construction	Cranes	0	8.00	226	0.29
Building Construction	Forklifts	0	7.00	89	0.20
Building Construction	Generator Sets	1	1.60	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Building Construction	Welders	1	0.10	46	0.45
Paving	Cement and Mortar Mixers	0	8.00	9	0.56
Paving	Pavers	1	1.60	125	0.42
Paving	Paving Equipment	1	1.60	130	0.36
Paving	Rollers	1	1.60	80	0.38
Paving	Tractors/Loaders/Backhoes	1	0.80	97	0.37
Architectural Coating	Aerial Lifts	1	8.00	62	0.31
Architectural Coating	Air Compressors	0	6.00	78	0.48
Architectural Coating	Cement and Mortar Mixers	1	6.00	9	0.56

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	3	8.00	0.00	239.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	1	3.00	0.00	4,125.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	3	81.00	19.00	150.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	4	10.00	0.00	9.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	16.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	1	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Clean Paved Roads

3.2 Demolition - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.8400e-003	0.0000	9.8400e-003	1.4900e-003	0.0000	1.4900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.3000e-003	0.0719	0.0348	7.0000e-005		3.2300e-003	3.2300e-003		3.0300e-003	3.0300e-003	0.0000	6.8093	6.8093	1.8400e-003	0.0000	6.8480
Total	**6.3000e-003**	**0.0719**	**0.0348**	**7.0000e-005**	**9.8400e-003**	**3.2300e-003**	**0.0131**	**1.4900e-003**	**3.0300e-003**	**4.5200e-003**	**0.0000**	**6.8093**	**6.8093**	**1.8400e-003**	**0.0000**	**6.8480**

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	3.1800e-003	0.0416	0.0325	9.0000e-005	2.0200e-003	6.2000e-004	2.6400e-003	5.5000e-004	5.7000e-004	1.1200e-003	0.0000	8.2900	8.2900	7.0000e-005	0.0000	8.2914
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	4.9000e-004	4.8400e-003	1.0000e-005	7.3000e-004	1.0000e-005	7.3000e-004	1.9000e-004	1.0000e-005	2.0000e-004	0.0000	0.6811	0.6811	4.0000e-005	0.0000	0.6819
Total	**3.5200e-003**	**0.0421**	**0.0373**	**1.0000e-004**	**2.7500e-003**	**6.3000e-004**	**3.3700e-003**	**7.4000e-004**	**5.8000e-004**	**1.3200e-003**	**0.0000**	**8.9710**	**8.9710**	**1.1000e-004**	**0.0000**	**8.9733**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.4000e-004	0.0000	4.4000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3300e-003	0.0614	0.0458	7.0000e-005		1.7000e-003	1.7000e-003		1.7000e-003	1.7000e-003	0.0000	6.8093	6.8093	1.8400e-003	0.0000	6.8480
Total	**2.3300e-003**	**0.0614**	**0.0458**	**7.0000e-005**	**4.4000e-004**	**1.7000e-003**	**2.1400e-003**	**7.0000e-005**	**1.7000e-003**	**1.7700e-003**	**0.0000**	**6.8093**	**6.8093**	**1.8400e-003**	**0.0000**	**6.8480**

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	3.1800e-003	0.0416	0.0325	9.0000e-005	2.0200e-003	6.2000e-004	2.6400e-003	5.5000e-004	5.7000e-004	1.1200e-003	0.0000	8.2900	8.2900	7.0000e-005	0.0000	8.2914

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	4.9000e-004	4.8400e-003	1.0000e-005	7.3000e-004	1.0000e-005	7.3000e-004	1.9000e-004	1.0000e-005	2.0000e-004	0.0000	0.6811	0.6811	4.0000e-005	0.0000	0.6819
Total	**3.5200e-003**	**0.0421**	**0.0373**	**1.0000e-004**	**2.7500e-003**	**6.3000e-004**	**3.3700e-003**	**7.4000e-004**	**5.8000e-004**	**1.3200e-003**	**0.0000**	**8.9710**	**8.9710**	**1.1000e-004**	**0.0000**	**8.9733**

3.3 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.2500e-003	0.0000	4.2500e-003	5.4000e-004	0.0000	5.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1100e-003	0.0132	4.6000e-003	1.0000e-005		6.0000e-004	6.0000e-004		5.6000e-004	5.6000e-004	0.0000	0.8061	0.8061	2.4000e-004	0.0000	0.8111
Total	**1.1100e-003**	**0.0132**	**4.6000e-003**	**1.0000e-005**	**4.2500e-003**	**6.0000e-004**	**4.8500e-003**	**5.4000e-004**	**5.6000e-004**	**1.1000e-003**	**0.0000**	**0.8061**	**0.8061**	**2.4000e-004**	**0.0000**	**0.8111**

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	0.0550	0.7180	0.5606	1.5500e-003	0.0349	0.0107	0.0455	9.5700e-003	9.8000e-003	0.0194	0.0000	143.0800	143.0800	1.2000e-003	0.0000	143.1053
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	3.0000e-005	2.7000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0383	0.0383	0.0000	0.0000	0.0384
Total	**0.0550**	**0.7180**	**0.5609**	**1.5500e-003**	**0.0349**	**0.0107**	**0.0456**	**9.5800e-003**	**9.8000e-003**	**0.0194**	**0.0000**	**143.1183**	**143.1183**	**1.2000e-003**	**0.0000**	**143.1437**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.9000e-004	0.0000	1.9000e-004	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1000e-004	7.2000e-003	4.5100e-003	1.0000e-005		1.5000e-004	1.5000e-004		1.5000e-004	1.5000e-004	0.0000	0.8061	0.8061	2.4000e-004	0.0000	0.8111
Total	**2.1000e-004**	**7.2000e-003**	**4.5100e-003**	**1.0000e-005**	**1.9000e-004**	**1.5000e-004**	**3.4000e-004**	**2.0000e-005**	**1.5000e-004**	**1.7000e-004**	**0.0000**	**0.8061**	**0.8061**	**2.4000e-004**	**0.0000**	**0.8111**

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	0.0550	0.7180	0.5606	1.5500e-003	0.0349	0.0107	0.0455	9.5700e-003	9.8000e-003	0.0194	0.0000	143.0800	143.0800	1.2000e-003	0.0000	143.1053

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	3.0000e-005	2.7000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0383	0.0383	0.0000	0.0000	0.0384
Total	**0.0550**	**0.7180**	**0.5609**	**1.5500e-003**	**0.0349**	**0.0107**	**0.0456**	**9.5800e-003**	**9.8000e-003**	**0.0194**	**0.0000**	**143.1183**	**143.1183**	**1.2000e-003**	**0.0000**	**143.1437**

3.4 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.5900e-003	0.0000	1.5900e-003	1.7000e-004	0.0000	1.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.8800e-003	0.1037	0.0580	1.0000e-004		5.1100e-003	5.1100e-003		4.7000e-003	4.7000e-003	0.0000	9.7347	9.7347	2.9100e-003	0.0000	9.7957
Total	**8.8800e-003**	**0.1037**	**0.0580**	**1.0000e-004**	**1.5900e-003**	**5.1100e-003**	**6.7000e-003**	**1.7000e-004**	**4.7000e-003**	**4.8700e-003**	**0.0000**	**9.7347**	**9.7347**	**2.9100e-003**	**0.0000**	**9.7957**

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	4.2000e-004	6.2000e-004	6.0500e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.2000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.8513	0.8513	5.0000e-005	0.0000	0.8524
Total	**4.2000e-004**	**6.2000e-004**	**6.0500e-003**	**1.0000e-005**	**9.1000e-004**	**1.0000e-005**	**9.2000e-004**	**2.4000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**0.8513**	**0.8513**	**5.0000e-005**	**0.0000**	**0.8524**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.0000e-005	0.0000	7.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6700e-003	0.0892	0.0707	1.0000e-004		2.6300e-003	2.6300e-003		2.6300e-003	2.6300e-003	0.0000	9.7347	9.7347	2.9100e-003	0.0000	9.7957
Total	**3.6700e-003**	**0.0892**	**0.0707**	**1.0000e-004**	**7.0000e-005**	**2.6300e-003**	**2.7000e-003**	**1.0000e-005**	**2.6300e-003**	**2.6400e-003**	**0.0000**	**9.7347**	**9.7347**	**2.9100e-003**	**0.0000**	**9.7957**

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	4.2000e-004	6.2000e-004	6.0500e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.2000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.8513	0.8513	5.0000e-005	0.0000	0.8524
Total	**4.2000e-004**	**6.2000e-004**	**6.0500e-003**	**1.0000e-005**	**9.1000e-004**	**1.0000e-005**	**9.2000e-004**	**2.4000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**0.8513**	**0.8513**	**5.0000e-005**	**0.0000**	**0.8524**

3.5 Trenching - 2015

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	9.0000e-004	8.5800e-003	6.0600e-003	1.0000e-005		6.7000e-004	6.7000e-004		6.2000e-004	6.2000e-004	0.0000	0.7427	0.7427	2.2000e-004	0.0000	0.7474
Total	**9.0000e-004**	**8.5800e-003**	**6.0600e-003**	**1.0000e-005**		**6.7000e-004**	**6.7000e-004**		**6.2000e-004**	**6.2000e-004**	**0.0000**	**0.7427**	**0.7427**	**2.2000e-004**	**0.0000**	**0.7474**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	5.0000e-005	4.5000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0639	0.0639	0.0000	0.0000	0.0639
Total	**3.0000e-005**	**5.0000e-005**	**4.5000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0639**	**0.0639**	**0.0000**	**0.0000**	**0.0639**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.6000e-004	7.5200e-003	5.8600e-003	1.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004	0.0000	0.7427	0.7427	2.2000e-004	0.0000	0.7474
Total	**3.6000e-004**	**7.5200e-003**	**5.8600e-003**	**1.0000e-005**		**3.0000e-004**	**3.0000e-004**		**3.0000e-004**	**3.0000e-004**	**0.0000**	**0.7427**	**0.7427**	**2.2000e-004**	**0.0000**	**0.7474**

Mitigated Construction Off-Site

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

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	5.0000e-005	4.5000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0639	0.0639	0.0000	0.0000	0.0639
Total	**3.0000e-005**	**5.0000e-005**	**4.5000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0639**	**0.0639**	**0.0000**	**0.0000**	**0.0639**

3.6 Building Construction - 2015

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	0.0184	0.1482	0.1191	2.0000e-004		9.9600e-003	9.9600e-003		9.8400e-003	9.8400e-003	0.0000	17.2925	17.2925	2.7300e-003	0.0000	17.3500
Total	**0.0184**	**0.1482**	**0.1191**	**2.0000e-004**		**9.9600e-003**	**9.9600e-003**		**9.8400e-003**	**9.8400e-003**	**0.0000**	**17.2925**	**17.2925**	**2.7300e-003**	**0.0000**	**17.3500**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.9800e-003	0.0259	0.0202	6.0000e-005	1.2600e-003	3.8000e-004	1.6500e-003	3.5000e-004	3.5000e-004	7.0000e-004	0.0000	5.1556	5.1556	4.0000e-005	0.0000	5.1565
Vendor	0.0294	0.2385	0.3224	4.9000e-004	0.0133	3.8300e-003	0.0172	3.8200e-003	3.5200e-003	7.3400e-003	0.0000	45.1616	45.1616	4.0000e-004	0.0000	45.1701
Worker	0.0372	0.0545	0.5340	9.5000e-004	0.0804	6.9000e-004	0.0811	0.0214	6.3000e-004	0.0220	0.0000	75.1637	75.1637	4.4100e-003	0.0000	75.2563
Total	**0.0686**	**0.3188**	**0.8766**	**1.5000e-003**	**0.0950**	**4.9000e-003**	**0.0999**	**0.0256**	**4.5000e-003**	**0.0301**	**0.0000**	**125.4810**	**125.4810**	**4.8500e-003**	**0.0000**	**125.5829**

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	8.6900e-003	0.1643	0.1288	2.0000e-004		6.7500e-003	6.7500e-003		6.7500e-003	6.7500e-003	0.0000	17.2925	17.2925	2.7300e-003	0.0000	17.3499
Total	**8.6900e-003**	**0.1643**	**0.1288**	**2.0000e-004**		**6.7500e-003**	**6.7500e-003**		**6.7500e-003**	**6.7500e-003**	**0.0000**	**17.2925**	**17.2925**	**2.7300e-003**	**0.0000**	**17.3499**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.9800e-003	0.0259	0.0202	6.0000e-005	1.2600e-003	3.8000e-004	1.6500e-003	3.5000e-004	3.5000e-004	7.0000e-004	0.0000	5.1556	5.1556	4.0000e-005	0.0000	5.1565

Vendor	0.0294	0.2385	0.3224	4.9000e-004	0.0133	3.8300e-003	0.0172	3.8200e-003	3.5200e-003	7.3400e-003	0.0000	45.1616	45.1616	4.0000e-004	0.0000	45.1701
Worker	0.0372	0.0545	0.5340	9.5000e-004	0.0804	6.9000e-004	0.0811	0.0214	6.3000e-004	0.0220	0.0000	75.1637	75.1637	4.4100e-003	0.0000	75.2563
Total	**0.0686**	**0.3188**	**0.8766**	**1.5000e-003**	**0.0950**	**4.9000e-003**	**0.0999**	**0.0256**	**4.5000e-003**	**0.0301**	**0.0000**	**125.4810**	**125.4810**	**4.8500e-003**	**0.0000**	**125.5829**

3.6 Building Construction - 2016

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	1.5000e-004	1.2400e-003	1.0800e-003	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.1582	0.1582	2.0000e-005	0.0000	0.1587
Total	**1.5000e-004**	**1.2400e-003**	**1.0800e-003**	**0.0000**		**8.0000e-005**	**8.0000e-005**		**8.0000e-005**	**8.0000e-005**	**0.0000**	**0.1582**	**0.1582**	**2.0000e-005**	**0.0000**	**0.1587**

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	2.0000e-005	2.0000e-004	1.7000e-004	0.0000	9.6000e-004	0.0000	9.6000e-004	2.3000e-004	0.0000	2.4000e-004	0.0000	0.0467	0.0467	0.0000	0.0000	0.0468
Vendor	2.4000e-004	1.9000e-003	2.7300e-003	0.0000	1.2000e-004	3.0000e-005	1.5000e-004	4.0000e-005	3.0000e-005	6.0000e-005	0.0000	0.4095	0.4095	0.0000	0.0000	0.4096
Worker	3.1000e-004	4.5000e-004	4.3800e-003	1.0000e-005	7.4000e-004	1.0000e-005	7.4000e-004	2.0000e-004	1.0000e-005	2.0000e-004	0.0000	0.6660	0.6660	4.0000e-005	0.0000	0.6668
Total	**5.7000e-004**	**2.5500e-003**	**7.2800e-003**	**1.0000e-005**	**1.8200e-003**	**4.0000e-005**	**1.8500e-003**	**4.7000e-004**	**4.0000e-005**	**5.0000e-004**	**0.0000**	**1.1222**	**1.1222**	**4.0000e-005**	**0.0000**	**1.1231**

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	8.0000e-005	1.5100e-003	1.1800e-003	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.1582	0.1582	2.0000e-005	0.0000	0.1587
Total	**8.0000e-005**	**1.5100e-003**	**1.1800e-003**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**	**0.0000**	**0.1582**	**0.1582**	**2.0000e-005**	**0.0000**	**0.1587**

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	2.0000e-005	2.0000e-004	1.7000e-004	0.0000	9.6000e-004	0.0000	9.6000e-004	2.3000e-004	0.0000	2.4000e-004	0.0000	0.0467	0.0467	0.0000	0.0000	0.0468

Vendor	2.4000e-004	1.9000e-003	2.7300e-003	0.0000	1.2000e-004	3.0000e-005	1.5000e-004	4.0000e-005	3.0000e-005	6.0000e-005	0.0000	0.4095	0.4095	0.0000	0.0000	0.4096
Worker	3.1000e-004	4.5000e-004	4.3800e-003	1.0000e-005	7.4000e-004	1.0000e-005	7.4000e-004	2.0000e-004	1.0000e-005	2.0000e-004	0.0000	0.6660	0.6660	4.0000e-005	0.0000	0.6668
Total	**5.7000e-004**	**2.5500e-003**	**7.2800e-003**	**1.0000e-005**	**1.8200e-003**	**4.0000e-005**	**1.8500e-003**	**4.7000e-004**	**4.0000e-005**	**5.0000e-004**	**0.0000**	**1.1222**	**1.1222**	**4.0000e-005**	**0.0000**	**1.1231**

3.7 Paving - 2015

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	1.3400e-003	0.0143	8.7000e-003	1.0000e-005		8.4000e-004	8.4000e-004		7.7000e-004	7.7000e-004	0.0000	1.2099	1.2099	3.6000e-004	0.0000	1.2175
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.3400e-003**	**0.0143**	**8.7000e-003**	**1.0000e-005**		**8.4000e-004**	**8.4000e-004**		**7.7000e-004**	**7.7000e-004**	**0.0000**	**1.2099**	**1.2099**	**3.6000e-004**	**0.0000**	**1.2175**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2000e-004	1.5700e-003	1.2200e-003	0.0000	8.0000e-005	2.0000e-005	1.0000e-004	2.0000e-005	2.0000e-005	4.0000e-005	0.0000	0.3122	0.3122	0.0000	0.0000	0.3122
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-004	3.1000e-004	3.0200e-003	1.0000e-005	4.6000e-004	0.0000	4.6000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.4257	0.4257	2.0000e-005	0.0000	0.4262
Total	**3.3000e-004**	**1.8800e-003**	**4.2400e-003**	**1.0000e-005**	**5.4000e-004**	**2.0000e-005**	**5.6000e-004**	**1.4000e-004**	**2.0000e-005**	**1.6000e-004**	**0.0000**	**0.7378**	**0.7378**	**2.0000e-005**	**0.0000**	**0.7384**

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	5.3000e-004	0.0114	9.6300e-003	1.0000e-005		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004	0.0000	1.2099	1.2099	3.6000e-004	0.0000	1.2175
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.3000e-004**	**0.0114**	**9.6300e-003**	**1.0000e-005**		**3.9000e-004**	**3.9000e-004**		**3.9000e-004**	**3.9000e-004**	**0.0000**	**1.2099**	**1.2099**	**3.6000e-004**	**0.0000**	**1.2175**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2000e-004	1.5700e-003	1.2200e-003	0.0000	8.0000e-005	2.0000e-005	1.0000e-004	2.0000e-005	2.0000e-005	4.0000e-005	0.0000	0.3122	0.3122	0.0000	0.0000	0.3122

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-004	3.1000e-004	3.0200e-003	1.0000e-005	4.6000e-004	0.0000	4.6000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.4257	0.4257	2.0000e-005	0.0000	0.4262
Total	**3.3000e-004**	**1.8800e-003**	**4.2400e-003**	**1.0000e-005**	**5.4000e-004**	**2.0000e-005**	**5.6000e-004**	**1.4000e-004**	**2.0000e-005**	**1.6000e-004**	**0.0000**	**0.7378**	**0.7378**	**2.0000e-005**	**0.0000**	**0.7384**

3.8 Architectural Coating - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0346					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1000e-004	1.3300e-003	1.3200e-003	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.1917	0.1917	5.0000e-005	0.0000	0.1927
Total	**0.0347**	**1.3300e-003**	**1.3200e-003**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**	**0.0000**	**0.1917**	**0.1917**	**5.0000e-005**	**0.0000**	**0.1927**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	1.0000e-004	9.7000e-004	0.0000	1.5000e-004	0.0000	1.5000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1362	0.1362	1.0000e-005	0.0000	0.1364
Total	**7.0000e-005**	**1.0000e-004**	**9.7000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1362**	**0.1362**	**1.0000e-005**	**0.0000**	**0.1364**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0346					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2000e-004	1.8900e-003	1.4900e-003	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.1917	0.1917	5.0000e-005	0.0000	0.1927
Total	**0.0347**	**1.8900e-003**	**1.4900e-003**	**0.0000**		**8.0000e-005**	**8.0000e-005**		**8.0000e-005**	**8.0000e-005**	**0.0000**	**0.1917**	**0.1917**	**5.0000e-005**	**0.0000**	**0.1927**

Mitigated Construction Off-Site

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

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	1.0000e-004	9.7000e-004	0.0000	1.5000e-004	0.0000	1.5000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1362	0.1362	1.0000e-005	0.0000	0.1364
Total	**7.0000e-005**	**1.0000e-004**	**9.7000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1362**	**0.1362**	**1.0000e-005**	**0.0000**	**0.1364**

3.8 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.0024					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9100e-003	0.0348	0.0382	6.0000e-005		1.4200e-003	1.4200e-003		1.3300e-003	1.3300e-003	0.0000	5.5112	5.5112	1.4700e-003	0.0000	5.5420
Total	**1.0053**	**0.0348**	**0.0382**	**6.0000e-005**		**1.4200e-003**	**1.4200e-003**		**1.3300e-003**	**1.3300e-003**	**0.0000**	**5.5112**	**5.5112**	**1.4700e-003**	**0.0000**	**5.5420**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7500e-003	2.5700e-003	0.0251	5.0000e-005	4.2200e-003	3.0000e-005	4.2600e-003	1.1200e-003	3.0000e-005	1.1600e-003	0.0000	3.8150	3.8150	2.1000e-004	0.0000	3.8195
Total	**1.7500e-003**	**2.5700e-003**	**0.0251**	**5.0000e-005**	**4.2200e-003**	**3.0000e-005**	**4.2600e-003**	**1.1200e-003**	**3.0000e-005**	**1.1600e-003**	**0.0000**	**3.8150**	**3.8150**	**2.1000e-004**	**0.0000**	**3.8195**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.0024					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.5400e-003	0.0547	0.0431	6.0000e-005		2.2100e-003	2.2100e-003		2.2100e-003	2.2100e-003	0.0000	5.5112	5.5112	1.4700e-003	0.0000	5.5420
Total	**1.0060**	**0.0547**	**0.0431**	**6.0000e-005**		**2.2100e-003**	**2.2100e-003**		**2.2100e-003**	**2.2100e-003**	**0.0000**	**5.5112**	**5.5112**	**1.4700e-003**	**0.0000**	**5.5420**

Mitigated Construction Off-Site

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

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7500e-003	2.5700e-003	0.0251	5.0000e-005	4.2200e-003	3.0000e-005	4.2600e-003	1.1200e-003	3.0000e-005	1.1600e-003	0.0000	3.8150	3.8150	2.1000e-004	0.0000	3.8195
Total	**1.7500e-003**	**2.5700e-003**	**0.0251**	**5.0000e-005**	**4.2200e-003**	**3.0000e-005**	**4.2600e-003**	**1.1200e-003**	**3.0000e-005**	**1.1600e-003**	**0.0000**	**3.8150**	**3.8150**	**2.1000e-004**	**0.0000**	**3.8195**

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	0.4443	0.8586	4.1784	7.7800e-003	0.5443	0.0103	0.5546	0.1458	9.4400e-003	0.1552	0.0000	596.6668	596.6668	0.0264	0.0000	597.2216
Unmitigated	0.4443	0.8586	4.1784	7.7800e-003	0.5443	0.0103	0.5546	0.1458	9.4400e-003	0.1552	0.0000	596.6668	596.6668	0.0264	0.0000	597.2216

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	466.20	466.20	466.20	1,040,729	1,040,729
Enclosed Parking with Elevator	0.00	0.00	0.00		
Quality Restaurant	192.02	192.02	192.02	227,762	227,762
Strip Mall	126.00	126.00	126.00	194,044	194,044
Total	784.22	784.22	784.22	1,462,535	1,462,535

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Quality Restaurant	9.50	7.30	7.30	12.00	69.00	19.00	38	18	44
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.527495	0.065038	0.176571	0.145330	0.036305	0.004850	0.009787	0.021393	0.001225	0.001483	0.006378	0.002095	0.002051

5.0 Energy Detail

4.4 Fleet Mix

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	136.8883	136.8883	0.0114	2.3500e-003	137.8571
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	136.8883	136.8883	0.0114	2.3500e-003	137.8571

NaturalGas Mitigated	8.2100e-003	0.0729	0.0504	4.5000e-004		5.6700e-003	5.6700e-003		5.6700e-003	5.6700e-003	0.0000	81.2250	81.2250	1.5600e-003	1.4900e-003	81.7193
NaturalGas Unmitigated	8.2100e-003	0.0729	0.0504	4.5000e-004		5.6700e-003	5.6700e-003		5.6700e-003	5.6700e-003	0.0000	81.2250	81.2250	1.5600e-003	1.4900e-003	81.7193

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					
Enclosed Parking with Elevator	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
Quality Restaurant	949680	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003	0.0000	50.6785	50.6785	9.7000e-004	9.3000e-004	50.9870
Strip Mall	3486	2.0000e-005	1.7000e-004	1.4000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1860	0.1860	0.0000	0.0000	0.1872
Apartments Mid Rise	568933	3.0700e-003	0.0262	0.0112	1.7000e-004		2.1200e-003	2.1200e-003		2.1200e-003	2.1200e-003	0.0000	30.3605	30.3605	5.8000e-004	5.6000e-004	30.5452
Total		**8.2100e-003**	**0.0729**	**0.0504**	**4.5000e-004**		**5.6700e-003**	**5.6700e-003**		**5.6700e-003**	**5.6700e-003**	**0.0000**	**81.2250**	**81.2250**	**1.5500e-003**	**1.4900e-003**	**81.7193**

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					
Quality Restaurant	949680	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003	0.0000	50.6785	50.6785	9.7000e-004	9.3000e-004	50.9870
Strip Mall	3486	2.0000e-005	1.7000e-004	1.4000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1860	0.1860	0.0000	0.0000	0.1872
Apartments Mid Rise	568933	3.0700e-003	0.0262	0.0112	1.7000e-004		2.1200e-003	2.1200e-003		2.1200e-003	2.1200e-003	0.0000	30.3605	30.3605	5.8000e-004	5.6000e-004	30.5452
Enclosed Parking with Elevator	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
Total		**8.2100e-003**	**0.0729**	**0.0504**	**4.5000e-004**		**5.6700e-003**	**5.6700e-003**		**5.6700e-003**	**5.6700e-003**	**0.0000**	**81.2250**	**81.2250**	**1.5500e-003**	**1.4900e-003**	**81.7193**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	246859	39.0631	3.2500e-003	6.7000e-004	39.3395
Enclosed Parking with Elevator	447536	70.8182	5.8900e-003	1.2200e-003	71.3194
Quality Restaurant	154305	24.4173	2.0300e-003	4.2000e-004	24.5901
Strip Mall	16366	2.5898	2.2000e-004	4.0000e-005	2.6081
Total		**136.8883**	**0.0114**	**2.3500e-003**	**137.8571**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	246859	39.0631	3.2500e-003	6.7000e-004	39.3395
Enclosed Parking with Elevator	447536	70.8182	5.8900e-003	1.2200e-003	71.3194
Quality Restaurant	154305	24.4173	2.0300e-003	4.2000e-004	24.5901
Strip Mall	16366	2.5898	2.2000e-004	4.0000e-005	2.6081
Total		**136.8883**	**0.0114**	**2.3500e-003**	**137.8571**

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	0.7691	6.1300e-003	0.5266	3.0000e-005		3.0900e-003	3.0900e-003		3.0900e-003	3.0900e-003	0.0000	4.2174	4.2174	9.3000e-004	6.0000e-005	4.2559
Unmitigated	0.7691	6.1300e-003	0.5266	3.0000e-005		3.0900e-003	3.0900e-003		3.0900e-003	3.0900e-003	0.0000	4.2174	4.2174	9.3000e-004	6.0000e-005	4.2559

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	0.1037					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6485					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.4000e-004	0.0000	2.0000e-005	0.0000		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004	0.0000	3.3653	3.3653	6.0000e-005	6.0000e-005	3.3858
Landscaping	0.0165	6.1300e-003	0.5266	3.0000e-005		2.8600e-003	2.8600e-003		2.8600e-003	2.8600e-003	0.0000	0.8521	0.8521	8.6000e-004	0.0000	0.8702
Total	**0.7691**	**6.1300e-003**	**0.5266**	**3.0000e-005**		**3.0900e-003**	**3.0900e-003**		**3.0900e-003**	**3.0900e-003**	**0.0000**	**4.2174**	**4.2174**	**9.2000e-004**	**6.0000e-005**	**4.2559**

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	0.1037					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6485					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Hearth	3.4000e-004	0.0000	2.0000e-005	0.0000		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004	0.0000	3.3653	3.3653	6.0000e-005	6.0000e-005	3.3858
Landscaping	0.0165	6.1300e-003	0.5266	3.0000e-005		2.8600e-003	2.8600e-003		2.8600e-003	2.8600e-003	0.0000	0.8521	0.8521	8.6000e-004	0.0000	0.8702
Total	**0.7691**	**6.1300e-003**	**0.5266**	**3.0000e-005**		**3.0900e-003**	**3.0900e-003**		**3.0900e-003**	**3.0900e-003**	**0.0000**	**4.2174**	**4.2174**	**9.2000e-004**	**6.0000e-005**	**4.2559**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	8.7525	0.1970	4.7500e-003	14.3627
Unmitigated	8.7525	0.1971	4.7600e-003	14.3658

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	4.56078 / 2.87528	6.9445	0.1491	3.6000e-003	11.1921
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	1.3659 / 0.0871852	1.6512	0.0446	1.0700e-003	2.9202
Strip Mall	0.103702 / 0.063559	0.1569	3.3900e-003	8.0000e-005	0.2535
Total		**8.7525**	**0.1971**	**4.7500e-003**	**14.3658**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	4.56078 / 2.87528	6.9445	0.1490	3.6000e-003	11.1898
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	1.3659 / 0.0871852	1.6512	0.0446	1.0700e-003	2.9195
Strip Mall	0.103702 / 0.063559	0.1569	3.3900e-003	8.0000e-005	0.2534
Total		**8.7525**	**0.1970**	**4.7500e-003**	**14.3627**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	7.6690	0.4532	0.0000	17.1867
Unmitigated	7.6690	0.4532	0.0000	17.1867

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	32.2	6.5363	0.3863	0.0000	14.6483
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	4.11	0.8343	0.0493	0.0000	1.8697
Strip Mall	1.47	0.2984	0.0176	0.0000	0.6687
Total		**7.6690**	**0.4532**	**0.0000**	**17.1867**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	32.2	6.5363	0.3863	0.0000	14.6483
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	4.11	0.8343	0.0493	0.0000	1.8697
Strip Mall	1.47	0.2984	0.0176	0.0000	0.6687
Total		**7.6690**	**0.4532**	**0.0000**	**17.1867**

9.0 Operational Offroad

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

10.0 Vegetation