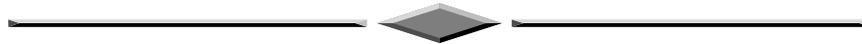


APPENDIX B

AIR QUALITY AND GREENHOUSE GAS STUDIES



City of Malibu

Rancho Malibu Resort Project

Air Quality Study



October 2012

Environmental Scientists Planners Engineers



Rincon Consultants, Inc.

180 North Ashwood Avenue
Ventura, California 93003

805 644 4455

FAX 644 4240

info@rinconconsultants.com

www.rinconconsultants.com

October 19, 2012
Project No. 11-98710

J.J. O'Brien
GREEN ACRES, LLC
c/o: Bruce McBride
a California Limited Liability Company
P.O. Box 6528
Malibu, California 90264

AIR QUALITY STUDY
Rancho Malibu Resort Project
Malibu, California

Dear Mr. O'Brien:

Rincon Consultants, Inc. is pleased to submit the attached Air Quality Study for the proposed Rancho Malibu Resort project in Malibu, California. Construction of the proposed project would result in emissions that would exceed the recommended South Coast Air Quality Management District (SCAQMD) construction thresholds for NO_x and PM₁₀. Mitigation was provided, recommending the use of tarps on soil hauling trucks, on-road and off-road NO_x emission control technologies, and either a limit on the daily maximum of soil hauling trips or, if this is infeasible, purchase of Mobile Source Emission Reduction Credits, pursuant to SCAQMD Rule 2022. The proposed project would not result in emissions would exceed the recommended South Coast Air Quality Management District (SCAQMD) operational thresholds for any criteria pollutant, or cumulative SCAQMD thresholds. As such, impacts related to air quality as a result of the proposed project would not be significant. If you have any questions regarding this study or if we can provide you with other environmental consulting services, please feel free to contact us.

Sincerely,

RINCON CONSULTANTS, INC.

Chris Bersbach
Associate Environmental Planner

Joe Power, AICP
Principal

Rancho Malibu Resort Project

Air Quality Study

Prepared for:

GREEN ACRES, LLC
a California Limited Liability Company
P.O. Box 6528
Malibu, California 90264

Prepared with the assistance of:

Rincon Consultants, Inc.
180 North Ashwood Avenue
Ventura, California 93003

October 2012

This report is printed on 50% recycled paper.

Rancho Malibu Resort Project Air Quality Study

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Appendix: CalEEMod Air Quality Model Worksheets – Summer



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RANCHO MALIBU RESORT PROJECT MALIBU, LOS ANGELES COUNTY AIR QUALITY STUDY

This report is an analysis of the potential air quality impacts of the proposed Rancho Malibu Resort project located in Malibu, California in Los Angeles County. The report has been prepared by Rincon Consultants, Inc. under contract to Green Acres, LLC for use by the City of Malibu, in support of the environmental documentation being prepared pursuant to the California Environmental Quality Act (CEQA). The purpose of this study is to analyze the proposed project's air quality emissions and the associated impacts. This analysis considers both temporary the air quality impacts that would result from project construction and potential long-term air quality impacts associated with operation of the proposed project.

PROJECT DESCRIPTION

The Rancho Malibu Resort project would involve the development of a 146-room luxury hotel and related facilities, which would be located at 4000 Malibu Canyon Road in Malibu, California. The project site totals 27.8 acres and is located at the junction of Malibu Canyon Road and Pacific Coast Highway (State Route 1) in the City of Malibu, Los Angeles County, California.

The main hotel would be approximately 167,062 square feet. The hotel would include a lobby, restaurant, bar, library, banquet facilities, and retail shops on the first floor, a basement level containing a spa and fitness center with a second basement level with additional retail floor area. The 146 guestrooms would include 12 suites located on the second floor of the hotel and 134 suites in 21 separate casita-type buildings, totaling 177,736 square feet.

Construction of the proposed project would require export of 189,760 cubic yards (cy) of soil. This volume of soil export is assumed to require 14,819 truck trips (13 cy per double trailer). The soil export trips would travel north along Malibu Canyon Road, and would not use Pacific Coast Highway. The hauling process will take approximately 86 work days at eight hours per day.

The proposed hotel would provide 543 parking spaces. Of those 543 spaces, 54 parking spaces would be provided in two separate at-grade parking lots. A 166,827 square foot, multi-level parking structure would provide 489 parking spaces. All public vehicular access to the hotel parking spaces would be provided by a single driveway located on Malibu Canyon Road, approximately 680 feet north of the Pacific Coast Highway centerline. The main hotel entrance and exit is near the curvature of Malibu Canyon Road. In addition to the main hotel access, a 26-foot wide fire access road is provided around the hotel site. The project site is located approximately 600 feet from a bus service stop (Metropolitan Transportation Authority [Metro] Route 534), which operates along Civic Center Way.



SETTING

Current Air Quality

California's weather is heavily influenced by a semi-permanent high-pressure system west of the Pacific. The Mediterranean climate of the region and the coastal influence produce moderate temperatures year round, with rainfall concentrated in the winter months. The sea breeze, which is the predominant wind, is a primary factor in creating this climate and typically flows from the west-southwest in a day-night cycle with speeds generally ranging from 5 to 15 miles per hour. The sea breeze maintains the cool temperatures and clean air circulation and generally prevents warmer inland temperatures and air pollution from permeating into the peninsula, except under certain seasonal conditions such as the offshore Santa Ana winds.

The City of Malibu is located within the South Coast Air Basin. The South Coast Air Basin's air quality is affected not only by the emission sources located in the region, but also to a large extent by three natural factors: terrain; a dominant on-shore flow; and atmospheric inversion. The first of these factors is a natural barrier to emission dispersion north and east of the metropolitan Los Angeles area. The dominant on-shore flow provides the driving mechanism for both air pollution transport and dispersion. Air pollution originating in the industrial areas along the coast and immediately inland is driven toward the natural terrain barrier, limiting horizontal dispersion. The effect of this second factor can be seen as a gradual degradation of air quality from coastal to inland areas. Malibu is typical of some of the South Coast Air Basin's best air quality areas because of its location along the coast upwind from most mobile and stationary sources. The greatest impacts can be seen in the San Gabriel Valley and near Riverside at the foot of the San Gabriel Mountains. The third factor affecting the regional air quality is atmospheric inversions, which limit dispersion of air pollution on a vertical scale. Inversions can be classified into one of two general categories: (1) inversion aloft or (2) surface based inversions. These two categories are the result of different meteorological conditions and tend to affect different sources. Inversions aloft are a critical factor in the degradation of regional air quality. The condition is defined by a vertical temperature profile, which initially conforms to standard conditions. For example, temperature typically decreases with height. However, under inversion conditions temperature begins to increase at some height above the ground. This height is called the base of the inversion. The temperature increase continues through an unspecified layer after which the temperature change with height returns to standard conditions. The inversion layer is typically very stable and acts as a cap to the vertical dispersions of pollutants.

Air Pollution Regulation

Federal and state standards have been established for six criteria pollutants, including ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulates less than 10 and 2.5 microns in diameter (PM₁₀ and PM_{2.5}), and lead (Pb). California has also set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. Table 1 lists the current federal and state standards for criteria pollutants.

Malibu is located within the South Coast Air Basin (Basin), which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The SCAQMD is required to monitor air pollutant levels to ensure that air quality standards are met and, if they are not met,



to develop strategies to meet the standards. Depending on whether the standards are met or exceeded, the local air basin is classified as being in “attainment” or “non-attainment.” The Basin, in which the project area is located, is a non-attainment area for both the federal and state standards for ozone and PM₁₀. The Basin is in attainment for the state and federal standards for nitrogen dioxide, and for carbon monoxide. Characteristics of ozone, carbon monoxide, nitrogen dioxide, and suspended particulates are described below.

Table 1
Current Federal and State Ambient Air Quality Standards

Pollutant	Federal Standard	California Standard
Ozone	0.075 ppm (8-hr avg)	0.09 ppm (1-hr avg) 0.07 ppm (8-hr avg)
Carbon Monoxide	9.0 ppm (8-hr avg) 35.0 ppm (1-hr avg)	9.0 ppm (8-hr avg) 20.0 ppm (1-hr avg)
Nitrogen Dioxide	0.053 ppm (annual avg) 0.100 ppm (1-hr avg)	0.18 ppm (1-hr avg) 0.030 ppm (annual avg)
Sulfur Dioxide	0.5 ppm (3-hr avg) 0.075 ppm (1-hr avg)	0.04 ppm (24-hr avg) 0.25 ppm (1-hr avg)
Lead	1.5 µg/m ³ (calendar quarter)	1.5 µg/m ³ (30-day avg)
Particulate Matter (PM ₁₀)	150 µg/m ³ (24-hr avg)	20 µg/m ³ (annual avg) 50 µg/m ³ (24-hr avg)
Particulate Matter (PM _{2.5})	15 µg/m ³ (annual avg) 35 µg/m ³ (24-hr avg)	12 µg/m ³ (annual avg)

ppm= parts per million

µg/m³ = micrograms per cubic meter

Source: California Air Resources Board, <http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>, last updated February 7, 2012.

Ozone. Ozone is produced by a photochemical reaction (triggered by sunlight) between nitrogen oxides (NO_x) and reactive organic gases (ROG). NO_x is formed during the combustion of fuels, while reactive organic gases are formed during combustion and evaporation of organic solvents. Because ozone requires sunlight to form, it mostly occurs in substantial concentrations between the months of April and October. Ozone is a pungent, colorless, toxic gas with direct health effects on humans including respiratory and eye irritation and possible changes in lung functions. Groups most sensitive to ozone include children, the elderly, people with respiratory disorders, and people who exercise strenuously outdoors.

Carbon Monoxide. CO is a local pollutant that is found in high concentrations only near a source of carbon monoxide. The major source of CO, a colorless, odorless, poisonous gas, is automobile traffic. Elevated concentrations, therefore, are usually only found near areas of high traffic volumes. CO’s health effects are related to its affinity for hemoglobin in the blood. At high concentrations, CO reduces the amount of oxygen in the blood, causing heart difficulty in people with chronic diseases, reduced lung capacity and impaired mental abilities.

Nitrogen Dioxide. NO₂ is a by-product of fuel combustion, with the primary source being motor vehicles and industrial boilers and furnaces. The principal form of nitrogen oxide produced by combustion is nitric oxide (NO), but NO reacts rapidly to form NO₂, creating the



mixture of NO and NO₂ commonly called NO_x. Nitrogen dioxide is an acute irritant. A relationship between NO₂ and chronic pulmonary fibrosis may exist, and an increase in bronchitis in young children at concentrations below 0.3 parts per million (ppm) may occur. NO₂ absorbs blue light and causes a reddish brown cast to the atmosphere and reduced visibility. It can also contribute to the formation of PM₁₀ and acid rain.

Suspended Particulates. Atmospheric particulate matter is comprised of finely divided solids and liquids such as dust, soot, aerosols, fumes, and mists. The particulates that are of particular concern are PM₁₀ (which measures no more than 10 microns in diameter) and PM_{2.5}, (a fine particulate measuring no more than 2.5 microns in diameter). The characteristics, sources, and potential health effects associated with the small particulates (those between 2.5 and 10 microns in diameter) and PM_{2.5} can be different. Major man-made sources of PM₁₀ are agricultural operations, industrial processes, combustion of fossil fuels, construction, demolition operations, and entrainment of road dust into the atmosphere. Natural sources include windblown dust, wildfire smoke, and sea spray salt. The finer, PM_{2.5} particulates are generally associated with combustion processes as well as being formed in the atmosphere as a secondary pollutant through chemical reactions. PM_{2.5} is more likely to penetrate deeply into the lungs and poses a serious health threat to all groups, but particularly to the elderly, children, and those with respiratory problems. More than half of the small and fine particulate matter that is inhaled into the lungs remains there, which can cause permanent lung damage. These materials can damage health by interfering with the body's mechanisms for clearing the respiratory tract or by acting as carriers of an absorbed toxic substance.

Local Air Quality

The air quality monitoring station located nearest to the project site is the Veteran's Administration (VA) Hospital in West Los Angeles, approximately 14 miles east of the project site. However, this station does not monitor PM₁₀ or PM_{2.5} emissions. Therefore, the West Palm Avenue monitoring station was also used, as shown in Table 2. Ambient air quality data obtained from these stations characterize the air quality representative of the ambient air quality in the project area.

Table 2 indicates the number of days that each of the standards has been exceeded at the closest monitoring station. As shown, the ozone concentration exceeded state standards eight times in 2008, five times in 2009 and three times in 2010. The PM₁₀ concentration exceeded the state standards five times in 2008 and ten times in 2009 but did not exceed state standards in 2010 and did not exceed the federal standards in 2008, 2009 or 2010. The PM_{2.5} concentration exceeded federal standards on two days in 2008, 11 days in 2009 and four days in 2010. No exceedances of either the state or federal standards for NO₂ or CO have occurred at either monitoring station in the last three years. Table 2 indicates that background CO levels are well within standards.



**Table 2
 Ambient Air Quality Data**

Pollutant	2008	2009	2010
Ozone, ppm - Worst Hour	0.97	0.95	0.79
Number of days of State exceedances (>0.09 ppm)	8	5	3
Number of days of Federal exceedances (>0.12 ppm)	2	3	1
Carbon Monoxide, ppm - Worst 8 Hours	1.76	1.51	1.44
Number of days of State/Federal exceedances (>9.0 ppm)	0	0	0
Nitrogen Dioxide, ppm - Worst Hour	0.090	0.077	0.071
Number of days of State exceedances (>0.25 ppm)	0	0	0
Particulate Matter <10 microns, $\mu\text{g}/\text{m}^3$ Worst 24 Hours ¹	118.5	130.3	51
Number of samples of State exceedances (>50 $\mu\text{g}/\text{m}^3$)	5	10	0
Number of samples of Federal exceedances (>150 $\mu\text{g}/\text{m}^3$)	0	0	0
Particulate Matter <2.5 microns, $\mu\text{g}/\text{m}^3$ Worst 24 Hours ¹	68.9	67.5	43.7
Number of samples of Federal exceedances (>35 $\mu\text{g}/\text{m}^3$)	2	11	4

West Los Angeles-VA Hospital Monitoring Station

¹ Burbank-West Palm Avenue Monitoring Station

Source: ARB, 2008, 2009, 2010 Annual Air Quality Data Summaries available at

<http://www.arb.ca.gov/adam/topfour/topfour1.php>

Air Quality Management Plan

Under state law, the SCAQMD is required to prepare a plan for air quality improvement for pollutants for which the District is in non-compliance. The SCAQMD updates the plan every three years. Each iteration of the SCAQMD's Air Quality Management Plan (AQMP) is an update of the previous plan and has a 20-year horizon. SCAQMD staff is currently developing the 2012 AQMP. The 2007 AQMP incorporates new scientific data and notable regulatory actions that have occurred since adoption of the 2003 AQMP. The SCAQMD adopted the 2007 AQMP on June 1, 2007. It was updated March 4, 2011 to include revisions to PM_{2.5} and Ozone State Implementation Plan for the Basin. The 2007 AQMP incorporates the revisions made in 2011.

The 2007 AQMP was prepared to ensure continued progress towards clean air and comply with state and federal requirements. This AQMP builds upon the approaches taken in the 2003 AQMP for the South Coast Air Basin for the attainment of the federal ozone air quality standard. This AQMP highlights the significant amount of reductions needed and the urgent need to identify additional strategies, especially in the area of mobile sources, to meet all federal criteria pollutant standards within the timeframes allowed under the Clean Air Act. New standards allow for a longer compliance schedule for federal fine particulates and 8-hour ozone, but with more stringent PM₁₀ and 1-hour ozone standards. The 2007 AQMP proposes attainment demonstration of the federal PM_{2.5} standards through a more focused control of



sulfur oxides (SO_x), directly-emitted PM_{2.5}, and NO_x supplemented with ROG by 2015. The 8-hour ozone control strategy builds upon the PM_{2.5} strategy, augmented with additional NO_x and ROG reductions to meet the standard by 2024 assuming a bump-up is obtained. Further, the 2007 AQMP aims to reduce mobile source emissions by discussing measures that would address the remaining air quality standard exceedances in the region. The 2007 AQMP is incorporated by reference and available to download at <http://www.aqmd.gov/aqmp/07aqmp/index.html>.

Sensitive Receptors

Ambient air quality standards have been established to represent the levels of air quality considered sufficient, with an adequate margin of safety, to protect public health and welfare. They are designed to protect that segment of the public most susceptible to respiratory distress, such as children under 14; the elderly over 65; persons engaged in strenuous work or exercise; and people with cardiovascular and chronic respiratory diseases. The majority of sensitive receptor locations are therefore schools and hospitals. Sensitive receptors likely to be affected by air quality impacts associated with project construction include residents to the northeast of the project site, as well as Webster Elementary School. Based on the project plans, construction activities may occur within approximately 600 feet of Our Lady of Malibu Church, 650 feet of the nearest residences to the east of the project site, 750 feet of Webster Elementary School, and 950 feet of Pepperdine University. Therefore, the sensitive receptor closest to the project site, where construction activities may occur, would be Our Lady of Malibu Church, which is located across Civic Center Way approximately 350 feet north of the project site boundary, and 600 feet north of the area proposed for construction. Air pollutant emissions associated with long-term use of the site are not location specific, but rather are a contribution to the airshed as a whole.

IMPACT ANALYSIS

Methodology and Significance Thresholds

This air quality analysis conforms to the methodologies recommended in the SCAQMD's *CEQA Air Quality Handbook* (1993). The handbook includes thresholds for emissions associated with both construction and operation of proposed projects.

The construction activities associated with development would generate diesel emissions and dust. Construction equipment that would generate criteria air pollutants includes excavators, graders, dump trucks, and loaders. Some of this equipment would be used during grading activities as well as when structures are constructed. It is assumed that all construction equipment used would be diesel-powered. The regional construction emissions associated with development of the proposed project were calculated using the California Emissions Estimator Model (CalEEMod) computer program developed for the SCAQMD by estimating the types and number of pieces of equipment that would be used on-site during each of the construction phases. These construction emissions are analyzed using the regional thresholds established by the SCAQMD and published in the *CEQA Air Quality Handbook*.



Operational emissions associated with on-site development were estimated using the CalEEMod computer program. Operational emissions include mobile source emissions, energy emissions, and area source emissions. Mobile source emissions are generated by the increase in motor vehicle trips to and from the project site associated with operation of on-site development. Emissions attributed to energy use include electricity and natural gas consumption for space and water heating. Area source emissions are generated by landscape maintenance equipment, consumer products and architectural coating. To determine whether a regional air quality impact would occur, the increase in emissions would be compared with the SCAQMD's recommended regional thresholds for operational emissions.

Regional Thresholds. To determine whether a proposed project would have a significant impact to air quality, Appendix G of the *CEQA Guidelines* questions whether a project would:

- a) Conflict with or obstruct implementation of the applicable air quality plan;
- b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors);
- d) Expose sensitive receptors to substantial pollutant concentrations; or
- e) Create objectionable odors affecting a substantial number of people.

The SCAQMD has developed specific numeric thresholds that apply to projects within the South Coast Air Basin. The SCAQMD has established the following significance thresholds for construction activities within the South Coast Air Basin:

- 75 pounds per day of ROG
- 100 pounds per day of NO_x
- 550 pounds per day of CO
- 150 pounds per day of PM₁₀
- 55 pounds per day of PM_{2.5}

The SCAQMD has also established the following significance thresholds for project operations within the South Coast Air Basin:

- 55 pounds per day of ROG
- 55 pounds per day of NO_x
- 550 pounds per day of CO
- 150 pounds per day of SO_x
- 150 pounds per day of PM₁₀
- 55 pounds per day of PM_{2.5}

Localized Significance Thresholds. In addition to the above thresholds, the SCAQMD has developed Localized Significance Thresholds (LSTs) in response to the Governing Board's Environmental Justice Enhancement Initiative (1-4), which was prepared to update the *CEQA Air Quality Handbook*. LSTs were devised in response to concern regarding exposure of individuals to criteria pollutants in local communities. LSTs represent the maximum emissions



from a project that will not cause or contribute to an air quality exceedance of the most stringent applicable federal or state ambient air quality standard at the nearest sensitive receptor, taking into consideration ambient concentrations in each source receptor area (SRA), project size, distance to the sensitive receptor, etc. However, LSTs only apply to emissions within a fixed stationary location, including idling emissions during both project construction and operation. LSTs have been developed for NO_x, CO, PM₁₀ and PM_{2.5}. LSTs are not applicable to mobile sources such as cars on a roadway (SCAQMD, June 2003). As such, LSTs for operational emissions do not apply to on-site development, as the majority of emissions would be generated by cars on the roadways. LSTs for construction are shown in Table 3.

Table 3
SCAQMD LSTs for Construction

Pollutant	Allowable emissions as a function of receptor distance in feet from a five-acre site (lbs/day)				
	82 Feet	164 Feet	328 Feet	656 Feet	1,640 Feet
Gradual conversion of NO _x to NO ₂	221	212	226	250	312
CO	1,531	1,985	2,762	4,383	10,467
PM ₁₀	13	40	55	84	174
PM _{2.5}	6	8	14	29	95

Source: SCAQMD, June 2003, <http://www.aqmd.gov/CEQA/handbook/LST/appC.pdf>, accessed online March 2012.

LSTs have been developed for emissions within construction areas up to five acres in size. The SCAQMD provides lookup tables for project sites that measure one, two, or five acres. The project site is located in Source Receptor Area 2 (SRA-2) and this analysis assumes that there would be no more than five acres of the site under active construction at one time. Therefore, the five-acre LSTs are used for significance determinations herein. According to the SCAQMD's publication *Final Localized Significant (LST) Thresholds Methodology*, the use of LSTs is voluntary, to be implemented at the discretion of local agencies.

Construction Impacts

Project construction would generate temporary air pollutant emissions. These impacts are associated with fugitive dust (PM₁₀ and PM_{2.5}) and exhaust emissions from heavy construction vehicles and soil hauling trucks, in addition to ROG that would be released during the drying phase upon application of architectural coatings. Construction would generally consist of site preparation, grading, erection of the proposed buildings, paving and architectural coating.

14,819 truck trips associated with soil export from the project site during an estimated 86 days of site preparation would add up to 173 heavy truck trips per day on Malibu Canyon Road. The California Air Resources Board's (ARB's) *Air Quality and Land Use Handbook: A Community Health Perspective* (April 2005) recommends against siting sensitive receptors within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.



Sensitive receptors within 500 feet of Malibu Canyon Road include Webster Elementary School and residences north of the project site. Recent traffic counts for Malibu Canyon Road are not available; however, the project traffic study, conducted by Overland Traffic Consultants, shows that traffic volumes are higher on Pacific Coast Highway than on Malibu Canyon Road. According to California Department of Transportation (Caltrans) traffic data for 2011, average daily traffic on Pacific Coast Highway at Malibu Canyon Road is between 34,500 and 34,500. Because traffic levels on Malibu Canyon Road are lower, the addition of 173 truck trips on Malibu Canyon Road would not cause traffic levels exceeding 50,000 vehicles per day. As such, traffic on Malibu Canyon Road is not expected to create significant health risks to sensitive receptors even with temporary haul truck traffic.

The site preparation phase would involve the greatest amount of heavy equipment and the greatest generation of fugitive dust. For the purposes of modeling, it was assumed that the project would comply with the SCAQMD Rule 403, which identifies measures to reduce fugitive dust and is required to be implemented at all construction sites located within the South Coast Air Basin. Therefore, the following conditions, which would be required to reduce fugitive dust in compliance with SCAQMD Rule 403, were included in CalEEMod for the site preparation and grading phases of construction.

- 1. Minimization of Disturbance.** Construction contractors should minimize the area disturbed by clearing, grading, earth moving, or excavation operations to prevent excessive amounts of dust.
- 2. Soil Treatment.** Construction contractors should treat all graded and excavated material, exposed soil areas, and active portions of the construction site, including unpaved on-site roadways to minimize fugitive dust. Treatment shall include, but not necessarily be limited to, periodic watering, application of environmentally safe soil stabilization materials, and/or roll compaction as appropriate. Watering shall be done as often as necessary, and at least twice daily, preferably in the late morning and after work is done for the day.
- 3. Soil Stabilization.** Construction contractors should monitor all graded and/or excavated inactive areas of the construction site at least weekly for dust stabilization. Soil stabilization methods, such as water and roll compaction, and environmentally safe dust control materials, shall be applied to portions of the construction site that are inactive for over four days. If no further grading or excavation operations are planned for the area, the area shall be seeded and watered until landscape growth is evident, or periodically treated with environmentally safe dust suppressants, to prevent excessive fugitive dust.
- 4. No Grading During High Winds.** Construction contractors should stop all clearing, grading, earth moving, and excavation operations during periods of high winds (20 miles per hour or greater, as measured continuously over a one-hour period).



5. **Street Sweeping.** Construction contractors should sweep all on-site driveways and adjacent streets and roads at least once per day, preferably at the end of the day, if visible soil material is carried over to adjacent streets and roads.

Table 4 summarizes the estimated maximum daily emissions of pollutants during each of the major phases of construction.

Table 4
Estimated Construction Maximum Daily Air Pollutant Emissions (lbs/day)

Construction Phase	Maximum Emissions (lbs/day)				
	ROG	NO _x	CO	PM ₁₀	PM _{2.5}
2013 (On-site and Off-site)	19.91	174.60	101.26	326.41	10.68
2014 (On-site and Off-site)	7.40	46.78	47.72	6.46	2.81
2015 (On-site and Off-site)	57.39	30.19	21.53	2.76	2.56
Maximum lbs/day	57.45	174.60	101.26	326.41	10.68
<i>SCAQMD Thresholds</i>	75	100	550	150	55
Threshold Exceeded?	No	Yes	No	Yes	No
Maximum On-site lbs/day	<i>n/a</i>	97.47	52.85	7.67	5.95
<i>Local Significance Thresholds^f (LSTs) (On-site only)</i>	<i>n/a</i>	250	4,383	84	29
Threshold Exceeded?	n/a	No	No	No	No

Notes: All calculations were made using the CalEEMod computer model. See the Appendix for calculations. Site Preparation, Grading, Paving, Building Construction and Architectural Coating totals include worker trips, soil export hauling trips, construction vehicle emissions and fugitive dust.

** Site Preparation and Grading phases incorporate anticipated emissions reductions the conditions listed above, which are required by SCAQMD Rule 403 to reduce fugitive dust.*

^f LSTs are for a five-acre project in SRA-2 within a distance of 656 feet from the site boundary.

With the use of low-VOC paint, construction emissions would not exceed thresholds related to ROG. With adherence to the conditions listed above, as required by SCAQMD Rule 403, maximum daily emissions of fugitive dust (PM₁₀ and PM_{2.5}) would not exceed SCAQMD LST thresholds. However, haul truck trips associated with soil export from the project site would generate emissions exceeding the SCAQMD regional thresholds for NO_x and PM₁₀. Therefore, Mitigation Measures AQ-1 through AQ-5 are recommended to reduce air quality impacts.

- AQ-1 Soil Hauling Tarp Requirement.** All trucks hauling dirt, sand, soil, or other loose materials should be tarped with a fabric cover and maintain a freeboard height of 12 inches.



Based on the Arizona Department of Transportation Construction Analysis Services, *Final Field Study Report - PM₁₀ Control Management Study for ADOT Construction Projects* (June 1994), Mitigation Measure AQ-1 would reduce PM₁₀ emissions from soil hauling vehicles by 91%, which is the equivalent of 282.83 lbs/day. Therefore, Mitigation Measure AQ-1 would reduce maximum PM₁₀ emissions to 43.58 lbs/day, which is below the SCAQMD regional PM₁₀ threshold of 150 lbs/day.

- AQ-2 On-Road NO_x Emission Control Technologies.** All trucks hauling dirt, sand, soil, or other loose materials should be equipped with CARB verified Level 3 Plus off-road engine emission control technologies.
- AQ-3 Off-Road NO_x Emission Control Technologies.** All mobile off-road equipment used during the site preparation and grading phases of project construction should meet Tier 4 standards.

According to SCAQMD¹, CARB verified Level 3 Plus on-road engine emission control technologies reduce NO_x emissions from on-road vehicles by 25%, which is the equivalent of 23.65 lbs/day. According to SCAQMD², increasing off-road loaders (estimated at 75 horsepower) to Tier 4 standards would reduce NO_x emissions from this equipment by a minimum of 25%, which is the equivalent of 20.00 lbs/day. Therefore, Mitigation Measures AQ-2 and AQ-3 would reduce maximum NO_x emissions to 130.95 lbs/day, which would still exceed the SCAQMD regional NO_x thresholds of 100 lbs/day by 30.95 lbs/day.

- AQ-4 Soil Hauling Daily Trip Limit.** Truck trips hauling soil export from the project site should be limited to a maximum of 130 trips per day.

Limiting soil hauling truck trips to 130 trips per day would reduce NO_x emissions during the site preparation phase of construction to less than 100 lbs/day, based on the following calculation:

$$14,819 \text{ soil hauling trips} \div 86 \text{ days} = 173 \text{ trips/day}$$

$$130.95 \text{ lbs NO}_x/\text{day} \div 173 \text{ trips/day} = 0.76 \text{ lbs NO}_x/\text{trip}$$

$$100 \text{ lbs NO}_x/\text{day} [\text{threshold}] \div 0.76 \text{ lbs NO}_x/\text{trip} = 131.6 \text{ trips}$$

If limiting soil hauling truck trips is determined to be infeasible or undesirable due to the project construction schedule, Mitigation Measure AQ-5 would allow the project applicant to mitigate NO_x emissions during the site preparation phase of construction through payment of Mobile Source Emission Reduction Credits (MSERCs) to SCAQMD.

- AQ-5 Mobile Source Emission Reduction Credits.** Pursuant to SCAQMD Rule 2022, the project applicant shall reduce NO_x emissions by purchasing MSERCs from SCAQMD for each pound of NO_x emissions in excess of the daily SCAQMD regional NO_x threshold of 100 lbs/day during project

¹ http://www.aqmd.gov/ceqa/handbook/mitigation/onroad/MM_onroad.html

² http://www.aqmd.gov/ceqa/handbook/mitigation/offroad/MM_offroad.html



construction. The total amount of MSERCs required to mitigate NO_x emissions during the site preparation phase of project construction would be 2,661.7 (30.95 lbs/day * 86 days).

Implementation of either Mitigation Measure 4 or Mitigation Measure 5 would reduce NO_x emissions during the site preparation phase of project construction below the SCAQMD regional NO_x threshold of 100 lbs/day.

Long-Term Regional Impacts

Air Pollutant Emissions

Table 5 summarizes projected emissions associated with operation of the proposed project. The majority of project-related operational emissions would be due to vehicle trips to and from the site. The Institute of Transportation Engineers traffic generation rates for retail, restaurant, and health club uses were used for the traffic analysis in order to provide a conservative estimate of the potential traffic generation impacts, and were adjusted to account for internal capture, consistent with the methodology used in the project traffic study. In addition, the emissions modeling accounts for the proposed project's proximity to transit (approximately 600 feet from Metro Route 534, which operates along Civic Center Way) and the increasing density and number of jobs in the area. As shown in Table 5, project generated emissions would not exceed the SCAQMD thresholds for ROG, NO_x, CO, SO_x, PM₁₀ and PM_{2.5}. As discussed above, CO background levels are low; therefore, based on project related emissions, no exceedances of state or federal CO standards is anticipated. In addition, because the proposed project would involve development of a luxury hotel resort, it would not create or emits odors. Therefore, impacts would be less than significant.

**Table 5
 Project Operational Emissions**

Emissions Source	Estimated Emissions (lbs/day)					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Vehicles	9.18	21.07	83.95	0.15	16.14	1.44
Electricity and Natural Gas Consumption, Landscaping, Consumer Products	12.91	3.46	2.91	0.02	0.26	0.26
Maximum lbs/day	22.09	24.53	86.86	0.17	16.40	1.70
<i>SCAQMD Thresholds</i>	55	55	550	150	150	55
Threshold Exceeded?	No	No	No	No	No	No

See Appendix for CalEEMod computer model output.



Carbon Monoxide Hotspot Analysis

Areas with high vehicle density, such as congested intersections, have the potential to create high concentrations of CO, known as CO hot spots. A project's localized air quality impact is considered significant if CO emissions create a hot spot where either the California one-hour standard of 20 ppm or the federal and state eight-hour standard of 9.0 ppm is exceeded. This typically occurs at severely congested intersections (level of service [LOS] E or worse). Pursuant to SCAQMD guidance, a CO hotspot analysis should be conducted for intersections where the proposed project would have a significant impact at a signalized intersection, causing the LOS to change to E or F, or when the volume to capacity ratio (V/C) increases by 2% or more as a result of a proposed project for intersections rated D or worse (SCAQMD, 2003).

The Bay Area Air Quality Management District (BAAQMD) has developed a screening methodology for potential CO hotspots that provides lead agencies with a conservative indication of whether a proposed project may result in CO emissions that exceed the California or federal standards. This screening methodology is one of the most recently developed methodologies for analyzing potential CO hotspots and has been used throughout California for CO hotspot analysis. According to the BAAQMD CO impact methodology, a project would result in less than significant impacts to localized CO concentrations if the following screening criteria are met:

1. The project is consistent with an applicable congestion management program established by the County Congestion Management Agency for designated roads or highways, regional transportation plan, and local congestion management agency plans.
2. The project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
3. The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited, (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

The Los Angeles County Congestion Management Program (CMP) was adopted to regulate and monitor regional traffic growth and transportation improvement programs. The CMP designates a transportation network which includes all state highways and some arterials within the County of Los Angeles. The CMP intersections listed below are analyzed in the project traffic study.

1. Topanga Canyon Boulevard and Pacific Coast Highway
2. Las Flores Canyon Road and Pacific Coast Highway
3. Malibu Canyon Road and Pacific Coast Highway
4. Kanan Dume Road and Pacific Coast Highway

The project traffic study found that, with the incorporation of recommended traffic mitigation measures, the project's traffic impacts would be fully mitigated, and the project would be consistent with the County CMP.



In addition, as shown in the project traffic study, the project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour. None of the local CMP intersections have substantially limited vertical and/or horizontal mixing. Therefore, significant impacts related to CO concentrations would not occur at any of the project intersections.

AQMP Consistency

A project may be inconsistent with the AQMP if it would generate population, housing or employment growth exceeding the forecasts used in the development of the AQMP. The 2007 AQMP, the most recent AQMP adopted by the SCAQMD, incorporates in part local city general plans and the Southern California Association of Government’s (SCAG) Regional Transportation Plan socioeconomic forecast projections of regional population, housing and employment growth.

The proposed project involves the development of a 146-room luxury hotel and related facilities and would not involve the development of residential uses that would cause a direct increase in the City’s population. However, the proposed project could cause an indirect increase in the City’s population through an increase in employment as a result of development of the luxury resort project (approximately eight acres of commercial hotel space). Using the SCAG employment density factor for West Los Angeles County of 51.91 employees per acre, the development of eight acres of commercial hotel space would generate an estimated 415 jobs (eight acres x 51.91 employees/acre) (SCAG, 2001). SCAG forecasts that the region will add 2.5 million new jobs, between 2005 and 2035, for a total of 10.3 million jobs in 2035 (SCAG, 2008). The 415 new employees, generated by development of the proposed project, would constitute approximately 0.02% of the new job growth in the region. Therefore, the proposed project would be consistent with the AQMP and impacts would be less than significant.

Cumulative Air Quality Impacts

Table 6 compares project operational emissions (from Table 5) to estimated emissions associated with full buildout of the City’s cumulative projects list.

**Table 6
 Cumulative Operational Emissions**

Emissions Source	Estimated Emissions (lbs/day)					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Project Emissions from Table 5 (lbs/day)	22.09	24.53	86.86	0.17	16.40	1.70
Malibu Cumulative Emissions ¹ (lbs/day)	339.50	452.81	2,180.33	4.15	417.91	93.05
Project Contribution to Cumulative Emissions	6.51%	5.42%	3.98%	4.10%	3.92%	1.83%

1: Cumulative emissions estimated based on the City of Malibu Cumulative Projects list (last updated August 1, 2012). See Appendix for CalEEMod computer model output.



As shown in Table 6, project operational emissions represent between 6.5% and 1.8% of cumulative criteria pollutant emissions in Malibu, depending on the specific pollutant.

The SCAQMD's *CEQA Air Quality Handbook* identifies possible methods to determine the cumulative significance of land use projects. These methods differ from the methodology used in other cumulative impact analyses in which all-foreseeable future development within a given service boundary or geographical area is predicted and its impacts measured. The SCAQMD has not identified thresholds to which the total emissions of all cumulative development can be compared. Instead, the SCAQMD's methods are based on performance standards and emission reduction targets necessary to attain the federal and State air quality standards, as predicted in the AQMP.

As discussed previously, the 2007 AQMP was prepared to comply with state and federal requirements. According to the *CEQA Air Quality Handbook*, projects that are consistent with the AQMP performance standards and emission reduction targets should be considered cumulatively less than significant, unless there is other pertinent information to the contrary. As discussed above, the proposed project would be consistent with the AQMP; therefore, cumulative air quality impacts would be less than significant.



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Appendix



CalEEMod.Air Quality Model Worksheets - Summer

Rancho Malibu Resort Project
Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Parking Lot	52	Space
Parking Structure	474	Space
Health Club	30.57	1000sqft
Hotel	146	Room
Quality Restaurant	7.71	1000sqft
User Defined Retail	22.5	User Defined Unit

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 2.2 **Utility Company** Southern California Edison
Climate Zone 8 **Precipitation Freq (Days)** 33

1.3 User Entered Comments

Project Characteristics -

Land Use - Acreages updated based on November 2011 traffic study and project description.

Construction Phase - Construction schedule estimated based on project description.

Site Prep: 3/8/13 - 86 days

Grading 7/6/13 - 56 days

Construction 9/24/2013 - 307 days

Paving: 11/27/14 - 65 days

Arch Coatings: 2/26/15 - 130 days

Trips and VMT - 14,819 haul trips, from project applicant.

Grading - Soil export = 14,819 trips carrying 13 cy each = 189,760 cy. Total acres disturbed = total acreage in Land Use tab.

Architectural Coating - Low VOC paints consistent with California's standard.

Vehicle Trips - Trip rates modified based on project traffic study, less internal capture (page 17 of traffic study).

Construction Off-road Equipment Mitigation - Dust control measures consistent with SCAQMD Rule 403.

Mobile Land Use Mitigation - Jobs generation rate from SCAG.

Nerest transit is MTA Route 534 on Civic Center Way.

Mobile Commute Mitigation -

Area Mitigation - Low VOC paints consistent with California's standard.

Energy Mitigation -

Water Mitigation -

Energy Use - User defined retail energy use

Water And Wastewater - User defined retail water and wastewater use

Solid Waste - User defined retail solid waste generation.

Waste Mitigation - 50% diversion rate as required by the California Integrated Waste Management Act

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	19.91	174.60	101.26	0.21	364.01	8.17	372.18	10.46	8.17	18.63	0.00	22,730.70	0.00	1.38	0.00	22,759.75
2014	7.40	46.78	47.72	0.09	4.20	2.74	6.82	0.19	2.74	2.81	0.00	9,246.77	0.00	0.65	0.00	9,260.35
2015	57.39	30.19	21.53	0.03	0.68	2.55	2.78	0.03	2.55	2.56	0.00	3,103.45	0.00	0.45	0.00	3,112.89
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	19.91	174.60	101.26	0.21	318.24	8.17	326.41	2.51	8.17	10.68	0.00	22,730.70	0.00	1.38	0.00	22,759.75
2014	7.40	46.78	47.72	0.09	3.84	2.74	6.46	0.19	2.74	2.81	0.00	9,246.77	0.00	0.65	0.00	9,260.35
2015	57.39	30.19	21.53	0.03	0.62	2.55	2.76	0.03	2.55	2.56	0.00	3,103.45	0.00	0.45	0.00	3,112.89
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	13.88	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.38	3.46	2.91	0.02		0.00	0.26		0.00	0.26		4,157.65		0.08	0.08	4,182.95
Mobile	9.53	22.09	88.20	0.16	16.21	0.97	17.18	0.56	0.97	1.53		15,388.57		0.58		15,400.75
Total	23.79	25.55	91.11	0.18	16.21	0.97	17.44	0.56	0.97	1.79		19,546.22		0.66	0.08	19,583.70

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	12.53	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.38	3.46	2.91	0.02		0.00	0.26		0.00	0.26		4,157.65		0.08	0.08	4,182.95
Mobile	9.18	21.07	83.95	0.15	15.22	0.91	16.14	0.53	0.91	1.44		14,481.01		0.55		14,492.54
Total	22.09	24.53	86.86	0.17	15.22	0.91	16.40	0.53	0.91	1.70		18,638.66		0.63	0.08	18,675.49

3.0 Construction Detail

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation (Soil Export) - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.45	0.00	18.45	9.97	0.00	9.97						0.00
Off-Road	9.90	79.99	45.35	0.07		3.93	3.93		3.93	3.93		7,997.69		0.89		8,016.38
Total	9.90	79.99	45.35	0.07	18.45	3.93	22.38	9.97	3.93	13.90		7,997.69		0.89		8,016.38

3.2 Site Preparation (Soil Export) - 2013

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.89	94.49	54.51	0.14	345.28	4.22	349.51	0.48	4.22	4.71		14,501.74		0.48		14,511.81
Vendor	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
Worker	0.12	0.12	1.40	0.00	0.28	0.01	0.29	0.01	0.01	0.02		231.27		0.01		231.56
Total	10.01	94.61	55.91	0.14	345.56	4.23	349.80	0.49	4.23	4.73		14,733.01		0.49		14,743.37

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.74	0.00	3.74	2.02	0.00	2.02						0.00
Off-Road	9.90	79.99	45.35	0.07		3.93	3.93		3.93	3.93	0.00	7,997.69		0.89		8,016.38
Total	9.90	79.99	45.35	0.07	3.74	3.93	7.67	2.02	3.93	5.95	0.00	7,997.69		0.89		8,016.38

3.2 Site Preparation (Soil Export) - 2013

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.89	94.49	54.51	0.14	314.25	4.22	318.47	0.48	4.22	4.71		14,501.74		0.48		14,511.81
Vendor	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
Worker	0.12	0.12	1.40	0.00	0.25	0.01	0.26	0.01	0.01	0.02		231.27		0.01		231.56
Total	10.01	94.61	55.91	0.14	314.50	4.23	318.73	0.49	4.23	4.73		14,733.01		0.49		14,743.37

3.3 Grading - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.23	0.00	6.23	3.31	0.00	3.31						0.00
Off-Road	11.85	97.47	52.85	0.10		4.59	4.59		4.59	4.59		10,856.66		1.06		10,878.90
Total	11.85	97.47	52.85	0.10	6.23	4.59	10.82	3.31	4.59	7.90		10,856.66		1.06		10,878.90

3.3 Grading - 2013

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	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
Worker	0.13	0.13	1.56	0.00	0.31	0.01	0.32	0.01	0.01	0.02		256.97		0.02		257.29
Total	0.13	0.13	1.56	0.00	0.31	0.01	0.32	0.01	0.01	0.02		256.97		0.02		257.29

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.26	0.00	1.26	0.67	0.00	0.67						0.00
Off-Road	11.85	97.47	52.85	0.10		4.59	4.59		4.59	4.59	0.00	10,856.66		1.06		10,878.90
Total	11.85	97.47	52.85	0.10	1.26	4.59	5.85	0.67	4.59	5.26	0.00	10,856.66		1.06		10,878.90

3.3 Grading - 2013

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	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
Worker	0.13	0.13	1.56	0.00	0.28	0.01	0.29	0.01	0.01	0.02		256.97		0.02		257.29
Total	0.13	0.13	1.56	0.00	0.28	0.01	0.29	0.01	0.01	0.02		256.97		0.02		257.29

3.4 Building Construction - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.17	34.66	23.45	0.04		2.28	2.28		2.28	2.28		4,040.62		0.46		4,050.31
Total	5.17	34.66	23.45	0.04		2.28	2.28		2.28	2.28		4,040.62		0.46		4,050.31

3.4 Building Construction - 2013

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	1.42	14.74	9.54	0.02	0.81	0.54	1.35	0.06	0.54	0.60		2,407.75		0.07		2,409.22
Worker	1.49	1.46	17.20	0.03	3.39	0.12	3.51	0.13	0.12	0.24		2,839.51		0.17		2,843.08
Total	2.91	16.20	26.74	0.05	4.20	0.66	4.86	0.19	0.66	0.84		5,247.26		0.24		5,252.30

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.17	34.66	23.45	0.04		2.28	2.28		2.28	2.28	0.00	4,040.62		0.46		4,050.31
Total	5.17	34.66	23.45	0.04		2.28	2.28		2.28	2.28	0.00	4,040.62		0.46		4,050.31

3.4 Building Construction - 2013

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	1.42	14.74	9.54	0.02	0.74	0.54	1.28	0.06	0.54	0.60		2,407.75		0.07		2,409.22
Worker	1.49	1.46	17.20	0.03	3.10	0.12	3.21	0.13	0.12	0.24		2,839.51		0.17		2,843.08
Total	2.91	16.20	26.74	0.05	3.84	0.66	4.49	0.19	0.66	0.84		5,247.26		0.24		5,252.30

3.4 Building Construction - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.74	32.06	23.20	0.04		2.02	2.02		2.02	2.02		4,040.61		0.42		4,049.51
Total	4.74	32.06	23.20	0.04		2.02	2.02		2.02	2.02		4,040.61		0.42		4,049.51

3.4 Building Construction - 2014

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	1.28	13.38	8.65	0.02	0.81	0.48	1.29	0.06	0.48	0.54		2,412.53		0.06		2,413.87
Worker	1.38	1.34	15.88	0.03	3.39	0.12	3.51	0.13	0.12	0.25		2,793.63		0.16		2,796.97
Total	2.66	14.72	24.53	0.05	4.20	0.60	4.80	0.19	0.60	0.79		5,206.16		0.22		5,210.84

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.74	32.06	23.20	0.04		2.02	2.02		2.02	2.02	0.00	4,040.61		0.42		4,049.51
Total	4.74	32.06	23.20	0.04		2.02	2.02		2.02	2.02	0.00	4,040.61		0.42		4,049.51

3.4 Building Construction - 2014

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	1.28	13.38	8.65	0.02	0.74	0.48	1.22	0.06	0.48	0.54		2,412.53		0.06		2,413.87
Worker	1.38	1.34	15.88	0.03	3.10	0.12	3.22	0.13	0.12	0.25		2,793.63		0.16		2,796.97
Total	2.66	14.72	24.53	0.05	3.84	0.60	4.44	0.19	0.60	0.79		5,206.16		0.22		5,210.84

3.5 Paving - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.20	32.09	20.70	0.03		2.74	2.74		2.74	2.74		2,917.65		0.47		2,927.48
Paving	0.02					0.00	0.00		0.00	0.00						0.00
Total	5.22	32.09	20.70	0.03		2.74	2.74		2.74	2.74		2,917.65		0.47		2,927.48

3.5 Paving - 2014

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	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
Worker	0.09	0.09	1.08	0.00	0.23	0.01	0.24	0.01	0.01	0.02		189.61		0.01		189.84
Total	0.09	0.09	1.08	0.00	0.23	0.01	0.24	0.01	0.01	0.02		189.61		0.01		189.84

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.20	32.09	20.70	0.03		2.74	2.74		2.74	2.74	0.00	2,917.65		0.47		2,927.48
Paving	0.02					0.00	0.00		0.00	0.00						0.00
Total	5.22	32.09	20.70	0.03		2.74	2.74		2.74	2.74	0.00	2,917.65		0.47		2,927.48

3.5 Paving - 2014

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	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
Worker	0.09	0.09	1.08	0.00	0.21	0.01	0.22	0.01	0.01	0.02		189.61		0.01		189.84
Total	0.09	0.09	1.08	0.00	0.21	0.01	0.22	0.01	0.01	0.02		189.61		0.01		189.84

3.5 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	lb/day										lb/day					
Off-Road	4.89	30.10	20.54	0.03		2.54	2.54		2.54	2.54		2,917.65		0.44		2,926.87
Paving	0.02					0.00	0.00		0.00	0.00						0.00
Total	4.91	30.10	20.54	0.03		2.54	2.54		2.54	2.54		2,917.65		0.44		2,926.87

3.5 Paving - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	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
Worker	0.09	0.08	0.99	0.00	0.23	0.01	0.24	0.01	0.01	0.02		185.81		0.01		186.02
Total	0.09	0.08	0.99	0.00	0.23	0.01	0.24	0.01	0.01	0.02		185.81		0.01		186.02

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.89	30.10	20.54	0.03		2.54	2.54		2.54	2.54	0.00	2,917.65		0.44		2,926.87
Paving	0.02					0.00	0.00		0.00	0.00						0.00
Total	4.91	30.10	20.54	0.03		2.54	2.54		2.54	2.54	0.00	2,917.65		0.44		2,926.87

3.5 Paving - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	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
Worker	0.09	0.08	0.99	0.00	0.21	0.01	0.22	0.01	0.01	0.02		185.81		0.01		186.02
Total	0.09	0.08	0.99	0.00	0.21	0.01	0.22	0.01	0.01	0.02		185.81		0.01		186.02

3.6 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	lb/day										lb/day					
Archit. Coating	56.73					0.00	0.00		0.00	0.00						0.00
Off-Road	0.41	2.57	1.90	0.00		0.22	0.22		0.22	0.22		281.19		0.04		281.96
Total	57.14	2.57	1.90	0.00		0.22	0.22		0.22	0.22		281.19		0.04		281.96

3.6 Architectural Coating - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	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
Worker	0.26	0.24	2.91	0.01	0.68	0.02	0.70	0.03	0.02	0.05		545.03		0.03		545.66
Total	0.26	0.24	2.91	0.01	0.68	0.02	0.70	0.03	0.02	0.05		545.03		0.03		545.66

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	56.73					0.00	0.00		0.00	0.00						0.00
Off-Road	0.41	2.57	1.90	0.00		0.22	0.22		0.22	0.22	0.00	281.19		0.04		281.96
Total	57.14	2.57	1.90	0.00		0.22	0.22		0.22	0.22	0.00	281.19		0.04		281.96

3.6 Architectural Coating - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	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
Worker	0.26	0.24	2.91	0.01	0.62	0.02	0.64	0.03	0.02	0.05		545.03		0.03		545.66
Total	0.26	0.24	2.91	0.01	0.62	0.02	0.64	0.03	0.02	0.05		545.03		0.03		545.66

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

- Increase Density
- Increase Transit Accessibility
- Employee Vanpool/Shuttle

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	9.18	21.07	83.95	0.15	15.22	0.91	16.14	0.53	0.91	1.44		14,481.01		0.55		14,492.54
Unmitigated	9.53	22.09	88.20	0.16	16.21	0.97	17.18	0.56	0.97	1.53		15,388.57		0.58		15,400.75
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Health Club	352.47	223.16	286.14	835,194	784,111
Hotel	1,192.82	1,195.74	868.70	3,193,188	2,997,927
Parking Lot	0.00	0.00	0.00		
Parking Structure	0.00	0.00	0.00		
Quality Restaurant	346.80	363.76	278.18	617,203	579,439
User Defined Retail	289.80	337.28	170.33		
Total	2,181.89	2,119.93	1,603.34	4,645,585	4,361,476

4.3 Trip Type Information

Land Use	Miles			Trip %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Health Club	8.90	13.30	7.40	16.90	64.10	19.00

Land Use	Miles			Trip %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Hotel	8.90	13.30	7.40	19.40	61.60	19.00
Parking Lot	8.90	13.30	7.40	0.00	0.00	0.00
Parking Structure	8.90	13.30	7.40	0.00	0.00	0.00
Quality Restaurant	8.90	13.30	7.40	12.00	69.00	19.00
User Defined Retail	8.90	13.30	7.40	16.30	64.70	19.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.38	3.46	2.91	0.02		0.00	0.26		0.00	0.26		4,157.65		0.08	0.08	4,182.95
NaturalGas Unmitigated	0.38	3.46	2.91	0.02		0.00	0.26		0.00	0.26		4,157.65		0.08	0.08	4,182.95
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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	lb/day										lb/day					
Health Club	1812.72	0.02	0.18	0.15	0.00		0.00	0.01		0.00	0.01		213.26		0.00	0.00	214.56
Hotel	27832.8	0.30	2.73	2.29	0.02		0.00	0.21		0.00	0.21		3,274.45		0.06	0.06	3,294.37
Parking Lot	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Parking Structure	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Quality Restaurant	5568.12	0.06	0.55	0.46	0.00		0.00	0.04		0.00	0.04		655.07		0.01	0.01	659.06
User Defined Retail	126.37	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00		14.87		0.00	0.00	14.96
Total		0.38	3.47	2.91	0.02		0.00	0.26		0.00	0.26		4,157.65		0.07	0.07	4,182.95

5.2 Energy by Land Use - NaturalGas

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	lb/day										lb/day					
Health Club	1.81272	0.02	0.18	0.15	0.00		0.00	0.01		0.00	0.01		213.26		0.00	0.00	214.56
Hotel	27.8328	0.30	2.73	2.29	0.02		0.00	0.21		0.00	0.21		3,274.45		0.06	0.06	3,294.37
Parking Lot	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Parking Structure	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Quality Restaurant	5.56812	0.06	0.55	0.46	0.00		0.00	0.04		0.00	0.04		655.07		0.01	0.01	659.06
User Defined Retail	0.12637	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00		14.87		0.00	0.00	14.96
Total		0.38	3.47	2.91	0.02		0.00	0.26		0.00	0.26		4,157.65		0.07	0.07	4,182.95

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	12.53	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	13.88	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	3.37					0.00	0.00		0.00	0.00						0.00
Consumer Products	10.51					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	13.88	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.02					0.00	0.00		0.00	0.00						0.00
Consumer Products	10.51					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	12.53	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00

7.0 Water Detail

7.1 Mitigation Measures Water

- Use Grey Water
- Install Low Flow Bathroom Faucet
- Install Low Flow Kitchen Faucet
- Install Low Flow Toilet
- Install Low Flow Shower

8.0 Waste Detail

8.1 Mitigation Measures Waste

Rancho Malibu Resort Project - Cumulative
Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Condo/Townhouse	32	Dwelling Unit
Regional Shopping Center	25.728	1000sqft
Single Family Housing	5	Dwelling Unit
High School	35.315	1000sqft
Single Family Housing	3	Dwelling Unit
Hospital	3.152	1000sqft
Single Family Housing	4	Dwelling Unit
Single Family Housing	2	Dwelling Unit
Single Family Housing	2	Dwelling Unit
Single Family Housing	2	Dwelling Unit
Single Family Housing	5	Dwelling Unit
General Office Building	9.685	1000sqft
Single Family Housing	4	Dwelling Unit
Regional Shopping Center	112.058	1000sqft

General Office Building	2	1000sqft
Supermarket	25	1000sqft
Quality Restaurant	4	1000sqft
Regional Shopping Center	10.839	1000sqft
Hospital	25	1000sqft
Condo/Townhouse	149	Dwelling Unit
Regional Shopping Center	76	1000sqft
Regional Shopping Center	394.137	1000sqft
Quality Restaurant	7.1	1000sqft
Quality Restaurant	5.904	1000sqft
General Office Building	2.63	1000sqft
Regional Shopping Center	4.517	1000sqft
General Office Building	2.499	1000sqft
Condo/Townhouse	8	Dwelling Unit
Single Family Housing	3	Dwelling Unit
Single Family Housing	4	Dwelling Unit
Single Family Housing	2	Dwelling Unit
Single Family Housing	3	Dwelling Unit
Single Family Housing	2	Dwelling Unit
Single Family Housing	1	Dwelling Unit

1.2 Other Project Characteristics

Urbanization Urban

Wind Speed (m/s) 2.2

Utility Company Southern California Edison

Climate Zone 8

Precipitation Freq (Days) 33

1.3 User Entered Comments

Project Characteristics -

Land Use - Land uses based on City of Malibu cumulative development table (updated August 1, 2012).

Construction Phase - Default construction period used, due to the fact that cumulative analysis will disregard construction emissions.

Trips and VMT -

Grading -

Architectural Coating -

Vehicle Trips - Default ITE 8th Edition trip rates used for cumulative analysis.

Energy Use -

Water And Wastewater -

Solid Waste -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation - 50% diversion rate as required by the California Integrated Waste Management Act

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2011	13.34	110.93	80.80	0.13	18.34	5.44	22.96	9.94	5.44	14.56	0.00	13,359.09	0.00	1.20	0.00	13,384.23
2012	11.17	67.48	75.40	0.13	7.43	3.75	11.18	0.33	3.75	4.08	0.00	13,270.34	0.00	0.96	0.00	13,290.59
2013	10.23	62.18	70.32	0.13	7.43	3.39	10.83	0.33	3.39	3.72	0.00	13,184.01	0.00	0.88	0.00	13,202.59
2014	374.27	57.06	66.19	0.13	7.43	3.04	10.48	0.33	3.04	3.38	0.00	13,110.10	0.00	0.82	0.00	13,127.23
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2011	13.34	110.93	80.80	0.13	18.34	5.44	22.96	9.94	5.44	14.56	0.00	13,359.09	0.00	1.20	0.00	13,384.23
2012	11.17	67.48	75.40	0.13	7.43	3.75	11.18	0.33	3.75	4.08	0.00	13,270.34	0.00	0.96	0.00	13,290.59
2013	10.23	62.18	70.32	0.13	7.43	3.39	10.83	0.33	3.39	3.72	0.00	13,184.01	0.00	0.88	0.00	13,202.59
2014	374.27	57.06	66.19	0.13	7.43	3.04	10.48	0.33	3.04	3.38	0.00	13,110.10	0.00	0.82	0.00	13,127.23
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	152.24	5.87	401.97	0.92		0.00	61.18		0.00	61.17	8,150.53	20,824.73		32.30	0.50	29,808.20
Energy	0.45	3.98	2.65	0.02		0.00	0.31		0.00	0.31		4,900.23		0.09	0.09	4,930.06
Mobile	186.81	442.96	1,775.71	3.21	336.49	19.93	356.42	11.64	19.93	31.57		317,743.33		11.81		317,991.24
Total	339.50	452.81	2,180.33	4.15	336.49	19.93	417.91	11.64	19.93	93.05	8,150.53	343,468.29		44.20	0.59	352,729.50

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	152.24	5.87	401.97	0.92		0.00	61.18		0.00	61.17	8,150.53	20,824.73		32.30	0.50	29,808.20
Energy	0.45	3.98	2.65	0.02		0.00	0.31		0.00	0.31		4,900.23		0.09	0.09	4,930.06
Mobile	186.81	442.96	1,775.71	3.21	336.49	19.93	356.42	11.64	19.93	31.57		317,743.33		11.81		317,991.24
Total	339.50	452.81	2,180.33	4.15	336.49	19.93	417.91	11.64	19.93	93.05	8,150.53	343,468.29		44.20	0.59	352,729.50

3.0 Construction Detail

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

3.2 Site Preparation (Soil Export) - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.07	0.00	18.07	9.93	0.00	9.93						0.00
Off-Road	10.99	89.73	50.45	0.07		4.61	4.61		4.61	4.61		7,997.70		0.99		8,018.42
Total	10.99	89.73	50.45	0.07	18.07	4.61	22.68	9.93	4.61	14.54		7,997.70		0.99		8,018.42

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	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
Worker	0.14	0.14	1.66	0.00	0.28	0.01	0.29	0.01	0.01	0.02		240.41		0.02		240.74
Total	0.14	0.14	1.66	0.00	0.28	0.01	0.29	0.01	0.01	0.02		240.41		0.02		240.74

3.2 Site Preparation (Soil Export) - 2011

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.07	0.00	18.07	9.93	0.00	9.93						0.00
Off-Road	10.99	89.73	50.45	0.07		4.61	4.61		4.61	4.61	0.00	7,997.70		0.99		8,018.42
Total	10.99	89.73	50.45	0.07	18.07	4.61	22.68	9.93	4.61	14.54	0.00	7,997.70		0.99		8,018.42

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	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
Worker	0.14	0.14	1.66	0.00	0.28	0.01	0.29	0.01	0.01	0.02		240.41		0.02		240.74
Total	0.14	0.14	1.66	0.00	0.28	0.01	0.29	0.01	0.01	0.02		240.41		0.02		240.74

3.3 Grading - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.67	0.00	8.67	3.31	0.00	3.31						0.00
Off-Road	13.18	110.77	57.70	0.10		5.43	5.43		5.43	5.43		10,856.66		1.18		10,881.42
Total	13.18	110.77	57.70	0.10	8.67	5.43	14.10	3.31	5.43	8.74		10,856.66		1.18		10,881.42

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	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
Worker	0.16	0.16	1.85	0.00	0.31	0.01	0.32	0.01	0.01	0.02		267.12		0.02		267.49
Total	0.16	0.16	1.85	0.00	0.31	0.01	0.32	0.01	0.01	0.02		267.12		0.02		267.49

3.3 Grading - 2011

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.67	0.00	8.67	3.31	0.00	3.31						0.00
Off-Road	13.18	110.77	57.70	0.10		5.43	5.43		5.43	5.43	0.00	10,856.66		1.18		10,881.42
Total	13.18	110.77	57.70	0.10	8.67	5.43	14.10	3.31	5.43	8.74	0.00	10,856.66		1.18		10,881.42

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	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
Worker	0.16	0.16	1.85	0.00	0.31	0.01	0.32	0.01	0.01	0.02		267.12		0.02		267.49
Total	0.16	0.16	1.85	0.00	0.31	0.01	0.32	0.01	0.01	0.02		267.12		0.02		267.49

3.4 Building Construction - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	6.11	40.22	24.03	0.04		2.80	2.80		2.80	2.80		4,040.62		0.55		4,052.11
Total	6.11	40.22	24.03	0.04		2.80	2.80		2.80	2.80		4,040.62		0.55		4,052.11

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	2.91	29.69	20.32	0.04	1.37	1.11	2.48	0.10	1.11	1.21		4,042.84		0.15		4,045.90
Worker	3.14	3.14	36.45	0.05	6.06	0.20	6.26	0.23	0.20	0.42		5,275.63		0.35		5,283.01
Total	6.05	32.83	56.77	0.09	7.43	1.31	8.74	0.33	1.31	1.63		9,318.47		0.50		9,328.91

3.4 Building Construction - 2011

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	6.11	40.22	24.03	0.04		2.80	2.80		2.80	2.80	0.00	4,040.62		0.55		4,052.11
Total	6.11	40.22	24.03	0.04		2.80	2.80		2.80	2.80	0.00	4,040.62		0.55		4,052.11

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	2.91	29.69	20.32	0.04	1.37	1.11	2.48	0.10	1.11	1.21		4,042.84		0.15		4,045.90
Worker	3.14	3.14	36.45	0.05	6.06	0.20	6.26	0.23	0.20	0.42		5,275.63		0.35		5,283.01
Total	6.05	32.83	56.77	0.09	7.43	1.31	8.74	0.33	1.31	1.63		9,318.47		0.50		9,328.91

3.4 Building Construction - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.63	37.37	23.73	0.04		2.54	2.54		2.54	2.54		4,040.62		0.51		4,051.23
Total	5.63	37.37	23.73	0.04		2.54	2.54		2.54	2.54		4,040.62		0.51		4,051.23

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	2.65	27.25	18.19	0.04	1.37	1.00	2.38	0.11	1.00	1.11		4,055.29		0.13		4,058.07
Worker	2.89	2.86	33.48	0.05	6.06	0.20	6.27	0.23	0.20	0.43		5,174.43		0.33		5,181.29
Total	5.54	30.11	51.67	0.09	7.43	1.20	8.65	0.34	1.20	1.54		9,229.72		0.46		9,239.36

3.4 Building Construction - 2012

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.63	37.37	23.73	0.04		2.54	2.54		2.54	2.54	0.00	4,040.62		0.51		4,051.23
Total	5.63	37.37	23.73	0.04		2.54	2.54		2.54	2.54	0.00	4,040.62		0.51		4,051.23

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	2.65	27.25	18.19	0.04	1.37	1.00	2.38	0.11	1.00	1.11		4,055.29		0.13		4,058.07
Worker	2.89	2.86	33.48	0.05	6.06	0.20	6.27	0.23	0.20	0.43		5,174.43		0.33		5,181.29
Total	5.54	30.11	51.67	0.09	7.43	1.20	8.65	0.34	1.20	1.54		9,229.72		0.46		9,239.36

3.4 Building Construction - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.17	34.66	23.45	0.04		2.28	2.28		2.28	2.28		4,040.62		0.46		4,050.31
Total	5.17	34.66	23.45	0.04		2.28	2.28		2.28	2.28		4,040.62		0.46		4,050.31

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	2.40	24.91	16.13	0.04	1.37	0.91	2.28	0.11	0.91	1.01		4,068.26		0.12		4,070.76
Worker	2.66	2.61	30.74	0.05	6.06	0.21	6.27	0.23	0.21	0.43		5,075.14		0.30		5,081.52
Total	5.06	27.52	46.87	0.09	7.43	1.12	8.55	0.34	1.12	1.44		9,143.40		0.42		9,152.28

3.4 Building Construction - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.17	34.66	23.45	0.04		2.28	2.28		2.28	2.28	0.00	4,040.62		0.46		4,050.31
Total	5.17	34.66	23.45	0.04		2.28	2.28		2.28	2.28	0.00	4,040.62		0.46		4,050.31

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	2.40	24.91	16.13	0.04	1.37	0.91	2.28	0.11	0.91	1.01		4,068.26		0.12		4,070.76
Worker	2.66	2.61	30.74	0.05	6.06	0.21	6.27	0.23	0.21	0.43		5,075.14		0.30		5,081.52
Total	5.06	27.52	46.87	0.09	7.43	1.12	8.55	0.34	1.12	1.44		9,143.40		0.42		9,152.28

3.4 Building Construction - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.74	32.06	23.20	0.04		2.02	2.02		2.02	2.02		4,040.61		0.42		4,049.51
Total	4.74	32.06	23.20	0.04		2.02	2.02		2.02	2.02		4,040.61		0.42		4,049.51

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	2.17	22.61	14.61	0.04	1.37	0.81	2.18	0.11	0.81	0.91		4,076.35		0.11		4,078.61
Worker	2.47	2.39	28.38	0.05	6.06	0.21	6.28	0.23	0.21	0.44		4,993.13		0.28		4,999.11
Total	4.64	25.00	42.99	0.09	7.43	1.02	8.46	0.34	1.02	1.35		9,069.48		0.39		9,077.72

3.4 Building Construction - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.74	32.06	23.20	0.04		2.02	2.02		2.02	2.02	0.00	4,040.61		0.42		4,049.51
Total	4.74	32.06	23.20	0.04		2.02	2.02		2.02	2.02	0.00	4,040.61		0.42		4,049.51

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	2.17	22.61	14.61	0.04	1.37	0.81	2.18	0.11	0.81	0.91		4,076.35		0.11		4,078.61
Worker	2.47	2.39	28.38	0.05	6.06	0.21	6.28	0.23	0.21	0.44		4,993.13		0.28		4,999.11
Total	4.64	25.00	42.99	0.09	7.43	1.02	8.46	0.34	1.02	1.35		9,069.48		0.39		9,077.72

3.5 Paving - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.20	32.09	20.70	0.03		2.74	2.74		2.74	2.74		2,917.65		0.47		2,927.48
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	5.20	32.09	20.70	0.03		2.74	2.74		2.74	2.74		2,917.65		0.47		2,927.48

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	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
Worker	0.09	0.09	1.08	0.00	0.23	0.01	0.24	0.01	0.01	0.02		189.61		0.01		189.84
Total	0.09	0.09	1.08	0.00	0.23	0.01	0.24	0.01	0.01	0.02		189.61		0.01		189.84

3.5 Paving - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.20	32.09	20.70	0.03		2.74	2.74		2.74	2.74	0.00	2,917.65		0.47		2,927.48
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	5.20	32.09	20.70	0.03		2.74	2.74		2.74	2.74	0.00	2,917.65		0.47		2,927.48

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	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
Worker	0.09	0.09	1.08	0.00	0.23	0.01	0.24	0.01	0.01	0.02		189.61		0.01		189.84
Total	0.09	0.09	1.08	0.00	0.23	0.01	0.24	0.01	0.01	0.02		189.61		0.01		189.84

3.6 Architectural Coating - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	373.33					0.00	0.00		0.00	0.00						0.00
Off-Road	0.45	2.77	1.92	0.00		0.24	0.24		0.24	0.24		281.19		0.04		282.03
Total	373.78	2.77	1.92	0.00		0.24	0.24		0.24	0.24		281.19		0.04		282.03

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	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
Worker	0.49	0.48	5.68	0.01	1.21	0.04	1.26	0.05	0.04	0.09		998.63		0.06		999.82
Total	0.49	0.48	5.68	0.01	1.21	0.04	1.26	0.05	0.04	0.09		998.63		0.06		999.82

3.6 Architectural Coating - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	373.33					0.00	0.00		0.00	0.00						0.00
Off-Road	0.45	2.77	1.92	0.00		0.24	0.24		0.24	0.24	0.00	281.19		0.04		282.03
Total	373.78	2.77	1.92	0.00		0.24	0.24		0.24	0.24	0.00	281.19		0.04		282.03

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	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
Worker	0.49	0.48	5.68	0.01	1.21	0.04	1.26	0.05	0.04	0.09		998.63		0.06		999.82
Total	0.49	0.48	5.68	0.01	1.21	0.04	1.26	0.05	0.04	0.09		998.63		0.06		999.82

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	186.81	442.96	1,775.71	3.21	336.49	19.93	356.42	11.64	19.93	31.57		317,743.33		11.81		317,991.24
Unmitigated	186.81	442.96	1,775.71	3.21	336.49	19.93	356.42	11.64	19.93	31.57		317,743.33		11.81		317,991.24
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	210.88	229.12	194.24	703,113	703,113
Condo/Townhouse	981.91	1,066.84	904.43	3,273,869	3,273,869
Condo/Townhouse	52.72	57.28	48.56	175,778	175,778
General Office Building	106.63	22.95	9.49	258,036	258,036
General Office Building	22.02	4.74	1.96	53,286	53,286
General Office Building	28.96	6.23	2.58	70,071	70,071
General Office Building	27.51	5.92	2.45	66,580	66,580
High School	455.21	154.33	63.21	991,625	991,625
Hospital	52.01	32.09	28.08	123,064	123,064
Hospital	412.50	254.50	222.75	976,080	976,080
Quality Restaurant	359.80	377.44	288.64	640,366	640,366
Quality Restaurant	638.65	669.96	512.34	1,136,650	1,136,650

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Quality Restaurant	531.06	557.10	426.03	945,181	945,181
Regional Shopping Center	1,104.76	1,285.63	649.37	2,793,848	2,793,848
Regional Shopping Center	4,811.77	5,599.54	2828.34	12,168,574	12,168,574
Regional Shopping Center	465.43	541.62	273.58	1,177,026	1,177,026
Regional Shopping Center	3,263.44	3,797.72	1918.24	8,252,973	8,252,973
Regional Shopping Center	16,924.24	19,695.03	9948.02	42,800,024	42,800,024
Regional Shopping Center	193.96	225.71	114.01	490,509	490,509
Single Family Housing	47.85	50.40	43.85	158,678	158,678
Single Family Housing	28.71	30.24	26.31	95,207	95,207
Single Family Housing	38.28	40.32	35.08	126,942	126,942
Single Family Housing	19.14	20.16	17.54	63,471	63,471
Single Family Housing	19.14	20.16	17.54	63,471	63,471
Single Family Housing	19.14	20.16	17.54	63,471	63,471
Single Family Housing	47.85	50.40	43.85	158,678	158,678
Single Family Housing	38.28	40.32	35.08	126,942	126,942
Single Family Housing	28.71	30.24	26.31	95,207	95,207
Single Family Housing	38.28	40.32	35.08	126,942	126,942
Single Family Housing	19.14	20.16	17.54	63,471	63,471
Single Family Housing	28.71	30.24	26.31	95,207	95,207
Single Family Housing	19.14	20.16	17.54	63,471	63,471
Single Family Housing	9.57	10.08	8.77	31,736	31,736
Supermarket	2,556.00	4,439.75	4161.00	5,527,414	5,527,414
Total	33,601.40	39,446.86	22,965.67	83,956,963	83,956,963

4.3 Trip Type Information

Land Use	Miles			Trip %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Condo/Townhouse	12.70	7.00	9.50	40.20	19.20	40.60

Land Use	Miles			Trip %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Condo/Townhouse	12.70	7.00	9.50	40.20	19.20	40.60
Condo/Townhouse	12.70	7.00	9.50	40.20	19.20	40.60
General Office Building	8.90	13.30	7.40	33.00	48.00	19.00
General Office Building	8.90	13.30	7.40	33.00	48.00	19.00
General Office Building	8.90	13.30	7.40	33.00	48.00	19.00
General Office Building	8.90	13.30	7.40	33.00	48.00	19.00
High School	8.90	13.30	7.40	77.80	17.20	5.00
Hospital	8.90	13.30	7.40	64.90	16.10	19.00
Hospital	8.90	13.30	7.40	64.90	16.10	19.00
Quality Restaurant	8.90	13.30	7.40	12.00	69.00	19.00
Quality Restaurant	8.90	13.30	7.40	12.00	69.00	19.00
Quality Restaurant	8.90	13.30	7.40	12.00	69.00	19.00
Regional Shopping Center	8.90	13.30	7.40	16.30	64.70	19.00
Regional Shopping Center	8.90	13.30	7.40	16.30	64.70	19.00
Regional Shopping Center	8.90	13.30	7.40	16.30	64.70	19.00
Regional Shopping Center	8.90	13.30	7.40	16.30	64.70	19.00
Regional Shopping Center	8.90	13.30	7.40	16.30	64.70	19.00
Regional Shopping Center	8.90	13.30	7.40	16.30	64.70	19.00
Single Family Housing	12.70	7.00	9.50	40.20	19.20	40.60
Single Family Housing	12.70	7.00	9.50	40.20	19.20	40.60
Single Family Housing	12.70	7.00	9.50	40.20	19.20	40.60
Single Family Housing	12.70	7.00	9.50	40.20	19.20	40.60
Single Family Housing	12.70	7.00	9.50	40.20	19.20	40.60
Single Family Housing	12.70	7.00	9.50	40.20	19.20	40.60
Single Family Housing	12.70	7.00	9.50	40.20	19.20	40.60
Single Family Housing	12.70	7.00	9.50	40.20	19.20	40.60

Land Use	Miles			Trip %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Single Family Housing	12.70	7.00	9.50	40.20	19.20	40.60
Single Family Housing	12.70	7.00	9.50	40.20	19.20	40.60
Single Family Housing	12.70	7.00	9.50	40.20	19.20	40.60
Single Family Housing	12.70	7.00	9.50	40.20	19.20	40.60
Single Family Housing	12.70	7.00	9.50	40.20	19.20	40.60
Single Family Housing	12.70	7.00	9.50	40.20	19.20	40.60
Supermarket	8.90	13.30	7.40	6.50	74.50	19.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.45	3.98	2.65	0.02		0.00	0.31		0.00	0.31		4,900.23		0.09	0.09	4,930.06
NaturalGas Unmitigated	0.45	3.98	2.65	0.02		0.00	0.31		0.00	0.31		4,900.23		0.09	0.09	4,930.06
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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	lb/day										lb/day					
Condo/Townhouse	10459.1	0.11	0.96	0.41	0.01		0.00	0.08		0.00	0.08		1,230.48		0.02	0.02	1,237.97
Condo/Townhouse	2246.25	0.02	0.21	0.09	0.00		0.00	0.02		0.00	0.02		264.26		0.01	0.00	265.87
Condo/Townhouse	561.562	0.01	0.05	0.02	0.00		0.00	0.00		0.00	0.00		66.07		0.00	0.00	66.47
General Office Building	254.463	0.00	0.02	0.02	0.00		0.00	0.00		0.00	0.00		29.94		0.00	0.00	30.12
General Office Building	52.5479	0.00	0.01	0.00	0.00		0.00	0.00		0.00	0.00		6.18		0.00	0.00	6.22
General Office Building	65.6587	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00		7.72		0.00	0.00	7.77
General Office Building	69.1005	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00		8.13		0.00	0.00	8.18
High School	1200.71	0.01	0.12	0.10	0.00		0.00	0.01		0.00	0.01		141.26		0.00	0.00	142.12
Hospital	4139.04	0.04	0.41	0.34	0.00		0.00	0.03		0.00	0.03		486.95		0.01	0.01	489.91
Hospital	521.85	0.01	0.05	0.04	0.00		0.00	0.00		0.00	0.00		61.39		0.00	0.00	61.77
Quality Restaurant	2886.9	0.03	0.28	0.24	0.00		0.00	0.02		0.00	0.02		339.64		0.01	0.01	341.70
Quality Restaurant	4261.07	0.05	0.42	0.35	0.00		0.00	0.03		0.00	0.03		501.30		0.01	0.01	504.35
Quality Restaurant	5124.25	0.06	0.50	0.42	0.00		0.00	0.04		0.00	0.04		602.85		0.01	0.01	606.52
Regional Shopping Center	144.5	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00		17.00		0.00	0.00	17.10
Regional Shopping Center	2213.65	0.02	0.22	0.18	0.00		0.00	0.02		0.00	0.02		260.43		0.00	0.00	262.01
Regional Shopping Center	25.3695	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		2.98		0.00	0.00	3.00
Regional Shopping Center	426.849	0.00	0.04	0.04	0.00		0.00	0.00		0.00	0.00		50.22		0.00	0.00	50.52
Regional Shopping Center	60.8766	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00		7.16		0.00	0.00	7.21

	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	lb/day										lb/day					
Regional Shopping Center	629.367	0.01	0.06	0.05	0.00		0.00	0.00		0.00	0.00		74.04		0.00	0.00	74.49
Single Family Housing	115.85	0.00	0.01	0.00	0.00		0.00	0.00		0.00	0.00		13.63		0.00	0.00	13.71
Single Family Housing	231.701	0.01	0.11	0.05	0.00		0.00	0.01		0.00	0.01		136.29		0.00	0.00	137.12
Single Family Housing	347.551	0.01	0.10	0.04	0.00		0.00	0.01		0.00	0.01		122.67		0.00	0.00	123.41
Single Family Housing	463.401	0.01	0.13	0.05	0.00		0.00	0.01		0.00	0.01		163.55		0.00	0.00	164.55
Single Family Housing	579.252	0.01	0.11	0.05	0.00		0.00	0.01		0.00	0.01		136.29		0.00	0.00	137.12
Supermarket	1443.15	0.02	0.14	0.12	0.00		0.00	0.01		0.00	0.01		169.78		0.00	0.00	170.82
Total		0.43	3.99	2.65	0.01		0.00	0.30		0.00	0.30		4,900.21		0.07	0.06	4,930.03

5.2 Energy by Land Use - NaturalGas

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	lb/day										lb/day					
Condo/Townhouse	0.561562	0.01	0.05	0.02	0.00		0.00	0.00		0.00	0.00		66.07		0.00	0.00	66.47
Condo/Townhouse	10.4591	0.11	0.96	0.41	0.01		0.00	0.08		0.00	0.08		1,230.48		0.02	0.02	1,237.97
Condo/Townhouse	2.24625	0.02	0.21	0.09	0.00		0.00	0.02		0.00	0.02		264.26		0.01	0.00	265.87
General Office Building	0.0525479	0.00	0.01	0.00	0.00		0.00	0.00		0.00	0.00		6.18		0.00	0.00	6.22
General Office Building	0.0656587	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00		7.72		0.00	0.00	7.77
General Office Building	0.0691005	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00		8.13		0.00	0.00	8.18

	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	lb/day										lb/day					
General Office Building	0.254463	0.00	0.02	0.02	0.00		0.00	0.00		0.00	0.00		29.94		0.00	0.00	30.12
High School	1.20071	0.01	0.12	0.10	0.00		0.00	0.01		0.00	0.01		141.26		0.00	0.00	142.12
Hospital	0.52185	0.01	0.05	0.04	0.00		0.00	0.00		0.00	0.00		61.39		0.00	0.00	61.77
Hospital	4.13904	0.04	0.41	0.34	0.00		0.00	0.03		0.00	0.03		486.95		0.01	0.01	489.91
Quality Restaurant	2.8869	0.03	0.28	0.24	0.00		0.00	0.02		0.00	0.02		339.64		0.01	0.01	341.70
Quality Restaurant	4.26107	0.05	0.42	0.35	0.00		0.00	0.03		0.00	0.03		501.30		0.01	0.01	504.35
Quality Restaurant	5.12425	0.06	0.50	0.42	0.00		0.00	0.04		0.00	0.04		602.85		0.01	0.01	606.52
Regional Shopping Center	0.0253695	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		2.98		0.00	0.00	3.00
Regional Shopping Center	0.0608766	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00		7.16		0.00	0.00	7.21
Regional Shopping Center	0.1445	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00		17.00		0.00	0.00	17.10
Regional Shopping Center	0.426849	0.00	0.04	0.04	0.00		0.00	0.00		0.00	0.00		50.22		0.00	0.00	50.52
Regional Shopping Center	0.629367	0.01	0.06	0.05	0.00		0.00	0.00		0.00	0.00		74.04		0.00	0.00	74.49
Regional Shopping Center	2.21365	0.02	0.22	0.18	0.00		0.00	0.02		0.00	0.02		260.43		0.00	0.00	262.01
Single Family Housing	0.11585	0.00	0.01	0.00	0.00		0.00	0.00		0.00	0.00		13.63		0.00	0.00	13.71
Single Family Housing	0.231701	0.01	0.11	0.05	0.00		0.00	0.01		0.00	0.01		136.29		0.00	0.00	137.12
Single Family Housing	0.347551	0.01	0.10	0.04	0.00		0.00	0.01		0.00	0.01		122.67		0.00	0.00	123.41
Single Family Housing	0.463401	0.01	0.13	0.05	0.00		0.00	0.01		0.00	0.01		163.55		0.00	0.00	164.55
Single Family Housing	0.579252	0.01	0.11	0.05	0.00		0.00	0.01		0.00	0.01		136.29		0.00	0.00	137.12

	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	lb/day										lb/day					
Supermarket	1.44315	0.02	0.14	0.12	0.00		0.00	0.01		0.00	0.01		169.78		0.00	0.00	170.82
Total		0.43	3.99	2.65	0.01		0.00	0.30		0.00	0.30		4,900.21		0.07	0.06	4,930.03

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	152.24	5.87	401.97	0.92		0.00	61.18		0.00	61.17	8,150.53	20,824.73		32.30	0.50	29,808.20
Unmitigated	152.24	5.87	401.97	0.92		0.00	61.18		0.00	61.17	8,150.53	20,824.73		32.30	0.50	29,808.20
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.63					0.00	0.00		0.00	0.00						0.00
Consumer Products	23.05					0.00	0.00		0.00	0.00						0.00
Hearth	122.94	5.64	382.31	0.92		0.00	61.07		0.00	61.06	8,150.53	20,790.00		32.26	0.50	29,772.71
Landscaping	0.63	0.23	19.65	0.00		0.00	0.10		0.00	0.10		34.73		0.04		35.49
Total	152.25	5.87	401.96	0.92		0.00	61.17		0.00	61.16	8,150.53	20,824.73		32.30	0.50	29,808.20

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.63					0.00	0.00		0.00	0.00						0.00
Consumer Products	23.05					0.00	0.00		0.00	0.00						0.00
Hearth	122.94	5.64	382.31	0.92		0.00	61.07		0.00	61.06	8,150.53	20,790.00		32.26	0.50	29,772.71
Landscaping	0.63	0.23	19.65	0.00		0.00	0.10		0.00	0.10		34.73		0.04		35.49
Total	152.25	5.87	401.96	0.92		0.00	61.17		0.00	61.16	8,150.53	20,824.73		32.30	0.50	29,808.20

7.0 Water Detail

7.1 Mitigation Measures Water

Use Grey Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Vegetation

9.0 Vegetation

City of Malibu

Rancho Malibu Resort Project

Greenhouse Gas Emissions Study



October 2012

Environmental Scientists Planners Engineers



Rincon Consultants, Inc.

180 North Ashwood Avenue
Ventura, California 93003

805 644 4455

FAX 644 4240

info@rinconconsultants.com

www.rinconconsultants.com

October 26, 2012
Project No. 11-98710

J.J. O'Brien
GREEN ACRES, LLC
c/o: Bruce McBride
a California Limited Liability Company
P.O. Box 6528
Malibu, California 90264

GREENHOUSE GAS STUDY
Rancho Malibu Resort Project
Malibu, California

Dear Mr. O'Brien:

Rincon Consultants, Inc. is pleased to submit the attached Greenhouse Gas Study for the proposed Rancho Malibu Resort project in Malibu, California. Calculations of CO₂, CH₄, and N₂O emissions are provided to identify the magnitude of potential project effects. The proposed project would result in 4,230 metric tons CO₂E per year. GHG reduction measures are also provided, including on-site GHG emission reduction strategies, such as increasing building energy efficiency ratings above what is required by Title 24 requirements and providing on-site renewable energy systems (e.g., photovoltaic). If you have any questions regarding this study or if we can provide you with other environmental consulting services, please feel free to contact us.

Sincerely,

RINCON CONSULTANTS, INC.

A handwritten signature in black ink, appearing to read "CB", with a long horizontal line extending to the right.

Chris Bersbach
Environmental Planner

A handwritten signature in black ink, appearing to read "Joe Power", with a long horizontal line extending to the right.

Joe Power, AICP
Principal

Rancho Malibu Resort Project

Greenhouse Gas Study

Prepared for:

GREEN ACRES, LLC
a California Limited Liability Company
P.O. Box 6528
Malibu, California 90264

Prepared with the assistance of:

Rincon Consultants, Inc.
180 North Ashwood Avenue
Ventura, California 93003

October 2012

This report is printed on 50% recycled paper.

Rancho Malibu Resort Project Greenhouse Gas Study

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Appendix:	CalEEMod GHG Model Worksheets/N ₂ O from Mobile Emissions GHG Calculation Worksheet
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RANCHO MALIBU RESORT PROJECT MALIBU, LOS ANGELES COUNTY GREENHOUSE GAS STUDY

This report is an analysis of the potential greenhouse gas (GHG) emissions impacts of the proposed Rancho Malibu Resort project located in Malibu, California in Los Angeles County. The report has been prepared by Rincon Consultants, Inc. under contract to Green Acres, LLC for use by the City of Malibu, in support of the environmental documentation being prepared pursuant to the California Environmental Quality Act (CEQA). The purpose of this study is to analyze the proposed project's GHG emissions and the associated impact to climate change. This study describes climate change, GHGs, and the current regulatory framework, quantifies GHG emissions for the proposed project, compares forecast emissions to quantitative thresholds, and discusses the project's consistency with applicable mitigation strategies.

PROJECT DESCRIPTION

The Rancho Malibu Resort project would involve the development of a 146-room luxury hotel and related facilities, which would be located at 4000 Malibu Canyon Road in Malibu, California. The project site totals 27.8 acres and is located at the junction of Malibu Canyon Road and Pacific Coast Highway (State Route 1) in the City of Malibu, Los Angeles County, California.

The main hotel would be approximately 167,062 square feet. The hotel would include a lobby, restaurant, bar, library, banquet facilities and retail shops on the first floor, a basement level containing a spa and fitness center with a second basement level with additional retail floor area. The 146 guestrooms would include 12 suites located on the second floor of the hotel and 134 suites in 21 separate casita-type buildings, totaling 177,736 square feet.

Construction of the proposed project would require export of 189,760 cubic yards (cy) of soil. This volume of soil export is assumed to require 14,819 truck trips (13 cy per double trailer). The soil export trips would travel north along Malibu Canyon Road, and would not use Pacific Coast Highway. The hauling process will take approximately 86 work days at eight hours per day.

The proposed hotel would provide 543 parking spaces. Of those 543 spaces, 54 parking spaces would be provided in two separate at-grade parking lots. A 166,827 square foot, multi-level parking structure would provide 489 parking spaces. All public vehicular access to the hotel parking spaces would be provided by a single driveway located on Malibu Canyon Road, approximately 680 feet north of the Pacific Coast Highway centerline. The main hotel entrance and exit is near the curvature of Malibu Canyon Road. In addition to the main hotel access, a 26-foot wide fire access road is provided around the hotel site. The project site is located approximately 600 feet from a bus service stop (Metropolitan Transportation Authority [Metro] Route 534), which operates along Civic Center Way.



The project would incorporate a number of features that would inherently reduce GHG emissions. These features include:

- *Installation of low-flow plumbing fixtures*
- *Installation of energy efficient appliances*
- *Gray water used for landscape irrigation*

SETTING

Overview of Climate Change

Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period of time. The term "climate change" is often used interchangeably with the term "global warming," but "climate change" is preferred to "global warming" because it helps convey that there are other changes in addition to rising temperatures. The baseline against which these changes are measured originates in historical records identifying temperature changes that have occurred in the past, such as during previous ice ages. The global climate is continuously changing, as evidenced by repeated episodes of substantial warming and cooling documented in the geologic record. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming, as glaciers have steadily retreated across the globe. However, scientists have observed acceleration in the rate of warming during the past 150 years. Per the United Nations Intergovernmental Panel on Climate Change (IPCC, 2007), the understanding of anthropogenic warming and cooling influences on climate has led to a high confidence (90% or greater chance) that the global average net effect of human activities since 1750 has been one of warming. The prevailing scientific opinion on climate change is that most of the observed increase in global average temperatures, since the mid-20th century, is likely due to the observed increase in anthropogenic GHG concentrations (IPCC, 2007).

Greenhouse Gases (GHGs)

Gases that absorb and re-emit infrared radiation in the atmosphere are called greenhouse gases (GHGs). GHGs are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO₂), methane (CH₄), nitrous oxides (N₂O), fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

GHGs are emitted by both natural processes and human activities. Of these gases, CO₂ and CH₄ are emitted in the greatest quantities from human activities. Emissions of CO₂ are largely by-products of fossil fuel combustion, whereas CH₄ results from off-gassing associated with agricultural practices and landfills. Man-made GHGs, many of which have greater heat-absorption potential than CO₂, include fluorinated gases and sulfur hexafluoride (SF₆) (California Environmental Protection Agency [CalEPA], 2006). Different types of GHGs have varying global



warming potentials (GWPs). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas (CO₂) is used to relate the amount of heat absorbed to the amount of the gas emissions, referred to as “carbon dioxide equivalent” (CO₂E), and is the amount of a GHG emitted multiplied by its GWP. Carbon dioxide has a GWP of one. By contrast, methane (CH₄) has a GWP of 21, meaning its global warming effect is 21 times greater than carbon dioxide on a molecule per molecule basis (IPCC, 1997).

The accumulation of GHGs in the atmosphere regulates the earth’s temperature. Without the natural heat trapping effect of GHG, Earth’s surface would be about 34° C cooler (CalEPA, 2006). However, it is believed that emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations. The following discusses the primary GHGs of concern.

Carbon Dioxide. The global carbon cycle is made up of large carbon flows and reservoirs. Billions of tons of carbon in the form of CO₂ are absorbed by oceans and living biomass (i.e., sinks) and are emitted to the atmosphere annually through natural processes (i.e., sources). When in equilibrium, carbon fluxes among these various reservoirs are roughly balanced (United States Environmental Protection Agency [USEPA], April 2011). CO₂ was the first GHG demonstrated to be increasing in atmospheric concentration, with the first conclusive measurements being made in the last half of the 20th Century. Concentrations of CO₂ in the atmosphere have risen approximately 40% since the industrial revolution. The global atmospheric concentration of CO₂ has increased from a pre-industrial value of about 280 parts per million (ppm) to 391 ppm in 2011 (IPCC, 2007; Oceanic and Atmospheric Association [NOAA], 2010). The average annual CO₂ concentration growth rate was larger during the last 10 years (1995–2005 average: 1.9 ppm per year) than it has been since the beginning of continuous direct atmospheric measurements (1960–2005 average: 1.4 ppm per year), although there is year-to-year variability in growth rates (NOAA, 2010). Currently, CO₂ represents an estimated 82.7% of total GHG emissions (Department of Energy [DOE] Energy Information Administration [EIA], December 2008). The largest source of CO₂, and of overall GHG emissions, is fossil fuel combustion.

Methane. Methane (CH₄) is an effective absorber of radiation, though its atmospheric concentration is less than that of CO₂ and its lifetime in the atmosphere is limited to 10 to 12 years. It has a global warming potential (GWP) approximately 21 times that of CO₂. Over the last 250 years, the concentration of CH₄ in the atmosphere has increased by 148% (IPCC, 2007), although emissions have declined from 1990 levels. Anthropogenic sources of CH₄ include enteric fermentation associated with domestic livestock, landfills, natural gas and petroleum systems, agricultural activities, coal mining, wastewater treatment, stationary and mobile combustion, and certain industrial processes (USEPA, April 2011).

Nitrous Oxide. Concentrations of nitrous oxide (N₂O) began to rise at the beginning of the industrial revolution and continue to increase at a relatively uniform growth rate (NOAA, 2010). N₂O is produced by microbial processes in soil and water, including those reactions that occur in fertilizers that contain nitrogen, fossil fuel combustion, and other chemical processes. Use of these fertilizers has increased over the last century. Agricultural soil management and mobile source



fossil fuel combustion are the major sources of N₂O emissions. Nitrous oxide's GWP is approximately 310 times that of CO₂.

Fluorinated Gases (HFCS, PFCS and SF₆). Fluorinated gases, such as hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfurhexafluoride (SF₆), are powerful GHGs that are emitted from a variety of industrial processes. Fluorinated gases are used as substitutes for ozone-depleting substances such as chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), and halons, which have been regulated since the mid-1980s because of their ozone-destroying potential and are phased out under the Montreal Protocol (1987) and Clean Air Act Amendments of 1990. Electrical transmission and distribution systems account for most SF₆ emissions, while PFC emissions result from semiconductor manufacturing and as a by-product of primary aluminum production. Fluorinated gases are typically emitted in smaller quantities than CO₂, CH₄, and N₂O, but these compounds have much higher GWPs. SF₆ is the most potent GHG the IPCC has evaluated.

Greenhouse Gas Inventory

Carbon dioxide equivalent (CO₂E) is a quantity that describes, for a given mixture and amount of GHGs, the amount of CO₂ (usually in metric tons) that would have the same GWP when measured over a specified timescale (generally, 100 years). Worldwide anthropogenic emissions of GHG were approximately 40,000 million metric tons (MMT) CO₂E in 2004, including ongoing emissions from industrial and agricultural sources, but excluding emissions from land use changes (i.e., deforestation, biomass decay) (IPCC, 2007). CO₂ emissions from fossil fuel use accounts for 56.6% of the total emissions of 49,000 million metric tons CO₂E (includes land use changes) and all CO₂ emissions are 76.7% of the total. Methane emissions account for 14.3% of GHG and N₂O emissions account for 7.9% (IPCC, 2007).

Total U.S. GHG emissions were 6,633.2 million metric tons CO₂E in 2009 (USEPA, April 2011). While total U.S. emissions have increased by 7.3% from 1990 to 2009, emissions decreased from 2008 to 2009 by 427.9 million metric tons CO₂E, or 6.1% (DOE EIA, Table 12.1, August 2010). This decrease was primarily due to (1) a decrease in economic output resulting in a decrease in energy consumption across all sectors; and (2) a decrease in the carbon intensity of fuels used to generate electricity due to fuel switching as the price of coal increased, and the price of natural gas decreased substantially. Since 1990, U.S. emissions have increased at an average annual rate of 0.4%. The transportation and industrial end-use sectors accounted for 33% and 26%, respectively, of CO₂ emissions from fossil fuel combustion in 2009. Meanwhile, the residential and commercial end-use sectors accounted for 22% and 19%, respectively, of CO₂ emissions from fossil fuel combustion in 2009 (USEPA, 2011).

Based upon the California Air Resources Board (ARB) *California Greenhouse Gas Inventory for 2000-2008* (<http://www.arb.ca.gov/cc/inventory/data/data.htm>), California produced 478 MMT CO₂E in 2008. The major source of GHG in California is transportation, contributing 36% of the state's total GHG emissions. Electricity generation is the second largest source, contributing 24% of the state's GHG emissions (ARB, June 2010). California emissions are due in part to its large size and large population compared to other states. Another factor that reduces California's per capita fuel use and GHG emissions, as compared to other states, is its relatively mild climate. ARB has projected statewide unregulated GHG emissions for the year 2020, which represent the



emissions that would be expected to occur in the absence of any GHG reduction actions, will be 596 MMT CO₂E (ARB, 2007).

Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources through potential impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. Scientists have projected that the average global surface temperature could rise by 1.0-4.5°F (0.6-2.5°C) in the next 50 years, and the increase may be as high as 2.2-10°F (1.4-5.8°C) in the next century. In addition to these projections, there are identifiable signs that global warming is currently taking place, including substantial ice loss in the Arctic (IPCC, 2007).

According to the CalEPA's 2010 Climate Action Team Biennial Report, potential impacts of climate change in California may include loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years (CalEPA, April 2010). Below is a summary of some of the potential effects that could be experienced in California as a result of climate change.

Sea Level Rise. According to *The Impacts of Sea-Level Rise on the California Coast*, prepared by the California Climate Change Center (CCCC) (May 2009), climate change has the potential to induce substantial sea level rise in the coming century. The rising sea level increases the likelihood and risk of flooding. The study identifies a sea level rise on the California coast over the past century of approximately eight inches. Based on the results of various global climate change models, sea level rise is expected to continue. The California Climate Adaptation Strategy (December 2009) estimates a sea level rise of up to 55 inches by the end of this century.

Air Quality. Higher temperatures, which are conducive to air pollution formation, could worsen air quality in California. Climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which, in turn, would further worsen air quality. However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains would tend to temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thereby ameliorating the pollution associated with wildfires. Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state (CEC March, 2009).

Water Supply. Analysis of paleoclimatic data (such as tree-ring reconstructions of stream flow and precipitation) indicates a history of naturally and widely varying hydrologic conditions in California and the west, including a pattern of recurring and extended droughts. Uncertainty remains with respect to the overall impact of climate change on future water supplies in California. However, the average early spring snowpack in the Sierra Nevada decreased by about 10 percent during the last century, a loss of 1.5 million acre-feet of snowpack storage. During the same period, sea level rose eight inches along California's coast. California's temperature has risen 1°F, mostly at night and during the winter, with higher elevations experiencing the highest increase. Many Southern California cities have experienced



their lowest recorded annual precipitation twice within the past decade. In a span of only two years, Los Angeles experienced both its driest and wettest years on record (California Department of Water Resources [DWR], 2008; CCCC, May 2009).

This uncertainty complicates the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood. The Sierra snowpack provides the majority of California's water supply by accumulating snow during our wet winters and releasing it slowly when we need it during our dry springs and summers. Based upon historical data and modeling DWR projects that the Sierra snowpack will experience a 25 to 40 percent reduction from its historic average by 2050. Climate change is also anticipated to bring warmer storms that result in less snowfall at lower elevations, reducing the total snowpack (DWR, 2008).

Hydrology. As discussed above, climate change could potentially affect: the amount of snowfall, rainfall, and snow pack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide and high runoff events); sea level rise and coastal flooding; coastal erosion; and the potential for salt water intrusion. Sea level rise may be a product of climate change through two main processes: expansion of sea water as the oceans warm and melting of ice over land. A rise in sea levels could result in coastal flooding and erosion and could jeopardize California's water supply due to salt water intrusion. Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

Agriculture. California has a \$30 billion agricultural industry that produces half of the country's fruits and vegetables. Higher CO₂ levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, water demand could increase; crop-yield could be threatened by a less reliable water supply; and greater air pollution could render plants more susceptible to pest and disease outbreaks. In addition, temperature increases could change the time of year certain crops, such as wine grapes, bloom or ripen, and thereby affect their quality (CCCC, 2006).

Ecosystems and Wildlife. Climate change and the potential resulting changes in weather patterns could have ecological effects on a global and local scale. Increasing concentrations of GHGs are likely to accelerate the rate of climate change. Scientists project that the average global surface temperature could rise by 1.0-4.5°F (0.6-2.5°C) in the next 50 years, and 2.2-10°F (1.4-5.8°C) in the next century, with substantial regional variation. Soil moisture is likely to decline in many regions, and intense rainstorms are likely to become more frequent. Sea level could rise as much as two feet along most of the U.S. coast. Rising temperatures could have four major impacts on plants and animals: (1) timing of ecological events; (2) geographic range; (3) species' composition within communities; and (4) ecosystem processes, such as carbon cycling and storage (Parmesan, 2004; Parmesan, C. and H. Galbraith, 2004).

While the above-mentioned potential impacts identify the possible effects of climate change at a global and potentially statewide level, in general scientific modeling tools are currently unable to predict what impacts would occur locally with a similar degree of accuracy. In general, regional and local predictions are made based on downscaling statewide models (CEC, March 2009).



Regulatory Setting

The following regulations address both climate change and GHG emissions.

International and Federal Regulations. The United States is, and has been, a participant in the United Nations Framework Convention on Climate Change (UNFCCC) since it was produced by the United Nations in 1992. The objective of the treaty is “stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.” This is generally understood to be achieved by stabilizing global GHG concentrations between 350 and 400 ppm, in order to limit the global average temperature increases between 2 and 2.4°C above pre-industrial levels (IPCC 2007). The UNFCCC itself does not set limits on GHG emissions for individual countries or enforcement mechanisms. Instead, the treaty provides for updates, called “protocols,” that would identify mandatory emissions limits.

Five years later, the UNFCCC brought nations together again to draft the *Kyoto Protocol* (1997). The Protocol established commitments for industrialized nations to reduce their collective emissions of six GHGs (carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, and perfluorocarbons) to 5.2% below 1990 levels by 2012. The United States is a signatory of the Protocol, but Congress has not ratified it and the United States has not bound itself to the Protocol’s commitments (UNFCCC, 2007).

The United States is currently using a voluntary and incentive-based approach toward emissions reductions in lieu of the Kyoto Protocol’s mandatory framework. The Climate Change Technology Program (CCTP) is a multi-agency research and development coordination effort (led by the Secretaries of Energy and Commerce) that is charged with carrying out the President’s National Climate Change Technology Initiative (USEPA, December 2007).

However, the voluntary approach to address climate change and GHG emissions may be changing. The United States Supreme Court in *Massachusetts et al. v. Environmental Protection Agency et al.* ([2007] 549 U.S. 05-1120) held that the United States Environmental Protection Agency (EPA) has the authority to regulate motor-vehicle GHG emissions under the federal Clean Air Act. EPA and the National Highway Traffic Safety Administration (NHTSA) are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced GHG emissions and improved fuel efficiency from on-road vehicles and engines. This will be done through coordination of the GHG emission limits and the NHTSA Corporate Average Fuel Economy (CAFE) standards. On May 7, 2010, the final combined EPA and NHTSA standards that comprise the first phase of this national program were promulgated regarding passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The CAFE standards require these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide per mile, equivalent to 35.5 miles per gallon (mpg) if the automobile industry were to meet this carbon dioxide level solely through fuel economy improvements. New emission limits and CAFE standards for light-duty vehicles for the 2017-2025 model years are currently under development. In October 2010, the agencies each proposed complementary GHG and CAFE standards under their respective authorities covering medium and heavy-duty trucks for the model years 2014-2018.



The EPA in May 2010 finalized the GHG Tailoring Rule that specifies that beginning in 2011, projects that will increase GHG emissions substantially will require an air permit. Typical facilities that would be covered under this rule include power plants, industrial boilers, and oil refineries, which as a group are responsible for 70 percent of the GHGs from stationary sources. The applicability criteria to determine which sources are subject to permitting are being “tailored” to apply to GHGs. New sources as well as existing sources not already subject to Title V that emit, or have the potential to emit, at least 100,000 tons per year (tpy) CO₂E will become subject to the Prevention of Significant Deterioration (PSD) and Title V requirements. In addition, sources that emit or have the potential to emit at least 100,000 tpy CO₂E and that undertake a modification that increases net emissions of GHGs by at least 75,000 tpy CO₂E will also be subject to PSD requirements.

California Regulations. Assembly Bill (AB) 1493 (2002), referred to as “Pavley,” requires ARB to develop and adopt regulations to achieve “the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles.” On June 30, 2009, EPA granted the waiver of Clean Air Act preemption to California for its GHG emission standards for motor vehicles beginning with the 2009 model year. Pavley I took effect for model years starting in 2009 to 2016 and Pavley II, which is now referred to as “LEV (Low Emission Vehicle) III GHG” will cover 2017 to 2025. Fleet average emission standards would reach 22 per cent reduction by 2012 and 30 per cent by 2016.

In 2005, Governor Schwarzenegger issued Executive Order S-3-05, establishing statewide GHG emissions reduction targets. Executive Order (EO) S-3-05 provides that by 2010, emissions shall be reduced to 2000 levels; by 2020, emissions shall be reduced to 1990 levels; and by 2050, emissions shall be reduced to 80% of 1990 levels (CalEPA, 2006). In response to EO S-3-05, CalEPA created the Climate Action Team (CAT), which in March 2006 published the Climate Action Team Report (the “2006 CAT Report”) (CalEPA, 2006). The 2006 CAT Report identified a recommended list of strategies that the state could pursue to reduce GHG emissions. These are strategies that could be implemented by various state agencies to ensure that the emission reduction targets in EO S-3-05 are met and can be met with existing authority of the state agencies. The strategies include the reduction of passenger and light duty truck emissions, the reduction of idling times for diesel trucks, an overhaul of shipping technology/infrastructure, increased use of alternative fuels, increased recycling, and landfill methane capture, etc.

California’s major initiative for reducing GHG emissions is outlined in Assembly Bill 32 (AB 32), the “California Global Warming Solutions Act of 2006,” signed into law in 2006. AB 32 codifies the Statewide goal of reducing GHG emissions to 1990 levels by 2020 (essentially a 15% reduction below 2005 emission levels; the same requirement as under S-3-05), and requires ARB to prepare a Scoping Plan that outlines the main State strategies for reducing GHGs to meet the 2020 deadline. In addition, AB 32 requires ARB to adopt regulations to require reporting and verification of statewide GHG emissions.

After completing a comprehensive review and update process, the ARB approved a 1990 statewide GHG level and 2020 limit of 427 MMT CO₂E. The Scoping Plan was approved by ARB on December 11, 2008, and includes measures to address GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among other measures. The Scoping Plan includes a range of GHG reduction actions that may include direct



regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms.

Executive Order S-01-07 was enacted on January 18, 2007. The order mandates that a Low Carbon Fuel Standard (“LCFS”) for transportation fuels be established for California to reduce the carbon intensity of California’s transportation fuels by at least 10% by 2020.

Senate Bill (SB) 97, signed in August 2007, acknowledges that climate change is an environmental issue that requires analysis in California Environmental Quality Act (CEQA) documents. In March 2010, the California Resources Agency (Resources Agency) adopted amendments to the State CEQA Guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted guidelines give lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHGs and climate change impacts.

Senate Bill (SB) 375, signed in August 2008, enhances the State’s ability to reach AB 32 goals by directing ARB to develop regional GHG emission reduction targets to be achieved from vehicles for 2020 and 2035. SB 375 directs each of the state’s 18 major Metropolitan Planning Organizations (MPO) to prepare a “sustainable communities strategy” (SCS) that contains a growth strategy to meet these emission targets for inclusion in the Regional Transportation Plan (RTP). On September 23, 2010 ARB adopted final regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035.

ARB Resolution 07-54 establishes 25,000 metric tons of GHG emissions as the threshold for identifying the largest stationary emission sources in California for purposes of requiring the annual reporting of emissions. This threshold is just over 0.005% of California’s total inventory of GHG emissions for 2004.

In April 2011, Governor Brown signed SB 2X requiring California to generate 33% of its electricity from renewable energy by 2020.

For more information on the Senate and Assembly bills, Executive Orders, and reports discussed above, and to view reports and research referenced above, please refer to the following websites: www.climatechange.ca.gov and <http://www.arb.ca.gov/cc/cc.htm>.

Local Regulations and CEQA Requirements. Pursuant to the requirements of SB 97, the Resources Agency has adopted amendments to the State CEQA Guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted CEQA Guidelines provide general regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents, but contain no suggested thresholds of significance for GHG emissions. Instead, they give lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHGs and climate change impacts. The general approach to developing a Threshold of Significance for GHG emissions is to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation adopted to reduce statewide GHG emissions needed to move the state towards climate stabilization. If a project would generate GHG emissions above the threshold level, its contribution to cumulative impacts would be considered significant. To date, the Bay Area Air Quality Management District (BAAQMD), the South Coast Air Quality Management District



(SCAQMD), and the San Joaquin Air Pollution Control District (SJVAPCD) have adopted quantitative significance thresholds for GHGs. The SCAQMD threshold, which was adopted in December 2008, considers emissions of over 10,000 metric tons CO₂E /year to be significant. However, the SCAQMD's threshold applies only to stationary sources and is expressly intended to apply only when the SCAQMD is the CEQA lead agency. Although not yet adopted, the SCAQMD recommends a quantitative threshold for all land use types of 3,000 metric tons CO₂E /year (SCAQMD, "Proposed Tier 3 Quantitative Thresholds - Option 1", September 2010). Note that no air district has the power to establish definitive thresholds that will completely relieve a lead agency of the obligation to determine significance on a case-by-case basis for a specific project.

CLIMATE CHANGE IMPACT ANALYSIS

Pursuant to the requirements of SB 97, the Resources Agency adopted amendments to the State CEQA Guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions in March 2010. These guidelines are used in evaluating the cumulative significance of GHG emissions from the proposed project. According to the adopted CEQA Guidelines, impacts related to GHG emissions from the proposed project would be significant if the project would:

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

The vast majority of individual projects do not generate sufficient GHG emissions to create a project-specific impact through a direct influence to climate change; therefore, the issue of climate change typically involves an analysis of whether a project's contribution towards an impact is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines, Section 15355).

For future projects, the significance of GHG emissions may be evaluated based on locally adopted quantitative thresholds, or consistency with a regional GHG reduction plan (such as a Climate Action Plan). However, because the SCAQMD has not yet adopted GHG emissions thresholds that apply to land use projects where the SCAQMD is not the lead agency and no GHG emissions reduction plan or GHG emissions thresholds have been adopted in the City of Malibu, the proposed project is evaluated based on the SCAQMD's recommended/preferred option threshold for all land use types - including retail - of 3,000 metric tons CO₂E per year (SCAQMD, "Proposed Tier 3 Quantitative Thresholds - Option 1", September 2010). It is important to note that the City of Malibu has not recommended that threshold for any other purpose at this time, but that numeric threshold is recommended for this analysis.

The proposed project would have a significant impact related to GHG emissions if the project would generate more than 3,000 metric tons of CO₂E per year. In addition, in order to determine whether or not the proposed project's GHG emissions are "cumulatively considerable," an inconsistency with applicable GHG emissions reductions strategies would be a significant impact under the second significance threshold discussed above.



Methodology

Calculations of CO₂, CH₄, and N₂O emissions are provided to identify the magnitude of potential project effects. The analysis focuses on CO₂, CH₄, and N₂O because these make up 98.9% of all GHG emissions by volume (IPCC, 2007) and are the GHG emissions that the project would emit in the largest quantities. Fluorinated gases, such as HFCs, PFCs, and SF₆, were also considered for the analysis. However, because the project involves the development of a 146-room luxury hotel, the quantity of fluorinated gases would be minimal since fluorinated gases are primarily associated with industrial processes. Emissions of all GHGs are converted into their equivalent weight in CO₂ (CO₂E). Minimal amounts of other main GHGs (such as chlorofluorocarbons [CFCs]) would be emitted, and these other GHG emissions would not substantially add to the calculated CO₂E amounts. Calculations are based on the methodologies discussed in the California Air Pollution Control Officers Association (CAPCOA) *CEQA and Climate Change* white paper (January 2008) and included the use of the California Climate Action Registry (CCAR) General Reporting Protocol (January 2009).

This analysis calculates GHG emissions by quantifying the project's amenities and design features and also takes into account current state and federal measures that are intended to reduce GHG emissions. State and federal measures that are built into the emissions model calculation include Title 24 Energy Standards, Pavley (Clean Car Standards) and Low Carbon Fuel Standards. Specific amenities and design features that were included in the analysis, as described above in the Project Description, included the installation of low-flow plumbing fixtures, the installation of energy efficient appliances, and the use of recycled water for landscape irrigation.

Construction Emissions. Although construction activity is addressed in this analysis, CAPCOA does not discuss whether any of the suggested threshold approaches (as discussed below in *GHG Cumulative Significance*) adequately address impacts from temporary construction activity. As stated in the *CEQA and Climate Change* white paper, "more study is needed to make this assessment or to develop separate thresholds for construction activity" (CAPCOA, 2008). Nevertheless, the SCAQMD has recommended amortizing construction-related emissions over a 30-year period in conjunction with the proposed project's operational emissions.

Construction of the proposed project would generate GHG emissions, primarily due to the operation of construction equipment and truck trips. Project construction was estimated to be completed within 24 months. For this analysis, it was assumed that construction would commence in April 2013 and would be completed in April of 2015. Emissions associated with the construction period were estimated using the California Emissions Estimator Model (CalEEMod) computer program, based on the projected maximum amount of equipment that would be used on-site at one time. Complete CalEEMod results and assumptions can be viewed in the Appendix.

On-site Operational Emissions. Operational emissions from energy use (electricity and natural gas use) for the proposed project were estimated using the CalEEMod computer program (see Appendix for CalEEMod computer program output). The default values on which CalEEMod are based include the California Energy Commission (CEC) sponsored California Commercial End Use Survey (CEUS) and Residential Appliance Saturation Survey (RASS) studies. CalEEMod provides operational emissions of CO₂, N₂O and CH₄. This methodology is considered reasonable



and reliable for use, as it has been subjected to peer review by numerous public and private stakeholders, and in particular by the CEC. It is also recommended by CAPCOA (January 2008).

Emissions associated with area sources, including consumer products, landscape maintenance, and architectural coating were calculated in CalEEMod and utilize standard emission rates from CARB, USEPA, and district supplied emission factor values (CalEEMod User Guide, 2011).

Emissions from waste generation were also calculated in CalEEMod and are based on the IPCC's methods for quantifying GHG emissions from solid waste using the degradable organic content of waste (CalEEMod User Guide, 2011). Waste disposal rates by land use and overall composition of municipal solid waste in California was primarily based on data provided by the California Department of Resources Recycling and Recovery (CalRecycle).

Emissions from water and wastewater usage calculated in CalEEMod were based on the default electricity intensity from the CEC's 2006 Refining Estimates of Water-Related Energy Use in California using the average values for Northern and Southern California.

Direct Emissions from Mobile Combustion. Emissions of CO₂ and CH₄ from transportation sources for the proposed project were quantified using the CalEEMod computer program. The emissions modeling accounts for the proposed project's proximity to transit (approximately 600 feet from Metro Route 534, which operates along Civic Center Way) and the increasing density and number of jobs in the area. Because CalEEMod does not calculate N₂O emissions from mobile sources, N₂O emissions were quantified using the California Climate Action Registry General Reporting Protocol (January 2009) direct emissions factors for mobile combustion (see Appendix for calculations). The estimate of total daily trips, associated with development of the proposed project, was based on the traffic analysis prepared by Overland Traffic Consultants, Inc. (April 2012), and were adjusted to account for internal capture, consistent with the methodology used in the traffic analysis. Total vehicle trips generated by the project were then calculated and extrapolated to derive total annual mileage in CalEEMod. Emission rates for N₂O emissions were based on the vehicle mix output generated by CalEEMod and the emission factors found in the California Climate Action Registry General Reporting Protocol.

Estimate of GHG Emissions

Construction Emissions.

Construction activity is assumed to occur over a period of approximately 24 months. Based on CalEEMod results, construction activity for the project would generate an estimated 2,577 metric tons of carbon dioxide equivalent (CO₂E) (as shown in Table 1). Amortized over a 30-year period (the assumed life of the project), construction of the proposed project would generate about 86 metric tons of CO₂E per year.



Table 1
Estimated Construction Emissions of Greenhouse Gases

Year	Annual Emissions (Carbon Dioxide Equivalent (CO ₂ E))
2013	1,463.25 metric tons
2014	1,010.17 metric tons
2015	103.42 metric tons
Total	2,576.84 metric tons
Amortized over 30 years	85.89 metric tons per year

Sources: See Appendix for CalEEMod computer program output and for GHG emission factor assumptions.

Operational Indirect and Stationary Direct Emissions.

Energy Use. Operation of on-site development would consume both electricity and natural gas (see Appendix for CalEEMod computer program output). The generation of electricity through combustion of fossil fuels typically yields CO₂, and to a smaller extent, N₂O and CH₄. As discussed above, annual electricity and natural gas emissions can be calculated using default values from the CEC sponsored CEUS and RASS studies which are built into CalEEMod.

With the installation of energy efficient appliances, electricity consumption associated with the project would generate approximately 1,083 metric tons of CO₂E per year. As shown in Table 2, natural gas use would generate approximately 693 metric tons of CO₂E per year. Thus, overall energy use at the project site would generate approximately 1,776 metric tons of CO₂E per year.

Table 2
Estimated Annual Energy-Related Greenhouse Gas Emissions

Emission Source	Annual Emissions (Carbon Dioxide Equivalent (CO ₂ E))
Electricity	1,083.08 metric tons
Natural Gas	692.53 metric tons
Total	1,775.62 metric tons

Sources: See Appendix for CalEEMod computer program output and for GHG emission factor assumptions.

Solid Waste Emissions. For solid waste generated on-site, it was assumed that the project would include a recycling program that would achieve the 50% diversion rate required by the California Integrated Waste Management Act of 1989 and reinforced by the objectives of the Conservation Element of the City's General Plan. Based on this assumption, it is anticipated that the project would generate approximately 285 tons of solid waste per year. As shown in Table 3, based on this estimate, the project would result in approximately 130 metric tons of CO₂E per



year, which would be reduced to 65 metric tons of CO₂E with the 50% diversion rate as required by the California Integrated Waste Management Act.

Table 3
Estimated Annual Solid Waste Greenhouse Gas Emissions

Emission Source	Annual Emissions (Carbon Dioxide Equivalent (CO ₂ E))
Solid Waste	129.59 metric tons
Total Waste Diverted ¹	64.78 metric tons
Total Waste Disposed at Landfill	64.79 metric tons

Source: See Appendix for CalEEMod computer program output and GHG emission factor assumptions.

¹*Based on a 50% diversion rate, as required by the California Integrated Waste Management Act.*

Water Use Emissions. With installation of low flow plumbing fixtures (low flow bathroom faucets, kitchen faucets, toilets and showers) and the use of gray water for landscaping, it is anticipated that the project would use approximately 7.61 million gallons of water per year. Based on the amount of electricity generated in order to supply this amount of water, as shown in Table 4, the project would generate approximately 36 metric tons of CO₂E per year.

Table 4
Estimated Greenhouse Gas Emissions from Water Use

Emission Source	Annual Emissions (Carbon Dioxide Equivalent (CO ₂ E))
Water Use	35.78 metric tons

Source: See Appendix for CalEEMod computer program output and GHG emission factor assumptions.

Transportation Emissions. Mobile source GHG emissions were estimated using the average daily trips derived from the traffic analysis prepared by Overland Traffic Consultants, and by the total VMT estimated in CalEEMod. The Institute of Transportation Engineers traffic generation rates for retail, restaurant and health club uses were used for the traffic analysis in order to provide a more conservative estimate of the potential traffic generation impacts. Therefore, mobile emissions as a result of the proposed project represent a conservative estimate. With the increase in employee density, increased transit accessibility and the implementation of an employee vanpool system, on-site development would generate approximately 4,361,476 annual VMT.

Table 5 shows the estimated mobile emissions of GHGs for the project based on the estimated annual VMT. As noted above, CalEEMod does not calculate N₂O emissions related to mobile



sources. As such, N₂O emissions were calculated based on the project’s VMT using calculation methods provided by the California Climate Action Registry General Reporting Protocol (January 2009). As shown in Table 5, the project would generate approximately 2,268 metric tons of CO₂E associated with mobile emissions.

Table 5
Estimated Annual Mobile Emissions of Greenhouse Gases

Emission Source	Annual Emissions (Carbon Dioxide Equivalent (CO ₂ E))
Mobile Emissions (CO ₂ & CH ₄) ¹	2,173.07 metric tons
Mobile Emissions (N ₂ O) ²	95.23 metric tons
Total	2,268.30 metric tons

Sources: See Appendix for CalEEMod computer program output and GHG emission factor assumptions.
¹ See Appendix for CalEEMod computer program output.
² See Appendix for CalEEMod computer program output according to California Climate Action Registry General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1, January 2009, page 30-35.

Combined Construction, Stationary and Mobile Source Emissions. Table 6 combines the construction, operational and mobile GHG emissions associated with on-site development for the proposed project. As discussed above, construction emissions associated with construction activity (approximately 2,577 metric tons CO₂E) are amortized over 30 years (the anticipated life of the project).

Table 6
Combined Annual Emissions of Greenhouse Gases

Emission Source	Annual Emissions
Construction	85.89 metric tons CO ₂ E
Operational	
Energy	1,775.62 metric tons CO ₂ E
Solid Waste	64.79 metric tons CO ₂ E
Water	35.78 metric tons CO ₂ E
Mobile	2,268.30 metric tons CO ₂ E
Total	4,230.38 metric tons CO₂E

Sources: See Appendix for CalEEMod computer program output and for GHG emission factor assumptions.

For the proposed project, the combined annual emissions would total approximately 4,230 metric tons per year in CO₂E. This total represents less than 0.01% of California’s total 2008 emissions of 478 million metric tons. The majority (54%) of the project’s GHG emissions are associated with motor vehicular travel. However, as noted above, mobile emissions are in part a redirection of existing travel to other locations, and so are already a part of the total California GHG emissions.



GHG Cumulative Significance. As noted above, neither the SCAQMD nor the City of Malibu has adopted formal GHG emissions thresholds that apply to land use projects. Additionally, the City of Malibu has not adopted a GHG emissions reduction plan. Therefore, the proposed project is evaluated based on the SCAQMD’s recommended/preferred option threshold of 3,000 metric tons CO₂E per year for all land use types (SCAQMD, “Proposed Tier 3 Quantitative Thresholds – Option 1”, September 2010).

As discussed above, total GHG emissions would be approximately 4,548 metric tons CO₂E per year. Although development facilitated by proposed project would generate additional GHG emissions beyond existing conditions, the total amount of GHG emissions would be above the threshold of 3,000 metric tons per year; therefore, impacts from GHG emissions would be potentially significant.

As indicated above, the CAT published the Climate Action Team Report to Governor Schwarzenegger and the Legislature (the “2006 CAT Report”) in March 2006. The CAT Report identifies a recommended list of strategies that the State could pursue to reduce GHG emissions. The CAT strategies are recommended to reduce GHG emissions at a statewide level to meet the goals of the Executive Order S-3-05. These are strategies that could be implemented by various State agencies to ensure that the Governor’s targets are met and can be met with existing authority of the State agencies. In addition, in 2008 the California Attorney General published The California Environmental Quality Act Addressing Global Warming Impacts at the Local Agency Level (Office of the California Attorney General, Global Warming Measures Updated May 21, 2008). This document provides information that may be helpful to local agencies in carrying out their duties under CEQA as they relate to global warming. Included in this document are various measures that may reduce the global warming related impacts of a project. Tables 7 and 8 illustrate that the proposed project would be consistent with the GHG reduction strategies set forth by the 2006 CAT Report as well as the 2008 Attorney General’s Greenhouse Gas Reduction Measures.

**Table 7
 Project Consistency with Applicable Climate Action Team
 Greenhouse Gas Emission Reduction Strategies**

<i>Strategy</i>	<i>Project Consistency</i>
California Air Resources Board	
<p>Vehicle Climate Change Standards</p> <p>AB 1493 (Pavley) required the state to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of climate change emissions emitted by passenger vehicles and light duty trucks. Regulations were adopted by the ARB in September 2004.</p>	<p>Consistent</p> <p>The vehicles that travel to and from the project site on public roadways would be in compliance with ARB vehicle standards that are in effect at the time of vehicle purchase.</p>
<p>Diesel Anti-Idling</p> <p>The ARB adopted a measure to limit diesel-fueled commercial motor vehicle idling in July 2004.</p>	<p>Consistent</p> <p>Current State law restricts diesel truck idling to five minutes or less. Diesel trucks operating from and making deliveries to the project site are subject to this state-wide law. Construction vehicles are also subject to this regulation.</p>



**Table 7
Project Consistency with Applicable Climate Action Team
Greenhouse Gas Emission Reduction Strategies**

<p>Hydrofluorocarbon Reduction</p> <p>1) Ban retail sale of HFC in small cans. 2) Require that only low GWP refrigerants be used in new vehicular systems. 3) Adopt specifications for new commercial refrigeration. 4) Add refrigerant leak-tightness to the pass criteria for vehicular inspection and maintenance programs. 5) Enforce federal ban on releasing HFCs.</p>	<p>Consistent</p> <p>This strategy applies to consumer products. All applicable products would be required to comply with the regulations that are in effect at the time of manufacture.</p>
<p>Alternative Fuels: Biodiesel Blends</p> <p>ARB would develop regulations to require the use of 1 to 4% biodiesel displacement of California diesel fuel.</p>	<p>Consistent</p> <p>The diesel vehicles such as construction vehicles or delivery trucks that travel to and from the project site on public roadways could utilize this fuel once it is commercially available.</p>
<p>Alternative Fuels: Ethanol</p> <p>Increased use of E-85 fuel.</p>	<p>Consistent</p> <p>Employees and visitors at the project site could choose to purchase flex-fuel vehicles and utilize this fuel once it is commercially available regionally and locally.</p>
<p>Heavy-Duty Vehicle Emission Reduction Measures</p> <p>Increased efficiency in the design of heavy duty vehicles and an education program for the heavy duty vehicle sector.</p>	<p>Consistent</p> <p>The heavy-duty vehicles for construction activities that travel to and from the project site on public roadways would be subject to all applicable ARB efficiency standards that are in effect at the time of vehicle manufacture.</p>
<p>Achieve 50% Statewide Recycling Goal</p> <p>Achieving the State's 50% waste diversion mandate as established by the Integrated Waste Management Act of 1989, (AB 939, Sher, Chapter 1095, Statutes of 1989), will reduce climate change emissions associated with energy intensive material extraction and production as well as methane emission from landfills. A diversion rate of 48% has been achieved on a statewide basis. Therefore, a 2% additional reduction is needed.</p>	<p>Consistent</p> <p>The Malibu Garbage Disposal District and the Los Angeles County Sanitation District are responsible for complying with AB 939. The City has enacted numerous programs to achieve the mandated 50% diversion. The programs include residential curbside recycling, residential drop-off locations, commercial and industrial recycling programs, residential curbside greenwaste collection, and public outreach. The City achieved a diversion rate of 57% in 2000.</p> <p>It is anticipated that the proposed project would participate in the City's waste diversion programs and would similarly divert at least 50% of its solid waste. The project would also be subject to all applicable State and County requirements for solid waste reduction as they change in the future.</p>
<p>Department of Water Resources</p>	
<p>Water Use Efficiency</p> <p>Approximately 19% of all electricity, 30% of all natural gas, and 88 million gallons of diesel are used to convey, treat, distribute and use water and wastewater. Increasing the efficiency of water transport and reducing water use would reduce greenhouse gas emissions.</p>	<p>Consistent</p> <p>The proposed project would include water saving features such as the use of gray water for landscape irrigation and providing low flow plumbing fixtures.</p>



**Table 7
 Project Consistency with Applicable Climate Action Team
 Greenhouse Gas Emission Reduction Strategies**

Energy Commission (CEC)	
<p><i>Building Energy Efficiency Standards in Place and in Progress</i></p> <p>Public Resources Code 25402 authorizes the CEC to adopt and periodically update its building energy efficiency standards (that apply to newly constructed buildings and additions to and alterations to existing buildings).</p>	<p>Consistent</p> <p>The proposed project would need to comply with the standards of Title 24 that are in effect at the time of development.</p>
<p><i>Appliance Energy Efficiency Standards in Place and in Progress</i></p> <p>Public Resources Code 25402 authorizes the Energy Commission to adopt and periodically update its appliance energy efficiency standards (that apply to devices and equipment using energy that are sold or offered for sale in California).</p>	<p>Consistent</p> <p>Under State law, appliances that are purchased for the project - both pre- and post-development - would be consistent with energy efficiency standards that are in effect at the time of manufacture.</p>
<p><i>Fuel-Efficient Replacement Tires & Inflation Programs</i></p> <p>State legislation established a statewide program to encourage the production and use of more efficient tires.</p>	<p>Consistent</p> <p>Employees at and visitors to the project site could purchase tires for their vehicles that comply with state programs for increased fuel efficiency.</p>
<p><i>Municipal Utility Energy Efficiency Programs/Demand Response</i></p> <p>Includes energy efficiency programs, renewable portfolio standard, combined heat and power, and transitioning away from carbon-intensive generation.</p>	<p><i>Not applicable</i>, but project development would not preclude the implementation of this strategy by municipal utility providers.</p>
<p><i>Municipal Utility Renewable Portfolio Standard</i></p> <p>California's Renewable Portfolio Standard (RPS), established in 2002, requires that all load serving entities achieve a goal of 20% of retail electricity sales from renewable energy sources by 2017, within certain cost constraints.</p>	<p><i>Not applicable</i>, but the project would not preclude the implementation of this strategy by Southern California Edison.</p>
<p><i>Municipal Utility Combined Heat and Power</i></p> <p>Cost effective reduction from fossil fuel consumption in the commercial and industrial sector through the application of on-site power production to meet both heat and electricity loads.</p>	<p><i>Not applicable</i> since this strategy addresses incentives that could be provided by utility providers such as Southern California Edison and The Gas Company.</p>
<p><i>Alternative Fuels: Non-Petroleum Fuels</i></p> <p>Increasing the use of non-petroleum fuels in California's transportation sector, as recommended as recommended in the CEC's 2003 and 2005 Integrated Energy Policy Reports.</p>	<p>Consistent</p> <p>Employees and visitors of the project site could purchase alternative fuel vehicles and utilize these fuels once they are commercially available regionally and locally.</p>
<p><i>Green Buildings Initiative</i></p> <p>Green Building Executive Order, S-20-04 (CA 2004), sets a goal of reducing energy use in public and private buildings by 20% by the year 2015, as compared with 2003 levels. The Executive Order and related action plan spell out specific actions state agencies are to take with state-owned and -leased buildings. The order and plan also discuss various strategies and incentives to encourage private building owners and operators to achieve the 20% target.</p>	<p>Consistent</p> <p>As discussed previously, the project would be required to be constructed in compliance with the standards of Title 24 that are in effect at the time of development. The 2008 Title 24 standards are approximately 15% more efficient than those of the 2005 standards.</p>



**Table 7
 Project Consistency with Applicable Climate Action Team
 Greenhouse Gas Emission Reduction Strategies**

Business, Transportation and Housing	
<p>Smart Land Use and Intelligent Transportation Systems (ITS)</p> <p>Smart land use strategies encourage jobs/housing proximity, promote transit-oriented development, and encourage high-density residential/commercial development along transit corridors.</p> <p>ITS is the application of advanced technology systems and management strategies to improve operational efficiency of transportation systems and movement of people, goods and services.</p> <p>The Governor is finalizing a comprehensive 10-year strategic growth plan with the intent of developing ways to promote, through state investments, incentives and technical assistance, land use, and technology strategies that provide for a prosperous economy, social equity and a quality environment.</p> <p>Smart land use, demand management, ITS, and value pricing are critical elements in this plan for improving mobility and transportation efficiency. Specific strategies include: promoting jobs/housing proximity and transit-oriented development; encouraging high density residential/commercial development along transit/rail corridor; valuing and congestion pricing; implementing intelligent transportation systems, traveler information/traffic control, incident management; accelerating the development of broadband infrastructure; and comprehensive, integrated, multimodal/intermodal transportation planning.</p>	<p>Consistent</p> <p>The project site is located approximately 600 feet from a bus service stop (Metropolitan Transportation Authority (Metro) Route 534, which operates along Civic Center Way). Employees and visitors of the project site would have adequate access to and from the site via public transportation.</p>
Public Utilities Commission (PUC)	
<p>Accelerated Renewable Portfolio Standard</p> <p>The Governor has set a goal of achieving 33% renewable in the State's resource mix by 2020. The joint PUC/Energy Commission September 2005 Energy Action Plan II (EAP II) adopts the 33% goal.</p>	<p><i>Not applicable</i>, but project development would not preclude the implementation of this strategy by energy providers.</p>

**Table 8
 Project Consistency with Applicable Attorney General
 Greenhouse Gas Reduction Measures**

Strategy	Project Consistency
Transportation-Related Emissions	
<p>Diesel Anti-Idling</p> <p>Set specific limits on idling time for commercial vehicles, including delivery vehicles.</p>	<p>Consistent</p> <p>Currently, the California Air Resources Board's (CARB) Airborne Toxic Control Measure (ATCM) to Limit Diesel-Fueled Commercial Motor Vehicle Idling restricts diesel truck idling to five minutes or less. Diesel trucks operating from and making deliveries to the project site are subject to this state-wide law. Construction vehicles are also subject to this regulation.</p>



**Table 8
Project Consistency with Applicable Attorney General
Greenhouse Gas Reduction Measures**

<i>Strategy</i>	<i>Project Consistency</i>
<p><i>Transportation Emissions Reduction</i></p> <p>Provide shuttle service to public transportation.</p>	<p>Consistent</p> <p>The project site is located within walking distance to the Metro Route #534, along Civic Center Way.</p>
Solid Waste and Energy Emissions	
<p><i>Solid Waste Reduction Strategy</i></p> <p>Project construction shall require reuse and recycling of construction and demolition waste.</p>	<p>Consistent</p> <p>It is anticipated that the proposed project would participate in the City's waste diversion programs and would similarly divert at least 50% of its solid waste from construction.</p>
<p><i>Water Use Efficiency</i></p> <p>Require measures that reduce the amount of water sent to the sewer system – see examples in CAT standard above. (Reduction in water volume sent to the sewer system means less water has to be treated and pumped to the end user, thereby saving energy.</p>	<p>Consistent</p> <p>As described above, the proposed project would include water saving features such as the use of gray water for landscape irrigation and low flow plumbing fixtures.</p>
Land Use Measures, Smart Growth Strategies and Carbon Offsets	
<p><i>Smart Land Use and Intelligent Transportation Systems</i></p> <p>Require pedestrian-only streets and plazas within the project site and destinations that may be reached conveniently by public transportation, walking or bicycling.</p>	<p>Consistent</p> <p>The project site is located within walking distance of public transportation, such as the Metro Route #534, along civic Center Way.</p>

As indicated in Tables 7 and 8, the proposed project would be consistent with CAT strategies and the 2008 Attorney General Greenhouse Gas Reduction Measures. However, as indicated in Table 6, the increase of GHG emissions associated with the project would be approximately 4,230 metric tons CO₂E per year, which would exceed SCAQMD's 3,000 MT CO₂E per year threshold by 1,230 MTCO₂E per year. Therefore, Mitigation Measures GHG-1 and GHG-2 are recommended to reduce GHG emissions impacts.

GHG-1 On-Site GHG Emission Reduction Strategies. GHG emissions could be further reduced through implementation of one or more of the following emissions reduction strategies:

- Increase building energy efficiency ratings above what is required by Title 24 requirements. Potential energy consumption reduction measures include, but are not limited to, increasing attic, wall, or floor insulation, the use of photovoltaic roof tiles, installation of energy efficient windows, and the use of R-45 insulation in the roof/attic space of all on-site structures; or
- Provide on-site renewable energy system(s) – Examples of nonpolluting and renewable energy potential include solar, wind, geothermal, biomass and bio-gas.



An on-site renewable energy system (e.g., photovoltaic) that generates 100% of the proposed project's energy needs would reduce the project's GHG emissions by up to 1,083 metric tons of CO₂E per year, as shown in Table 2. This would reduce the project's total GHG emissions to 3,147 metric tons of CO₂E per year, which still exceeds SCAQMD's 3,000 MT CO₂E per year threshold.

Due to the large volume of GHG emissions from off-site mobile sources that would be generated by the proposed project, which cannot be mitigated on-site, reducing project emissions to below SCAQMD's 3,000 MT CO₂E per year threshold is not feasible using only on-site GHG emission reduction strategies. Therefore, Mitigation Measure GHG-2 would allow the project applicant to mitigate GHG emissions through purchase of verified off-site GHG emissions reduction credits. It should be noted that on-site GHG emission reductions through modifications to the project are preferred to the purchase of off-site GHG emission reduction credits; therefore Mitigation Measure GHG-1 should be implemented to the maximum extent feasible for the proposed development, prior to implementation of Mitigation Measure GHG-2.

GHG-2 Off-Site GHG Emission Reduction Credits. Once on-site emission reduction strategies have been implemented to the maximum extent feasible, verified GHG emission reduction credits (offsets) may be purchased to reduce GHG emissions below threshold levels. GHG emission reduction credits should be verified by an accredited organization, such as the California Resources Board, or otherwise approved by the City of Malibu.

With incorporation of Mitigation Measures GHG-1 and GHG-2, the project's contribution to cumulative GHG emissions and climate change would be reduced to a less than significant level.



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Appendix



*CalEEMod.GHG Model Worksheets/
N₂O from Mobile Emissions GHG Calculation
Worksheet*

Rancho Malibu Resort Project
Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Parking Lot	52	Space
Parking Structure	474	Space
Health Club	30.57	1000sqft
Hotel	146	Room
Quality Restaurant	7.71	1000sqft
User Defined Retail	22.5	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Utility Company	Southern California Edison
Climate Zone	8	Precipitation Freq (Days)	33		

1.3 User Entered Comments

Project Characteristics -

Land Use - Acreages updated based on November 2011 traffic study and project description.

Construction Phase - Construction schedule estimated based on project description.

Site Prep: 3/8/13 - 86 days

Grading 7/6/13 - 56 days

Construction 9/24/2013 - 307 days

Paving: 11/27/14 - 65 days

Arch Coatings: 2/26/15 - 130 days

Trips and VMT - 14,819 haul trips, from project applicant.

Grading - Soil export = 14,819 trips carrying 13 cy each = 189,760 cy. Total acres disturbed = total acreage in Land Use tab.

Architectural Coating - Low VOC paints consistent with California's standard.

Vehicle Trips - Trip rates modified based on project traffic study, less internal capture (page 17 of traffic study).

Energy Use - User defined retail energy use

Water And Wastewater - User defined retail water and wastewater use

Solid Waste - User defined retail solid waste generation.

Construction Off-road Equipment Mitigation - Dust control measures consistent with SCAQMD Rule 403.

Mobile Land Use Mitigation - Jobs generation rate from SCAG.

Nearest transit is MTA Route 534 on Civic Center Way.

Mobile Commute Mitigation -

Area Mitigation - Low VOC paints consistent with California's standard.

Energy Mitigation -

Water Mitigation -

Waste Mitigation - 50% diversion rate as required by the California Integrated Waste Management Act

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					
2013	1.49	12.04	7.77	0.02	14.36	0.58	14.94	0.55	0.58	1.14	0.00	1,461.07	1,461.07	0.10	0.00	1,463.25
2014	0.94	5.93	5.93	0.01	0.45	0.34	0.79	0.02	0.34	0.37	0.00	1,008.61	1,008.61	0.07	0.00	1,010.17
2015	3.83	0.79	0.74	0.00	0.04	0.07	0.11	0.00	0.07	0.07	0.00	103.17	103.17	0.01	0.00	103.42
Total	6.26	18.76	14.44	0.03	14.85	0.99	15.84	0.57	0.99	1.58	0.00	2,572.85	2,572.85	0.18	0.00	2,576.84

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					
2013	1.49	12.04	7.77	0.02	12.38	0.58	12.97	0.13	0.58	0.72	0.00	1,461.07	1,461.07	0.10	0.00	1,463.25
2014	0.94	5.93	5.93	0.01	0.41	0.34	0.75	0.02	0.34	0.37	0.00	1,008.61	1,008.61	0.07	0.00	1,010.17
2015	3.83	0.79	0.74	0.00	0.04	0.07	0.11	0.00	0.07	0.07	0.00	103.17	103.17	0.01	0.00	103.42
Total	6.26	18.76	14.44	0.03	12.83	0.99	13.83	0.15	0.99	1.16	0.00	2,572.85	2,572.85	0.18	0.00	2,576.84

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	2.53	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
Energy	0.07	0.63	0.53	0.00		0.00	0.05		0.00	0.05	0.00	1,776.08	1,776.08	0.06	0.03	1,787.09
Mobile	1.62	3.83	15.35	0.03	2.51	0.17	2.67	0.10	0.17	0.26	0.00	2,307.28	2,307.28	0.09	0.00	2,309.23
Waste						0.00	0.00		0.00	0.00	57.82	0.00	57.82	3.42	0.00	129.59
Water						0.00	0.00		0.00	0.00	0.00	44.85	44.85	0.29	0.01	53.47
Total	4.22	4.46	15.88	0.03	2.51	0.17	2.72	0.10	0.17	0.31	57.82	4,128.21	4,186.03	3.86	0.04	4,279.38

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.29	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
Energy	0.07	0.63	0.53	0.00		0.00	0.05		0.00	0.05	0.00	1,764.68	1,764.68	0.06	0.03	1,775.62
Mobile	1.56	3.65	14.66	0.02	2.35	0.16	2.51	0.09	0.16	0.25	0.00	2,171.23	2,171.23	0.09	0.00	2,173.07
Waste						0.00	0.00		0.00	0.00	28.91	0.00	28.91	1.71	0.00	64.79
Water						0.00	0.00		0.00	0.00	0.00	28.93	28.93	0.23	0.01	35.77
Total	3.92	4.28	15.19	0.02	2.35	0.16	2.56	0.09	0.16	0.30	28.91	3,964.84	3,993.75	2.09	0.04	4,049.25

3.0 Construction Detail

3.1 Mitigation Measures Construction

- Use Cleaner Engines for Construction Equipment
- Use DPF for Construction Equipment
- Use Soil Stabilizer
- Replace Ground Cover
- Water Exposed Area
- Clean Paved Roads

3.2 Site Preparation (Soil Export) - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.79	0.00	0.79	0.43	0.00	0.43	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.43	3.44	1.95	0.00		0.17	0.17		0.17	0.17	0.00	311.90	311.90	0.03	0.00	312.63
Total	0.43	3.44	1.95	0.00	0.79	0.17	0.96	0.43	0.17	0.60	0.00	311.90	311.90	0.03	0.00	312.63

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	0.43	4.06	2.45	0.01	13.24	0.18	13.42	0.02	0.18	0.20	0.00	564.60	564.60	0.02	0.00	565.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.06	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	8.56	8.56	0.00	0.00	8.57
Total	0.44	4.07	2.51	0.01	13.25	0.18	13.43	0.02	0.18	0.20	0.00	573.16	573.16	0.02	0.00	573.57

3.2 Site Preparation (Soil Export) - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.16	0.00	0.16	0.09	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.43	3.44	1.95	0.00		0.17	0.17		0.17	0.17	0.00	311.90	311.90	0.03	0.00	312.63
Total	0.43	3.44	1.95	0.00	0.16	0.17	0.33	0.09	0.17	0.26	0.00	311.90	311.90	0.03	0.00	312.63

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	0.43	4.06	2.45	0.01	12.05	0.18	12.23	0.02	0.18	0.20	0.00	564.60	564.60	0.02	0.00	565.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.06	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	8.56	8.56	0.00	0.00	8.57
Total	0.44	4.07	2.51	0.01	12.06	0.18	12.24	0.02	0.18	0.20	0.00	573.16	573.16	0.02	0.00	573.57

3.3 Grading - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.17	0.00	0.17	0.09	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.33	2.73	1.48	0.00		0.13	0.13		0.13	0.13	0.00	275.70	275.70	0.03	0.00	276.26
Total	0.33	2.73	1.48	0.00	0.17	0.13	0.30	0.09	0.13	0.22	0.00	275.70	275.70	0.03	0.00	276.26

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	6.19	6.19	0.00	0.00	6.20
Total	0.00	0.00	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	6.19	6.19	0.00	0.00	6.20

3.3 Grading - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.04	0.00	0.04	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.33	2.73	1.48	0.00		0.13	0.13		0.13	0.13	0.00	275.70	275.70	0.03	0.00	276.26
Total	0.33	2.73	1.48	0.00	0.04	0.13	0.17	0.02	0.13	0.15	0.00	275.70	275.70	0.03	0.00	276.26

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	6.19	6.19	0.00	0.00	6.20
Total	0.00	0.00	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	6.19	6.19	0.00	0.00	6.20

3.4 Building Construction - 2013

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	0.18	1.23	0.83	0.00		0.08	0.08		0.08	0.08	0.00	130.09	130.09	0.01	0.00	130.41
Total	0.18	1.23	0.83	0.00		0.08	0.08		0.08	0.08	0.00	130.09	130.09	0.01	0.00	130.41

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.05	0.52	0.37	0.00	0.03	0.02	0.05	0.00	0.02	0.02	0.00	77.31	77.31	0.00	0.00	77.36
Worker	0.05	0.05	0.59	0.00	0.11	0.00	0.11	0.00	0.00	0.01	0.00	86.72	86.72	0.01	0.00	86.83
Total	0.10	0.57	0.96	0.00	0.14	0.02	0.16	0.00	0.02	0.03	0.00	164.03	164.03	0.01	0.00	164.19

3.4 Building Construction - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.18	1.23	0.83	0.00		0.08	0.08		0.08	0.08	0.00	130.09	130.09	0.01	0.00	130.41
Total	0.18	1.23	0.83	0.00		0.08	0.08		0.08	0.08	0.00	130.09	130.09	0.01	0.00	130.41

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.05	0.52	0.37	0.00	0.02	0.02	0.04	0.00	0.02	0.02	0.00	77.31	77.31	0.00	0.00	77.36
Worker	0.05	0.05	0.59	0.00	0.10	0.00	0.10	0.00	0.00	0.01	0.00	86.72	86.72	0.01	0.00	86.83
Total	0.10	0.57	0.96	0.00	0.12	0.02	0.14	0.00	0.02	0.03	0.00	164.03	164.03	0.01	0.00	164.19

3.4 Building Construction - 2014

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	0.56	3.78	2.74	0.01		0.24	0.24		0.24	0.24	0.00	432.42	432.42	0.05	0.00	433.37
Total	0.56	3.78	2.74	0.01		0.24	0.24		0.24	0.24	0.00	432.42	432.42	0.05	0.00	433.37

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.16	1.57	1.11	0.00	0.09	0.06	0.14	0.01	0.06	0.06	0.00	257.47	257.47	0.01	0.00	257.62
Worker	0.16	0.17	1.81	0.00	0.36	0.01	0.37	0.01	0.01	0.03	0.00	283.60	283.60	0.02	0.00	283.95
Total	0.32	1.74	2.92	0.00	0.45	0.07	0.51	0.02	0.07	0.09	0.00	541.07	541.07	0.03	0.00	541.57

3.4 Building Construction - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.56	3.78	2.74	0.01		0.24	0.24		0.24	0.24	0.00	432.42	432.42	0.05	0.00	433.37
Total	0.56	3.78	2.74	0.01		0.24	0.24		0.24	0.24	0.00	432.42	432.42	0.05	0.00	433.37

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.16	1.57	1.11	0.00	0.08	0.06	0.14	0.01	0.06	0.06	0.00	257.47	257.47	0.01	0.00	257.62
Worker	0.16	0.17	1.81	0.00	0.33	0.01	0.34	0.01	0.01	0.03	0.00	283.60	283.60	0.02	0.00	283.95
Total	0.32	1.74	2.92	0.00	0.41	0.07	0.48	0.02	0.07	0.09	0.00	541.07	541.07	0.03	0.00	541.57

3.5 Paving - 2014

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	0.07	0.40	0.26	0.00		0.03	0.03		0.03	0.03	0.00	33.08	33.08	0.01	0.00	33.19
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.07	0.40	0.26	0.00		0.03	0.03		0.03	0.03	0.00	33.08	33.08	0.01	0.00	33.19

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.04	2.04	0.00	0.00	2.04
Total	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.04	2.04	0.00	0.00	2.04

3.5 Paving - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.07	0.40	0.26	0.00		0.03	0.03		0.03	0.03	0.00	33.08	33.08	0.01	0.00	33.19
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.07	0.40	0.26	0.00		0.03	0.03		0.03	0.03	0.00	33.08	33.08	0.01	0.00	33.19

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.04	2.04	0.00	0.00	2.04
Total	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.04	2.04	0.00	0.00	2.04

3.5 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	0.10	0.60	0.41	0.00		0.05	0.05		0.05	0.05	0.00	52.92	52.92	0.01	0.00	53.09
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.10	0.60	0.41	0.00		0.05	0.05		0.05	0.05	0.00	52.92	52.92	0.01	0.00	53.09

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.20	3.20	0.00	0.00	3.20
Total	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.20	3.20	0.00	0.00	3.20

3.5 Paving - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.10	0.60	0.41	0.00		0.05	0.05		0.05	0.05	0.00	52.92	52.92	0.01	0.00	53.09
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.10	0.60	0.41	0.00		0.05	0.05		0.05	0.05	0.00	52.92	52.92	0.01	0.00	53.09

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.20	3.20	0.00	0.00	3.20
Total	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.20	3.20	0.00	0.00	3.20

3.6 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	3.69					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.03	0.17	0.12	0.00		0.01	0.01		0.01	0.01	0.00	16.58	16.58	0.00	0.00	16.62
Total	3.72	0.17	0.12	0.00		0.01	0.01		0.01	0.01	0.00	16.58	16.58	0.00	0.00	16.62

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.02	0.02	0.18	0.00	0.04	0.00	0.04	0.00	0.00	0.00	0.00	30.48	30.48	0.00	0.00	30.51
Total	0.02	0.02	0.18	0.00	0.04	0.00	0.04	0.00	0.00	0.00	0.00	30.48	30.48	0.00	0.00	30.51

3.6 Architectural Coating - 2015

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	3.69					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.03	0.17	0.12	0.00		0.01	0.01		0.01	0.01	0.00	16.58	16.58	0.00	0.00	16.62
Total	3.72	0.17	0.12	0.00		0.01	0.01		0.01	0.01	0.00	16.58	16.58	0.00	0.00	16.62

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.02	0.02	0.18	0.00	0.04	0.00	0.04	0.00	0.00	0.00	0.00	30.48	30.48	0.00	0.00	30.51
Total	0.02	0.02	0.18	0.00	0.04	0.00	0.04	0.00	0.00	0.00	0.00	30.48	30.48	0.00	0.00	30.51

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

- Increase Density
- Increase Transit Accessibility
- Employee Vanpool/Shuttle

	ROG	NOx	CO	SO2	Fugitive 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	1.56	3.65	14.66	0.02	2.35	0.16	2.51	0.09	0.16	0.25	0.00	2,171.23	2,171.23	0.09	0.00	2,173.07
Unmitigated	1.62	3.83	15.35	0.03	2.51	0.17	2.67	0.10	0.17	0.26	0.00	2,307.28	2,307.28	0.09	0.00	2,309.23
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Health Club	352.47	223.16	286.14	835,194	784,111
Hotel	1,192.82	1,195.74	868.70	3,193,188	2,997,927
Parking Lot	0.00	0.00	0.00		
Parking Structure	0.00	0.00	0.00		
Quality Restaurant	346.80	363.76	278.18	617,203	579,439
User Defined Retail	289.80	337.28	170.33		
Total	2,181.89	2,119.93	1,603.34	4,645,585	4,361,476

4.3 Trip Type Information

Land Use	Miles			Trip %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Health Club	8.90	13.30	7.40	16.90	64.10	19.00
Hotel	8.90	13.30	7.40	19.40	61.60	19.00
Parking Lot	8.90	13.30	7.40	0.00	0.00	0.00
Parking Structure	8.90	13.30	7.40	0.00	0.00	0.00
Quality Restaurant	8.90	13.30	7.40	12.00	69.00	19.00
User Defined Retail	8.90	13.30	7.40	16.30	64.70	19.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive 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						0.00	0.00		0.00	0.00	0.00	1,076.34	1,076.34	0.05	0.02	1,083.08
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	1,087.74	1,087.74	0.05	0.02	1,094.55
NaturalGas Mitigated	0.07	0.63	0.53	0.00		0.00	0.05		0.00	0.05	0.00	688.34	688.34	0.01	0.01	692.53
NaturalGas Unmitigated	0.07	0.63	0.53	0.00		0.00	0.05		0.00	0.05	0.00	688.34	688.34	0.01	0.01	692.53
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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	tons/yr										MT/yr					
Health Club	661643	0.00	0.03	0.03	0.00		0.00	0.00		0.00	0.00	0.00	35.31	35.31	0.00	0.00	35.52
Hotel	1.0159e+007	0.05	0.50	0.42	0.00		0.00	0.04		0.00	0.04	0.00	542.12	542.12	0.01	0.01	545.42
Parking Lot	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Parking Structure	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Quality Restaurant	2.03236e+006	0.01	0.10	0.08	0.00		0.00	0.01		0.00	0.01	0.00	108.45	108.45	0.00	0.00	109.11
User Defined Retail	46125	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	2.46	2.46	0.00	0.00	2.48
Total		0.06	0.63	0.53	0.00		0.00	0.05		0.00	0.05	0.00	688.34	688.34	0.01	0.01	692.53

5.2 Energy by Land Use - NaturalGas

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	tons/yr										MT/yr					
Health Club	661643	0.00	0.03	0.03	0.00		0.00	0.00		0.00	0.00	0.00	35.31	35.31	0.00	0.00	35.52
Hotel	1.0159e+007	0.05	0.50	0.42	0.00		0.00	0.04		0.00	0.04	0.00	542.12	542.12	0.01	0.01	545.42
Parking Lot	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Parking Structure	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Quality Restaurant	2.03236e+006	0.01	0.10	0.08	0.00		0.00	0.01		0.00	0.01	0.00	108.45	108.45	0.00	0.00	109.11
User Defined Retail	46125	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	2.46	2.46	0.00	0.00	2.48
Total		0.06	0.63	0.53	0.00		0.00	0.05		0.00	0.05	0.00	688.34	688.34	0.01	0.01	692.53

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Health Club	282513					82.17	0.00	0.00	82.69
Hotel	2.86564e+006					833.53	0.04	0.01	838.75
Parking Lot	0					0.00	0.00	0.00	0.00
Parking Structure	0					0.00	0.00	0.00	0.00
Quality Restaurant	303431					88.26	0.00	0.00	88.81
User Defined Retail	288000					83.77	0.00	0.00	84.30
Total						1,087.73	0.04	0.01	1,094.55

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Health Club	282513					82.17	0.00	0.00	82.69
Hotel	2.82645e+006					822.13	0.04	0.01	827.28
Parking Lot	0					0.00	0.00	0.00	0.00
Parking Structure	0					0.00	0.00	0.00	0.00
Quality Restaurant	303431					88.26	0.00	0.00	88.81
User Defined Retail	288000					83.77	0.00	0.00	84.30
Total						1,076.33	0.04	0.01	1,083.08

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	ROG	NOx	CO	SO2	Fugitive 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	2.29	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
Unmitigated	2.53	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
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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	0.61					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	1.92					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	2.53	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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e	
SubCategory	tons/yr										MT/yr						
Architectural Coating	0.37					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	1.92					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	2.29	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

7.0 Water Detail

7.1 Mitigation Measures Water

Use Grey Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					28.93	0.23	0.01	35.77
Unmitigated					44.85	0.29	0.01	53.47
Total	NA							

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Health Club	1.80801 / 1.10813					10.45	0.06	0.00	12.10
Hotel	3.70355 / 0.411505					15.40	0.11	0.00	18.74
Parking Lot	0 / 0					0.00	0.00	0.00	0.00
Parking Structure	0 / 0					0.00	0.00	0.00	0.00
Quality Restaurant	2.34024 / 0.149377					9.37	0.07	0.00	11.48
User Defined Retail	1.66663 / 1.02148					9.63	0.05	0.00	11.15
Total						44.85	0.29	0.00	53.47

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Health Club	1.4464 / 0					5.49	0.04	0.00	6.80
Hotel	2.96284 / 0					11.25	0.09	0.00	13.92
Parking Lot	0 / 0					0.00	0.00	0.00	0.00
Parking Structure	0 / 0					0.00	0.00	0.00	0.00
Quality Restaurant	1.8722 / 0					7.11	0.06	0.00	8.80
User Defined Retail	1.33331 / 0					5.06	0.04	0.00	6.26
Total						28.91	0.23	0.00	35.78

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					28.91	1.71	0.00	64.79
Unmitigated					57.82	3.42	0.00	129.59
Total	NA							

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Health Club	174.25					35.37	2.09	0.00	79.27
Hotel	79.94					16.23	0.96	0.00	36.37
Parking Lot	0					0.00	0.00	0.00	0.00
Parking Structure	0					0.00	0.00	0.00	0.00
Quality Restaurant	7.04					1.43	0.08	0.00	3.20
User Defined Retail	23.63					4.80	0.28	0.00	10.75
Total						57.83	3.41	0.00	129.59

Greenhouse Gas Emission Worksheet
N2O Mobile Emissions

Rancho Malibu Resort Project

From URBEMIS 2007 Vehicle Fleet Mix Output:

Annual VMT: 4,361,476

Vehicle Type	Percent Type	CH4 Emission Factor (g/mile)*	CH4 Emission (g/mile)**	N2O Emission Factor (g/mile)*	N2O Emission (g/mile)**
Light Auto	46.0%	0.04	0.0184	0.04	0.0184
Light Truck < 3750 lbs	10.3%	0.05	0.00515	0.06	0.00618
Light Truck 3751-5750 lbs	23.2%	0.05	0.0116	0.06	0.01392
Med Truck 5751-8500 lbs	12.2%	0.12	0.01464	0.2	0.0244
Lite-Heavy Truck 8501-10,000 lbs	2.1%	0.12	0.00252	0.2	0.0042
Lite-Heavy Truck 10,001-14,000 lbs	0.5%	0.09	0.00045	0.125	0.000625
Med-Heavy Truck 14,001-33,000 lbs	1.0%	0.06	0.0006	0.05	0.0005
Heavy-Heavy Truck 33,001-60,000 lbs	2.9%	0.06	0.00174	0.05	0.00145
Other Bus	0.1%	0.06	0.00006	0.05	0.00005
Urban Bus	0.1%	0.06	0.00006	0.05	0.00005
Motorcycle	1.1%	0.09	0.00099	0.01	0.00011
School Bus	0.1%	0.06	0.00006	0.05	0.00005
Motor Home	0.4%	0.09	0.00036	0.125	0.0005
Total	100.0%		0.05663		0.070435

Total Emissions (metric tons) =

Emission Factor by Vehicle Mix (g/mi) x Annual VMT(mi) x 0.000001 metric tons/g

Conversion to Carbon Dioxide Equivalency (CO2e) Units based on Global Warming Potential (GWP)

CH4 21 GWP
 N2O 310 GWP
 1 ton (short, US) = 0.90718474 metric ton

Annual Mobile Emissions:

	Total Emissions	Total CO2e units
N2O Emissions:	0.3072 metric tons N2O	95.23 metric tons CO2e
Project Total:		95.23 metric tons CO2e

References

- * from Table C.4: Methane and Nitrous Oxide Emission Factors for Mobile Sources by Vehicle and Fuel Type (g/mile). in California Climate Action Registry General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1, January 2009. Assume Model year 2000-present, gasoline fueled.
- ** Source: California Climate Action Registry General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1, January 2009.
- *** From URBEMIS 2007 results for mobile sources

8.2 Waste by Land Use

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Health Club	87.125					17.69	1.05	0.00	39.63
Hotel	39.97					8.11	0.48	0.00	18.18
Parking Lot	0					0.00	0.00	0.00	0.00
Parking Structure	0					0.00	0.00	0.00	0.00
Quality Restaurant	3.52					0.71	0.04	0.00	1.60
User Defined Retail	11.815					2.40	0.14	0.00	5.37
Total						28.91	1.71	0.00	64.78

9.0 Vegetation
