

**AC Marriot Hotel – West San Jose
Appendix B - Air Quality Summary**

**5696 Stevens Creek Boulevard
San José, CA 95014
File No. H17-023
May 2018**

Air Quality Analysis Methodology and Assumptions

The Project is located on Stevens Creek Boulevard, and is an approximately 0.415-acre parcel and is identified as having an Accessor's Parcel Number (APN) of 375-12-017. Based on drawings provided by Burkett Architecture, the Project consist of one seven-story hotel building (168 rooms) with four levels of subterranean parking, a restaurant, and associated on-site improvements including paving and landscaping. The Project would require the demolition of the existing gas station and convenience store. The Project includes an art piece structure on the northwest corner of the project site. In addition to the structure, art will be featured on the side of the proposed building, facing west.

An Air Quality analysis was performed by J.B. Anderson Land Use Planning on April 2, 2018, to evaluate potential pollutant levels anticipated under the Project and to evaluate compliance with regulatory standards. Air quality impacts were modeled using the California Emissions Estimator Model (CalEEMod), version 2016.3.1. The CalEEMod program is a tool used to estimate air emissions resulting from land development projects based on California-specific emissions factors. The modal estimates mass emissions from two basic sources: construction sources and operation sources (i.e., area and mobile sources). The CalEEMod reports were ran using all default assumptions and not selecting any mitigation measures to be implemented under the Project.

The CalEEMod analysis assumed that construction of the Project would begin on January 1, 2019 and the project would be operational in the year 2020. The standard timing (including number of days per week and number of days) for all phases of the Project construction, including demolition, site preparation, grading, building construction, paving, and architectural coating, were utilized.

Air Quality Assessment

Construction impacts are short term and result from fugitive dust, equipment exhaust, and indirect effects associated with construction workers and deliveries. Operational impacts can occur on two levels: regional or local. In the case of the project, operation impacts would be primarily due to emissions from mobile sources associated with the vehicular travel along the roadways within the project area.

Inputs to CalEEMod include such items as the air basin containing the project, land uses, trip generation rates, trip lengths, vehicle fleet mix (percentage of autos, medium truck, etc.) trip destination (i.e., percent of trips from home to work, etc.), duration of construction phases, construction equipment usage, grading areas, season, and ambient temperature, as well as other parameters.

Construction Emissions

Construction-related activities are temporary sources of air emissions. Sources of construction-related air emissions include:

- Fugitive dust from grading activities;
- Construction equipment exhaust;
- Construction-related trips by workers, delivery trucks, and material-hauling trucks; and
- Construction-related power consumption.

Construction-related pollutants result from dust raised during demolition and grading, emissions from construction vehicles, and chemicals used during construction. Fugitive dust emissions vary greatly during construction and are dependent on the amount and type of activity, silt content of the soil, and the weather. Vehicles moving over paved and unpaved surfaces, demolition, excavation, earth movement, grading, and wind erosion from exposed surfaces are all sources of fugitive dust. Construction operations are subject to the requirements established by the Bay Area Air Quality Management District (BAAQMD).

Heavy-duty construction equipment is usually diesel powered. In general, emissions from diesel-powered equipment contain more NO_x, SO_x, and particulate matter than gasoline-powered engines. However, diesel-powered engines generally produce less CO and less ROG than do gasoline-powered engines. Standard construction equipment includes tractors/loaders/backhoes, rubber-tired dozers, excavators, graders, cranes, forklifts, rollers, paving equipment, generator sets, welders, cement and mortar mixers, and air compressors.

As discussed above, construction emissions were modeled assuming construction would begin in January 2019 and last until June 2020. Primary inputs are the numbers of each piece of equipment and the length of each construction stage. Specific construction phasing and equipment parameters are not available at this time. However, CalEEMod can estimate the required construction equipment when project-specific information is unavailable. Air emission estimates in CalEEMod are based on the duration of construction phases; construction equipment type, quantity, and usage; grading area; season; and ambient temperature, among other parameters. Project construction would occur in five stages: site preparation, grading/excavation, building construction, paving, and architectural coatings.

Table 4 shows the total projected construction maximum daily emissions levels for each criteria pollutant. The CalEEMod output files for construction emissions are contained in Appendix B of the Initial study.

TABLE 4 CONSTRUCTION EMISSIONS (POUNDS/DAY)

Pollutant/Precursor	Maximum Emissions	Daily	BAAQMD Threshold	Significance	Significant Impact?
ROG	12.2		54		No
NO _x	19.7		54		No
PM ₁₀	2.1		82		No
PM _{2.5}	1.2		54		No
See Appendix B for CalEEMod worksheets.					

Standard dust control measures would be implemented as part of project construction in accordance with BAAQMD rules and regulations. Fugitive dust emissions were calculated using CalEEMod default values, and did not take into account the required dust control measures. Thus, emissions shown in Table 4 are conservative.

For assessing the significance of the air quality emissions that would be generated during construction of the project, the construction emissions were compared to the BAAQMD significance thresholds shown in Table 4. As shown above, maximum daily construction emissions associated with the project are projected to be less than the applicable thresholds for all criteria pollutants. Construction related air quality impacts would be less than significant.

Operational Emissions

Mobile source emissions would originate from traffic generated by the project. Area source emissions would result from the use of natural gas, fire places, consumer products, as well as applying architectural coatings and landscaping activities. Mobile source operational emissions are based on the trip rate, trip length for each land use type and size. Default vehicle emission factors and vehicle miles traveled (VMT) counts for this project were used.

Area source emissions associated with the project include consumer products, natural gas used in space and water heating, architectural coatings, and landscaping equipment. Hearths (fireplaces) and woodstoves are also a source of area emissions; however, the project would not include hearths or woodstoves. Consumer products are chemically formulated products used by household and institutional consumers, including, but not limited to, detergents, cleaning compounds, polishes, floor finishes, disinfectants, sanitizers, and aerosol paints but not including other paint products, furniture coatings, or architectural coatings. Emissions due to consumer products are calculated using the total building area and product emission factors.

Table 5 provides a summary of the operational emissions generated by the project. CalEEMod output files for the project are contained in Appendix B of the Initial Study and attached to this Summary. As shown, project-generated emissions are projected to be less than the BAAQMD’s significance thresholds for all criteria pollutants.

TABLE 5 OPERATIONAL EMISSIONS (POUNDS/DAY)

Pollutant/Precursor	Total Emissions	BAAQMD Threshold	Significance	Significant Impact?
ROG	4.2	54		No
NO _x	8.4	54		No
PM ₁₀	5.7	82		No
PM _{2.5}	1.6	54		No
See Appendix B for CalEEMod worksheets.				

Conclusions

As shown in Table 4, project construction emissions would not exceed the applicable regional emissions thresholds. These thresholds are designed to provide limits below which project emissions would not significantly change regional air quality. Therefore, as project emissions would be below these limits, project construction would not result in regional emissions that would exceed BAAQMD thresholds or contribute to existing violations. Additionally, construction emissions would be temporary, intermittent, and would cease at the end of project construction.

As shown in Table 5, project operational emission would not exceed the applicable regional emissions thresholds. Therefore, as project emissions would be below these limits, project operations would not result in regional emissions that would exceed the BAAQMD thresholds.

The project does not include any uses that are typically associated with odor complaints. The project does include a restaurant. Restaurants can produce noticeable odors through the preparation of food. However, the odors from general food preparation are not generally considered objectionable. Additionally restaurant kitchens are required to install ventilation systems that would decrease odor impacts. These sources are not expected to generate significant objectionable odors affecting a substantial number of people. The project would involve the use of diesel-powered construction equipment. Diesel exhaust may be noticeable temporarily at adjacent properties; however, construction activities would be temporary. Therefore, odor impacts would be less than significant.