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HOLIDAY INN SUITES AIR QUALITY AND GHG EMISSIONS ASSESSMENT

Milpitas, California

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Project 14-115

Introduction

The purpose of this report is to address air quality and greenhouse gas emission impacts associated with the proposed Holiday Inn Suites project in Milpitas, California. We understand that the project proposes the construction of 4 levels of Type V-A wood frame above grade construction, with a total building area of 71,719 square feet and site acreage of 3.294 acres in parcel APN 022-57-001. Green building design features such as designated parking for fuel-efficient vehicles, electric vehicle charging station, bicycle parking, water-efficient landscaping, renewable and low-emitting materials, LED lighting fixtures, lighting and HVAC occupancy sensors will be incorporated into the project.

The site is relatively flat and would not require substantial grading. Air quality impacts could occur due to temporary construction emissions and as a result of direct and indirect emissions from users of the new hotel. This analysis was conducted following guidance provided by the Bay Area Air Quality Management District (BAAQMD).

Setting

The project is located in the northern portion of the Santa Clara County, which is in the San Francisco Bay Area Air Basin. Ambient air quality standards have been established at both the State and federal level. The Bay Area meets all ambient air quality standards with the exception of ground-level ozone, respirable particulate matter (PM_{10}) and fine particulate matter ($PM_{2.5}$).

High ozone levels are caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NOx). These precursor pollutants react under certain meteorological conditions to form high ozone levels. Controlling the emissions of these precursor pollutants is the focus of the Bay Area's attempts to reduce ozone levels. The highest ozone levels in the Bay Area occur in the eastern and southern inland valleys that are downwind of air pollutant sources. High ozone levels aggravate respiratory and cardiovascular diseases, reduced lung function, and increase coughing and chest discomfort.

Particulate matter is another problematic air pollutant of the Bay Area. Particulate matter is assessed and measured in terms of respirable particulate matter or particles that have a diameter of 10 micrometers or less (PM_{10}) and fine particulate matter where particles have a diameter of 2.5 micrometers or less ($PM_{2.5}$). Elevated concentrations of PM_{10} and $PM_{2.5}$ are the result of both region-wide (or cumulative) emissions and localized emissions. High particulate matter levels aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

Toxic air contaminants (TAC) are a broad class of compounds known to cause morbidity or mortality (usually because they cause cancer) and include, but are not limited to, the criteria air pollutants listed above. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, state, and Federal level.

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about three-quarters of the cancer risk from TACs (based on the Bay Area average). According to the CARB, diesel exhaust is a complex mixture of gases, vapors and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the state's Proposition 65 or under the Federal Hazardous Air Pollutants programs.

CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium and heavy duty diesel trucks that represent the bulk of DPM emissions from California highways. These regulations include the solid waste collection vehicle (SWCV) rule, in-use public and utility fleets, and the heavy-duty diesel truck and bus regulations. In 2008, CARB approved a new regulation to reduce emissions of DPM and nitrogen oxides from existing on-road heavy-duty diesel fueled vehicles.[1] The regulation requires affected vehicles to meet specific performance requirements between 2014 and 2023, with all affected diesel vehicles required to have 2010 model-year engines or equivalent by 2023. These requirements are phased in over the compliance period and depend on the model year of the vehicle.

The Bay Area Air Quality Management District (BAAQMD) is the regional agency tasked with managing air quality in the region. At the State level, the California Air Resources Board (a part of the California Environmental Protection Agency) oversees regional air district activities and regulates air quality at the State level. The BAAQMD has recently published CEQA Air Quality Guidelines that are used in this assessment to evaluate air quality impacts of projects.[2]

Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 14, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, elementary schools, and parks. The closest off-site sensitive receptors are residences located to the southeast of the project site on N. Abbott Avenue. The project would not introduce any new sensitive receptors to the area.

Significance Thresholds

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under CEQA. These Thresholds were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA and were posted on BAAQMD's website and included in the Air District's updated CEQA Guidelines (updated May 2011). The significance thresholds identified by BAAQMD and used in this analysis are summarized in Table 1.

BAAQMD's adoption of significance thresholds contained in the 2011 CEQA Air Quality Guidelines was called into question by an order issued March 5, 2012, in California Building Industry Association (CBIA) v. BAAQMD (Alameda Superior Court Case No. RGI0548693). The order requires BAAQMD to set aside its approval of the thresholds until it has conducted environmental review under CEQA. The ruling made in the case concerned the environmental impacts of adopting the thresholds and how the thresholds would indirectly affect land use development patterns. In August 2013, the Appellate Court struck down the lower court's order to set aside the thresholds. However, this litigation remains pending as the California Supreme Court recently accepted a portion of CBIA's petition to review the appellate court's decision to uphold BAAQMD's adoption of the thresholds. The specific portion of the argument to be considered is in regard to whether CEQA requires consideration of the effects of the environment on a project (as contrasted to the effects of a proposed project on the environment). Therefore, the significance thresholds contained in the 2011 CEQA Air Quality Guidelines are applied to this project.

[1] Available online: http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm. Accessed: July 11, 2012.
[2] Bay Area Air Quality Management District. 2011. BAAQMD CEQA Air Quality Guidelines. May.

Table 1. Air Quality Significance Thresholds

Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs./day)	Average Daily Emissions (lbs./day)	Annual Average Emissions (tons/year)
Criteria Air Pollutants			
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82	82	15
$PM_{2.5}$	54	54	10
CO	Not Applicable	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	
Health Risks and Hazards for New Sources			
Excess Cancer Risk	10 per one million		
Chronic or Acute Hazard Index	1.0		
Incremental annual average $PM_{2.5}$	0.3 µg/m^3		
Health Risks and Hazards for Sensitive Receptors (Cumulative from all sources within 1,000 foot zone of influence) and Cumulative Thresholds for New Sources			
Excess Cancer Risk	100 per one million		
Chronic Hazard Index	10.0		
Annual Average $PM_{2.5}$	0.8 µg/m^3		
Greenhouse Gas Emissions			
GHG Annual Emissions	1,100 metric tons or 4.6 metric tons per capita		

Note: ROG = reactive organic gases, NOx = nitrogen oxides, PM_{10} = course particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, $PM_{2.5}$ = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less; and GHG = greenhouse gas.

Impacts and Mitigation Measures

> **Impact 1:** Conflict with or obstruct implementation of the applicable air quality plan? ***Less than significant***

The most recent clean air plan is the *Bay Area 2010 Clean Air Plan* that was adopted by BAAQMD in September 2010. The proposed project would not conflict with the latest Clean Air planning efforts since the project would have emissions well below the BAAQMD thresholds (see Impact 2), and development would be near existing transit with regional connections. The project, at 129 rooms, is too small to exceed any of the significance thresholds and, thus, it is not required to incorporate project-specific transportation control measures listed in the latest Clean Air Plan

> **Impact 2:** Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? ***Less than significant***

The Bay Area is considered a non-attainment area for ground-level ozone and fine particulate matter ($PM_{2.5}$) under both the Federal Clean Air Act and the California Clean Air Act. The area is also considered non-attainment for respirable particulates or particulate matter with a diameter of less than 10 micrometers (PM_{10}) under the California Clean Air Act, but not the Federal act. The area has attained both State and Federal ambient air quality standards for carbon monoxide. As part of an effort to attain and maintain ambient air quality standards for ozone and PM_{10}, the BAAQMD has established thresholds of significance for these air pollutants and their precursors. These thresholds are for ozone precursor pollutants (ROG and NOx), PM_{10} and $PM_{2.5}$ and apply to both construction period and operational period impacts.

Due to the project size, construction exhaust and operational period emissions would be less than significant. In their 2011 update to the *CEQA Air Quality Guidelines*, BAAQMD identified the size of land use projects that could result in significant air pollutant emissions. For construction exhaust impacts, the hotel size was identified at 554 rooms. For operational impacts, the project size was identified at 489 rooms. Since the project proposes 129 rooms, it is concluded that emissions would be below the BAAQMD significance thresholds for both construction exhaust and operational emissions.

However, construction activities, particularly during site preparation and grading would temporarily generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. Fugitive dust emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. Fugitive dust emissions would also depend on soil moisture, silt content of soil, wind speed, and the amount of equipment operating. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site. The BAAQMD *CEQA Air Quality Guidelines* consider these impacts to be less than significant if best management practices are employed to reduce these emissions. According to the project applicant, the project would implement BAAQMD-recommended best management practices, shown below as Construction BMPs. Because the project would be below the screening size for both construction exhaust and operational period emissions, and because the project would implement BAAQMD- recommended BMPs to control fugitive dust during construction, this impact is considered *less than significant*.

Construction BMPs: Include measures to control dust emissions.
Implementation of the measures recommended by BAAQMD and listed below would reduce the air quality and fugitive dust-related impacts associated with grading and new construction to a less than significant. The contractor shall implement the following Best Management Practices that are required of all projects:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

4. All vehicle speeds on unpaved roads shall be limited to 15 mph.

5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Impact 3: Violate any air quality standard or contribute substantially to an existing or projected air quality violation? ***Less than significant***

As discussed under Impact 2, the project would have emissions less than the BAAQMD screening size for evaluating impacts related to ozone and particulate matter. Therefore, the project would not contribute substantially to existing or projected violations of those standards. Carbon monoxide emissions from traffic generated by the project would be the pollutant of greatest concern at the local level. Congested intersections with a large volume of traffic have the greatest potential to cause high-localized concentrations of carbon monoxide. Air pollutant monitoring data indicate that carbon monoxide levels have been at healthy levels (i.e., below State and federal standards) in the Bay Area since the early 1990s. As a result, the region has been designated as attainment for the standard. There is an ambient air quality monitoring station in San Jose that measures carbon monoxide concentrations. The highest measured level over any 8-hour averaging period during the last 3 years is less than 3.0 parts per million (ppm), compared to the ambient air quality standard of 9.0 ppm. Intersections affected by the project would have traffic volumes less than the BAAQMD screening criteria and, thus, would not cause a violation of an

ambient air quality standard or have a considerable contribution to cumulative violations of these standards.[3]

Impact 4: Expose sensitive receptors to substantial pollutant concentrations? ***Less than significant***

Operation of the project is not expected to cause any localized emissions that could expose sensitive receptors to unhealthy air pollutant levels. No stationary sources of TACs, such as generators, are proposed as part of the project. Construction activity would generate dust and equipment exhausts on a temporary basis. The project would not introduce any new sensitive receptors to the area.

Project Construction Activity

Construction equipment and associated heavy-duty truck traffic generate diesel exhaust, which is a known TAC. Diesel exhaust and $PM_{2.5}$ pose both potential health and nuisance impacts to nearby receptors. A refined health risk assessment of the project construction activities was conducted that evaluated potential health effects of sensitive receptors at nearby residences from construction emissions of diesel particulate matter (DPM) and $PM_{2.5}$.[4] A dispersion model was used to predict the off-site DPM concentrations resulting from project construction so that lifetime cancer risks could be predicted. Figure 1 shows the project site and sensitive receptor locations (residences) used in the air quality dispersion modeling analysis where potential health impacts were evaluated.

Construction Emissions

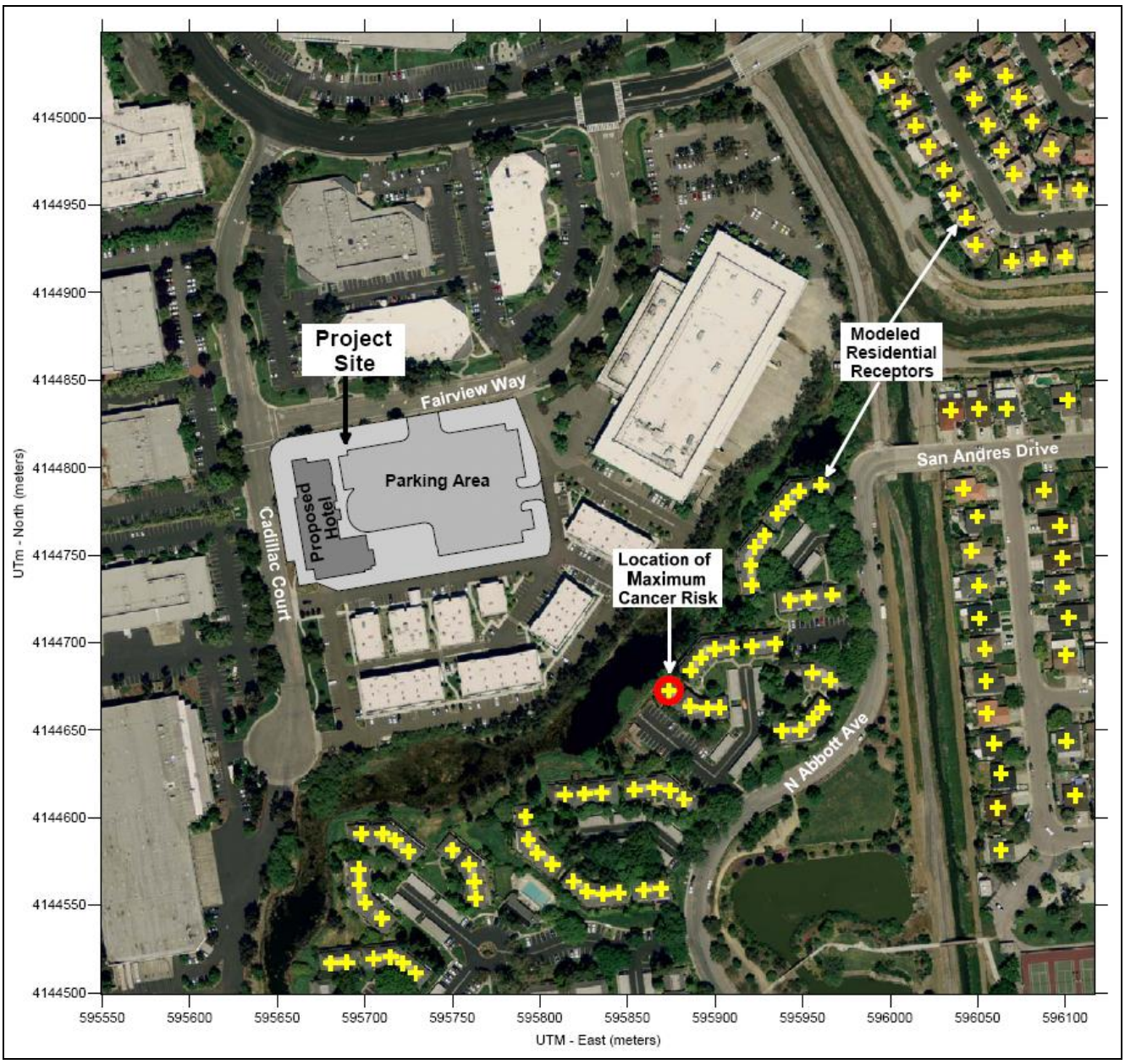
The refined health risk assessment focused on modeling on-site construction activity using construction information provided by the project applicant. Construction period emissions were modeled using the California Emissions Estimator Model, Version 2013.2.2 (CalEEMod) along with anticipated construction activity. The number and types of construction equipment and diesel vehicles, along with the anticipated length of their use for different phases of construction were based on the site-specific construction activity schedule provided. Construction of the project is expected to occur over a seven month period, beginning in February 2015. It is anticipated that there would be 30 total cement truck round-trips during building construction and that approximately 379 cubic yards of asphalt would be needed during paving.

The CalEEMod model provided total annual $PM_{2.5}$ exhaust emissions (assumed to be diesel particulate matter) for the off-road construction equipment and for exhaust emissions from on-road vehicles (haul trucks, vendor trucks, and worker vehicles), with total emissions of 19.5 pounds. The on-road emissions are a result of worker travel, and vendor deliveries during building grading and construction activities. A trip length of 0.3 miles was used to represent vehicle travel while at or near the construction site. It was assumed that these emissions from on-road vehicles traveling at or near the site would occur at the construction site. Fugitive $PM_{2.5}$ dust emissions were calculated by CalEEMod as 13.5 pounds for the overall construction period. The project emission calculations and construction schedule are provided in *Attachment 1*.

[3] For a land-use project type, the BAAQMD CEQA Air Quality Guidelines state that a proposed project would result in a less than significant impact to localized carbon monoxide concentrations if the project would not increase traffic at affected intersections to more than 44,000 vehicles per hour.

[4] DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.

Figure 1. Project Site, Modeled Receptors, and Location of Maximum Cancer Risk



Dispersion Modeling

The U.S. EPA ISCST3 dispersion model was used to calculate concentrations of DPM and $PM_{2.5}$ concentrations at existing sensitive receptors (residences) in the vicinity of the project construction area. The ISCST3 dispersion model is a BAAQMD-recommended model for use in modeling analysis of these types of emission activities for CEQA projects.[5] The ISCST3 modeling utilized two area sources to represent the on-site construction emissions from the project site, one for DPM exhaust emissions and the other for fugitive $PM_{2.5}$ dust emissions. For the exhaust emissions from construction equipment, an emission release height of six meters (20 feet) was used for the area source. The elevated source height reflects the height of the equipment exhaust pipes plus an additional distance for the height of the exhaust plume above the exhaust pipes to account for plume rise of the exhaust gases. For modeling fugitive $PM_{2.5}$ emissions, a near ground level release height of two meters was used for modeling the area source. Emissions from vehicle travel on-site and off-site within about 1,600 feet of the construction site were distributed throughout the modeled area sources. Construction emissions were modeled as occurring daily between 7 a.m. and 4 p.m. when a majority of the construction activity involving equipment usage would occur.

The modeling used a five-year data set (1996 - 2000) of hourly meteorological data from the Alviso monitoring station available from BAAQMD. The airport is about 2 miles southwest of the project site. Annual DPM and $PM_{2.5}$ concentrations from construction activities in 2015 were calculated using the model. DPM and $PM_{2.5}$ concentrations were calculated at nearby residential locations at a receptor height of 1.5 meters (4.9 feet).

The maximum-modeled DPM and $PM_{2.5}$ concentrations from project construction occurred at the apartment complex along N. Abbott Avenue, about 350 feet from the southeast corner of the project site. The location of these receptors is identified on Figure 1.

Predicted Cancer Risk and Hazards

Increased cancer risks were calculated using the modeled concentrations and BAAQMD recommended risk assessment methods for infant exposure (3rd trimester through 2 years of age), child exposure, and for an adult exposure. The cancer risk calculations were based on applying the BAAQMD recommended age sensitivity factors to the DPM exposures. Age-sensitivity factors reflect the greater sensitivity of infants and small children to cancer causing TACs. BAAQMD recommended exposure parameters were used for the cancer risk calculations.[6] Infant, child, and adult exposures were assumed to occur at all residences through the entire construction period.

Results of this assessment indicate that for project construction the maximum increased child cancer risk would be 0.7 in one million and the maximum increased adult cancer risk would be 0.03 in one million. These increased cancer risks would be lower than the BAAQMD significance threshold of a cancer risk of 10 in one million or greater and would be considered a *less than significant impact*.

The maximum annual $PM_{2.5}$ concentration was 0.013 micrograms per cubic meter ($\mu g/m^3$). This $PM_{2.5}$ concentration is much lower than the BAAQMD significance threshold of 0.3 $\mu g/m^3$ used to judge the significance of health impacts from $PM_{2.5}$. This would be considered a *less than significant impact*.

[5] Bay Area Air Quality Management District (BAAQMD), 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0.* May.

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

Potential non-cancer health effects due to chronic exposure to DPM were also evaluated. Non-cancer health hazards from TAC exposure are expressed in terms of a hazard index (HI), which is the ratio of the TAC concentration to a reference exposure level (REL). California's Office of Environmental Health and Hazards (OEHHA) has defined acceptable concentration levels for contaminants that pose non-cancer health hazards. TAC concentrations below the REL are not expected to cause adverse health impacts, even for sensitive individuals. The chronic inhalation REL for DPM is 5 $\mu g/m^3$. The maximum modeled annual residential DPM concentration was 0.007 $\mu g/m^3$, which is much lower than the REL. The maximum computed hazard index based on this DPM concentration is 0.001 which is much lower than the BAAQMD significance criterion of a hazard index greater than 1.0

Attachment 2 includes the emission calculations used for the area source modeling and the cancer risk calculations.

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

Impact 5: Create objectionable odors affecting a substantial number of people? ***Less than significant***

The project would generate localized emissions of diesel exhaust during construction equipment operation and truck activity. These emissions may be noticeable from time to time by adjacent receptors. However, they would be localized and are not likely to adversely affect people off site by resulting in confirmed odor complaints. The project would not include any sources of significant odors that would cause complaints from surrounding uses. This would be a *less-than-significant* impact

Impact 6: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? ***Less than significant***

The City of Milpitas Climate Action Plan[7] serves as a Qualified Greenhouse Gas Reduction Strategy or a community-wide plan approved by BAAQMD to reduce greenhouse gas (GHG) emissions in accordance with AB 32 goals. A Scoping Plan for AB 32 was adopted by CARB in December 2008. It contains the State of California's main strategies to reduce GHGs from business-as-usual emissions projected in 2020 back down to 1990 levels. Business-as-usual (BAU) is the projected emissions in 2020, including increases in emissions caused by growth, without any GHG reduction measures. The Scoping Plan has a range of GHG reduction actions, including direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system.

According to the City Climate Action Plan, the Milpitas community emitted approximately 744,150 metric tons of carbon dioxide equivalent (MT CO_2e) in the year 2005. Of that, 43 percent came from transportation, 25 percent from non-residential energy, 14 percent from stationary sources, 9 percent from solid waste, 2 percent from off-road equipment, and less than one percent each from water and wastewater, and light rail.

One purpose of the Qualified Greenhouse Gas Reduction Strategy is to streamline the decision-making process regarding a proposed project's impact on GHG emissions within the City. The project would not require a General Plan Amendment, and thus the project's consistency with relevant Climate Action Plan measures and actions has been used to evaluate the significance of this impact.

[7] City of Milpitas, 2013. *City of Milpitas Climate Action Plan: A Qualified Greenhouse Gas Reduction Strategy*. May.

The following emissions reduction measures and actions shown in Table 2 are relevant to the proposed project, with the project's consistency evaluated below. Correspondence between Illingworth & Rodkin and Tracy Tam, Project Planner for the City, and Leon Sheyman, Permit Center Manager for the City, helped to determine the project's requirements and consistency.[8]

Table 2. Climate Action Plan Consistency

Mandatory/ Voluntary	Climate Action Plan Measures and Actions	Compliance
Energy		
Pending City action	Measure 1.5: Urban Cooling Action A: Amend the Zoning Code to create tree planting standards for new and renovated development. Action E: Reduce heat gain from surface parking lots in new development for a minimum of 50% of the site's hardscape. Develop standards to provide shade from the existing tree canopy or from appropriately selected new trees that complement site characteristics and maximize drought tolerance. Where feasible, use open-grid pavement systems (at least 50% pervious, which would also satisfy the stormwater Low Impact Development requirement).	Currently, there has been no City movement amending the zoning code to create tree planting or shading standards. The project description does not contain specifications for tree planting or pervious pavement design requirements. The project would, however, 1) implement a plan to preserve and protect from development and construction activity 40% of the greenfield area that exits, 2) design landscape irrigation to reduce the project's requirement by at least 50% from the baseline for site peak watering month, and 3) design and implement Storm Water Management Plan.
Pending City action	Measure 1.6 : Smart Grid Integration Action A: Adopt new development standards to encourage the integration of smart-grid appliances.	Currently, there has been no City movement to adopt smart-grid standards. The project description does not contain plans to integrate the use of smart-grid appliances, such as refrigerators.
Voluntary	Measure 1.8: Online Energy Monitoring Action A: Encourage the use of smart-grid and Energy Star appliances.	The project description does not contain plans to integrate the use of smart-grid appliances and Energy Star appliances, such as refrigerators.
Mandatory	Measure 2.1: Energy Efficiency in New Development Action D: New nonresidential construction… greater than or equal to 50,000 gross square feet must be verified as LEED Silver (MMC 11-20-3.01(c))	Consistent – the project will meet or exceed LEED Silver standards.
Voluntary	Measure 3.1: Renewable Energy in New Development Action A. Encourage through the discretionary process all new nonresidential development to meet energy needs with renewable energy sources.	The project description does not contain renewable energy source commitments.

[8] Correspondence between Illingworth & Rodkin, Inc., and Tracy Tam, Project Planner, City of Milpitas, September 3, 2014, and Leon Sheyman, Permit Center Manager, City of Milpitas, September 12, 2014.

Mandatory/ Voluntary	Climate Action Plan Measures and Actions	Compliance
Water		
Mandatory	Measure 4.1: Tiered Water Rates Action B: Encourage the installation and use of greywater and rainwater harvesting systems to reduce outdoor potable use. Action C: Implement the water-efficient landscaping ordinance and the water conservation ordinance.	Consistent – the City's requirements are included in the Water-Efficient Landscape Ordinance No. 238.3. The project would install water meters that measure the total potable water use and would design landscape irrigation to reduce the project's requirement by at least 50% from the baseline for site peak watering month. In addition, the project would reduce indoor water consumption by using fixtures that reduce aggregate water consumption by 20% from the baseline and install equipment that meets minimum requirements.
Transportation and Land Use		
Mandatory	Measure 5.1: Increased Densities Action B: Ensure pedestrian accessibility for all new development.	Consistent – the project is designed with pedestrian-friendly and handicap-accessible sidewalks.
Mandatory	Measure 7.5: Bicycle Parking Action A: Create new development standards to support bicycle parking requirements.	Consistent – the City's requirements for off-street parking are included in Section 53 of the Municipal Code. According to Table 53.09-1 of Section 53, there are no minimum requirements for commercial use bicycle parking. However, the project site would have a minimum of 10 bicycle storage devises.
Pending City Action	Measure 8.1: Transportation Demand Management Action A: Expand existing rideshare programs to require mandatory inclusion of ridesharing in employer TDM programs and preferential parking for rideshare vehicles.	If the planning staff report determines that a TDM would be necessary, the project shall require mandatory inclusion of ridesharing for employees.
Voluntary	Measure 8.2: Car-Share Programs Action A: Work with City Car Share or other non-governmental organizations and/or businesses to provide car-sharing resources and information.	The project description does not contain plans to include car-sharing services on-site.
Pending City action	Measure 9.2: Nonresidential Parking Requirements Action A: Revise development standards to create incentives to reduce the minimum parking requirements for new nonresidential buildings in Milpitas.	Currently, there has been no City movement to revise development standards to create incentives to reduce the minimum parking requirements for new nonresidential buildings. The project would include 126 parking lot spaces.

Mandatory/ Voluntary	Climate Action Plan Measures and Actions	Compliance
Pending City action	Measure 10.1: Parking for Low-Emissions Vehicles Action A: Revise development standards. Action D: Provide a parking reduction ratio of one-to-one for every percentage of total parking spots designated for low-emitting, fuel-efficient vehicles. Action E: Pre-wire stalls for electric vehicle charging stations for 2% of new parking capacity.	Currently, there has been no City movement to revise development standards regarding low-emissions vehicle parking. The project would include designated parking for clean air vehicles and an electric vehicle charging station.
Solid Waste		
Voluntary	Measure 11.1: Waste Diversion Action A: Support the expansion of existing food waste and composting collection routes in order to provide composting services for interested residents and businesses.	The project description does not contain plans to install on-site compost receptacles.
	Off-Road Equipment	
Mandatory	Measure 12.1: Lawn and Garden Equipment Action C: Require new buildings to provide accessible exterior electrical outlets to charge electric-powered lawn and garden equipment.	Consistent – the project will provide accessible exterior electrical outlets.
Voluntary	Measure 12.2: Construction Best Management Practices Action A: The City will encourage new development to comply with applicable BAAQMD best management practices that reduce GHGs, including use of alternative-fueled vehicles and equipment, use of local recycled materials, and recycling of construction or demolition materials.	The BAAQMD does not have an adopted Threshold of Significance for construction-related GHG emissions. The District recommends quantifying emissions and disclosing that GHG emissions would occur during construction. BAAQMD also encourages the incorporation of best management practices to reduce GHG emissions during construction where feasible and applicable. Best management practices assumed to be incorporated into construction of the proposed project include, but are not limited to: using local building materials of at least 10% and recycling or reusing at least 50% of construction waste or demolition materials. The project would instate a material handling and waste management program for reduction, recycling and salvage of materials. Use of efficient framing techniques are proposed, which would include the use of materials that reduce material waste by an estimated 50%. The installation of only direct-vent sealed gas of high-efficiency electric fireplaces would be required as part of the proposed project.

As shown in Table 2, the project as proposed is consistent with the mandatory requirements of the City Climate Action Plan. Several items are pending City action, such as ordinances to be adopted and the revision of development standards. The project shall ensure consistency with the following pending City actions if, and when, the applicable ordinances or development standards are adopted: Climate Action

Plan Measures 1.5, 1.6, 8.1, 9.2, and 10.1. Finally, the project applicant is strongly encouraged to instate all applicable voluntary actions as part of the final project design, including those listed in Table 2.

> **Impact 7:** Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases? ***No Impact.***

The project would be subject to new requirements under rule making developed at the State and local level regarding greenhouse gas emissions and be subject to local policies, such as the City Climate Action Plan, that may affect emissions of greenhouse gases.

Attachment 1: CalEEMod Emission Computations

Holiday Inn (1100 Cadillac Court), Milpitas

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	126.00	Space	0.00	50,400.00	0
Hotel	129.00	Room	3.30	71,719.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2014
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Land Use - Lot acreage, proposed building s.f. and new parking spaces from project site plan.

Construction Phase - Anticipated phasing schedule provided by project applicant.

Off-road Equipment - Proposed equipment list provided by project applicant.

Off-road Equipment - Proposed equipment list provided by project applicant.

Off-road Equipment - Proposed equipment list provided by project applicant.

Off-road Equipment - Proposed equipment list provided by project applicant.

Off-road Equipment - Proposed equipment list provided by project applicant.

Trips and VMT - 30 round-trip cement truck trips during Building Construction (60 one-way), 379 CY asphalt = 24 trucks (48 one-way) during Paving. 0.3 mile tip lengths to calculate risk from on-site vehicle travel.

Table Name	Column Name	Default Value	New Value

tblConstructionPhase	NumDays	18.00	62.00
tblConstructionPhase	NumDays	230.00	76.00
tblConstructionPhase	NumDays	8.00	16.00
tblConstructionPhase	NumDays	18.00	7.00
tblConstructionPhase	NumDays	5.00	3.00
tblConstructionPhase	PhaseStartDate	6/13/2015	6/15/2015
tblGrading	AcresOfGrading	1.10	4.00
tblLandUse	LandUseSquareFeet	187,308.00	71,719.00
tblLandUse	LotAcreage	1.13	0.00
tblLandUse	LotAcreage	4.30	3.30
tblOffRoadEquipment	LoadFactor	0.40	0.40
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.31	0.31
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.20
tblOffRoadEquipment	UsageHours	8.00	2.20
tblOffRoadEquipment	UsageHours	8.00	1.10

tblOffRoadEquipment	UsageHours	8.00	3.40
tblOffRoadEquipment	UsageHours	6.00	3.40
tblOffRoadEquipment	UsageHours	8.00	1.90
tblOffRoadEquipment	UsageHours	7.00	1.60
tblOffRoadEquipment	UsageHours	8.00	3.40
tblOffRoadEquipment	UsageHours	8.00	6.00
tblTripsAndVMT	HaulingTripLength	20.00	0.30
tblTripsAndVMT	HaulingTripLength	20.00	0.30
tblTripsAndVMT	HaulingTripLength	20.00	0.30
tblTripsAndVMT	HaulingTripLength	20.00	0.30
tblTripsAndVMT	HaulingTripLength	20.00	0.30
tblTripsAndVMT	HaulingTripNumber	0.00	60.00
tblTripsAndVMT	HaulingTripNumber	0.00	48.00
tblTripsAndVMT	VendorTripLength	7.30	0.30
tblTripsAndVMT	VendorTripLength	7.30	0.30
tblTripsAndVMT	VendorTripLength	7.30	0.30
tblTripsAndVMT	VendorTripLength	7.30	0.30
tblTripsAndVMT	VendorTripLength	7.30	0.30
tblTripsAndVMT	WorkerTripLength	12.40	0.30
tblTripsAndVMT	WorkerTripLength	12.40	0.30
tblTripsAndVMT	WorkerTripLength	12.40	0.30
tblTripsAndVMT	WorkerTripLength	12.40	0.30
tblTripsAndVMT	WorkerTripLength	12.40	0.30

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.4117	0.2001	0.2498	2.0000e-004	0.0143	0.0106	0.0249	6.7300e-003	9.7500e-003	0.0165	0.0000	18.8649	18.8649	4.9000e-003	0.0000	18.9679
Total	**0.4117**	**0.2001**	**0.2498**	**2.0000e-004**	**0.0143**	**0.0106**	**0.0249**	**6.7300e-003**	**9.7500e-003**	**0.0165**	**0.0000**	**18.8649**	**18.8649**	**4.9000e-003**	**0.0000**	**18.9679**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	2/2/2015	2/4/2015	5	3	
2	Grading	Grading	2/5/2015	2/26/2015	5	16	
3	Building Construction	Building Construction	2/27/2015	6/12/2015	5	76	
4	Architectural Coating	Architectural Coating	6/15/2015	9/8/2015	5	62	
5	Paving	Paving	9/9/2015	9/17/2015	5	7	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 109,847; Non-Residential Outdoor: 36,616 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	0	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Grading	Excavators	1	2.20	162	0.38
Grading	Graders	1	1.10	174	0.41

Grading	Rubber Tired Dozers	1	1.90	255	0.40
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	1	0.20	226	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	1.60	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Paving	Pavers	1	3.40	125	0.42
Paving	Paving Equipment	0	6.00	130	0.36
Paving	Rollers	1	3.40	80	0.38
Paving	Tractors/Loaders/Backhoes	1	3.40	97	0.37
Architectural Coating	Air Compressors	0	6.00	78	0.48
Building Construction	Rough Terrain Forklifts	1	3.90	100	0.40
Building Construction	Skid Steer Loaders	1	1.60	64	0.37
Architectural Coating	Aerial Lifts	1	0.70	62	0.31

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	1	3.00	0.00	0.00	0.30	0.30	0.30	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	0.30	0.30	0.30	LD_Mix	HDT_Mix	HHDT
Building Construction	4	51.00	20.00	60.00	0.30	0.30	0.30	LD_Mix	HDT_Mix	HHDT
Paving	3	8.00	0.00	48.00	0.30	0.30	0.30	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	10.00	0.00	0.00	0.30	0.30	0.30	LD_Mix	HDT_Mix	HHDT

3.2 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.1000e-004	3.8600e-003	2.7300e-003	0.0000		3.0000e-004	3.0000e-004		2.8000e-004	2.8000e-004	0.0000	0.3342	0.3342	1.0000e-004	0.0000	0.3363
Total	**4.1000e-004**	**3.8600e-003**	**2.7300e-003**	**0.0000**	**0.0000**	**3.0000e-004**	**3.0000e-004**	**0.0000**	**2.8000e-004**	**2.8000e-004**	**0.0000**	**0.3342**	**0.3342**	**1.0000e-004**	**0.0000**	**0.3363**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	0.0000	5.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.8400e-003	1.8400e-003	0.0000	0.0000	1.8400e-003
Total	**1.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.8400e-003**	**1.8400e-003**	**0.0000**	**0.0000**	**1.8400e-003**

3.3 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0136	0.0000	0.0136	6.5200e-003	0.0000	6.5200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	4.5000e-003	0.0500	0.0339	4.0000e-005		2.4800e-003	2.4800e-003		2.2800e-003	2.2800e-003	0.0000	3.3742	3.3742	1.0100e-003	0.0000	3.3954
Total	**4.5000e-003**	**0.0500**	**0.0339**	**4.0000e-005**	**0.0136**	**2.4800e-003**	**0.0160**	**6.5200e-003**	**2.2800e-003**	**8.8000e-003**	**0.0000**	**3.3742**	**3.3742**	**1.0100e-003**	**0.0000**	**3.3954**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	5.0000e-005	6.4000e-004	0.0000	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0262	0.0262	0.0000	0.0000	0.0262
Total	**1.8000e-004**	**5.0000e-005**	**6.4000e-004**	**0.0000**	**1.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0262**	**0.0262**	**0.0000**	**0.0000**	**0.0262**

3.4 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.8100e-003	0.1027	0.0761	1.1000e-004		6.3700e-003	6.3700e-003		5.8600e-003	5.8600e-003	0.0000	10.3372	10.3372	3.0900e-003	0.0000	10.4020
Total	**8.8100e-003**	**0.1027**	**0.0761**	**1.1000e-004**		**6.3700e-003**	**6.3700e-003**		**5.8600e-003**	**5.8600e-003**	**0.0000**	**10.3372**	**10.3372**	**3.0900e-003**	**0.0000**	**10.4020**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.5000e-004	8.5000e-004	5.1800e-003	0.0000	1.0000e-005	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0791	0.0791	0.0000	0.0000	0.0792
Vendor	6.9100e-003	0.0197	0.0904	2.0000e-005	2.2000e-004	1.3000e-004	3.5000e-004	6.0000e-005	1.2000e-004	1.8000e-004	0.0000	1.8420	1.8420	3.0000e-005	0.0000	1.8426
Worker	5.5200e-003	1.4200e-003	0.0194	1.0000e-005	4.5000e-004	2.0000e-005	4.6000e-004	1.2000e-004	2.0000e-005	1.4000e-004	0.0000	0.7919	0.7919	9.0000e-005	0.0000	0.7938
Total	**0.0128**	**0.0220**	**0.1150**	**3.0000e-005**	**6.8000e-004**	**1.6000e-004**	**8.2000e-004**	**1.8000e-004**	**1.4000e-004**	**3.3000e-004**	**0.0000**	**2.7130**	**2.7130**	**1.2000e-004**	**0.0000**	**2.7156**

3.5 Architectural Coating - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3819					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7000e-004	2.8500e-003	2.9400e-003	0.0000		1.3000e-004	1.3000e-004		1.2000e-004	1.2000e-004	0.0000	0.4242	0.4242	1.3000e-004	0.0000	0.4268
Total	**0.3820**	**2.8500e-003**	**2.9400e-003**	**0.0000**		**1.3000e-004**	**1.3000e-004**		**1.2000e-004**	**1.2000e-004**	**0.0000**	**0.4242**	**0.4242**	**1.3000e-004**	**0.0000**	**0.4268**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.8000e-004	2.3000e-004	3.1000e-003	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1267	0.1267	1.0000e-005	0.0000	0.1270
Total	**8.8000e-004**	**2.3000e-004**	**3.1000e-003**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.1267**	**0.1267**	**1.0000e-005**	**0.0000**	**0.1270**

3.6 Paving - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.7600e-003	0.0177	0.0109	2.0000e-005		1.1500e-003	1.1500e-003		1.0600e-003	1.0600e-003	0.0000	1.4528	1.4528	4.3000e-004	0.0000	1.4619
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.7600e-003**	**0.0177**	**0.0109**	**2.0000e-005**		**1.1500e-003**	**1.1500e-003**		**1.0600e-003**	**1.0600e-003**	**0.0000**	**1.4528**	**1.4528**	**4.3000e-004**	**0.0000**	**1.4619**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.8000e-004	6.8000e-004	4.1400e-003	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0633	0.0633	0.0000	0.0000	0.0633
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	8.0000e-005	2.0000e-005	2.8000e-004	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0114	0.0114	0.0000	0.0000	0.0115
Total	**3.6000e-004**	**7.0000e-004**	**4.4200e-003**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0747**	**0.0747**	**0.0000**	**0.0000**	**0.0748**

Attachment 2: Construction Health Risk Analysis Calculations

Holiday Inn - Milpitas, CA

DPM Construction Emissions and Modeling Emission Rates

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2015	Construction	0.0098	CON_DPM	19.5	0.00594	7.48E-04	13,847	5.40E-08

Notes:

Emissions assumed to be evenly distributed over each construction areas

hr/day =	9	(7am - 4pm)
days/yr =	365	
hours/year =	3285	

PM2.5 Fugitive Dust Construction Emissions for Modeling

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2015	Construction	CON_FUG	0.0067	13.5	0.00410	5.16E-04	13,847	3.73E-08

Notes:

Emissions assumed to be evenly distributed over each construction areas

hr/day =	9	(7am - 4pm)
days/yr =	365	
hours/year =	3285	

Holiday Inn - Milpitas, CA - Construction Health Impact Summary

Construction Health Impact Summary - Residential Receptors

Construction Year	Maximum Concentrations: Exhaust PM2.5/DPM ($\mu g/m^3$)	Maximum Concentrations: Fugitive PM2.5 ($\mu g/m^3$)	Cancer Risk (per million): Child	Cancer Risk (per million): Adult	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2015	0.0074	0.0053	**0.7**	**0.0**	0.001	0.013
Maximum Annual	0.0074	0.0053	-	-	**0.001**	**0.013**

Holiday Inn - Milpitas, CA - Unmitigated Emissions
Maximum DPM Cancer Risk Calculations From Construction
Off-Site Residential Receptor Locations - 1.5 meters

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

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

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

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

Values

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

		Child - Exposure Information				Adult - Exposure Information					
					Child	Modeled			Adult		
Exposure	Exposure Duration	DPM Conc (ug/m3)		Exposure Adjust	Cancer Risk	DPM Conc (ug/m3)		Exposure Adjust	Cancer Risk	Fugitive	Total
Year	(years)	Year	Annual	Factor	(per million)	Year	Annual	Factor	(per million)	PM2.5	PM2.5
1	1	2015	0.0074	10	0.65	2015	0.0074	1	0.03	0.0053	0.013
2	1		0.0000	10	0.00		0.0000	1	0.00		
3	1		0.0000	4.75	0.00		0.0000	1	0.00		
4	1		0.0000	3	0.00		0.0000	1	0.00		
5	1		0.0000	3	0.00		0.0000	1	0.00		
6	1		0.0000	3	0.00		0.0000	1	0.00		
7	1		0.0000	3	0.00		0.0000	1	0.00		
8	1		0.0000	3	0.00		0.0000	1	0.00		
9	1		0.0000	3	0.00		0.0000	1	0.00		
10	1		0.0000	3	0.00		0.0000	1	0.00		
11	1		0.0000	3	0.00		0.0000	1	0.00		
12	1		0.0000	3	0.00		0.0000	1	0.00		
13	1		0.0000	3	0.00		0.0000	1	0.00		
14	1		0.0000	3	0.00		0.0000	1	0.00		
15	1		0.0000	3	0.00		0.0000	1	0.00		
16	1		0.0000	3	0.00		0.0000	1	0.00		
17	1		0.0000	1.5	0.00		0.0000	1	0.00		
18	1		0.0000	1	0.00		0.0000	1	0.00		
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65	1		0.0000	1	0.00		0.0000	1	0.00		
66	1		0.0000	1	0.00		0.0000	1	0.00		
67	1		0.0000	1	0.00		0.0000	1	0.00		
68	1		0.0000	1	0.00		0.0000	1	0.00		
69	1		0.0000	1	0.00		0.0000	1	0.00		
70	1		0.0000	1	0.00		0.0000	1	0.00		
Total Increased Cancer Risk					**0.65**				**0.03**		