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APPENDIX C

AIR QUALITY

AIR QUALITY IMPACT ANALYSIS FOR THE PROPOSED FLEA MARKET TRANSIT-ORIENTED COMMUNITY CITY OF SAN JOSE

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EXISTING CONDITIONS

Air Pollution Climatology

The amount of a given pollutant in the atmosphere is determined by the amount of pollutant released and the atmosphere's ability to transport and dilute the pollutant. The major determinants of transport and dilution are wind, atmospheric stability, terrain and, for photochemical pollutants, sunshine.

Northwest winds and northerly winds are most common in the project area, reflecting the orientation of the Bay and the San Francisco Peninsula. Winds from these directions carry pollutants released by autos and factories from upwind areas of the Peninsula toward San Jose, particularly during the summer months. Winds are lightest on the average in fall and winter. Every year in fall and winter there are periods of several days when winds are very light and local pollutants can build up.

Pollutants can be diluted by mixing in the atmosphere both vertically and horizontally. Vertical mixing and dilution of pollutants are often suppressed by inversion conditions, when a warm layer of air traps cooler air close to the surface. During the summer, inversions are generally elevated above ground level, but are present over 90 percent of the time in both the morning and afternoon. In winter, surface-based inversions dominate in the morning hours, but frequently dissipate by afternoon.

Topography can restrict horizontal dilution and mixing of pollutants by creating a barrier to air movement. The South Bay has significant terrain features that affect air quality. The Santa Cruz Mountains and Hayward Hills on either side of the South Bay restrict horizontal dilution, and this alignment of the terrain also channels winds from the north to south, carrying pollution from the northern Peninsula toward San Jose.

The combined effects of moderate ventilation, frequent inversions that restrict vertical dilution and terrain that restrict horizontal dilution give San Jose a relatively high atmospheric potential for pollution compared to other parts of the San Francisco Bay Air Basin and provide a high potential for transport of pollutants to the east and south.

Ambient Air Quality Standards

Criteria Pollutants

Both the U. S. Environmental Protection Agency and the California Air Resources Board have established ambient air quality standards for common pollutants. These ambient air quality standards are levels of contaminants which represent safe levels that avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents. Table 1 identifies the major criteria pollutants, characteristics, health effects and typical sources. The federal and California

state ambient air quality standards are summarized in Table 2.

The federal and state ambient standards were developed independently with differing purposes and methods, although both processes attempted to avoid health-related effects. As a result, the federal and state standards differ in some cases. In general, the California state standards are more stringent. This is particularly true for ozone and particulate matter (PM_{10} and $PM_{2.5}$)

Suspended particulate matter (PM) is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, and dust. "Inhalable" PM consists of particles less than 10 microns in diameter, and is defined as "suspended particulate matter" or PM_{10}. Fine particles are less than 2.5 microns in diameter ($PM_{2.5}$). $PM_{2.5}$, by definition, is included in PM_{10}.

In 1997 new national standards for fine Particulate Matter (diameter 2.5 microns or less) were adopted for 24-hour and annual averaging periods. The current PM_{10} standards were to be retained, but the method and form for determining compliance with the standards were revised.

The State of California regularly reviews scientific literature regarding the health effects and exposure to PM and other pollutants. On May 3, 2002, the California Air Resources Board (CARB) staff recommended lowering the level of the annual standard for PM_{10} and establishing a new annual standard for $PM_{2.5}$ (particulate matter 2.5 micrometers in diameter and smaller). The new standards became effective on July 5, 2003.

On April 28, 2005 the California Air Resources Board established a new 8-hour standard for ozone (0.07 PPM), to become effective in 2006.

Toxic Air Contaminants

In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TACs) are another group of pollutants of concern. There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Cars and trucks release at least forty different toxic air contaminants. The most important, in terms of health risk, are diesel particulate, benzene, formaldehyde, 1,3-butadiene and acetaldehyde.

Public exposure to TACs can result from emissions from normal operations, as well as accidental releases. Health effects of TACs include cancer, birth defects, neurological damage and death.

Table 1: Major Criteria Pollutants

Pollutant	Characteristics	Health Effects	Major Sources
Ozone	A highly reactive photochemical pollutant created by the action of sunshine on ozone precursors (primarily reactive hydrocarbons and oxides of nitrogen. Often called photochemical smog.	•Eye Irritation •Respiratory function impairment.	The major sources ozone precursors are combustion sources such as factories and automobiles, and evaporation of solvents and fuels.
Carbon Monoxide	Carbon monoxide is an odorless, colorless gas that is highly toxic. It is formed by the incomplete combustion of fuels.	•Impairment of oxygen transport in the bloodstream. •Aggravation of cardiovascular disease. •Fatigue, headache, confusion, dizziness. •Can be fatal in the case of very high concentrations.	Automobile exhaust, combustion of fuels, combustion of wood in woodstoves and fireplaces.
Nitrogen Dioxide	Reddish-brown gas that discolors the air, formed during combustion.	•Increased risk of acute and chronic respiratory disease.	Automobile and diesel truck exhaust, industrial processes, fossil-fueled power plants.
Sulfur Dioxide	Sulfur dioxide is a colorless gas with a pungent, irritating odor.	•Aggravation of chronic obstruction lung disease. •Increased risk of acute and chronic respiratory disease.	Diesel vehicle exhaust, oil-powered power plants, industrial processes.
Particulate Matter	Solid and liquid particles of dust, soot, aerosols and other matter which are small enough to remain suspended in the air for a long period of time.	•Aggravation of chronic disease and heart/lung disease symptoms.	Combustion, automobiles, field burning, factories and unpaved roads. Also a result of photochemical processes.

Table 2: Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Primary Standard	State Standard
Ozone	1-Hour 8-Hour	0.12 PPM 0.08 PPM	0.09 PPM 0.07 PPM
Carbon Monoxide	8-Hour 1-Hour	9.0 PPM 35.0 PPM	9.0 PPM 20.0 PPM
Nitrogen Dioxide	Annual Average 1-Hour	0.05 PPM --	-- 0.25 PPM
Sulfur Dioxide	Annual Average 24-Hour 1-Hour	0.03 PPM 0.14 PPM --	-- 0.04 PPM 0.25 PPM
PM_{10}	Annual Average 24-Hour	50 $\mu g/m^3$ 150 $\mu g/m^3$	20 $\mu g/m^3$ 50 $\mu g/m^3$
$PM_{2.5}$	Annual 24-Hour	15 $\mu g/m^3$ 65 $\mu g/m^3$	12 $\mu g/m^3$ --
Lead	Calendar Quarter 30 Day Average	1.5 $\mu g/m^3$ --	-- 1.5 $\mu g/m^3$
Sulfates	24 Hour	25 $\mu g/m^3$	--
Hydrogen Sulfide	1-Hour	0.03 PPM	--
Vinyl Chloride	24-Hour	0.01 PPM	--

PPM = Parts per Million
$\mu g/m^3$ = Micrograms per Cubic Meter

Source: California Air Resources Board, Ambient Air Quality Standards (5/6/05)
http://www.arb.ca.gov.aqs/aaqs2.pdf

Ambient Air Quality

The Bay Area Air Quality Management District (BAAQMD) monitors air quality at several locations within the San Francisco Bay Air Basin. The closest multi-pollutant monitoring site to the project site is located in downtown San Jose on Jackson Street. Table 3 summarizes exceedances of State and Federal standards at this monitoring site during the period 2003-2005. Table 3 shows that ozone and PM_{10} exceed the state standards in the South Bay.

Of the three pollutants known to at times exceed the state and federal standards in the project area, two are regional pollutants. Both ozone and particulate matter (PM_{10} and $PM_{2.5}$) are considered regional pollutants in that concentrations are not determined by proximity to individual sources, but show a relative uniformity over a region. Thus, the data shown in Table 3 for ozone and PM_{10} provide a good characterization of levels of these pollutants on the project site.

Carbon monoxide is a local pollutant, i.e., high concentrations are normally only found very near sources. The major source of carbon monoxide, a colorless, odorless, poisonous gas, is automobile traffic. Elevated concentrations, therefore, are usually only found near areas of high traffic volumes.

Attainment Status and Regional Air Quality Plans

The federal Clean Air Act and the California Clean Air Act of 1988 require that the State Air Resources Board, based on air quality monitoring data, designate portions of the state where the federal or state ambient air quality standards are not met as "nonattainment areas". Because of the differences between the national and state standards, the designation of nonattainment areas is different under the federal and state legislation. The Bay is currently a nonattainment for 1-hour ozone standard. However, in April 2004, U.S. EPA made a final finding that the Bay Area has attained the national 1-hour ozone standard. The finding of attainment does not mean the Bay Area has been reclassified as an attainment area for the 1-hour standard. The region must submit a re-designation request to EPA in order to be reclassified as an attainment area.

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Table 3: Summary of Air Quality Data for Downtown San Jose

Pollutant	Standard	Days Exceeding Standard in:		
		2003	2004	2005
Ozone	Federal 1-Hour	0	0	0
Ozone	State 1-Hour	4	0	1
Ozone	Federal 8-Hour	0	0	0
Carbon Monoxide	State/Federal 8-Hour	0	0	0
Nitrogen Dioxide	State 1-Hour	0	0	0
PM_{10}	Federal 24-Hour	0	0	0
PM_{10}	State 24-Hour	3	4	1
$PM_{2.5}$	Federal 24-Hour	0	0	0

Source: Air Resources Board, Aerometric Data Analysis and Management (ADAM), 2006. (http: //www.arb.ca.gov./adam/cgi-bin/adamtop/d2wstart)

re-designation request to EPA in order to be reclassified as an attainment area.

The U. S. Environmental Protection Agency has classified the San Francisco Bay Area as a non-attainment area for the federal 8-hour ozone standard. The Bay Area was designated as unclassifiable/attainment for the federal PM_{10} and $PM_{2.5}$ standards.

Under the California Clean Air Act Santa Clara County is a non-attainment area for ozone and particulate matter (PM_{10} and $PM_{2.5}$). The county is either attainment or unclassified for other pollutants

Sensitive Receptors

The Bay Area Air Quality Management District defines sensitive receptors as facilities where sensitive receptor population groups (children, the elderly, the acutely ill and the chronically ill) are likely to be located. These land uses include residences, schools playgrounds, child care centers, retirement homes, convalescent homes, hospitals and medical clinics. Most of the lands surrounding the project site are industrial in nature. However, residences abut the northwest boundary of the project site, and residences are located within a short distance to the north and east of the project site.

Significance Criteria

The document *BAAQMD CEQA Guidelines*[1] provide the following definitions of a significant air quality impact:

- A project contributing to carbon monoxide (CO) concentrations exceeding the State Ambient Air Quality Standard of 9 parts per million (ppm) averaged over 8 hours or 20 ppm for 1 hour would be considered to have a significant impact.

- A project that generates criteria air pollutant emissions in excess of the BAAQMD annual or daily thresholds would be considered to have a significant air quality impact. The current thresholds are 15 tons/year or 80 pounds/day for Reactive Organic Gases (ROG), Nitrogen Oxides (NO_x) or PM_{10}. Any proposed project that would individually have a significant air quality impact would also be considered to have a significant cumulative air quality impact.

- Any project with the potential to frequently expose members of the public to objectionable odors would be deemed to have a significant impact.

- Any project with the potential to expose sensitive receptors or the general public to substantial levels of toxic air contaminants would be deemed to have a significant impact.

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[1] Bay Area Air Quality Management District, BAAQMD CEQA Guidelines, 1996 (Revised December 1999).

Despite the establishment of both federal and state standards for $PM_{2.5}$ (particulate matter, 2.5 microns), the BAAQMD has not developed a threshold of significance for this pollutant. For this analysis, $PM_{2.5}$ impacts would be considered significant if project emissions of PM_{10} exceed 80 pounds per day.

The BAAQMD significance threshold for construction dust impact is based on the appropriateness of construction dust controls. The BAAQMD guidelines provide feasible control measures for construction emission of PM_{10}. If the appropriate construction controls are to be implemented, then air pollutant emissions for construction activities would be considered less-than-significant.

IMPACTS

Impact 1: Construction Dust Emissions. Construction activities such as demolition, clearing, excavation and grading operations, construction vehicle traffic and wind blowing over exposed earth would generate fugitive particulate matter emissions that would temporarily affect local air quality. This impact is potentially significant, but normally mitigable.

Construction dust would affect local air quality during implementation of the project. The dry, windy climate of the area during the summer months creates a high potential for dust generation when and if underlying soils are exposed to the atmosphere. The proposed project would substantial excavation and earthmoving. The movement of earth on the site is a construction activity with a high potential for creating air pollutants. After grading of the site, dust would continue to affect local air quality during construction of the project.

According to the *BAAQMD CEQA Guidelines*, emissions of ozone precursors (ROG and NOx) and carbon monoxide related to construction equipment are already included in the emission inventory that is the basis for regional air quality plans, and thus are not expected to impede attainment or maintenance of ozone and carbon monoxide standards in the Bay Area. Thus, the effects of construction activities would be increased dustfall and locally elevated levels of PM_{10} downwind of construction activity. Construction dust has the potential for creating a nuisance at nearby properties. This is considered a potentially significant impact.

Mitigation Measure 1: Require implementation of the following dust control measures by contractors during demolition of existing structures:

- Watering should be used to control dust generation during demolition of structures and break-up of pavement.

- Cover all trucks hauling demolition debris from the site.

- Use dust-proof chutes to load debris into trucks whenever feasible.

Consistent with guidance from the BAAQMD, the following measures shall be required of construction contracts and specifications for the project:

- Water all active construction areas at least twice daily and more often during windy periods; active areas adjacent to existing land uses shall be kept damp at all times, or shall be treated with non-toxic stabilizers or dust palliatives;

- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard;

- Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites;

- Sweep daily (preferably with water sweepers) all paved access roads, parking areas, and staging areas at construction sites; water sweepers shall vacuum up excess water to avoid runoff-related impacts to water quality;

- Sweep streets daily (preferably with water sweepers) if visible soil material is carried onto adjacent public streets;

- Apply non-toxic soil stabilizers to inactive construction areas;

- Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.);

- Limit traffic speeds on unpaved roads to 15 mph;

- Install sandbags or other erosion control measures to prevent silt runoff to public roadways;

- Replant vegetation in disturbed areas as quickly as possible.

The following are additional mitigation measures recommended by the BAAQMD to reduce engine exhaust emissions:

- Use alternative fueled construction equipment

- Minimize idling time (5 minutes maximum);

- Maintain properly tuned equipment;

- Limit the hours of operation of heavy equipment and/or the amount of equipment in use.

The above measures include all feasible measures for construction emissions identified by the Bay Area Air Quality Management District for large sites. According to the District threshold of significance for construction impacts, implementation of the measures would reduce construction impacts of the project to a less-than-significant level.

Impact 2: Construction TAC Emissions. During construction various diesel-powered vehicles and equipment would be in use on the site. Exposure of sensitive receptors to diesel particulate would represent a less-than-significant impact.

In 1998 the California Air Resources Board identified particulate matter from diesel-fueled engines as a toxic air contaminant (TAC). CARB has completed a risk management process that identified potential cancer risks for a range of activities using diesel-fueled

engines.[2] High volume freeways, stationary diesel engines and facilities attracting heavy and constant diesel vehicle traffic (distribution centers, truckstop) were identified as having the highest associated risk.

Health risks from Toxic Air Contaminants are function of both concentration and duration of exposure. Unlike the above types of sources, construction diesel emissions are temporary, affecting an area for a period of weeks at any one location. Additionally, construction related sources are mobile and transient in nature, and the bulk of the emission occurs within the project site at a substantial distance from most nearby receptors. The prevailing wind direction is from the northwest, which means that the exposure to construction emission would be greatest southeast of construction activity where there are no sensitive land uses. Because of its short duration and the fact that nearby sensitive receptors would not be down-wind of construction activity when the wind is from the prevailing northwest direction, health risks from construction emissions of diesel particulate would be a less-than-significant impact.

Mitigation Measure 2: None required.

Impact 3: Permanent Local Impacts. Project traffic would add to carbon monoxide concentrations near streets and intersections providing access to the site. This is a less than significant impact.

On the local scale, the project would change traffic on the local street network, changing carbon monoxide levels along roadways used by project traffic. Carbon monoxide is an odorless, colorless poisonous gas whose primary source in the Bay Area is automobiles. Concentrations of this gas are highest near intersections of major roads.

Carbon monoxide concentrations under worst-case meteorological conditions have been predicted for signalized intersections affected by project. These intersections were selected as having the worst intersection Level Of Service and highest average delay. PM peak traffic volumes were applied to a screening form of the CALINE-4 dispersion model to predict maximum 1-and 8-hour concentrations near these intersections. Appendix 1 provides a description of the model and a discussion of the methodology and assumptions used in the analysis. The model results were used to predict the maximum 1- and 8-hour concentrations, corresponding to the 1- and 8-hour averaging times specified in the state and federal ambient air quality standards for carbon monoxide.

Table 4 shows the results of the CALINE-4 analysis for the peak 1-hour and 8-hour traffic periods in parts per million (PPM). The 1-hour values are to be compared to the federal 1-hour standard of 35 PPM and the state standard of 20 PPM. The 8-hour values in Table 3 are to be compared to the state and federal standard of 9 PPM.

Table 4 shows that existing predicted concentrations near the intersections meet the 1-

[2] California Air Resources Board, Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles, October 2000.

Table 4: Worst Case Carbon Monoxide Concentrations Near Selected Intersections, in Parts Per Million

Intersection	Existing		Existing + Background		Existing+ Background+ Project+	
	1-Hour	8-Hour	1-Hour	8-Hour	1-Hour	8-Hour
Montegue/ Oakland Road	12.4	8.5	12.9	8.9	12.9	8.9
Montegue/ Trade Zone	11.9	8.2	12.2	8.3	12.2	8.4
Commercial/ Oakland Road	10.2	6.9	11.1	7.6	11.5	7.9
US 101/ Oakland Road (N)	10.2	7.0	10.8	7.4	11.2	7.7
US 101/ Oakland Road (S)	10.1	6.9	10.7	7.3	11.1	7.6
Hedding/ 10th Street	9.3	6.3	10.5	7.2	10.9	7.4
Hedding/ Oakland Road	9.5	6.5	10.4	7.1	10.7	7.3
Taylor/ 11th Street	9.0	6.1	9.6	6.5	9.6	6.5
Most Stringent Standard	20.0	9.0	20.0	9.0	20.0	9.0

hour and 8-hour standards. Background traffic increases would increase concentrations by up to 1.2 Parts Per Million (PPM). Traffic from the project would further increase concentrations by up to 0.3 Parts Per Million (PPM). However, concentrations with background and project traffic growth would not exceed the state/federal ambient air quality standards.

Since project traffic would not cause any new violations of the 8-hour standards for carbon monoxide, nor contribute substantially to an existing or projected violation, project impacts on local carbon monoxide concentrations are considered to be less-than-significant.

Mitigation Measure 3: None required.

Impact 4: Permanent Regional Impacts. Additional trips to and from the project would result in new air pollutant emissions within the air basin. The emissions from these new trips would exceed the BAAQMD thresholds of significance, and therefore represent a significant and unavoidable impact.

Vehicle trips generated by the project would result in air pollutant emissions affecting the entire San Francisco Bay Air Basin. Regional emissions associated with project vehicle use have been calculated using the URBEMIS2002 emission model. The methodology used in estimating vehicular emissions is described in Attachment 2.

The incremental daily emission increase associated with project land uses is identified in Table 5 for reactive organic gases and oxides of nitrogen (two precursors of ozone) and PM_{10}. The Bay Area Air Quality Management District has established threshold of significance for ozone precursors and PM_{10} of 80 pounds per day. Proposed project emissions shown in Table 5 would exceed these thresholds of significance, so the proposed project would have a significant effect on regional air quality.

Mitigation Measure 4: The BAAQMD has identified mitigation measures for reducing vehicle emissions from projects. Feasible mitigation measures to reduce vehicle emissions for the residential portions of the project should include:

- Provide a satellite tele-commute center within or near the development.
- Provide secure and conveniently placed bicycle parking and storage facilities at parks and other facilities.
- Allow only natural gas fireplaces, pellet stoves or EPA-Certified wood-burning fireplaces or stoves in residences. Conventional open-hearth fireplaces should not be permitted. EPA-Certified fireplaces and fireplace inserts are 75 percent effective in reducing emissions from this source.
- Require outside power receptacles that would allow use of electric lawn and garden equipment for landscaping.

Table 5: Project Regional Emissions in Pounds Per Day

	Reactive Organic Gases	**Nitrogen Oxides**	**PM_{10}**
Vehicular Emissions	298.0	330.0	317.9
Area Source Emissions	193.8	24.9	0.1
Total	491.8	354.9	318.0
BAAQMD Significance Threshold	80.0	80.0	80.0

- Construct transit amenities such as bus turnouts/bus bulbs, benches, shelters, etc.

- Provide direct, safe, attractive pedestrian access from project land uses to transit stops and adjacent development.

- Utilize reflective (or high albedo) and emissive roofs and light colored construction materials to increase the reflectivity of roads, driveways, and other paved surfaces, and include shade trees near buildings to directly shield them from the sun's rays and reduce local air temperature and cooling energy demand.

- Provide physical improvements, such as sidewalk improvements, landscaping and bicycle parking that would act as incentives for pedestrian and bicycle modes of travel.

Employment-generating uses should be developed under a Transportation Demand Management program that would include, at a minimum, the following elements:

- Provide physical improvements, such as sidewalk improvements, landscaping and bicycle parking that would act as incentives for pedestrian and bicycle modes of travel.

- Connect site with regional bikeway/pedestrian trail system.

- Provide transit information kiosks.

- Implement a carpool/vanpool program, e.g., carpool ridematching for employees, assistance with vanpool formation, provision of vanpool vehicles, etc.

- Develop a transit use incentive program for employees, such as on-site distribution of passes and/or subsidized transit passes for local transit system.

- Provide preferential parking for electric or alternatively-fueled vehicles.

- Provide a guaranteed ride home program.

- Implement a flextime policy.

- Provide on-site child care.

- Provide showers and lockers for employees bicycling or walking to work.

- Provide secure and conveniently located bicycle parking and storage for workers.

- Implement parking cash-out program for employees (non-driving employees receive transportation allowance equivalent to the value of subsidized parking).

The above measures have the potential to reduce project-related regional emissions by 10-20%. Even with a reduction of this magnitude, project emissions would remain well above the BAAQMD significance threshold of 80 pounds per day. Project regional air quality impacts and cumulative impacts would remain significant after mitigation.

Impact 5: Increased Exposure to TACs. The project would include sensitive receptors that would be exposed to stationary and mobile sources of TACs. This impact would be less-than-significant.

The project is located within an industrial area. The current inventory of Toxic Air Contaminant emissions maintained by the Bay Area Air Quality Management District lists one source source of TACs within one-fourth mile of the project. A Chevron Products facility at 1020 Berryessa Road is included in the inventory as a source of benzene, a component of gasoline. This TAC source is not identified as a priority source requiring preparation of a health risk assessment or notification under the Air Toxics "Hot Spots" Information and Assessment Act.[3]

The California Air Resources Board recently published an air quality/land use handbook.[4] The handbook, which is advisory and not regulatory, was developed in response to recent studies that have demonstrated a link between exposure to poor air quality and respiratory illnesses, both cancer and non-cancer related. The CARB handbook recommends that planning agencies strongly consider proximity to these sources when finding new locations for "sensitive" land uses such as homes, medical facilities, daycare centers, schools and playgrounds.

Air pollution sources of concern include freeways, rail yards, ports, refineries, distribution centers, chrome plating facilities, dry cleaners and large gasoline service stations.

Key recommendations in the handbook include taking steps to avoid siting new, sensitive land uses:

- Within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day;
- Within 1,000 feet of a major service and maintenance rail yard;
- Immediately downwind of ports (in the most heavily impacted zones) and petroleum refineries;
- Within 300 feet of any dry cleaning operation (for operations with two or more machines, provide 500 feet);
- Within 300 feet of a large gasoline dispensing facility.

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[3] Bay Area Air Quality Management District, Toxic Air Contaminant Control Program Annual Report 2002, June 2004.

[4] California Air Resources Board, Air Quality and Land Use Handbook: A Community Health Perspective, April 2005.

The project would create new residential areas that would be a minimum of 1100 feet from the Chevron gasoline facility and more than 1000 feet from the nearest freeway (US 101). These buffer zones from TAC sources exceed the CARB recommendations.

The project would create new residential sensitive receptors adjacent or near the existing railroad that abuts the east side of the project site. While the CARB handbook provides siting guidelines near "major service and maintenance rail yards", it contains no minimum setbacks from rail corridors. Since the prevailing northwest wind direction would carry emissions from this rail line away from rather than towards the residences, impacts related to mobile and stationary sources of TACs are considered to be less-than-significant.

Mitigation Measure 5: None required.

Impact 6: Cumulative Regional Impacts. The project would have a significant impact individually on regional air quality and therefore would also have a cumulatively significant regional air quality impact.

According to BAAQMD significance criteria, any proposed project that would individually have a significant air quality impact would also be considered to have a significant cumulative air quality impact. The project was found to individually have a significant impact on regional air quality and thus would also have a significant cumulative impact on regional air quality (See Impact 4 and Table 5).

Emissions from development projects have several cumulative impacts. Growth in emissions will delay attainment of the ambient air quality standards for which the region is non-attainment (ozone, particulate matter), contribute to visibility reduction and contribute to mobile-source toxic air contaminant concentrations.

Since ozone, particulate matter and some constituents of ROG that are also TACs have been shown to be correlated with adverse heath effects cumulative emissions increases in the region would have potential cumulative health effects. Studies have shown that children who participated in several sports and lived in communities with high ozone levels were more likely to develop asthma than the same active children living in areas with less ozone pollution. Other studies have found a positive association between some volatile organic compounds and symptoms in asthmatic children. A large body of evidence has shown significant associations between measured levels of particulate matter outdoors and worsening of both asthma symptoms and acute and chronic bronchitis. It is not possible, however, to predict increases in severity of disease, hospital visits or deaths from respiratory diseases for a development project.

Mitigation Measure 6: Same as Mitigation Measure 4.

ATTACHMENT 1: CALINE-4 MODELING

The CALINE-4 model is a fourth-generation line source air quality model that is based on the Gaussian diffusion equation and employs a mixing zone concept to characterize pollutant dispersion over the roadway. Given source strength, meteorology, site geometry and site characteristics, the model predicts pollutant concentrations for receptors located within 150 meters of the roadway. The CALINE-4 model allows roadways to be broken into multiple links that can vary in traffic volume, emission rates, height, width, etc.

A screening-level form of the CALINE-4 program was used to predict concentrations.[5] Normalized concentrations for each roadway size (2 lanes, 4 lanes, etc.) are adjusted for the two-way traffic volume and emission factor. Calculations were made for a receptor at a corner of the intersection, located 25 feet from the curb. Emission factors were derived from the California Air Resources Board EMFAC2002 computer program based on a 2006 Bay Area vehicle mix.

The screening form of the CALINE-4 model calculates the local contribution of nearby roads to the total concentration. The other contribution is the background level attributed to more distant traffic. The 1-hour background level in 2006 was taken as 7.4 PPM and the 8-hour background concentration was taken as 5.0 PPM. These backgrounds were estimated using isopleth maps and correction factors developed by the Bay Area Air Quality Management District.

Eight-hour concentrations were obtained from the 1-hour output of the CALINE-4 model using a persistence factor of 0.7.

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[5] Bay Area Air Quality Management District, BAAQMD CEQA Guidelines, 1999.

ATTACHMENT 2: NEW VEHICLE TRAVEL EMISSIONS

Estimates of regional emissions generated by project traffic were made using a program called URBEMIS-2002.[6] URBEMIS-2002 is a program that estimates the emissions that result from various land use development projects. Land use projects can include residential uses such as single-family dwelling units, apartments and condominiums, and nonresidential uses such as shopping centers, office buildings, and industrial parks. URBEMIS-2002 contains default values for much of the information needed to calculate emissions. However, project-specific, user-supplied information can also be used when it is available.

Inputs to the URBEMIS-2002 program include trip generation rates, vehicle mix, average trip length by trip type and average speed. Trip generation rates for project land uses were provided by the project transportation consultant. Average trip lengths and vehicle mixes for the Bay Area were used. Average speed for all types of trips was assumed to be 30 MPH.

The URBEMIS-2002 run assumed summertime conditions with an ambient temperature of 85 degrees F.

The analysis was carried out assuming a 2007 vehicle mix. The URBEMIS-2002 output is attached.

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[6] Jones and Stokes Associates, Software User's Guide: URBEMIS2002 for Windows with Enhanced Construction Module, Version 8.7, April 2003.

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\fleamarket.urb
Project Name: Flea Market
Project Location: San Francisco Bay Area
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	193.76	24.87	19.21	0.06	0.08

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	298.04	329.99	3,425.99	2.10	317.92

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	491.80	354.86	3,445.20	2.16	317.99

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\fleamarket.urb
Project Name: Flea Market
Project Location: San Francisco Bay Area
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	1.90	24.83	11.77	0	0.05
Hearth - No summer emissions					
Landscaping	1.15	0.04	7.43	0.06	0.03
Consumer Prdcts	137.82	-	-	-	-
Architectural Coatings	52.89	-	-	-	-
TOTALS(lbs/day,unmitigated)	193.76	24.87	19.21	0.06	0.08

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Single family housing	13.80	15.45	161.68	0.10	14.94
Condo/townhouse/Live-Work	216.23	232.46	2,433.31	1.49	224.85
Retail	41.79	51.22	511.31	0.31	47.79
Office/Industrial	26.21	30.86	319.70	0.20	30.34
TOTAL EMISSIONS (lbs/day)	298.04	329.99	3,425.99	2.10	317.92

Does not include correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2007 Temperature (F): 85 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Single family housing	45.00	9.90 trips/dwelling unit	135.00	1,336.50
Condo/townhouse/Live-Work	167.63	7.50 trips/dwelling unit	2,682.00	20,115.00
Retail		40.00 trips/1000 sq. ft.	152.70	6,108.00
Office/Industrial		11.18 trips/1000 sq. ft.	215.62	2,410.65
		Sum of Total Trips		29,970.15
		Total Vehicle Miles Traveled		208,705.58

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	55.20	1.80	97.80	0.40
Light Truck < 3,750 lbs	15.10	3.30	94.00	2.70
Light Truck 3,751- 5,750	16.10	1.90	96.90	1.20
Med Truck 5,751- 8,500	7.10	1.40	95.80	2.80
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.40	0.00	50.00	50.00
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.10	0.00	0.00	100.00
Motorcycle	1.70	82.40	17.60	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.20	8.30	83.30	8.40

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.8	4.6	6.1	11.8	5.0	5.0

Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	27.3	21.2	51.5			
% of Trips - Commercial (by land use)						
Retail				2.0	1.0	97.0
Office/Industrial				48.0	24.0	28.0

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
have changed from the defaults 9.57/45. to 9.9/45.
The Trip Rate and/or Acreage values for Condominium/townhouse general
have changed from the defaults 6.9/167.63 to 7.5/167.63

Changes made to the default values for Area

The hearth option switch changed from on to off.

Changes made to the default values for Operations

The pass by trips option switch changed from on to off.
The operational emission year changed from 2005 to 2007.

HISTORIC EVALUATION SHEET

HISTORIC RESOURCE NAME: Scarpac Appliance
HISTORIC RESOURCE ADDRESS: 631 E. Hedding St (APN 249-12-019)

A. VISUAL QUALIFICATIONS

1	EXTERIOR	E	VG	**G**	FP
2	STYLE: modern - vernacular	E	VG	**G**	FP
3	DESIGNER unknown	E	VG	G	**FP**
4	CONSTRUCTION materials in common use	E	VG	G	**FP**
5	SUPPORTIVE ELEMENTS: no supporting elements	E	VG	G	**FP**

B. HISTORY/ASSOCIATION

6	PERSON/ORGANIZATION	E	VG	G	**FP**
7	EVENT none of significance	E	VG	G	**FP**
8	PATTERNS redevelopment in urban grid	E	VG	G	**FP**
9	AGE 1950	E	VG	G	**FP**

C. ENVIRONMENTAL/CONTEXT

10	CONTINUITY not located in an area of importance	E	VG	G	**FP**
11	SETTING buildings of mixed age and use area, no landscaping	E	VG	**G**	FP
12	FAMILIARITY minimal recognition on busy street	E	VG	G	**FP**

D. INTEGRITY

13	CONDITION considerable surface wear	E	VG	**G**	FP
14	EXTERIOR ALTERATIONS character changed from store to garage	E	VG	**G**	FP
15	STRUCTURAL REMOVALS	**E**	VG	G	FP
16	SITE	**E**	VG	G	FP

E. REVERSIBILITY

17	EXTERIOR alterations to convert retail store to garage	E	**VG**	G	FP

F. ADDITIONAL CONSIDERATIONS/BONUS POINTS

18	INTERIOR VISUAL remodeling & change in use	E	VG	G	**FP**
19	INTERIOR HISTORY neighborhood businesses	E	VG	**G**	FP
20	INTERIOR ALTERATIONS	E	VG	**G**	FP
21	INTERIOR REVERSIBILITY	E	VG	**G**	FP
22	NATIONAL OR CALIFORNIA REGISTER	E	VG	G	**FP**

REVIEWED BY: Bonnie Bamburg

DATE: September 30, 2006

EVALUATION TALLY SHEET
(PART 1)

HISTORIC RESOURCE ADDRESS: 631 E. Hedding St (APN 249-12-019)

			E	VG	G	FP	
A	VISUAL QUALITY/DESIGN						
	1	EXTERIOR	16	12	6	0	6
	2	STYLE	10	8	4	0	4
	3	DESIGNER	6	4	2	0	0
	4	CONSTRUCTION	10	8	4	0	0
	5	SUPPORTIVE ELEMENTS	8	6	3	0	0
					Subtotal:		10
B.	HISTORY/ASSOCIATION						
	6	PERSON/ORGANIZATION	20	15	7	0	0
	7	EVENT	20	15	7	0	0
	8	PATTERNS	12	9	5	0	0
	9	AGE	8	6	3	0	0
					Subtotal:		0
C.	ENVIRONMENTAL/ CONTEXT						
	10	CONTINUITY	8	6	3	0	0
	11	SETTING	6	4	2	0	2
	12	FAMILIARITY	10	8	4	0	0
					SUBTOTAL:		2
					A & C SUBTOTAL:		12
					B SUBTOTAL:		0
					PRELIMINARY TOTAL: (sum of A. B. & C.)		12

EVALUATION TALLY SHEET
(PART II)

HISTORIC RESOURCE ADDRESS: 631 E. Hedding St (APN 249-12-019)

D.	INTEGRITY	E	VG	G	FP			
	13 CONDITION		0.03	0.05	0.1	12 X	0.05 =	0.6
		SUBTOTAL A,B&C						
	14 EXTERIOR ALTERATIONS		0.05	0.1	0.2	12 X	0.1 =	1.2
		SUBTOTAL A&C						
			0.03	0.05	0.1	0 X	0.05 =	0
		FROM B						
	15 STRUCTURAL REMOVALS		0.2	0.3	0.4	12 X	0 =	0
		SUBTOTAL: A & C						
			0.1	0.2	0.4	0 X	0 =	0
		FROM B						
	16 SITE		0.1	0.2	0.4	0 X	0 =	0
		FROM B						
		INTEGRITY DEDUCTIONS SUBTOTAL						1.8
		ADJUSTED SUBTOTAL: (Preliminary Total minus Integrity Deductions)				12 -	1.8	10.2
		VALUE						
E	REVERSIBILITY	E	VG	G	FP			
	17 EXTERIOR	3	3	2	2			3
				Total:		3		
F.	ADDITIONAL CONSIDERATIONS BONUS POINTS							
	18 INTERIOR HISTORY ASSOCIATION	3	3	1	0	1		
	19 INTERIOR VISUAL QUALITY	3	3	1	0	0		
	20 INTERIOR ALTERATIONS	4	4	3	1	2		
	21 INTERIOR REVERSIBILITY	4	4	2	0	2		
	22 NATIONAL OR CALIFORNIA REGISTER	20	15	10	0	0		
		BONUS POINTS SUBTOTAL:						5
		ADJUSTED TOTAL:						18.2

HISTORIC EVALUATION SHEET

HISTORIC RESOURCE NAME: Marie's Restaurant
HISTORIC RESOURCE ADDRESS: 904 N. 13th Street (APN 249-12-019)

A. VISUAL QUALIFICATIONS

1	EXTERIOR new facad for corner location with minimal setback	E	VG	**G**	FP
2	STYLE: vernicular - bungalow elements	E	VG	**G**	FP
3	DESIGNER unknown	E	VG	G	**FP**
4	CONSTRUCTION materials in common use	E	VG	G	**FP**
5	SUPPORTIVE ELEMENTS: signs, minimal front planters	E	VG	**G**	FP

B. HISTORY/ASSOCIATION

6	PERSON/ORGANIZATION multiple tenants, none significant	E	VG	G	**FP**
7	EVENT none of significance	E	VG	G	**FP**
8	PATTERNS neighborhood restaurant - redevelopment in urban grid	E	VG	**G**	FP
9	AGE c. 1935: remodeling 1950	E	VG	**G**	FP

C. ENVIRONMENTAL/CONTEXT

10	CONTINUITY not located in an area of importance	E	VG	G	**FP**
11	SETTING buildings of mixed age and use area	E	VG	G	**FP**
12	FAMILIARITY neighborood restaurant on a busy road	E	VG	**G**	FP

D. INTEGRITY

13	CONDITION rebuilt in 2000	E	**VG**	G	FP
14	EXTERIOR ALTERATIONS building has changed with remodeling	E	VG	G	**FP**
15	STRUCTURAL REMOVALS Façade and walls have changed	E	**VG**	G	FP
16	SITE	**E**	VG	G	FP

E. REVERSIBILITY

17	EXTERIOR significant remodeling and repairs	E	VG	**G**	FP

F. ADDITIONAL CONSIDERATIONS/BONUS POINTS

18	INTERIOR VISUAL remodeling & use	E	VG	G	**FP**
19	INTERIOR HISTORY neighborhood restaurant	E	VG	**G**	FP
20	INTERIOR ALTERATIONS significant from original	E	VG	G	**FP**
21	INTERIOR REVERSIBILITY not judged	E	VG	G	**FP**
22	NATIONAL OR CALIFORNIA REGISTER	E	VG	G	**FP**

REVIEWED BY: Bonnie Bamburg

DATE: September 30, 2006

EVALUATION TALLY SHEET
(PART 1)

HISTORIC RESOURCE ADDRESS: 904 N. 13th Street (APN 249-12-019)

			E	VG	G	FP	
A	VISUAL QUALITY/DESIGN						
	1	EXTERIOR	16	12	6	0	6
	2	STYLE	10	8	4	0	4
	3	DESIGNER	6	4	2	0	0
	4	CONSTRUCTION	10	8	4	0	0
	5	SUPPORTIVE ELEMENTS	8	6	3	0	3
					Subtotal:		13
B.	HISTORY/ASSOCIATION						
	6	PERSON/ORGANIZATION	20	15	7	0	0
	7	EVENT	20	15	7	0	0
	8	PATTERNS	12	9	5	0	5
	9	AGE	8	6	3	0	3
					Subtotal:		8
C.	ENVIRONMENTAL/ CONTEXT						
	10	CONTINUITY	8	6	3	0	0
	11	SETTING	6	4	2	0	0
	12	FAMILIARITY	10	8	4	0	4
					SUBTOTAL:		4
					A & C SUBTOTAL:		17
					B SUBTOTAL:		8
					PRELIMINARY TOTAL: (sum of A. B. & C.)		25

EVALUATION TALLY SHEET
(PART II)

HISTORIC RESOURCE ADDRESS: 904 N. 13th Street (APN 249-12-019)

D.	INTEGRITY	E	VG	G	FP			
	13 CONDITION		0.03	0.05	0.1	25 X	0.03 =	0.75
		SUBTOTAL A,B&C						
	14 EXTERIOR ALTERATIONS		0.05	0.1	0.2	17 X	0.2 =	3.4
		SUBTOTAL A&C						
			0.03	0.05	0.1	8 X	0.1 =	0.8
		FROM B						
	15 STRUCTURAL REMOVALS		0.2	0.3	0.4	17 X	0.2 =	3.4
		SUBTOTAL: A & C						
			0.1	0.2	0.4	8 X	0.1 =	0.8
		FROM B						
	16 SITE		0.1	0.2	0.4	8 X	0 =	0
		FROM B						
		INTEGRITY DEDUCTIONS SUBTOTAL						9.15
		ADJUSTED SUBTOTAL: (Preliminary Total minus Integrity Deductions)				25 -	9.15	15.85
		VALUE						
E	REVERSIBILITY	E	VG	G	FP			
	17 EXTERIOR	3	3	2	2			2
				Total:		2		
F.	ADDITIONAL CONSIDERATIONS BONUS POINTS							
	18 INTERIOR HISTORY ASSOCIATION	3	3	1	0	1		
	19 INTERIOR VISUAL QUALITY	3	3	1	0	0		
	20 INTERIOR ALTERATIONS	4	4	3	1	0		
	21 INTERIOR REVERSIBILITY	4	4	2	0	0		
	22 NATIONAL OR CALIFORNIA REGISTER	20	15	10	0	0		
		BONUS POINTS SUBTOTAL:						1
		ADJUSTED TOTAL:						18.85

HISTORIC EVALUATION SHEET

HISTORIC RESOURCE NAME: Scarpac House
HISTORIC RESOURCE ADDRESS: 903 N. 14th Street (APN 249-12-019)

A. VISUAL QUALIFICATIONS

1	EXTERIOR	E VG **G** FP
2	STYLE: Spanish Colonial Revival -vernacular	E VG **G** FP
3	DESIGNER unknown	E VG G **FP**
4	CONSTRUCTION materials in common use	E VG G **FP**
5	SUPPORTIVE ELEMENTS: minimal landscaping, concrete yard surface Garage has compatible design	E VG **G** FP

B. HISTORY/ASSOCIATION

6	PERSON/ORGANIZATION Frank Scarpac family	E VG G **FP**
7	EVENT none of significance	E VG G **FP**
8	PATTERNS redevelopment in urban grid	E VG G **FP**
9	AGE 1935	E VG **G** FP

C. ENVIRONMENTAL/CONTEXT

10	CONTINUITY not located in an area of importance	E VG G **FP**
11	SETTING buildings of mixed age and use area	E VG G **FP**
12	FAMILIARITY not particularly conspicuous of familiar	E VG G **FP**

D. INTEGRITY

13	CONDITION	E **VG** G FP
14	EXTERIOR ALTERATIONS	**E** VG G FP
15	STRUCTURAL REMOVALS	**E** VG G FP
16	SITE	**E** VG G FP

E. REVERSIBILITY

17	EXTERIOR minor repairs	**E** VG G FP

F. ADDITIONAL CONSIDERATIONS/BONUS POINTS

18	INTERIOR VISUAL remodeling & use	E VG G **FP**
19	INTERIOR HISTORY	E VG G **FP**
20	INTERIOR ALTERATIONS	E VG G **FP**
21	INTERIOR REVERSIBILITY not judged	E VG G **FP**
22	NATIONAL OR CALIFORNIA REGISTER	E VG G **FP**

REVIEWED BY: Bonnie Bamburg

DATE: September 30, 2006

EVALUATION TALLY SHEET
(PART 1)

HISTORIC RESOURCE ADDRESS: 903 N. 14th Street (APN 249-12-019)

			E	VG	G	FP	
A	VISUAL QUALITY/DESIGN						
	1	EXTERIOR	16	12	6	0	6
	2	STYLE	10	8	4	0	4
	3	DESIGNER	6	4	2	0	0
	4	CONSTRUCTION	10	8	4	0	0
	5	SUPPORTIVE ELEMENTS	8	6	3	0	3
					Subtotal:		13
B.	HISTORY/ASSOCIATION						
	6	PERSON/ORGANIZATION	20	15	7	0	0
	7	EVENT	20	15	7	0	0
	8	PATTERNS	12	9	5	0	0
	9	AGE	8	6	3	0	3
					Subtotal:		3
C.	ENVIRONMENTAL/ CONTEXT						
	10	CONTINUITY	8	6	3	0	0
	11	SETTING	6	4	2	0	0
	12	FAMILIARITY	10	8	4	0	0
					SUBTOTAL:		0
					A & C SUBTOTAL:		13
					B SUBTOTAL:		3
					PRELIMINARY TOTAL: (sum of A. B. & C.)		16

EVALUATION TALLY SHEET
(PART II)

HISTORIC RESOURCE ADDRESS: 903 N. 14th Street (APN 249-12-019)

D.	INTEGRITY	E	VG	G	FP			
	13 CONDITION		0.03	0.05	0.1	16 X	0.03 =	0.48
		SUBTOTAL A,B&C						
	14 EXTERIOR ALTERATIONS		0.05	0.1	0.2	13 X	0 =	0
		SUBTOTAL A&C						
			0.03	0.05	0.1	3 X	0 =	0
		FROM B						
	15 STRUCTURAL REMOVALS		0.2	0.3	0.4	13 X	0 =	0
		SUBTOTAL: A & C						
			0.1	0.2	0.4	3 X	0 =	0
		FROM B						
	16 SITE		0.1	0.2	0.4	3 X	0 =	0
		FROM B						
		INTEGRITY DEDUCTIONS SUBTOTAL						0.48
		ADJUSTED SUBTOTAL:				16 -	0.48	15.52
		(Preliminary Total minus Integrity Deductions)						
		VALUE						
E	REVERSIBILITY	E	VG	G	FP			
	17 EXTERIOR	3	3	2	2			3
				Total:		3		
F.	ADDITIONAL CONSIDERATIONS BONUS POINTS							
	18 INTERIOR HISTORY ASSOCIATION	3	3	1	0	0		
	19 INTERIOR VISUAL QUALITY	3	3	1	0	0		
	20 INTERIOR ALTERATIONS	4	4	3	1	0		
	21 INTERIOR REVERSIBILITY	4	4	2	0	0		
	22 NATIONAL OR CALIFORNIA REGISTER	20	15	10	0	0		
		BONUS POINTS SUBTOTAL:						0
		ADJUSTED TOTAL:						18.52

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November 2, 2006

Demetri Loukas
David J. Powers and Associates, Inc.
1885 The Alameda, Suite 204
San Jose, CA 95126

VIA E-Mail: dloukas@davidjpowers.com

SUBJECT: Flea Market Project, San Jose, CA --
Evaluation of Air Quality Impacts Resulting from
the Implementation of Traffic Mitigation Measures

Dear Demetri:

This letter summarizes the results of our air quality impact assessment of the traffic mitigation measures required as part of the Flea Market Project at the intersection of Oakland Road and East Hedding Street. Air quality impacts were assessed for both short-term and future traffic conditions for both "protected" and mitigated intersection conditions.

Air quality impacts were assessed by predicting carbon monoxide levels at receptors adjacent to the intersection roadways and comparing those concentrations to ambient air quality standards. The EMFAC2002 Emissions Factor model and the CALINE4 dispersion model were used to predict roadside concentrations. The following conditions were modeled:

- Protected Intersection – Existing + Background + Project traffic in 2006
- Protected Intersection – General Plan traffic beyond 2010
- Mitigated Intersection– Existing + Background + Project traffic in 2006
- Mitigated Intersection – General Plan traffic beyond 2010

Composite vehicle emission factors were modeled using the California Air Resources Board EMFAC2002 model. Default model inputs for Santa Clara County in the winter season were used in the model. Existing plus background plus project traffic conditions were assumed to occur in 2006. General Plan conditions were assumed to occur beyond 2010, but are represented by 2010 emission factors. The EMFAC2002 emission factors decrease in the future because

newer vehicles with improved emissions technology will replace older, more polluting, vehicles. Emission factors are highly dependent on speed, where emission rates are highest for slow speeds. The model provides composite vehicular emission factors expressed as grams per mile. Congested traffic speeds of 5 miles per hour were assumed for a worst-case assessment.

Emission rates were used with the CALINE4 Line Source Dispersion Model to predict concentrations at receptor positions along the roadways. The CALINE4 model included geometric conditions representative of both the existing intersection configuration and the mitigated configuration. In addition, traffic volumes and speed adjustments were used in the model. Inputs for wintertime meteorological conditions recommended by the Bay Area Air Quality Management District were also used in the modeling. The CALINE4 model provides predicted 1-hour average concentrations caused by the local roadways. These 1-hour concentrations were converted to 8-hour average concentrations by multiplying with a persistence factor of 0.7. The total predicted 8-hour concentration was added to a background level of 6 parts per million (ppm) for 1-hour average and 4.0 ppm for and 8-hour average. These are the highest carbon monoxide concentrations measured in San José over the last 3 years.

Results of this assessment indicate that carbon monoxide concentrations would remain below ambient air quality standards, whether intersection improvements are made or if the intersection is protected. Table 1 shows the highest modeled concentration under each scenario evaluated and compares those results to national and California ambient air quality standards.

Table 1 Modeled Carbon Monoxide Concentrations at the Oakland Road and Hedding Street Intersection

Scenario	Predicted Carbon Monoxide Concentration in ppm		Exceeds Standard?
	1-Hour	8-hour	
Protected Intersection – 2006	8.6	5.8	No
Mitigated Intersection – 2006	8.6	5.8	No
Protected Intersection – beyond 2010	8.0	5.4	No
Mitigated Intersection – beyond 2010	8.0	5.4	No
California Ambient Air Quality Standard	*20 ppm*	*9.0 ppm*	
National Ambient Air Quality Standard	*35 ppm*	*9 ppm*	

Proposed mitigation would bring some traffic lanes closer to receptors, resulting in slightly higher air pollutant levels at those specific receptors. However, carbon monoxide concentrations are predicted to remain below ambient air quality standards. Therefore, a less-than-significant impact to air quality would occur under either scenario.

* * *

This concludes our air quality impact assessment of the traffic mitigation measures proposed at the intersection of Oakland Road and East Hedding Street as part of the Flea Market Project. If you have any questions or comments regarding this analysis, please do not hesitate to call.

Sincerely yours,

James A. Reyff

James a. Reyff
Senior Consultant
Illingworth & Rodkin, Inc.

06-207