



August 3, 2012

Ms. Darcy Forsell, Associate Planner
Community Development Department/Planning Division
City of San Mateo
330 W. 20th Avenue
San Mateo, CA 94403

Fresno
559.497.0310

Irvine
714.508.4100

Palm Springs
760.322.8847

Sacramento
916.447.1100

San Bernardino
909.884.2255

San Ramon
925.830.2733

Subject: Air Quality Consistency Analysis – Nueva High School Site Plan and Architectural Review

Dear Ms. Forsell:

This letter provides a review of the potential air quality impact of the proposed Nueva High School Site Plan and Architectural Review (SPAR) in comparison to the adopted San Mateo Rail Corridor Plan & Bay Meadows Specific Plan Amendment Environmental Impact Report (EIR). The EIR was certified—and the Bay Meadows Phase II Specific Plan amendments approved—by the City of San Mateo (City) in 2005. Because the exact mix of uses was not known when the EIR was prepared, the EIR assumed various combinations of land uses at Mixed Use Block 1 (MU-1). The Bay Meadows Phase II Specific Plan, however, expressly allows educational facilities as a permitted land use. A private high school (together with affordable housing on a one-acre portion of the Block) is now considered an option for MU-1; the Nueva High School SPAR is proposed for the City's consideration. This analysis addresses only the Nueva High School SPAR.

To evaluate the proposed project under consideration, Michael Brandman Associates (MBA) reviewed the certified EIR, the proposed project, and the Nueva High School Transportation Demand Management Plan (TDM Plan) prepared by Kimley-Horn and Associates to determine if the proposed project would create any new or significantly increased impacts on air quality. In addition, MBA estimated daily trip generation and vehicle miles traveled using ITE trip generation rates and San Mateo County-specific trip lengths. We conclude that the proposed Nueva High School is consistent with the EIR and would not change the EIR findings, require revisions to the EIR, or require any new mitigation measures, or raise any new significant air quality issues.

Project Description

The proposed Nueva High School would be constructed to accommodate up to 450 students and 60 full time and part time faculty and staff. The school is anticipated to take approximately 8 years to reach its initial target enrollment of 400 students. The Bay Meadows area is supported by a robust transportation system that includes opportunities for carpooling, use of transit, biking and walking to reduce drive-alone trips. The school would provide 125 parking spaces, two loading areas for delivery vehicles, and a bus loading (and parking) area that would accommodate up to two large school buses. Onsite parking spaces would be dedicated for the use of faculty, staff, and visitors. Although no regular student parking would be provided, additional spaces would be available to students on an exception basis. Large special events would occasionally be held at Nueva High School, such as parents' night, sporting events, cultural presentations, and graduation.

Basis of Existing Air Quality Analysis

Conditions of approval of the Bay Meadows Phase II Specific Plan amendments included establishing a trip budget for the entire project, as well as for each block, in order to measure the project's success in meeting

applicable trip reduction goals. Block MU-1 is one of four blocks designated mixed-use, and approved to be developed with residential over ground floor retail or office. Block MU-1 was originally evaluated in the Bay Meadows Traffic Management Plan as 187 residential units; because of its mixed-use designation, it allows for development of up to 165,000 square feet at the maximum Floor Area Ratio per the purchase agreement with the master developer.

Construction Impacts

Construction activities associated with development of the Bay Meadow's project were analyzed in the certified EIR and found to be reduced to less than significant with mitigation measure Air Quality-BM1.

Long-Term Regional Impacts

For the majority of development projects, including residential, office, and education facilities, on-road mobile vehicles traveling to and from the development constitute the single largest contributing source of air pollutant emissions. Therefore, average daily trip generation, and vehicle miles traveled (VMT) are key metrics in determining operational emissions of development projects.

The certified EIR found that development of the Bay Meadows project would result in regional air pollutant emissions due to the related intensification of land uses and increase in VMT. However, the EIR found that development of Bay Meadows would not exceed the applicable regional air pollutant thresholds due to consistency with population and VMT projections, and inclusion of goals and objectives that would facilitate transportation oriented design on the project site (consistency with Clean Air Plan Transportation Control Measures).

As estimated using ITE trip generation rates and region-specific trip lengths contained within the URBEMIS air quality emissions model, development of MU-1 in 187 apartments would result in an estimated 1,290 average annual daily trips (AADT), with approximately 11,032 daily vehicle miles traveled (VMT). Development of the block with 165,000 square feet of office space would result in an estimated 1,817 AADT, and 14,719 VMT. These trips are unadjusted for transit, TDM, and mixed-use internal capture

Odors

The certified EIR found no known land uses that emit odors affecting substantial numbers of people in the project area. In addition, City Municipal code requires any proposed commercial and/or manufacturing development to control potential onsite odors. Subsequently, the EIR found odor impacts associated with development of the Bay Meadows project would be less than significant.

Toxics

Impacts from toxic emissions on residential land uses, which are considered a location of sensitive receptors, were analyzed in the certified EIR. The EIR found that proposed development with a potential to emit toxic air contaminants may be constructed in the project area; therefore, impacts to sensitive receptors from future development may be potentially significant. However, the EIR found that implementation of mitigation measure Air Quality-BM2 would reduce the impact to less than significant.

Long-Term Local and Cumulative Impacts

This impact is related to potential carbon monoxide (CO) hotspot generation. CO hotspots are a concern at roadway intersections with high traffic volumes at peak hours. The certified EIR found that the development of the Bay Meadows project would result in a less than significant CO impact on a localized basis as well as cumulative basis.

For this comparative analysis, the maximum PM Peak Hour generation is used as a proxy for intersection congestion. The maximum PM trip budget for block MU-1 is 106 trips as “mid-term” development, and 95 trips at “long-term” buildout of the specific plan area. As noted in the TDM Plan, development of the block as general office building would result in 204 PM unadjusted trips out. Development of MU-1 in 187 dwelling units would result in an estimated 41 PM Peak Hour trips out. Please note these trips are unadjusted for transit, TDM, and mixed-use internal capture.

Analysis of Proposed Nueva School SPAR

MBA analyzed the proposed project to determine if the development would result in any new or significantly increased air quality impacts than that analyzed and disclosed in the certified EIR. The Nueva High School TDM Plan, prepared by Kimley-Horn and Associates July 28, 2012, includes a review of traffic and parking requirements of the Bay Meadows Specific Plan, Block MU-1 trip budgets, the proposed Nueva High School trip generation, and the compatibility of the proposed Nueva High School to the Bay Meadows Specific Plan.

Construction Impacts

Construction of the proposed Nueva High School would not involve a greater intensity or duration of construction activities than development of the site with residences or office buildings. In addition, the project would be required to implement mitigation measure Air Quality-BM1. Therefore, development Nueva High School would not result in new or significantly increased construction impacts from what was analyzed in the certified EIR.

Long-Term Regional Impacts

Development of the Nueva High School would result in an estimated 770 AADT, and 5,821 VMT. Therefore, the proposed project would result in substantially lower AADT and VMT than development of residences or office buildings. These trips are unadjusted for transit, TDM, and mixed-use internal capture as a worst-case assumption. In addition, the Nueva High School would not increase the population of the project area. Development of the site is required to be consistent with the goals and objectives identified in the Bay Meadow’s Phase II Specific Plan.

Because the Nueva High School would be developed consistent with the goals and objectives of the Bay Meadow’s Phase II Specific Plan, would not increase population greater than that analyzed in the EIR, nor would it increase VMT generated for the project area above that analyzed in the certified EIR, the proposed school would not result in a new or significantly increased operational regional air quality impacts.

Odors

No new land uses that emit odors affecting substantial numbers of people have been developed in the project area. In addition, commercial and/or manufacturing development must still comply with City Municipal Code requirements to control potential onsite odors. Schools are not considered odor sources having the potential to generate odor impacts. Chemistry and other science labs at schools can generate odors from certain experiments; however, this is not a frequent occurrence and the labs are required by state building code and OSHA to provide adequate ventilation to minimize exposure of students, staff, and faculty. Therefore, the development of the Nueva High School would not result in new or significantly increased odor impacts.

Toxics

Schools are considered a location of sensitive receptors; therefore, because impacts to sensitive receptors were assessed in the EIR and because development of potential toxic air contaminants must comply with mitigation measure Air Quality-BM2, development of the site as a school would not result in a new or significantly increased risk to sensitive receptors. Furthermore, the site is located more than 0.5 mile from

Highway 101 and Highway 92. Therefore, in accordance with the Bay Area Air Quality Management District's guidance, Highway 101 and Highway 92 would not pose a significant toxic risk impact to the project.

Laboratories, including school laboratories, must comply with all applicable health, safety and environmental protection laws, regulations and requirements, including Title 8, California Code of Regulations (CCR), Section 5191 (Occupational Exposures to Hazardous Chemicals in Laboratories). As such, Nueva High School is required to prepare a Chemical Hygiene Plan (CHP). The CHP describes the proper use, handling practices and procedures to be followed by faculty, staff, students, visiting scholars, and all other personnel. The CHP is required to be: capable of protecting employees from the health hazards present in the workplace, capable of keeping exposures below Cal/OSHA-regulated limits, readily accessible to employees, and reviewed annually and updated as appropriate. Preparation and implementation of the CHP reduces in-school exposure to toxic substances in laboratories to less than significant for employees and students.

Diesel-fueled school buses would be a localized source of diesel particulate matter, which is an identified toxic air contaminant. However, operation and idling of school buses on school sites is not expected to result in significant toxic air contaminant exposure primarily due to the small number of school buses that would operate on a site and the limited duration of onsite idling. As described in the TDM Plan, four buses are anticipated to serve the school; two of which are estimated to take four minutes to load with the other two buses estimated to take two minutes to unload. The California Air Resources Board (ARB) approved an Airborne Toxic Control Measure that limits school bus idling and other vehicle idling at or near schools to only when necessary for safety or operational concerns. This regulation has been in effect since July 16, 2003. The regulation targets school buses, school pupil activity buses, youth buses, paratransit vehicles, transit buses, and heavy-duty commercial motor vehicles that operate at or near schools.

For reference, the current methodological protocols required by the ARB when studying the health risk posed by diesel particulate matter assume the following: (1) 24-hour constant exposure; (2) 350 days a year; (3) for a continuous period lasting 70 years. These are incredibly conservative assumptions that are not replicated in reality. Most people are indoors for 18-20 hours a day (at their place of employment or home) and most people do not live, work, or study in the same location for a 70-year period. Therefore, the limited amount of onsite school bus idling would not pose new or significantly increased air quality impacts from toxic air contaminant exposures.

Long-Term Local and Cumulative Impacts

The TDM Plan includes a review of the PM trip generation of the proposed Nueva High School using two methodologies: mode share trip generation and ITE trip generation. The mode share methodology found up to 100 total trips (inbound and outbound) are expected to be generated by the Nueva High School during the PM Peak Hour. The ITE analysis found only 40 PM Peak Hour trips out. Therefore, the proposed project would result in fewer PM Peak Hour trips out than if developed with residences or in general commercial and, it follows, not result in new or significantly increased potential for CO hotspot generation. These trips are unadjusted for transit, TDM, and mixed-use internal capture. The long-term and cumulative impacts for other pollutants are less than the uses analyzed in the EIR.

Vehicles may queue in the drop-off and pick-up area; however, vehicles idling on a school-site for pick-up and drop-off are not among sources typically identified as a concern for CO hotspot generation. As stated within the TDM Plan, many students are expected to take a school bus or to utilize other transit options. The AM Peak drop-off queue is estimated to produce concentrated peak traffic that usually lasts 15-30 minutes, with 4 vehicles accommodated at a time within the drop-off area, at a rate of 8 vehicles per minute. The TDM Plan determined that the drop-off queue could be contained within the total 500 feet of queuing distance available onsite. For PM Peak pick-up, it was estimated that the pick-up line capacity would be 4 vehicles per minute, with a result that the pick-up queue would be contained within the total 500 feet queuing distance available

onsite. For reference, the Bay Area Air Quality Management District's guidance provides screening criteria that, if met, would result in less-than-significant CO concentrations. The quantitative screening criteria are:

- The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

The project site would not experience more than 44,000 vehicles per hour, nor would it experience more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited. Therefore, the proposed project would not result in new or significantly increased potential for CO hotspot generation through onsite idling and queuing.

Conclusion

As shown in the comparative analysis provided above, the proposed Nueva High School would not introduce any new or significantly increased air quality impacts from that analyzed and mitigated within the certified EIR. Therefore, air quality impacts would be less than significant with mitigation, as contained within the previously certified EIR and discussed above. The certified EIR analysis does not need to be modified to address the project as proposed.

Sincerely,



Chrissy Meier, Senior Air Quality Analyst

Michael Brandman Associates

Bishop Ranch 3

2633 Camino Ramon, Suite 460

San Ramon, CA 94583



September 27, 2012

Ms. Darcy Forsell, Associate Planner
Community Development Department/Planning Division
City of San Mateo
330 W. 20th Avenue
San Mateo, CA 94403

Fresno
559.497.0310

Irvine
714.508.4100

Palm Springs
760.322.8847

Sacramento
916.447.1100

San Bernardino
909.884.2255

San Ramon
925.830.2733

Subject: Air Quality Consistency Analysis: Carbon Monoxide Hotspot Assessment – Nueva High School Site Plan and Architectural Review

Dear Ms. Forsell:

In response to City comments, Michael Brandman Associates (MBA) prepared the following clarification to supplement the Air Quality Consistency Analysis provided on August 3, 2012 regarding whether emissions from the vehicles dropping off and picking up students at the proposed high school have the potential to create a carbon monoxide (CO) hotspot.

Carbon Monoxide Hotspots

The Air Quality Consistency Analysis prepared by MBA concluded that the project would not have the potential to create a CO hotspot. The conclusion was based on a comparison of peak trips generated by the project during student pick up and drop off with trip based screening criteria contained in the Bay Area Air Quality Management District's CEQA Air Quality Guidelines. According to the project traffic consultant, Kimley-Horn, the project would generate a maximum of 95 PM peak hour trips which would result in 48 trips entering the site and 47 trips exiting the site during the peak hour. The most likely time for queuing and idling to occur is at the end of the school day when some parents may arrive before class ends and leave their engines running while they are waiting. This would generate CO emissions in the pick up and queuing area.

To further refine the assessment, MBA developed average idling times based on a worst case scenario for the peak hour. The Transportation Demand Management study estimated that the PM Peak pick-up line capacity would be 4 vehicles per minute, with a result that the pick-up queue would be contained within the total 500 feet queuing distance available onsite. At this rate, the 48 student pickups could be accommodated in 12 minutes under ideal conditions. However, as a worst case, the following assumptions were made to reflect parents arriving early or right at the end of classes for the day:

- 50 percent arrive early (1/6th 15 min, 1/6th 10 min, 1/6th 5 min)
- All other vehicles arriving in the peak hour arrive when school lets out for the day
- All drivers leave their engines running while they are waiting
- The drivers that are last in line when class lets out wait 12 minutes to get to the pick up point.

Based on these assumptions, the worst case average idling time during the peak hour is 11.5 minutes including waiting and queuing. Actual idling is expected to be much less.

At a rate of 11.5 minutes of idling per vehicle, 48 idling vehicles would generate 552 idling minutes during the peak hour. By comparison, the BAAQMD screening criteria used to identify potential CO hotspots for roadway intersections is 44,000 vehicles per hour. Consider the amount of idling that would occur at a signalized intersection with traffic volumes of 44,000 vehicles per hour. Assuming the average idling time while waiting for the signal lights to change was 30 seconds per vehicle, the intersection would produce 22,000 minutes of idling per hour plus the emissions generated while the vehicles travel through the intersection. The intersection in this case is producing idling emissions at a rate nearly 40 times the rate of emissions produced in the school loading area. In terms of emissions, the project would generate approximately 0.37 pounds of CO per hour compared to the intersection, which would generate 13.2 pounds of CO per hour based on EMFAC 2011 light duty auto emission rates. For this reason, vehicles idling on a school-site for pick-up and drop-off are not among sources typically identified as a concern for CO hotspot generation. Therefore, the proposed project would not result in new or significantly increased potential for CO hotspot generation through onsite idling and queuing.

Sincerely,



David M. Mitchell, Air Quality Services Manager
Michael Brandman Associates
Bishop Ranch 3
2633 Camino Ramon, Suite 460
San Ramon, CA 94583