DRAFT
Initial Study and Mitigated Negative Declaration
Sierra Madre School Upper Campus
Sierra Madre, California

Prepared for:

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April 28, 2010

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SECTION 1: INTRODUCTION

1.1 - Purpose

This Initial Study (IS) was prepared for the Pasadena Unified School District (PUSD), and is intended to assess the potential environmental impacts associated with the construction and long-term operation of the proposed Sierra Madre School Upper Campus (Project). This IS has been prepared in accordance with the *California Environmental Quality Act (CEQA) of 1970* (Public Resources Code, Section 21000 et seq.), the *Guidelines for Implementation of the California Environmental Quality Act* published by the Resources Agency of the State of California (California Administrative Regulations Section 15000 et seq.). This IS is an informational document to be used by decision-makers, public agencies, and the general public. This IS was prepared by Michael Brandman Associates (MBA), a private environmental consulting firm on behalf of the PUSD, which is the Lead Agency. As mandated by the CEQA Guidelines, this IS reflects the independent judgment of the PUSD regarding the Project (CEQA Guidelines Section 15084(e)). Following a 30-day period for circulation and public review, the PUSD will consider all comments prior to any decision on the Project.

1.2 - Project Location

Regionally, the Sierra Madre School Upper Campus site is located in the San Gabriel Valley region of Los Angeles County, in the northern portion of the City of Sierra Madre (See Exhibit 1 – *Regional Location*). Specifically, the Project site is located directly north of East Highland Avenue, east of North Canon Avenue, south of East Laurel Avenue and west of Sierra Vista Park at 160 North Canon Avenue. (See Exhibit 2 – *Local Vicinity Aerial Map*). The property consists of Assessor's Parcel Number (APN) 576-600-2900. The site is depicted on the Los Angeles County, California U.S. Geological Survey (USGS 7.5-minute) topographic map in Section 16, Township 1 North, and Range 11 West (Exhibit 3 – *Local Vicinity Topographical Map*). The Project site is located at 34° 09´52.91´´ north latitude and 118° 02´36.71´´ west longitude.

1.3 - Project Description

The current Sierra Madre School Upper Campus is located on an approximately eight (8) acre site. The Project site contains a total of 13 buildings and breezeways totaling approximately 40,410 square feet. Implementation of the Project will demolish all existing structures on-site and will develop a grouping of two-story, small-scale buildings, totaling approximately 72,114 square feet. The total increase in square footage compared to the original facilities is approximately 31,704 square feet. Included within the new facility will be a gymnasium that will available for joint use with the City of Sierra Madre. The proposed buildings and associated square footage is described in Exhibit 4 and Table 1, below.

Table 1: Proposed Building and Associated Square Footage

Category/Function	Square Feet
Instructional Facilities* (Approximately 28 Classrooms)	29,948.64
Library/Media Center**	7,230.08
Administration	5,701.77
Multi-Purpose/Cafeteria	5,729.64
Gymnasium & Lockers	9,956.32
Kitchen	1,057.42
Student Store	92.14
Student and Faculty Restroom	2,545.39
Miscellaneous***	9,852.70
Total	**72,114.10**

Source: Sierra Madre Upper Campus Schematic Design (September 3, 2009).
* The Project will include 28 classrooms including special types, including labs, art, special day class, media lab and music. This does not include the computer lab. There are 18 general classrooms.
** Includes the computer lab that opens into the library.
*** Includes utility, circulation and workrooms.

The Project site was leased to a private school organization and housed the Maranantha High School and over 700 students. However, the District converted the site to a middle school. The total student capacity at the school site is 550 students. Current enrollment at the Sierra Madre School Upper Campus is approximately 325 students. Development of the new Sierra Madre School Upper Campus will have a total current school's capacity of 550 students, which is consistent with the existing schools capacity. The main increase in square footage is within the proposed support facilities, consistent with a modern middle school.

Construction of the proposed Sierra Madre School Upper Campus – Middle School will be constructed in four (4) phases. Phase 1 will consist of an interim school phase, which includes using existing building "C" and adding temporary portable units on-site. Phase 2 will consist of a rough grading phase in the area of the new buildings. Phase 3 will consist of the main construction phase, which includes construction of all the new buildings and inner campus site work. Phase 4 will consist of the final parking improvements, demolition of building "C", removal of the portable buildings, perimeter site work, and field construction. Construction of the Project is expected to begin July 2010 and will be completed in August 2011 (an estimated 12-15 months).

During construction of the Project, temporary portable school buildings will be in place for the 2010 – 2011 school year, and will consist of six (6) regular portable classrooms, one special education portable classroom, one day use portable, one multi- use portable, and three (3) office/administrative portables. In addition, seven (7) existing classrooms within building "C" (6,328

square feet) of the Sierra Madre School Upper Campus site will be used. Portable restrooms will also be in place during the 2010 – 2011 school year, and will be located in the southeast corner of the Project site. The existing building "C", located in the northwest portion of the project site, will be the last building of the old school to be demolished.

Development of the new two-story school buildings will be located in the same general area of the site as the previous campus buildings; however, the placement of the new buildings will be arranged to create a central quad and provide a focal point within the new campus layout. A majority of the circulation walkways for students and staff will be within the inner campus and between buildings and will therefore not face out towards the property line (the current design is an open circulation and facing outward to the adjacent neighborhood). A total of three (3) basketball courts will be located within the northern portion of the Project site, approximately 55 feet from residences located north of the basketball courts. Currently three (3) basketball courts are provided on the campus. The hours of play on the basketball courts will be limited to the period between 9:00 a.m. and 3:30 p.m. and only during school days. The total parking provided on-site will be approximately 106 spaces. The existing facility currently provides 93 parking spaces. The parking and athletic fields will be located within the southern and eastern portions of the Project site, which is within the same general area as the previous layout. In addition, the existing retaining wall (approximately 12-15 feet in height) will remain as part of the Project and is currently located in the northern portion of the Project site. Exhibit 4, *Conceptual Site Plan*, shows the conceptual layout of the proposed facilities.

Development and operation of the proposed Sierra Madre School Upper Campus – Middle School will be at minimum a Silver certification under the Leadership in Energy and Environmental Design (LEED) system. Implementation of the Project will utilize day lighting and natural ventilation in the new buildings design in addition to using recycled materials. Building design will also use energy efficient and water saving systems. The site will contain verdant sustainable planting and incorporate sustainable storm water management with landscape features.

1.4 - Intended Uses of this Document

The IS is intended as an informational document to be used by decision-makers, public agencies, public service providers and the public to assist in the assessment of the Project. Pursuant to CEQA, an Initial Study of the Project shall be circulated for public review prior to discretionary approval by PUSD, so that the public may have the opportunity to comment. The PUSD must review the Project prior to approval. All responsible agencies, including the South Coast Air Quality Management District (SCAQMD), Regional Water Quality Control Board (RWQCB) and others must have the opportunity to review the Project prior to approval. The review process is designed to identify and eliminate, minimize or mitigate any potentially negative physical impacts of the Project on the environment.

1.5 - Environmental Setting

The proposed Sierra Madre School Upper Campus site is located near the eastern margin of a triangular shaped, low relief, alluvial plain known as the Raymond Basin. The Raymond Basin is bordered by the Arroyo Seco (west), San Rafael Hills (north), Sierra Madre Fault and San Gabriel Mountains (northeast), and the Raymond Fault and San Gabriel Basin (south).

The general topography across the existing Sierra Madre School Upper Campus site is comprised of a series of relatively flat-graded areas, draining to the southeast. The ground surface elevations range from approximately 760 feet at the southeastern portion of the site to approximately 800 feet near the northwestern portion of the site. Slopes, retaining walls and stairs accommodate the grade differentials, which range up to approximately 12-15 feet between the flat areas.

The proposed construction areas are currently fully developed and contain approximately 40,410 square feet of school facilities. The ground surface is mostly covered with buildings, asphalt pavement and concrete walkways. Vegetation on the Project site includes trees, shrubs, and lawns.

According to the City of Sierra Madre General Plan (1996), the site is located within an area designated and Zoned as Institutional (I). Uses within the Project area are designated as Residential Low Density (RL) and Zoned as Single Family Residential (Minimum. 7,500 sq ft - R-1).

Existing land uses surrounding the Project site consist of residential development. In addition, the Vista Park, located at 611 East Sierra Madre Blvd, is approximately 225 feet east of the Project site and contains a swimming pool, recreation center, children's area, picnic tables, barbecues, two baseball diamonds, tennis courts, a basketball court and sand volleyball courts. Additional uses in the vicinity of the Project area include the Sierra Madre Spreading Ground (approximately 225 feet east) and the Sierra Madre Aquatics Center (approximately 760 feet east). Additionally, the Project site is located approximately 1.03 miles north of the State Route 210 (SR-210) Freeway and approximately 1.5 miles north of Santa Anita Park.

Public utilities within the Project area include the Southern California Gas Company (Gas) and Southern California Edison Company (Electricity). The City of Sierra Madre provides water and sewer service to the Project area.

Source: Census 2000 Data, The CaSIL, MBA GIS 2009.

NORTH

5 2.5 0 5 Miles

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Exhibit 1
Regional Location Map

PUSD • SIERRA MADRE SCHOOL UPPER CAMPUS
INITAL STUDY / MITIGATED NEGATIVE DECLARATION

Source: NAIP for Los Angeles County (2009).

NORTH

500 250 0 500 Feet

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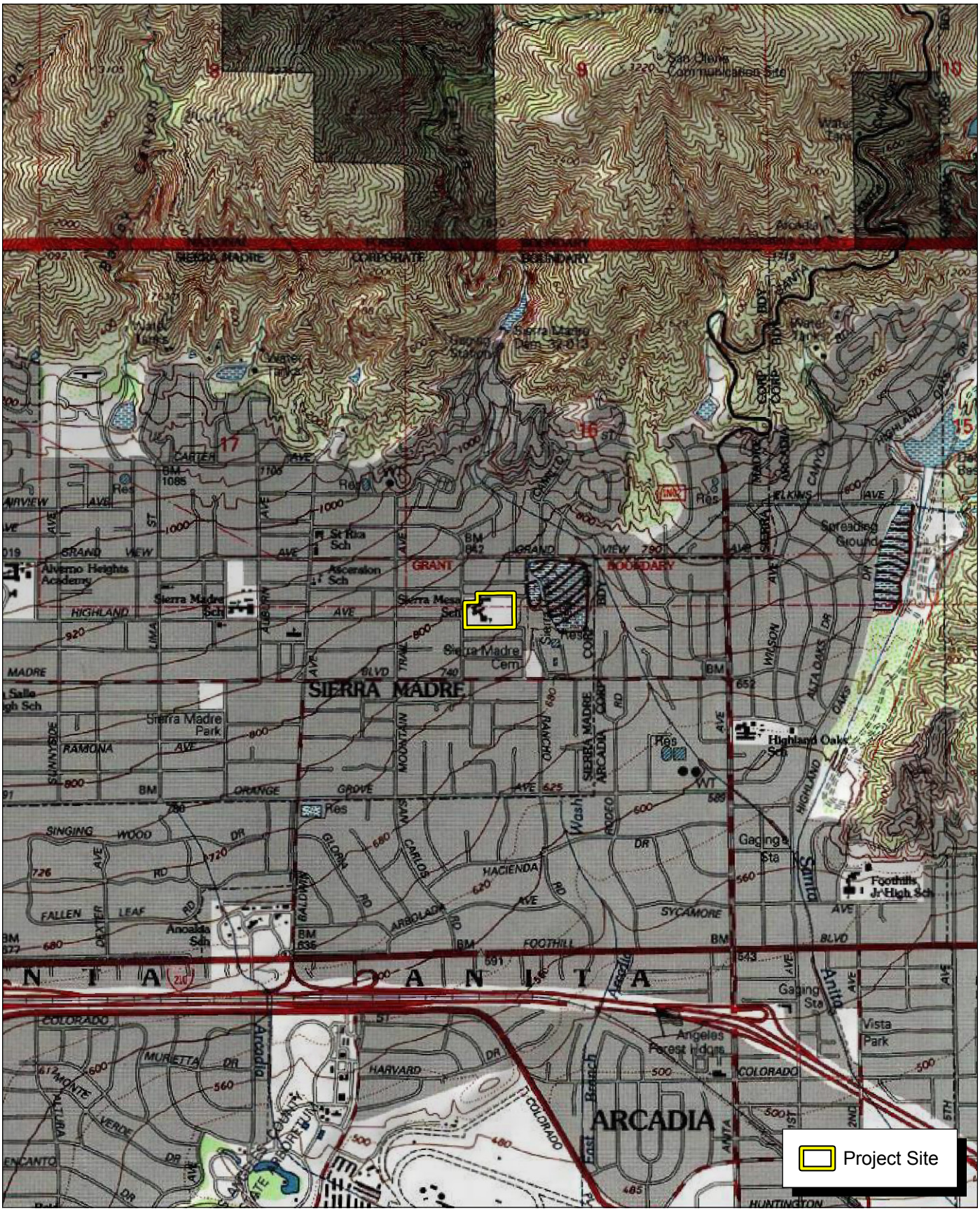
Exhibit 2
Local Vicinity Map
Aerial Base



Source: TOPO! USGS Mount Wilson (1995) 7.5' DRG.

Exhibit 3
Local Vicinity Map
Topographic Base

NORTH

2,000 1,000 0 2,000 Feet

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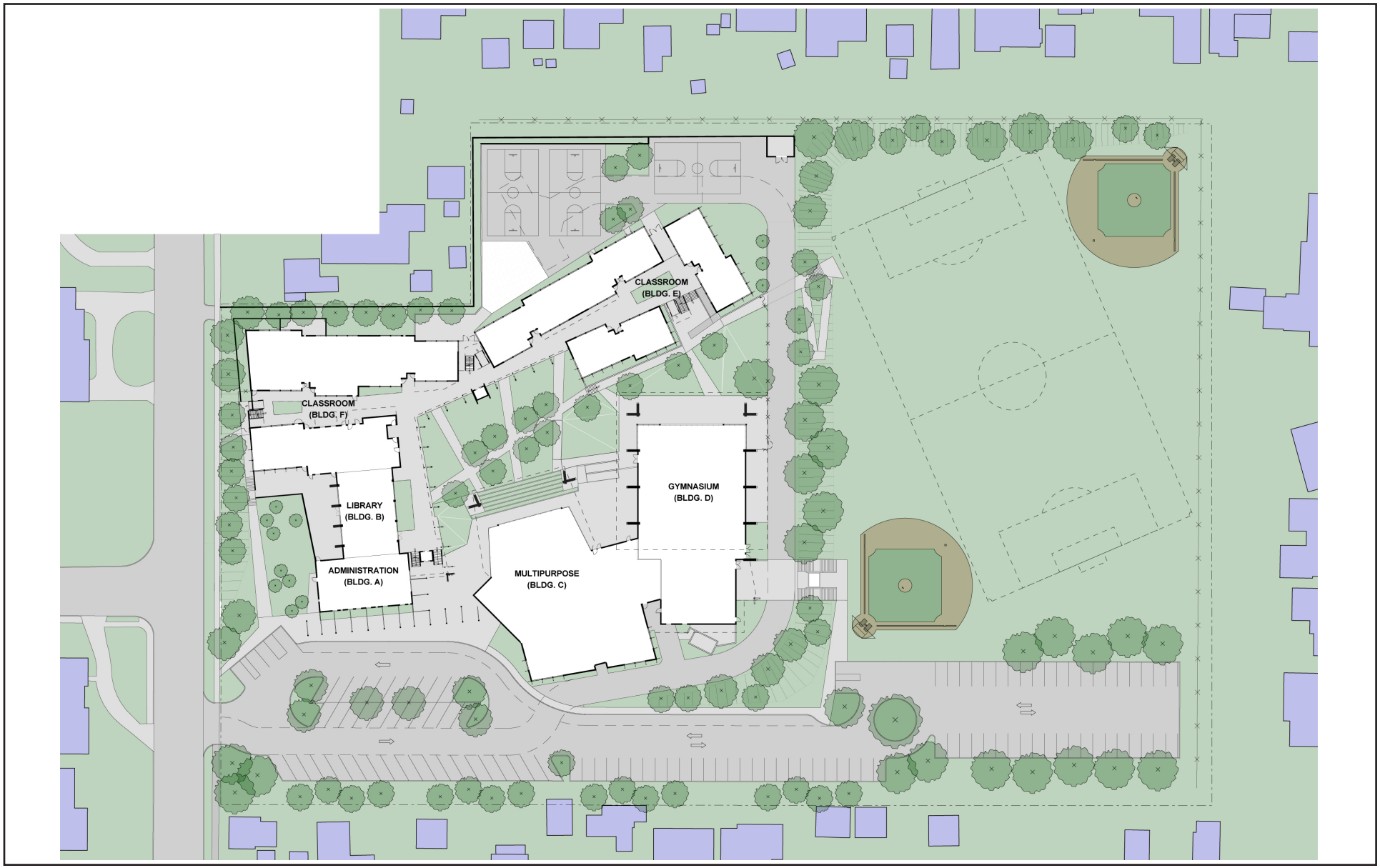

Source: PBWS Architects (September 9, 2009).

NORTH

Not To Scale

Michael Brandman Associates

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Exhibit 4
Site Plan

SECTION 2: ENVIRONMENTAL CHECKLIST

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
1. Aesthetics *Would the project:*				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a state scenic highway?	☐	☐	☒	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐
2. Agriculture Resources *In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland.* *Would the project:*				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program (FMMP) of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	☒
3. Air Quality *Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.* *Would the project:*				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
c) 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)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐
4. Biological Resources *Would the project:*				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game (CDFG) or U.S. Fish and Wildlife Service (USFWS)?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFG or USFWS?	☐	☐	☒	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (CWA) (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or state HCP?	☐	☐	☒	☐

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
5. Cultural Resources *Would the project:*				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☒	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐
6. Geology / Soils *Would the project:*				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☒	☐

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
7. Hazards / Hazardous Materials *Would the project:*				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☒	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐
8. Hydrology / Water Quality *Would the project:*				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production	☐	☐	☒	☐

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted?				
c) Substantially alter the existing drainage pattern of area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☒	☐
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☒	☐
9. Land Use / Planning *Would the project:*				
a) Physically divide an established community?	☐	☐	☒	☐
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
c) Conflict with any applicable HCP or NCCP?	☐	☐	☒	☐

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
10. Mineral Resources *Would the project:*				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☒	☐
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☒	☐
11. Noise *Would the project result in:*				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐
12. Population / Housing *Would the project:*				
a) Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
c) Displace substantial numbers of people necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐
13. Public Services *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*				
a) Fire Protection?	☐	☐	☒	☐
b) Police Protection?	☐	☐	☒	☐
c) Schools?	☐	☐	☒	☐
d) Parks?	☐	☐	☒	☐
e) Other public facilities?	☐	☐	☒	☐
14. Recreation				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☒	☐
15. Transportation / Traffic *Would the project:*				
a) Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	☒	☐
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☒	☐
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
e) Result in inadequate emergency access?	☐	☐	☒	☐

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
f) Result in inadequate parking capacity?	☐	☐	☒	☐
g) Conflict with adopted policies, plans or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks)?	☐	☐	☒	☐
16. Utilities / Service Systems *Would the project:*				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board (RWQCB)?	☐	☐	☒	☐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
e) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐
17. Mandatory Findings of Significance				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☒	☐
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐	Aesthetics	☐	Agriculture Resources	☐	Air Quality
☐	Biological Resources	☐	Cultural Resources	☐	Geology / Soils
☐	Hazards / Hazardous Materials	☐	Hydrology / Water Quality	☐	Land Use / Planning
☐	Mineral Resources	☐	Noise	☐	Population / Housing
☐	Public Services	☐	Recreation	☐	Transportation / Traffic
☐	Utilities / Services Systems	☐	Mandatory Findings of Significance		

Environmental Determination

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measure based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signed _____ Date 4/26/10

SECTION 3: DISCUSSION OF ENVIRONMENTAL EVALUATION

1. Aesthetics

Would the project:

a) *Have a substantial adverse effect on a scenic vista?*

Less Than Significant Impact: The City of Sierra Madre General Plan (1995) does not designate the Project area as being within a scenic vista. The Angeles National Forest is located approximately 0.66 mile north of the Project site. Views of the Angeles National Forest from residences south of the site are already impaired by the presence of the existing Sierra Madre Upper Campus. In addition, the parking and athletic fields will be located within the southern and eastern portions of the Project site, which is within the same general area as the previous layout. The parking area will act as a buffer between the higher buildings, including the gymnasium and multipurpose room, and the southern residential neighborhood. Therefore, implementation of the Project would not result in any adverse impacts to scenic vistas.

b) *Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?*

Less Than Significant Impact: The existing visual character of the site consists of approximately 40,410 square feet of school facilities. The ground surface is mostly covered with buildings, asphalt pavement and concrete walkways. Vegetation on the Project site includes trees, shrubs, and lawns. There are no designated Scenic Highways in the immediate vicinity of the Project site. Consequently, development of the Project would not damage the integrity of existing visual resources or historic buildings located within a State Scenic Highway. Therefore, the Project's impact scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway will be less than significant.

c) *Substantially degrade the existing visual character or quality of the site and its surroundings?*

Less Than Significant Impact: As previously described, the existing visual character of the site consists of approximately 40,410 square feet of school facilities. The ground surface is mostly covered with buildings, asphalt pavement and concrete walkways. Vegetation on the Project site includes trees, shrubs, and lawns. Development of the Project would be similar in design and would not degrade the existing visual character of the site.

The proposed Project will create short-term impacts due to specific phases in the construction process. Typical short-term impacts are in the form of isolated views of the site with heavy construction equipment and machinery preparing the land (i.e., grading), and eventually the construction of the school facilities. Because this impact would be short-term and temporary, it is considered less than significant. In addition, the Project will attempt to balance the cut and fill so that minimal earth material will be imported and or exported. This will minimize the short-term impacts associated with excessive grading operations.

Furthermore, aesthetics have been considered in the design criteria for the Project. The new Sierra Madre School Upper Campus will be designed to appear as a grouping of small-scale buildings, which fit within the village of Sierra Madre while still providing the space required to house the school's program. The roof forms of the two story buildings on the north side of the site slope down toward the adjacent residential buildings to help reduce the mass. The parking area acts as a buffer between the higher buildings, including the gymnasium and multipurpose room, and the southern residential neighborhood. The building's facade along Canon Avenue will consist of various patterns of materials, breaks in massing and angles to create an appropriate scale to the adjacent street. Therefore, the Project's impacts to existing visual character or quality of the site and its surroundings will be less than significant.

d) *Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?*

Less than Significant Impact. The existing school site contains security lighting within the parking areas (south and west portion of the site) and facility lighting on buildings throughout the Project site. Implementation of the proposed Project will be consistent with existing lighting conditions by including three types of lighting that may be visible during nighttime and early morning hours, including facility lighting on buildings and lighted parking areas. The tallest light poles will be up to 25 feet in height. As a standard practice, the District will prepare a lighting plan to prevent potential light spillover and glare on adjacent properties.

Facility Lighting

The operation of the proposed school facilities would include security lighting for the site, which is consistent with the existing school facility lighting. The security lighting would be used during night and early morning hours. The lighting would be shielded to prevent glare from spilling over to adjacent areas. The low intensity facility lighting would not significantly increase over existing lighting, and would not adversely affect surrounding areas. No significant impact from school facility lighting would therefore occur.

Parking Lots

Approximately 121 parking spaces will be provided on the Project site. Parking area lighting will be provided within the southern portion of the Project site and is a potential source of light and glare if not properly designed and shielded. The District will apply standard control measures (i.e. shield, fixture direct, brightness controls) to avoid light and glare issues. Moreover, the athletic field and basketball courts will not be lighted. Therefore, impacts associated with light and glare would be less than significant.

2. Agricultural Resources

Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. According to the California Department of Conservation Farmland Mapping and Monitoring Program (FMMP), the Project site is located in land designated as Other Land, which is categorized as "Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than forty acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land." Thus, there would be no impact to Prime Farmland, Unique Farmland, or Farmland of Statewide Importance resulting from Project development.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. The Project is currently in use as a school facility and is not within or near to any zoning for agricultural use, and is not under a Williamson Act contract. Thus, there would be no impact resulting from Project development.

c) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?

No Impact. As previously stated, the Project is currently in use as a school facility and is not within or near to any zoning for agricultural use. Thus, there would be no impact resulting from Project development.

3. Air Quality

The proposed Project is located in the South Coast Air Basin (Basin), which is under the jurisdiction of the SCAQMD. The Basin is in nonattainment for ozone and particulate matter (PM_{10} and $PM_{2.5}$), which means that concentrations of those pollutants measured in the atmosphere currently exceed the federal and/or State ambient air quality standards for these pollutants. Ambient air quality standards (AAQS) for criteria pollutants are set by the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (ARB) to protect the health of sensitive individuals. Criteria pollutants include ozone, PM_{10}, $PM_{2.5}$, carbon monoxide (CO), nitrogen dioxide (NO_2), lead (Pb), and sulfur dioxide (SO_2). Ozone is formed through reactions of volatile organic compounds (VOCs), nitrogen oxides (NO_x), and sunlight.

Air emissions associated with the proposed project would come from short-term construction activities as well as from the long-term operation of the proposed project. In assessing the air quality significance of the construction and operation of the proposed project, the following significance criteria were used in accordance with CEQA Appendix G Environmental Checklist Form.

Would the Project:

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less than Significant Impact: A potentially significant impact on air quality would occur if a proposed project would conflict with or obstruct the implementation of the applicable air quality plan. Of primary concern is that project-related impacts have been properly anticipated in the regional air quality planning process and reduced whenever feasible. Therefore, it is necessary to assess the proposed project's consistency with the Air Quality Management Plan (AQMP). Consistency with the AQMP means that the proposed project is consistent with the goals, objectives, and assumptions in the AQMP necessary to achieve the federal and State ambient air quality standards.

The AQMP prepared by the SCAQMD is the air quality plan applicable to the proposed project. The SCAQMD adopted the AQMP on June 1, 2007 (SCAQMD 2007). The 2003 AQMP was prepared to lead the Basin and portions of the Salton Sea Air Basin under SCAQMD jurisdiction into compliance with the 1-hour ozone and PM_{10} national standards (SCAQMD 2003). The update to the 2003 AQMP, the 2007 AQMP, was prepared to lead the Basin into compliance of the national 8-hour ozone and $PM_{2.5}$ standards. The AQMP determines emission budgets for future years; input to these budgets includes projections for land use designations from local and regional governmental planning agencies. Since the AQMP is based in large part on local general plans, projects that are deemed consistent with the general plan are found to be consistent with the AQMP. Further, for a project to be consistent with the AQMP, the pollutants

emitted from the project should not exceed the SCAQMD CEQA air quality significance thresholds for nonattainment or maintenance pollutants.

The proposed project would be designed for a capacity of 550 students, which is consistent with the current student capacity of 550 students. As a result, the proposed project is consistent with the existing school site land use and zoning in the City of Sierra Madre where the proposed project would be located. Further, as demonstrated in the Checklist Question b) analysis below, the anticipated project emissions would not exceed the SCAQMD air quality significance thresholds. Therefore, the project would be consistent with the AQMP.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less than Significant Impact: Two primary types of significance thresholds have been defined by the SCAQMD to address this question: regional emission significance thresholds and localized significance thresholds. The regional emission thresholds (SCAQMD 1993) are designed to limit the impacts that emissions from a proposed project would have in affecting the ability of the Basin in attaining air quality standards. Such emissions may affect the attainment of air quality standards many miles from the project location. Local significance thresholds (SCAQMD 2008) were developed in response to the SCAQMD Governing Board's environmental justice initiatives (EJ initiative I-4) in recognition of the fact that criteria pollutants such as CO, NO_x, and PM_{10} and $PM_{2.5}$ in particular, can have local impacts as well as regional impacts. Regional and local significance thresholds are defined separately for short-term construction activities and long-term operations.

Regional Emissions Significance Impact Analysis

An assessment of project-generated short-term construction and long-term operational regional air pollutant emissions was conducted using the URBEMIS2007, version 9.2.4 computer model and an accompanying emission spreadsheet for estimating demolition emissions. Input data used in the URBEMIS model were taken from the project description and plans and focused transportation study. The regional emission calculations are included in Appendix A.

Short-term Regional Construction Impacts

Construction emissions occur during all facets of the construction activities involving demolition, grading, trenching, asphalt paving, building construction, and application of architectural coatings. Based on the project description, air pollutant emissions associated with the proposed project construction were assumed to occur over the time period from July 2010 through August 2011. The proposed project would be constructed

in four phases as described in Section 1.3, Project Description. Such emissions would come from construction equipment combustion products, fugitive dust from demolition, grading and earth-moving activities, asphalt paving, application of architectural coatings, and emissions from vehicles driven to and from the site by construction workers and vendor delivery vehicles. Construction emissions consist of VOC, NO_x, CO, oxides of sulfur (SO_x), and PM_{10} and $PM_{2.5}$.

The proposed project covers a total area of approximately 8 acres and includes the demolition of several existing buildings and the construction of new buildings. The existing buildings planned for initial demolition total approximately 34,083 square feet. An additional building (Building C) totaling 6,328 square feet would be demolished later in the construction process. The new structures planned for construction total 72,114 square feet and include: instructional facilities, library/media center, administration, multipurpose/cafeteria, faculty lounge, gymnasium, kitchen, student store, restrooms, and other supporting structures. Construction emissions were estimated using the URBEMIS2007 land use emission model, which is recommended by the SCAQMD for such purposes. For purposes of this emission estimation, it was assumed that a maximum of 5 acres would be disturbed each day during the grading process. The default construction equipment inventory contained in the URBEMIS model for the construction was used in the emission inventory estimates. Applying this information, the proposed project would generate an expected 4,734 cubic yards of debris during the initial demolition and 879 cubic yards of debris in the demolition of Building C. This demolition debris was assumed to be transported approximately 20 miles to a nearby landfill. Table 2 presents the estimated maximum daily regional construction emissions for the proposed project prior to application of mitigation measures and compares the estimated emissions with the daily mass regional emission significance thresholds for construction established by the SCAQMD.

Table 2: Maximum Regional Daily Construction Emissions (without Mitigation)

Construction Activity	Maximum Daily Emissions (pounds per day)[1]					
	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Phase 1						
Demolition	6.8	49.2	28.9	0.1	12.4	4.6
Phase 2						
Mass Grading	3.0	25.1	13.5	0.0	7.3	2.4
Phase 3						
Trenching	2.1	17.8	9.3	0.0	0.9	0.8

Table 2 (cont.): Maximum Regional Daily Construction Emissions (without Mitigation)

Construction Activity	Maximum Daily Emissions (pounds per day)[1]					
	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Asphalt Paving	2.3	12.9	9.2	0.0	1.1	1.0
Building Construction + Architectural Coating	19.5	10.2	10.9	0.0	0.6	0.6
Phase 4						
Demolition	5.5	38.1	23.8	0.1	7.2	3.1
Max emissions in 1 day	19.5	49.2	28.9	0.1	12.4	4.6
Regional Threshold	75	100	550	150	150	55
Significant Impact?	**No**	**No**	**No**	**No**	**No**	**No**

Note:
[1] Emissions shown assume compliance with applicable emission regulations. The PM_{10} and $PM_{2.5}$ fugitive dust emissions are in the "mitigated" output in URBEMIS because the project would comply with dust control measures as specified in SCAQMD Rule 403.
Source: Appendix A

As shown in Table 2, construction-related emissions generated by the proposed project would not exceed the SCAQMD regional thresholds of significance. Therefore, the impact would be less than significant and no project-specific mitigation is required. Note that the URBEMIS results shown in Table 2 above for PM_{10} and $PM_{2.5}$ assume compliance with the requirements SCAQMD Rule 403, Fugitive Dust, which requires that fugitive dust generating activities follow best available control measures (BACM) to reduce emissions of fugitive dust. The BACM and the associated measure in URBEMIS are displayed in Table 3.

Table 3: Best Available Control Measures – SCAQMD Rule 403

Best Available Control Measure (BACM)[1]	Associated Measure in URBEMIS [2]
<u>Clearing and Grubbing</u> 02-1 Maintain stability of soil through pre-watering of site prior to clearing and grubbing 02-2 Stabilize soil during clearing and grubbing activities 02-3 Stabilize soil immediately after clearing and grubbing activities	-Water exposed surfaces three per day - Apply soil stabilizers to inactive areas

Table 3 (cont.): Best Available Control Measures – SCAQMD Rule 403

Best Available Control Measure (BACM)[1]	Associated Measure in URBEMIS [2]
Earth Moving Activities 08-1 Pre-apply water to depth of proposed cuts 08-2 Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction 08-3 Stabilize soils once earth-moving activities are complete	
Import/Export of Bulk Materials 09-1 Stabilize material while loading to reduce fugitive dust emissions 09-2 Maintain at least six inches of freeboard on haul vehicles 09-3 Stabilize material while transporting to reduce fugitive dust emissions 09-4 Stabilize material while unloading to reduce fugitive dust emissions 09-5 Comply with Vehicle Code Section 23114	- Equipment loading/unloading
Landscaping 10-1 Stabilize soils, materials, slopes Guidance: Apply water to materials to stabilize; Maintain materials in a crusted condition; Maintain effective cover over materials; Stabilize sloping surfaces using soil until vegetation or ground cover can effectively stabilize the slopes; Hydroseed prior to rain season	-Replace ground cover in disturbed areas quickly
Staging Areas 13-1 Stabilize staging areas during use by limiting vehicle speeds to 15 miles per hour	-Reduce speed on unpaved roads to 15 miles per hour.
Traffic Areas for Construction Activities 15-1 Stabilize all off-road traffic and parking areas 15-2 Stabilize all haul routes 15-3 Direct construction traffic over established haul routes Guidance: Apply gravel/paving to all haul routes as soon as possible to all future roadway areas; Barriers can be used to ensure vehicles are only used on established parking areas/haul routes	-Haul road dust watering three per day
Sources: [1] SCAQMD Rule 403; [2] URBEMIS output in Appendix A	

Long-Term Regional Operational Impacts

Long-term operational emissions occur once the proposed project commences full operations. Such emissions would come from area sources including gasoline-powered landscaping and maintenance equipment, painting, and from mobile sources (e.g., vehicle trips for school buses, students, and staff). The URBEMIS model estimates the number of daily vehicle trips for a particular land use using information derived from the Institute of Transportation Engineers. Based on its description, the proposed project would be classified as a "middle school". Mobile source emissions were derived from a focused traffic study prepared by Kunzman and Associates (Kunzman 2010). This traffic study

quantified the trip generation from the current project (existing school setting), the trip generation associated with the proposed project, and the difference in trips. For purposes of this assessment, mobile source emissions were estimated from the current project and the proposed project trip generation estimates. Total emissions including both area source and mobile sources were then estimated and the changes in emissions were compared to the SCAQMD's significance thresholds to determine the air quality significance of the emissions contributed by the proposed project. Table 4 compares the number of vehicle trips associated with the current and proposed project.

Table 4: Current and Proposed Project Student and Trip Generation

Project	Total Number Of Students	Number of Buses	Average Student Bus ridership	Average Non-Bus Ridership Students	Actual Daily Trips[(1)]
Current	334	7	85	249	431
Proposed	550	9	137	413	705
Difference	216	2	52	164	274

Note:
[(1)] Trips are estimated as non-PCE trips. For example, the 431 trip under current comprise 403 automobile trips and 28 bus trips. Separate emissions factors are then applied for autos and buses.
Source: Kunzman 2010

The proposed project compared to the current project is projected to generate approximately 274 more daily vehicle trips than the current project.

Using this information, the emissions from the current project and the proposed project were estimated using the URBEMIS2007 land use emission model. The URBEMIS default vehicle fleet for the current and proposed projects were adjusted to account for the actual vehicle fleet based on the results from the traffic study. Table 5 provides the operational emissions for the current project, proposed project, and the difference in emissions for the summer season while Table 6 provides similar information for the winter season. Also shown are the SCAQMD's regional operational significance thresholds.

Table 5: Daily Operational Emissions – Summer (Without Mitigation)

Project	Total Daily Operational Emissions (pounds per day)[(1)]					
	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Current	4.1	4.1	34.4	0.0	7.2	1.4
Proposed	6.6	6.1	55.5	0.1	11.7	2.3
Difference	2.5	2.0	21.1	0.1	4.5	0.9

Table 5 (cont.): Daily Operational Emissions – Summer (Without Mitigation)

Project	Total Daily Operational Emissions (pounds per day)[(1)]					
	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
SCAQMD Regional Threshold	55	55	550	150	150	55
Difference Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Note:
(1) Total emissions for area and mobile emissions sources for the buildout year, 2011.
Source: Appendix A

Table 6: Daily Operational Emissions - Winter (Without Mitigation)

Project	Total Daily Operational Emissions (pounds per day)[(1)]					
	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Current	3.3	4.8	30.4	0.0	7.2	1.4
Proposed	5.5	7.3	49.9	0.1	11.7	2.3
Difference	2.2	2.5	19.5	0.1	4.5	0.9
SCAQMD Regional Threshold	55	55	550	150	150	55
Difference Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Note:
(1) Total emissions for area and mobile emissions sources for the buildout year, 2011.
Source: Appendix A

As shown in Table 5 and Table 6, the increase in operational-related emissions associated with the proposed project would not exceed the regional operational thresholds of significance established by the SCAQMD. Therefore, the impact would be less than significant and no mitigation is required.

Localized Significance Impact Analysis

The analysis of local impacts makes use of the localized significance threshold methodology developed by the SCAQMD for assessing the impacts during construction and operation on local air quality. This methodology provides a series of mass emission rate look-up tables that identify the maximum daily emissions from a project that would not cause an exceedance of the most restrictive State or federal ambient air quality standard. The emission estimate depends on the size of the project, its location within the Basin, and the distance to the nearest receptor, and applies to emissions of NO_x, CO, and PM_{10} and $PM_{2.5}$. Separate localized significance thresholds are provided for construction and operation.

Short term Construction Impacts

The localized construction assessment requires an estimate of the construction emissions generated solely from onsite construction activities, that is, emissions from construction equipment and fugitive dust and does not include emissions from offsite delivery or worker vehicles. The localized significance thresholds are derived from the SCAQMD mass rate daily emission tables for a 5-acre construction area in SCAQMD source-receptor area 8 (West San Gabriel Valley)[1]. As indicated earlier, the maximum area to be disturbed in a single day was assumed to be 5 acres. A receptor distance of 25 meters from the project was also assumed as the distance to the nearest residences, which are adjacent to the proposed project across Canon Street, and residences that border the proposed project on the north, east, and south. Table 7 provides the localized significance threshold analysis results for proposed project construction.

Table 7: Summary of Construction Localized Assessment (without Mitigation)

Construction Activity	Maximum Daily Emissions (pounds per day)			
	NOx	CO	PM_{10}	$PM_{2.5}$
Phase 1				
Demolition	41.5	24.5	6.9	3.2
Phase 2				
Mass Grading	25.0	12.5	7.3	2.4
Phase 3				
Trenching	17.7	8.2	0.9	0.8
Asphalt Paving	11.9	7.0	1.0	0.9
Building Construction & Architectural Coating	9.2	4.8	0.6	0.6
Phase 4				
Demolition	36.5	21.4	6.2	2.8
Maximum Emissions in 1 day	41.5	24.5	7.3	3.2
SCAQMD Significance Threshold(1)	148	1,540	12	7
Exceeds Threshold ?	**No**	**No**	**No**	**No**

Note:
[1] Thresholds are taken from SCAQMD localized significance threshold tables for Source/Receptor Area 8 for a 5 acre site and a receptor distance of 25 meters

[1] The SCAQMD divides the Basin into 35 geographical areas called source-receptor areas or SRAs wherein the meteorology and terrain are relatively consistent and uniform. SRAs are used to identify emission source areas and areas that are impacted by transported pollution in the Basin.

As shown in Table 7, the construction of the proposed project would not exceed any of the SCAQMD localized significance thresholds. Therefore, the localized impact is less than significant and no mitigation is required.

Long Term Operational Impacts

The predominant sources of operational emissions arise from the daily traffic from school buses and staff. The vast majority of the proposed project's operational emissions, therefore, are derived while the traffic moves to and from the proposed project and not from traffic operating within the school use itself. Consequently, there would only be small amounts of onsite emissions from motor vehicles. In addition, only minor amounts of onsite emissions arise from emissions from landscape equipment and natural gas. Therefore, the operational localized air quality impacts are less than significant.

c) *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 Impact: The region where the proposed project is located is a nonattainment area for PM_{10}, $PM_{2.5}$, and the ozone. The proposed project would contribute criteria pollutants to the area during short-term project construction as well as daily operation. As detailed in response to Checklist Question b) above, these emissions would be less than the SCAQMD regional and localized significance thresholds. Because short- and long- term emissions associated with the project would be below SCAQMD thresholds, the project's contribution of these pollutants would not be cumulatively considerable and would represent a less than significant impact. In addition, the proposed project is consistent with the existing zoning and land use in the City of Sierra Madre and thus consistent with the assumptions contained in the AQMP. As a result, the proposed project would not result in result in cumulative health effects from its construction or operation.

d) *Expose sensitive receptors to substantial pollutant concentrations?*

Less than Significant Impact: Exposure to sensitive receptors is addressed for four situations: compliance with the localized significance thresholds, indoor air quality, exposure to diesel particulate matter exhaust, and exposure to asbestos during building demolition.

Localized Significance Threshold Analysis

As discussed in response to Checklist Question b), the project's local construction and operational impacts are less than the SCAQMD's localized significance thresholds. The

localized impact analysis uses thresholds that represent the maximum emissions for a proposed project that would not cause or contribute to an exceedance of the most stringent applicable national or State ambient air quality standard. If the proposed project results in emissions under those thresholds, it follows that the proposed project would not cause or contribute to an exceedance of the standard. If the standards are not exceeded at the sensitive receptor locations, it follows that the receptors would not be exposed to substantial pollutant concentrations. Therefore, during construction and operation, concentrations of nitrogen dioxide, CO, PM_{10}, and $PM_{2.5}$ contributed by the proposed project would not expose sensitive receptors to substantial pollutant concentrations. As such, the project would not expose sensitive receptors to substantial pollutant concentrations.

Indoor Air Quality

Indoor air quality problems are caused primarily from indoor sources that release gases or particles into the air. Ventilation can decrease indoor pollutant levels by diluting the concentrations. The indoor air pollutants that may be associated with operation of the project include VOCs from new carpets and fresh paints, mold spores, radon, cigarette smoke, and combustion sources. The air pollutants that are controlled by the construction of the project include VOCs from carpets, paints, and radon.

VOCs from new carpets and new paint are temporary impacts that can be reduced by proper ventilation after installation. The health impact from these sources is anticipated to be less than significant.

Radon is a naturally occurring colorless, odorless, and tasteless radioactive gas originating from the radioactive decay of uranium in rock, soil, and groundwater. Radon gets inside a building primarily from soil under homes. It is a known human lung carcinogen and is the largest source of radiation exposure to the public. Most is rapidly exhaled; however, the inhaled decay products can deposit into the lung where they irradiate sensitive airway cells increasing the risk of lung cancer (EPA 2003). According to the EPA map of radon zones (EPA 2009), the project is within Zone 2, which includes counties having a moderate radon potential.

In general, the method and speed of radon's movement through soil is controlled by three conditions: the amount of water present in the pore space (the soil moisture content), the percentage of pore space in the soil (the porosity), and the permeability of the pore spaces that determines the soil's ability to transmit water and air. Therefore, radon moves more rapidly through permeable soils such as coarse sand and gravel, similar to those in the project area.

The distance that radon moves before most of it decays is less than 1 inch in water-saturated rocks or soils, but it can be more than 6 feet, and sometimes tens of feet, through dry rocks or soils. Even though the proposed project area has no "real" source of uranium to produce radon gas, the permeability of the dry gravelly soils permits high indoor radon to occur.

Indoor radon tests in the project's zip code, 91024, indicate that 0 percent of the samples contained radon concentrations in excess of the EPA threshold of 4 pCi/l (CDPH 2009). The California Department of Public Health classifies zip codes with indoor radon concentrations greater than 4.0 pCi/l as follows: 0 to 6 percent - low potential; 7 to 19 percent - moderate potential; 20 percent or more - high potential. Thus, based on these samples, the project area would have a low potential for radon concentrations over 4.0 pCi/l. These samples are taken inside buildings, not in the open, as radon is easily dispersed. The project would be installing ventilation fans that bring indoor air outdoors. Radon is removed from a building through ventilation. Therefore, the fans and the windows would help to circulate the air and to prevent indoor radon concentrations from reaching significant levels. Therefore, the ventilation system would be sufficient to disperse indoor radon concentrations minimizing the risk to human health.

Diesel Particulate Matter Exhaust Emissions

Projects of concern for diesel particulate matter exposure are those projects which would be located near high traffic freeways, urban roads with more than 100,000 vehicles per day and a high concentration of heavy truck usage such as rail yards, ports, and distribution centers (ARB 2005). The proposed project would not be near any of those uses that would emit significant quantities of diesel particulate matter. In addition, the school buses that would provide transportation service to the school must comply with the ARB Air Toxic Control Measure (ARB 2003) that limits idling times for school buses when they are stopping at a school or located within 100 feet of a school. The school bus control measure requires a driver of a school bus or vehicle, transit bus, or other commercial motor vehicle to manually turn off the bus or vehicle engine upon arriving at a school and to restart no more than 30 seconds before departing. A driver of a school bus or vehicle is subject to the same requirement when operating within 100 feet of a school and is prohibited from idling more than five minutes at each stop beyond schools, such as parking or maintenance facilities, school bus stops, or school activity destinations. A driver of a transit bus or other commercial motor vehicle is prohibited from idling more than five minutes at each stop within 100 feet of a school. Idling necessary for health, safety, or operational concerns is exempt from these restrictions. As a result of the above considerations, the impact of diesel particulate matter emissions would be less than significant.

Exposure to Asbestos During Construction

Significant exposure to any type of asbestos will increase the risk of lung cancer, mesothelioma and nonmalignant lung and pleural disorders, including asbestosis, pleural plaques, pleural thickening, and pleural effusions. Demolition activities are covered under National Emission Standards for Hazardous Air Pollutants (NESHAP) program (40 Code of Federal Regulation (CFR), Part 61, Subpart M) under section 112 of the CAA. The SCAQMD was delegated authority by the EPA to implement Part 61, which is accomplished through the adoption of and periodic amendments to Regulation X – National Emission Standards for Hazardous Air Pollutants. This delegated authority is established as SCAQMD Rule 1403.

The proposed project involves the demolition and removal of existing structures from the site. It is not known at the present time whether the structures to be demolished contain asbestos materials. Prior to the commencement of the demolition activities, the proposed project would be required to comply with SCAQMD Rule 1403 which specifies work practice requirements to limit asbestos emissions from building demolition and renovation activities including the removal and associated disturbance of asbestos-containing materials. Rule compliance requires that a facility survey be conducted to determine the presence of asbestos containing materials and the completion of a SCAQMD Rule 1403 Notification Form for Demolition and Asbestos Removal. Compliance with SCAQMD Rule 1403 would insure that any asbestos containing materials are properly disposed of and resulting in a less than significant impact.

e) Create objectionable odors affecting a substantial number of people?

Less than Significant Impact: Individual responses to odors are highly variable and can result in a variety of effects. Land uses typically considered to be associated with odors include wastewater treatment facilities, waste-disposal facilities, or agricultural operations. The Proposed Project does not contain land uses typically associated with emitting objectionable odors nor is the proposed project located near any of the above odor-generating emission sources.

During construction, the proposed project would operate equipment that may generate odors from VOC and diesel emissions. Potential construction odors would result from on-site construction equipment's diesel exhaust emissions, roofing, or paving operations. However, these odors would be temporary and would dissipate rapidly from the source with increasing distance. Future development may involve minor, odor-generating activities such as cooking odors, lawn mower exhaust, and other factors. However, these types and concentrations of odors are typical of local commercial uses and would be considered less than significant.

f) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment or otherwise conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases??

Less than Significant Impact. In 2006, the California State Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 focuses on reducing greenhouse gas emissions in California. Greenhouse gases, as defined under AB 32, include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. AB 32 requires that greenhouse gases emitted in California be reduced to 1990 levels by the year 2020.

The ARB Board approved a Climate Change Scoping Plan in December 2008. The Scoping Plan outlines the State's strategy to achieve the 2020 greenhouse gas emissions limit. The Scoping Plan "proposes a comprehensive set of actions designed to reduce overall greenhouse gas emissions in California, improve our environment, reduce our dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health" (ARB 2008). The measures in the Scoping Plan will be developed over the next two years and be in place by 2012.

Greenhouse gas emissions would be emitted during the construction and operation of the proposed project. Construction activities including the demolition of the existing structures, mass grading, trenching, asphalt paving, building construction, and application of architectural coatings would all generate greenhouse gas emissions from construction equipment and mobile sources.

An inventory of greenhouse gas emissions generated by the proposed project is presented below. The emissions are converted to metric tons of carbon equivalents ($MTCO_2e$) using the formula: $MTCO_2e$ = (tons of gas) x (global warming potential) x (0.9072 metric tons of gas).

Greenhouse gas emissions from construction were estimated using URBEMIS 2007 and the demolition spreadsheet, as discussed previously. The emissions of carbon dioxide from project construction equipment and worker vehicles are shown in Table 8. Emissions of nitrous oxide and methane are negligible. The emissions are from all phases of construction.

Table 8: Construction Greenhouse Gas Emissions

Phase	Carbon Dioxide Emissions (tons)	Emissions[(1)] ($MTCO_2e$)
1	67	61
2	56	51
3	187	170
4	14	13
Total	**324**	**295**

Notes:
(1) MTCO2e = metric tons of carbon dioxide equivalent, converted from tons by multiplying by 0.9072 and the global warming potential of 1.
Source: URBEMIS 2007 and emission spreadsheets.

Operational or long-term emissions occur over the life of the project. Mobile, area source, and indirect sources generate operational emissions. Mobile sources are exhaust emissions from the motor vehicles that would access the project site. Area source emissions are from landscaping equipment and natural gas usage by the onsite buildings. Indirect sources refer to the electricity required for the project during its operation and the electricity required to transport and treat the water that would be used for the project.

The operational emissions for the current project, proposed project, and their differences are shown in Table 9 assuming a build out year of 2011. There would also be minor emissions from refrigerant leakage during the deconstruction of the existing air conditioning systems, installation of the new air conditioning systems, and during operation of the new air conditioning systems. However, modern equipment is generally associated with fewer emissions because of advances in technology and reductions in possible leakage. Therefore, any differences in refrigerant leakage would be negligible. There would also be minor emissions of methane and nitrous oxide; however, such emissions are negligible.

Table 9: Current Project and Proposed Project Operational Greenhouse Gases

Source	Carbon Dioxide Emissions (tons per year)	
	Current Project	Proposed Project
Motor vehicles	715	1,160
Landscape/Natural Gas Consumption	45	75
Electricity	109	195
Water Conveyance	9	16

Table 9 (cont.): Current Project and Proposed Project Operational Greenhouse Gases

Source	Carbon Dioxide Emissions (tons per year)	
	Current Project	Proposed Project
Total	**878 797 MTCO2e(1)**	**1,446 1,312 MTCO2e(1)**
Difference	**568 tons 515 MTCO2e1**	

Note:
(1) $MTCO_2e$ = metric tons of carbon dioxide equivalent, converted from tons per year by multiplying by the global warming potential (1) and 0.9072 to convert to metric tons.
Source: Motor vehicle and landscape emissions are from URBEMIS 2007 and electricity and water transport/treatment are estimated as shown in the attached spreadsheets.

As noted above, the construction of the proposed project would emit approximately 295 metric tons of carbon dioxide equivalents ($MTCO_2e$) from the worker and delivery vehicles and the off-road construction equipment. Averaging (or amortizing) the construction emissions over 30 years as recommended by the SCAQMD amounts to an annual level of 10 $MTCO_2e$ per year. During operation, the proposed project would increase the greenhouse gas emissions from the current level by 515 $MTCO_2e$ per year. Adding the averaged construction emissions to the operational emissions would result in an increase of 525 $MTCO_2e$ per year in greenhouse gases attributable to the proposed project.

Neither the Pasadena Unified School District, City of Sierra Madre nor the SCAQMD presently has implemented a climate plan, policy or regulation for the purpose of reducing greenhouse gases. However, the design of the proposed project contains several noteworthy design features that are designed to reduce greenhouse gas emissions and are strategies contained within the AB32 Scoping Plan. These design features include a minimum of a Silver Certification under LEED, day lighting and natural ventilation in the building design, use of recycled materials, use of energy efficient and water saving systems, use verdant sustainable planting, and incorporate sustainable storm water management with landscape features.

Implementation of the Project would be consistent with LEED Version 3 (v.3) or commonly known as LEED 2009. LEED works by requiring a certain number of points. The "silver" certification level requires between 50 and 59 points. There are a number of mandatory prerequisites that must be followed as well. Many, but not all, of the points would reduce greenhouse gas emissions.

There is also another "green" school program for the State of California that some schools choose to do called the Collaborative for High Performance Schools; it is

unknown if this program would be better than LEED in regards to reducing greenhouse gas emissions.

The proposed Project would be located near existing residential uses. Consequently, due to the Project's location to nearby residential uses, transportation-related emissions from transporting kids via either bus or car would be less than if the Project were located in a more distant and rural area. As a result, implementation of the Project would have decreased emissions from transportation within the immediate vicinity of the proposed Project. Therefore, although the construction and operation of the proposed Project would generate greenhouse gases, either directly or indirectly, the emissions would not have a significant impact on the environment.

4. Biological Resources

Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS?

Less Than Significant Impact with Mitigation: The Project site and area consists of urban development; therefore the potential of sensitive species existing onsite is considered low. However, the Project site does contain suitable nesting habitat for avian species. Therefore, as a Project mitigation measure, removal of vegetation will be conducted outside the breeding season and will eliminate any impacts to nesting birds. Therefore, impacts in this regard will be less than significant.

Mitigation:

MM BR-1 Tree removal shall occur outside of the nesting bird season (February to August). If such avoidance is not feasible, the applicant shall have a qualified biologist's survey for actively nesting birds within the nesting bird season. Any active nests identified shall have highly visible construction fencing installed within a 100-foot radius (200 foot for birds of prey) of the active nests. Disturbance shall not occur within the buffer area until the biologist determines that the young have fledged.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFG or USFWS?

Less Than Significant Impact: During site reconnaissance of the Project site, no riparian/riverine habitats were observed onsite. In addition, no vernal pools, vernal pool habitat were observed on the Project site. Therefore, impacts in this regard will be less than significant.

c) *Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*

Less Than Significant Impact: During site reconnaissance of the Project site, no wetlands were observed onsite. Consequently, the Project would not affect any off-site wetlands as defined by Section 404 of the CWA. Therefore, impacts in this regard will be less than significant.

d) *Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*

Less Than Significant Impact: The Project site does not contain flowing water or standing pools that may attract animals, nor does the site support any vegetation or resources that serves as a habitat for migratory fish or wildlife. The site does not lie within any known wildlife corridors. In addition, the site does not contain any nursery areas or resources. Therefore, impacts in this regard will be less than significant.

e) *Conflict with any local applicable policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

Less Than Significant Impact: The Sierra Madre General Plan contains a Tree Preservation and Protection Ordinance. The ordinance establishes basic standards and measures for preserving and protecting the City's public trees and oak trees located on undeveloped private property. The ordinance also specifies the requirements for planting trees on public property in or adjacent to newly planned or renovated commercial and residential developments.

The Project contains landscaping and trees throughout the Project site, including several oak trees at north, west and east perimeter of the Project site. Although the City of Sierra Madre does not have jurisdiction over the Project, the District will selectively preserve a majority of the existing trees, including all oak trees onsite. This will be done by minimizing the cut and fill within the trees existing drip line whereby no more that 25 percent of the existing trees will be affected. This will ensure the health of the trees can be protected. Therefore, implementation of the Project will be consistent with the Sierra Madre General Plan Tree Preservation and Protection Ordinance.

f) Conflict with the provisions of an adopted HCP, NHCP,NCCP, or other approved local, regional, or state HCP?

Less Than Significant Impact: The Sierra Madre Municipal Code Section 17.28.190 establishes a tree conservation plan, stating no native Oak tree shall be removed without approval of the planning commission. As stated in Impact 4 (e), the Project contains landscaping and trees throughout the Project site, including several oak trees at north, west and east perimeter of the Project site. Although the City of Sierra Madre does not have jurisdiction over the Project, the District will selectively preserve a majority of the existing trees, including all oak trees onsite. This will be done by minimizing the cut and fill within the trees existing drip line whereby no more that 25 percent of the existing trees will be affected. This will ensure the health of the trees can be protected. Therefore, implementation of the Project will be consistent with the Sierra Madre General Plan Tree conservation plan.

In addition, there is no approved HCP or NCCPs that apply to the Project site. Therefore, the Project will not conflict with any of the adopted local, regional or State HCP.

5. Cultural Resources

Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

Less Than Significant Impact. The existing school site and buildings are not located within the City of Sierra Madre's designated list of historical buildings (November 17, 2008). The property was built between 1953 to early 1960; however, is not designated as an historical structure by the City of Sierra Madre. Moreover, development of the Project would be required to comply with all applicable federal, State, and local statutes and regulations related to development of the Project site. Therefore, impacts to historical resources as defined in §15064.5 will be less than significant.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant Impact. As previously stated within Impact 5 (a), according to the District, the property was built between 1953 to early 1960. Consequently, the Project site is overlaid by a roughly 3 to 9-foot layer of engineered soil. Due to the

thickness of the layer of engineered soil, the potential to uncover archaeological or paleontological resource at the Project site is low.

There is always the possibility that ground-disturbing activities during construction will uncover previously unknown, buried cultural resources. In the event that buried cultural resources are discovered during construction, operations shall stop in the immediate vicinity of the find and a qualified archaeologist shall be consulted to determine whether the resource requires further study. The qualified archeologist shall make recommendations to the City of Riverside on the measures that shall be implemented to protect the discovered resources, including but not limited to excavation of the finds and evaluation of the finds in accordance with § 15064.5 of the CEQA Guidelines.

Therefore, implementation of above standard criteria in the case of accidental discovery of archaeological or paleontological resources will reduce Project impacts to less than significant.

d) Disturb any human remains, including those interred outside of formal cemeteries?

Less Than Significant Impact. The proposed Project will not involve the disturbance of any formal cemetery, known burial ground, or place of interment. Because the upper three feet of soil below the existing school site has been disturbed by construction activity (1953-early 1960), the potential for impacts to human remains is considered extremely unlikely.

However, in the unlikely event that human remains are unearthed during construction, state law [California Health and Safety Code 7050.5 and CEQA Section 15604(e)] requires that the County Coroner be contacted within 24 hours of the discovery. No further disturbance shall occur in the vicinity of the find until the coroner has made the necessary findings as to the origin and disposition pursuant to the California PRC 5097.98. Additionally, if the remains are determined to be prehistoric or ancestral to Native Americans, then the coroner shall contact the Native American Heritage Commission (NAHC) within 24 hours, and the NAHC shall identify the person or persons it believes to be the "most likely descendant" of the deceased Native American. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98.

With implementation of the minimization and avoidance procedures as required by state law, there would be no adverse change in the significance of archeological resources as a result of this Project.

6. Geology and Soils

Geotechnical Professionals, Inc. (GPI) conducted a Geotechnical Investigation Report for Modernization and Rehabilitation at Sierra Madre Middle School, 160 N. Canon Avenue, Sierra Madre, California, on November 23, 2009. The report is contained in Appendix B of this document.

Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Less Than Significant Impact: The potential for fault rupture on the Project site is very low due to the distance from the Sierra Madre fault (2,000 feet north of the Project site) and the Raymond Fault (5,500 feet southeast of the Project site). The absence of an active or potentially active fault on or adjacent to the Project site, according to the Geotechnical Investigation Report (2009), precludes impacts to structures directly related to fault rupture. Moreover, the Project site is not located on or adjacent to an Alquist-Priolo Earthquake Fault. Therefore, implementation of the Project would result in less than significant impacts related to fault rupture.

ii) Strong seismic ground shaking?

Less Than Significant Impact: The Project site is located in a seismically active area of southern California. According to the Geotechnical Investigation Report (2009), the Project site is located within a distance of approximately 2,000 feet south from the Sierra Madre fault and approximately 5,500 feet north from the Raymond fault. Although the Project site is within the general vicinity of known faults, primary surface rupture is considered low. The main geotechnical constraint on-site is the presence of natural soils of variable but generally low relative density. Of particular concern is a relatively loose layer of natural soils below the fill soil, which upon wetting can create a significant amount of collapse.

The loose sands would also be susceptible to some additional compression under concentrated foundation loads when subjected to seismic shaking. Consequently, ground-shaking hazards caused by earthquakes along regional active faults do exist. The Geotechnical Investigation Report (2009) provided recommendations, including the removal of loose soils at shallow depths in building pad areas and replacement

with compacted fills, and implementation of strict drainage measures to minimize the potential of saturating natural foundation soils remaining below the compacted fill.

The Project will implement recommendations outlined within the Geotechnical Investigation Report (2009) as appropriated within the design and construction of the proposed facilities. Therefore, with implementation of recommendations within the Geotechnical Investigation Report (2009), impacts from strong seismic ground shaking will be less than significant.

iii) Seismic-related ground failure, including liquefaction, or landslides?

Less Than Significant Impact: According to the Geotechnical Investigation Report (2009), the Project site is not subject to ground failure resulting from fault rupture and is relatively flat and is therefore not subject to ground failure from landslides. In addition, the potential for liquefaction to occur on the Project site is considered unlikely, since the historic depth to ground water beneath the site has been in excess of 100 feet. Therefore, implementation of the Project would result in less than significant impacts related to seismically induced ground failure, liquefaction or landslides.

b) Result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact: The Project site is generally level and not subject to high erosion potential, that would result in down cutting, sheet wash, slumping, or bank failures from heavy rain events. In addition, the Project design does not propose significant changes in site elevation or excessive stormwater discharges that would result in a high potential for erosion. The fill soil and older alluvium/alluvial fan deposits (native soil) currently on the site may be subject to wind erosion without proper controls. Grading and construction activities associated with the Project will expose soil, making it susceptible to soil erosion or loss of topsoil. However, the District will have prepared an erosion control plan to minimize erosion during grading and construction, and such plan will be prepared in compliance with California Department of Education requirements and the requirements and standards of the Los Angeles RWQCB.

In addition, the excavation and grading activities that would occur will be carried out pursuant to a National Pollutant Discharge Elimination System (NPDES) permit that requires adoption of appropriate Stormwater Pollution Prevention Plan (SWPPP) and implementation of Best Management Practices (BMPs) to reduce erosion from stormwater runoff. During construction, the Project will also comply with SCAQMD Rule 403 (Fugitive Dust Emissions Control), which includes BMP's such as watering controls to prevent equipment from tracking dirt off-site, and cessation of grading during

high wind conditions. Therefore, impacts to soil erosion or topsoil loss will be less than significant.

c) *Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?*

Less Than Significant Impact: The geologic report indicates that subsurface conditions on the Project site is unsusceptible to liquefaction, lateral spreading, or lurching during a strong seismic event. However, as previously described, the main geotechnical constraint on-site is the presence of natural soils of variable but generally low relative density. Of particular concern is a relatively loose layer of natural soils below the fill soil, which upon wetting can create a significant amount of collapse.

The loose sands would also be susceptible to some additional compression under concentrated foundation loads when subjected to seismic shaking. Consequently, the Geotechnical Investigation Report (2009) provided recommendations, including the removal of loose soils at shallow depths in building pad areas and replacement with compacted fills, and implementation of strict drainage measures to minimize the potential of saturating natural foundation soils remaining below the compacted fill.

The Project will implement recommendations outlined within the Geotechnical Investigation Report (2009) as appropriated within the design and construction of the proposed facilities. Therefore, with implementation of recommendations within the Geotechnical Investigation Report (2009) as a Project design feature, impacts from collapse will be less than significant.

d) *Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (UBC) (1994), creating substantial risks to life or property?*

Less Than Significant Impact: The Geotechnical Investigation Report (2009) indicates that near-surface soils within the areas of proposed construction were found to consist of fills and older deep alluvium/alluvial (native soil) and was determined to have non-expansive soils. Therefore, Project implementation would not create a substantial risk to life or property due to soils expansion, and potential impacts would be less than significant.

e) *Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?*

Less Than Significant Impact: The current school facilities are connected to an existing septic tank. Implementation of the Project will remove the existing septic tank or will fill the existing septic tank with natural earth, rock, sand or gravel, consistent with local and or State UBC and will connect to the sewer system currently serviced by the Sierra Madre Department of Public Works. The sewer collection system is owned by the City of Sierra Madre and is managed, operated and maintained by the City's Public Works Department. Therefore, with proper remediation of the existing septic tank and connection to the City's sewer system, impacts associated with wastewater disposal systems will be less than significant.

7. Hazards and Hazardous Materials

Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less Than Significant Impact with Mitigation:

Short-Term Impacts

Construction Activities

Demolition of the existing structures may contain lead-based paint and asbestos remains due to the construction of existing facilities prior to the federal ban on lead-based paint, other lead-based building materials and asbestos. Consequently, with implementation of mitigation measure HHM-1, the Project will be required to submit documentation to the District that asbestos and lead-based paint issues are not applicable to the property, or that appropriate actions will be taken to correct any asbestos or lead-based paint issues prior to development of the site. Therefore, impacts in this regard will be less than significant.

Construction activities associated with the proposed school would use a limited amount of hazardous materials. Construction vehicles onsite may require routine or emergency maintenance that could result in minor releases of oil, diesel fuel, transmission fluid, or other materials. Relevant construction materials may include asphalt, tar, paints, coatings and solvent. These would be used on a limited basis, both in terms of volume and duration by professionals trained in their appropriate use. The potential for the release of these materials is considered low and, even if a release were to occur, it would not result in a significant hazard to the public, surrounding uses, or the environment due to the small quantities of these materials associated with construction vehicles.

Long-Term Impacts

Hazards and Hazardous Materials

A limited amount of hazardous materials would be used and stored on-site for use in grounds and building maintenance. These materials would consist of liquid and spay paints, lubricants, sealants, glues, grease, fertilizers, pesticides, herbicides and miscellaneous chemical cleaning products and would all be stored in secured maintenance buildings or closets. The storage of all hazardous materials would be in accordance with applicable requirements and all appropriate employees will be trained to properly contain spills of hazardous materials and to clean up and dispose of hazardous materials. Proper storage and proper training of maintenance employees will reduce the potential for significant impacts to a less than significant level.

Operation of the cafeteria would also involve the storage and use of small quantities of hazardous materials such as cleaning products and cooking oil waste. The scale of operation would not create a significant human health hazard or a threat to the environment in the case of accidental spill and release. The cafeteria would be subject to standard regulatory requirements for food preparation and disposal.

With safeguards outlined above, the storage and use of hazardous materials in association with the operation of the Project would not create a significant impact.

HHM-1 Prior to demolition, for major renovation or demolition of any pre-1979 structure within the Project site, the District shall obtain documentation that demonstrates asbestos and lead-based paint issues are not applicable to the property, or that appropriate actions will be taken to correct any asbestos or lead-based paint issues prior to development of the site.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less Than Significant Impact: As discussed in Impact 7 (a), demolition of the existing structures may contain lead-based paint and asbestos remains due to the construction of existing facilities prior to the federal ban on lead-based paint, other lead-based building materials and asbestos. Consequently, with implementation of mitigation measure HHM-1, the District will be required to obtain documentation that asbestos and lead-based paint issues are not applicable to the property, or that appropriate actions will be taken to correct any asbestos or lead-based paint issues prior to development of the site. Therefore, impacts in this regard will be less than significant.

Potential long-term impacts from the operation of the school facilities, which are also discussed under impact HHM-1, would not create significant adverse impacts regarding the likely release of hazardous materials nor create a significant hazard to the public or the environment. Therefore, the Project will have a less than significant impact related hazards due to the possible release of hazardous materials.

c) *Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?*

Less Than Significant Impact: The Project will be consistent with California Education Code Section 17213, Public Resources Code Section 21151.8 and CEQA Guidelines Section 15186, which contain specific requirements for the evaluation of hazards near proposed school sites. During Site reconnaissance, the following was evaluated for consistency with the California Education Code.

Electrical Transmission Lines

Upon construction of the proposed school buildings, a 115-kilovolt (kV) electrical transmission line will be located approximately 119 feet north of classroom building E and a 37.7 kV electrical transmission line will be located approximately 339 feet east of classroom building D. The California Code of Regulations, Title 5, Section 14010(c) specifies the following setback distances for school property lines and power line easements:

1. 100 feet for 50-133 kV line;
2. 150 feet for 220-230 kV line; and
3. 350 feet for 500-550 kV line.

Consequently, both power lines will be at least 100-foot from the proposed school buildings, and, impacts associated with the power line will be less than significant.

During site reconnaissance, no identified water tanks or fuel storage tanks were located within 1,500 feet of the Project site. Moreover, the Project site and surrounding vicinity is not in use as agriculture (i.e. crop production or dairy farming), and has not been, nor is it currently used as a hazardous or solid waste disposal site. Therefore, implementation of the Project will have a less than significant impact.

d) *Be located on a site which is included on a list of hazardous materials lists compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?*

Less Than Significant Impact: According to the California Environmental Protection Agency (Cal EPA) the Department of Toxic Substances Control (DTSC) is required to compile and update a list of all hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code ("HSC")." Upon review of the Cal EPA Cortese List: Section 65962.5(a) online (February 4, 2010), the City of Sierra Madre does not contain a hazardous substance release site.

In addition, according to Cal EPA, the Project site is located approximately 1,200 feet southwest of a Spills, Leaks, Investigations or Cleanups (SLIC) Cleanup Program Site (Loc Case #: 012314-012442). However, due to the location (downgrade of the site) and distance to the site (1,200 feet), impacts to the proposed Project will be less than significant.

Furthermore, site reconnaissance found that there was no evidence of contamination on the Project site. Therefore, hazard to the public or the environment will be less than significant.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

No Impact: The Project site is not located within two (2) miles of an airport or airport land use plan. Therefore, no impacts are anticipated to occur because of the Project.

f) For a project within the vicinity of a private airstrip, would the project would the project result in a safety hazard for people residing or working the project area?

No Impact: The Project site is not located within the vicinity of a private airstrip. Therefore, no impacts are anticipated to occur because of the Project.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact: Disaster preparedness in the City of Sierra Madre is coordinated through a volunteer fire department within Los Angeles County, located at 242 W. Sierra Madre Boulevard (adjacent to City Hall). In addition, Federal Emergency Management Agency (FEMA) and the State Office of Emergency Services adopted a four-part concept Disaster Preparedness comprised of four key components: Preparedness, Mitigation, Response and Recovery. The District will comply with the emergency response plan/evacuation plan. These plans are also coordinated with the City in which they are located. Therefore, the Projects impact to adopted emergency response or evacuation plans would be less than significant

h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Less Than Significant Impact: The Project site is located in an urban area surrounded by residential uses. Consequently, no wildland habitat occurs within the vicinity of the Project site. Therefore, no impacts from wildland fires would occur by implementation of the Project.

8. Hydrology and Water Quality

Would the project:

a) Violate any water quality standards or waste discharge requirements?

Less Than Significant Impact:

Short-Term Construction Impact

The Project could result in short-term construction related impacts to surface water quality. Grading and construction within the site will remove existing vegetation and disturb on-site soils, increasing the potential for erosion and off-site transport of sediment in stormwater runoff. The use of heavy equipment, machinery, and other materials during construction could result in adverse water quality impacts if spills encounter stormwater, and polluted runoff enters downstream receiving waters.

This Project is subject to the Statewide NPDES permit for construction related activities from the State Water Resources Control Board (SWRCB). Consequently, the District will develop and implement a Stormwater Pollution Protection Plan (SWPPP), which will demonstrate compliance with the State NPDES permit, and provide protection of water quality during construction and operation of the Project and will submit the SWPPP to the RWQCB along with the required Notice of Intent prior to commencement of grading activities. The imposition of BMP's ensure that federal and State water quality standards will not be violated and are considered less than significant without mitigation.

Long-Term Operational Impacts

Once developed, on-site storm water flows will come into contact with developed surfaces that may contain pollutants. The primary potential source areas for pollutants include parking lots, refuse storage areas, and outside storage areas. Common pollutant sources associated with school development could include trash, food waste, and detergents. Although the landscape palette will emphasize drought tolerant and native plants, turf would be used on athletic field and would require the use of pesticides and fertilizers. The use of pesticides and fertilizers is expected to be minimal and not pose a

threat to water quality. Impacts to water quality can be minimized by employing BMP's, emphasizing good housekeeping measures and storage practices, which keep potential pollutant sources separated from stormwater.

In addition, a WQMP will be prepared for the Project that will implement various measures as outlined by the Los Angeles RWQCB, which typically include, but are not limited to, guidance, operation and maintenance for all source control, site design, and treatment control BMP's; that requires operation and maintenance, which include maximizing canopy interception and water conservation, landscape planning, roof runoff controls, efficient irrigation, storm drain system signage, trash storage areas and litter control, employee training/education program, protect slopes and channels, common area catch basin inspection, energy dissipaters, pervious concrete/alternative materials, and storm filter filtration systems. Standard conditions of the WQMP will also include providing a thorough description of operation and maintenance activities, and providing a schedule of the frequency of operation and maintenance for each BMP.

The inclusion of the aforementioned standard conditions, which reflect the Los Angeles RWQCB's WQMP and BMP's requirements, will treat future storm water runoff and will reduce impacts to water quality standards or waste discharge requirements to a level of less than significant.

b) *Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?*

Less Than Significant Impact: The City of Sierra Madre is the licensee and operator of its own water distribution system under the Sierra Madre Water Department (SMWD). The SMWD's water supply comes from two (2) sources, which include groundwater within the East Raymond Basin and natural spring tunnels located within the City's foothills. The Project would generate a marginal increase in additional demands for water as compared to existing demands generated by the existing school. According to the City of Sierra Madre General Plan, because of the City's built-out nature, negative population growth in recent years, and a land use and zoning approach that maintains current density of development, the City does not foresee a significant increase in water demand on the current system. Consequently, the Project would not significantly burden existing water service capability of the City Water Department.

In addition, the Project will comply with Chapter 13.24 of the City of Sierra Madre Municipal Code (Mandatory Water Conservation Plan), which would lessen the Project's

demand for water resources. Applicable water conservation measures outlined in Chapter 13.24, include:

- No washing of sidewalks, walkways, patios, driveways, or parking areas by a water hose.
- No water shall be used to clean, fill or maintain levels in decorative fountains unless such water is part of a recycling system.
- No customer of the water department shall permit water to leak from any facility on the premises.
- No lawn, landscaping, or other turf area shall be watered or irrigated between the hours of 10:00 a.m. and 4:00 p.m.
- No lawn, landscape, or turf area shall be watered in a wasteful manner. Nor shall any water be wasted if the existing conditions may be corrected or reasonably modified.

Compliance with the Mandatory Water Conservation Plan will reduce the Project's impacts to groundwater supplies to a level of less than significant.

c) *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?*

Less Than Significant Impact: The proposed improvements will marginally alter the drainage pattern of the existing school by changing the site buildings, paved areas, parking and roadways. Erosion and siltation reduction measures will be implemented during construction of the Project by developing and implementing a SWPPP, which will demonstrate compliance with the State NPDES permit and will submit the SWPPP to the RWQCB along with the required Notice of Intent (NOI) prior to commencement of grading activities, which is consistent with federal and State standards.

During operation of the Project, the District will reduce impacts associated with erosion or siltation by preparing a WQMP, which will implement various measures as outlined by the Los Angeles RWQCB that typically include, but are not limited to, guidance operation and maintenance for all source control, site design, and treatment control BMP's; list and identify each BMP that requires operation and maintenance, which include maximizing canopy interception and water conservation, landscape planning , roof runoff controls, efficient irrigation, storm drain system signage, trash storage areas and litter control, employee training/education program, protect slopes and channels,

common area catch basin inspection, energy dissipaters, pervious concrete/alternative materials, and storm filter filtration systems. Standard conditions also include providing a thorough description of operation and maintenance activities; including BMP start-up dates; and providing a schedule of the frequency of operation and maintenance for each BMP. The inclusion of the aforementioned standard conditions will therefore reduce impacts associated with erosion or siltation to a level of less than significant.

d) *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?*

Less Than Significant Impact: The Project will alter on-site drainage; however, the stormwater design will conform to existing drainage patterns, as will be outlined in the Project's WQMP, which will be implemented as a condition of approval of the Project. Consequently, the design of the Project will adequately convey stormwater, preventing flooding, erosion and siltation. In addition, the Sierra Madre Wash is located approximately 0.30 miles east of the Project site; however, due to the wash's distance to the Project site, impacts to the wash will be less than significant. Moreover, there are no streams or rivers located on the Project site that would be affected. Therefore, impacts to a stream or river will be less than significant.

e) *Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?*

Less Than Significant Impact: During construction, the Project will develop and implement a SWPPP, which will demonstrate compliance with the State NPDES permit, and prevent polluted runoff from leaving the construction site. The SWPPP will be submitted to the RWQCB along with the required Notice of Intent prior to commencement of grading activities.

During operation of the Project, the District will reduce impacts associated with polluted runoff by applying the requirements of the Project's WQMP. Typical measures include, but are not limited to: guidance operation and maintenance for all source control; site design; and treatment control BMP's; list and identify each BMP that requires operation and maintenance; which include maximizing canopy interception and water conservation; landscape planning; roof runoff controls; efficient irrigation; storm drain system signage; trash storage areas and litter control; employee training/education program; protect slopes and channels; street sweeping and parking lots; common area catch basin inspection; energy dissipaters; and storm filter filtration systems. With implementation of the

aforementioned standard conditions, the Project would not induce a substantial addition of polluted runoff and impacts will therefore be below the level of significance.

f) Otherwise substantially degrade water quality?

Less Than Significant Impact: As described in Section 8 (a), the District will develop and implement a SWPPP, which will demonstrate compliance with the State NPDES permit, and provide protection of water quality during construction of the Project. The imposition of BMP's ensure that federal and State water quality standards will not be violated.

During operation of the Project, the District will reduce impacts associated with water quality by incorporating specific previsions within the Project's WQMP. The inclusion of BMP's included in the WQMP will therefore reduce impacts associated with water quality to a level of less than significant.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

No Impact. There is no residential housing construction associated with this Project. The Project is not located in a 100-year flood hazard area (Flood Insurance Rate Map, 2008). This Project will not cause any change in flood potential in the Project area. The Project area is located between 100 and 500-year flood zones, designated as Zone X on FEMA maps. Therefore, the Project will not have a significant impact in regards to place housing within a 100-year flood hazard area.

h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?

No Impact: The Project is not located within a 100-year hazard area and would not place structures in such a way that they would impede or redirect flood flows (Flood Insurance Rate Map, 2008). Therefore, the Project will not have a significant impact in regards to placing structures within a 100-year flood hazard area, which would impede or redirect flood flows.

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

Less Than Significant Impact: The City of Sierra Madre currently contains a tunnel water source, which is located in the hills at the base of Little and Big Santa Anita Dam (approximately 0.75 mile north of the site). Both dams are owned and maintained by the Los Angeles County Public Works Department. Once the dams reach their holding

capacity, the County Public Works Department has an agreement with the SMWD to discharge the water along with surface water from the two dams into the spreading basins at the City Yard, located approximately 225 feet east of the Project site. Although the spreading basins are located near the Project site, due to the slope of the Project area (slopes in a northwest to a southeast direction) flooding impacts to the Project site would be reduce to less than significant upon excess discharge into the spreading basin.

j) Inundation by seiche, tsunami, or mudflow?

Less Than Significant Impact: The Project is not near a large body of water that could potentially create seiches during seismic activity. The Pacific Ocean, which could produce tsunamis, is located too far from the Project site to cause inundation due to such an event. According to the City of Sierra Madre General Plan, historical mudslides have occurred in several locations within the northern portion of the City. However, the Project site is located approximately 0.55 miles south of the Angeles National Forrest foothills (nearest hillside to site) and is located within an area surrounded by urbanization and residential uses. Consequently, the Projects impact from mudflow will be less than significant.

9. Land Use and Planning

Would the project:

a) Physically divide an established community?

Less Than Significant Impact: Implementation of the Project will not displace or physically divide an established community. All construction activities proposed in association with this Project would occur on land currently used as a school facility. In addition, the Project site will not limit access nor otherwise divide the existing residential uses adjacent to the Project site. Therefore, implementation of the Project would have a less than significant impact on physically dividing an established community.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Less Than Significant Impact: As previously stated, all construction activities proposed in association with this Project would occur on land currently used as a school facility. In addition, according to the City of Sierra Madre General Plan (1996), the site is located within an area designated and Zoned as Institutional (I). Implementation of the Project will develop approximately 72,114 square feet of school facilities, consistent with the

City of Sierra Madre General Plan. Therefore, impacts in this case will be less than significant.

c) *Conflict with any applicable HCP or NCCP?*

Less Than Significant Impact: The Sierra Madre Municipal Code Section 17.28.190 establishes a tree conservation plan, stating no native Oak tree shall be removed without approval of the planning commission. As stated in Impact 4 (e), the Project contains landscaping and trees throughout the Project site, including several oak trees at north, west and east perimeter of the Project site. Although the City of Sierra Madre does not have jurisdiction over the Project, the District will selectively preserve a majority of the existing trees, including all oak trees onsite. This will be done by minimizing the cut and fill within the trees existing drip line whereby no more that 25 percent of the existing trees will be affected. This will ensure the health of the trees can be protected. Therefore, implementation of the Project will be consistent with the Sierra Madre General Plan Tree conservation plan.

In addition, there is no approved HCP or NCCPs that apply to the Project site. Therefore, the Project will not conflict with any of the adopted local, regional or State HCP.

10. Mineral Resources

Would the project:

a) *Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?*

Less Than Significant Impact: The Project site is located within the San Gabriel P-C Region; however, is not located within an area containing mineral resources. In addition, the Project site is currently developed and used as a school facility and surrounding uses consist of single-family residences. Consequently, the extraction of mineral resources on-site or within the Project area would not be feasible. Therefore, impacts to the loss of availability of a known mineral resource would be less than significant.

b) *Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?*

Less Than Significant Impact: As previously stated, the Project site is located within the San Gabriel P-C Region; however, is not located within an area containing mineral resources. In addition, the Project site is currently developed and used as a middle school facility and surrounding uses consist of single-family residences. Consequently, the extraction of mineral resources on-site or within the Project area would not be feasible.

Therefore, impacts to the loss of availability of a known mineral resource would be less than significant.

11. Noise

Would the project result in:

a) Exposure of persons to or generation of noise levels in excess of standards established in any applicable plan or noise ordinance, or applicable standards of other agencies?

Less Than Significant Impact: Construction noise represents a short-term increase in ambient noise levels. Noise impacts from construction activities associated with the Project would be a function of the noise generated by construction equipment, equipment location, the sensitivity of nearby land uses, and the timing and duration of the construction activities. However, according to Section 9.32.060 of the City of Sierra Madre Municipal Code (Special Exception Provisions) "between the hours of 7:00 a.m. and 7:00 p.m. daily, except Sundays and holidays when the exemption herein shall apply between 10:00 a.m. and 6:00 p.m., construction, alteration or repair activities which are authorized by a valid city permit shall be allowed. The Project will conduct hours of construction, grading and demolition in accordance with the requirements of the City's Noise Ordinance.

Traffic Noise

The Sierra Madre Municipal Code has noise level threshold for public property of no more than 60 dBA measured at a distance of fifty feet from the source. Traffic from the school uses represents long-term sources of ambient noise in the area. The most prominent source of existing and future noise that would affect the Project site would be for traffic on Canon Avenue, which is located directly to the west.

Vehicular noise along major roadways in the vicinity of the Project was evaluated to estimate existing noise levels from mobile traffic (See Appendix C). The existing and future roadway noise levels were projected using the Federal Highway Administration (FHWA) Traffic Noise Prediction Model (RD-77-108). The FHWA model is based upon reference energy mean emission levels (REMEL) for automobiles, medium trucks (2 axles), and heavy trucks (3 or more axles), with consideration given to vehicle volume and speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. Table 10 shows the existing and projected noise levels for streets that would be affected by the Project, based on a distance of 50-feet from road centerlines.

Table 10: Existing and Projected Traffic Noise

Roadway	Existing	Opening Year 2013*	Increase in dba
North Canon Avenue	57.7	59.8	2.1
*Values are in dBA Ldn and are based on 50-foot distance from street centerline.			

As can be seen within Table 10, the 60-dBA criterion is not exceeded under existing conditions or opening year 2011 conditions for Canon Avenue. Therefore, impacts in regards to increased traffic will be less than significant.

On-Site Impacts

Noise Created by the Project

The existing school facilities produce long-term onsite noise primarily from school activities including onsite traffic, parking and school activities. Implementation of the proposed Project will create similar long-term onsite noise in comparison to existing conditions. However, as a Project design feature, activities at the basketball courts and the baseball field would be limited to the hours of 9:00 a.m. to 3:30 p.m. and only during school days. Therefore, with implementation of Project design features, impacts in regards to noise created by the Project will be less than significant.

b) *Exposure of persons to, or generation of, excessive ground borne vibration or ground borne noise levels?*

Less Than Significant Impact: Operation of the school will not result in any excessive groundborne noise levels or groundborne vibration. In addition, there are no such vibration or groundborne sources associated with the proposed school.

Construction Vibration

Construction activities can produce vibration that may be felt by adjacent uses. The construction of the Project would not require the use of equipment such as pile drivers, which are known to generate substantial construction vibration levels. The primary sources of vibration during construction would be from bulldozers, backhoes, crawler tractors, and scrapers. Construction impacts were assessed using the continuous/frequent intermittent structural damage vibration threshold of 0.5 peak particle velocity PPV for construction. A vibratory roller would produce the greatest amount of vibration on the Project site, with a (PPV) of 0.210 inches per second at 25 feet, well below the 0.5 PPV standard. The nearest existing sensitive receptors to the Project site is the residences located approximately 55 feet north of the Project site, which yields only an estimated 0.105 PPV for a vibratory roller. Therefore, construction-related vibration impacts from the Project on existing sensitive receptors would be less than significant.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Less Than Significant Impact: The existing school facilities currently generate ambient noise generally from offsite roadway noise associated with vehicles traveling to and from the school site. Project noise will be similar to those at the existing school facilities and will be generated by offsite roadway noise associated with vehicles traveling to and from the proposed school. Onsite noise generated by school activities and onsite vehicles at the Project site will also represent a permanent increase in ambient noise, similar to those at the existing school facilities.

The Project would result in additional vehicles on the local roadways and could potentially increase noise levels on and off the Project site. Concerns associated with noise from motor vehicles on surrounding roadways were analyzed using the FHWA Traffic Noise Prediction Model – FHWA-RD-77-108 (FHWA Model), which identifies the incremental noise increase that results from Project specific vehicle trips. The noise calculation worksheet used to in determining noise impacts is in Appendix C. The noise increase resulting from Project would generate approximately 59.8 dBA, which is below the City's criterion of 60 dBA. Therefore, the Project will not cause a significant increase in the noise levels impacts associated with offsite roadway noise.

In addition, the existing school generates onsite noise during school activities at the school site. Onsite noise generated by school activities at the school site are also a source of existing ambient noise within the area. Implementation of the Project will generate similar onsite noise during school activities in comparison to the existing conditions. However, as a Project design feature, activities at the basketball courts and the baseball field would be limited to the hours of 9:00 a.m. to 3:30 p.m. and only during school days. Therefore, the Project will not create a permanent increase in ambient noise levels in the project vicinity above existing levels.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less Than Significant Impact With Mitigation: Construction noise represents a short-term increase in ambient noise levels. Noise impacts from construction activities associated with the Project would be a function of the noise generated by construction equipment, equipment location, the sensitivity of nearby land uses, and the timing and duration of the construction activities.

Short-term noise impacts could occur during construction activities either from the noise impacts created from the transport of workers and movement of construction materials to and from the Project site, or from the noise generated onsite during demolition, ground

clearing, excavation, grading, and construction activities. Table 11, below, lists typical construction equipment noise levels for equipment that would be used during construction of the Project. Construction activities are carried out in discrete steps, each of which has a unique mix of equipment and, consequently, unique noise characteristics. These sequential phases would change the character of the noise levels surrounding the construction site as work progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow noise ranges to be categorized by work phase.

Table 11: Noise Associated with Typical Construction Equipment

Construction Phases	Maximum Noise Levels Measured (dBA at 50 feet)
Grading	89
Backhoe	90
Pneumatic tools	88
Air compressor	86
Crane	83
Plate compactor	89
Concrete vibrator	85
Trucks	87
Source: Federal Transit Agency, 1995.	

On the basis of their proximity to the Project site, the residential land uses to the north, east and south of the Project site are the sensitive receptors of most concern as they relate to Project construction noise. Noise levels at these receptors represent the highest potential construction noise levels, and any receptors further from the Project site would experience noise levels that are less than those predicted here. In addition, it should be noted that the CEQA requirements target a Project's effects on the environment in general and not on a Project's effects on specific individuals. While this IS has conducted an analysis on the impacts with the specified individuals, this methodological approach is highly conservative insofar as a general matter, CEQA is not concerned with a project's effects on specific individuals. In this manner, the analysis for noise impacts goes beyond CEQA to provide specific information for the receptors closest to the Project site.

Based on the closest residence approximately 55 feet to the north of the Project site, and based on operation of a backhoe which is the noisiest equipment listed in Table 10, above, the maximum noise level would be 90 dBA. Note that construction noise often varies significantly on a day-to-day basis, and the noise levels shown in the table represent a worst-case scenario. For example, operation of a backhoe near sensitive

receptors is likely to occur during a relatively short period during the grading phase of the Project. Noise levels based on construction noise at 90 dBA measured at 50 feet from Project site; assume a 6-dB reduction for each doubling of distance. Noise level depicts peak levels and does not predict the 24-hour weighted average (CNEL).

Construction noise would occur during clearing, grading and construction, but would be the most noticeable during the initial period of intensive grading. In addition, the noise created would be of limited and variable duration and would occur only during the construction phase of the Project. Consequently, the noise generated from construction may at times represent a substantial temporary increase over existing noise levels.

In order to minimize disruption to existing residents, all construction activity would be performed during hours specified by the Sierra Madre Municipal Code Noise requirements; which are weekdays from 7:00 a.m. to 6:00 p.m. and on weekends from 9:00 a.m. to 6:00 p.m. Implementation of Mitigation Measure N-1 will also reduce construction noise levels to less than significant.

Mitigation Measures

N-1 Prior to commencement of grading, the District shall prepare a construction noise plan that provides the following:

- All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers.
- During construction, stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receivers, to the extent feasible.
- During construction, stockpiling and vehicle staging areas shall be located as far as practical from noise sensitive receptors during construction activities. This provision shall also be coordinated with staging and stockpiling requirements contained in the Projects SWPPP.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Less Than Significant Impact: There are no airport land use plans in the area, nor is the Project within two miles of an airport. The airport closest to the Project is the El Monte (EMT) Airport, which is approximately five (5) miles south of the Project site. Therefore, impacts to an airport land use plan will be less than significant.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

Less Than Significant Impact: There are no private airstrips in the project vicinity. Therefore, impacts to a private airstrip will be less than significant.

12. Population and Housing

Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Less Than Significant Impact: Development of the proposed Sierra Madre School Upper Campus is necessary to meet the increasing demand for school facilities at the proposed school site. The maximum student capacity will remain consistent with the current student capacity at 550 students. Consequently, the total student capacity at the school site will not increase, nor will the Project have a direct or indirect increase in population within the Project area. Therefore, impacts to substantial population growth in an area will be less than significant.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

Less Than Significant Impact: There are no houses on the Project site. Therefore, implementation of the Project would not displace any existing houses or people. The residential uses within the vicinity of the site are not within the Project boundaries and are not affected by the Project. Therefore, impact to housing or population will be less than significant.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

Less Than Significant Impact: As discussed in Impact 12 (b), implementation of the Project would not displace any existing houses or people. The residential structure to the north, west and south of the Project site are not within the development plans of the proposed school and would therefore not be affected by development of the Project. Therefore, the Project will not displace an existing population or need to develop replacement housing.

13. Public Services

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

a) Fire Protection?

Less Than Significant Impact: The Sierra Madre Fire Department (SMFD) operates out of one fire station located in the downtown area at 242 West Sierra Madre Boulevard, approximately 0.80 mile southwest of the Project site. The Department has three Battalion Chiefs, one Fire Marshal, one Captain Paramedic Coordinator, 6 Captains, 6 Engineers, and 30 firefighters, consisting of five crews on a rotating platoon basis. The estimated response time for the SMFD to the Project site would be approximately 1.4 minutes and will not exceed the five-minute SMFD average response time (based on an average speed of 35 miles per hour).

Access roads (driveways) are required per the California Fire Code when any portion of a facility or any portion of an exterior wall of the first story of the building is located more than 150 feet from fire apparatus access. Continuous fire access roadways and public hydrants will be provided throughout the Project site in order to allow adequate emergency access.

Inadequate fire flow demands would be considered a significant impact, but are remedied through the proper design of water infrastructure on-site in coordination with the SMFD, and in compliance with State Department Education Code requirements. Therefore, implementation of the Project would result in a less than significant impact to fire protection.

b) Police Protection?

Less Than Significant Impact: The SMPD provides police protection to the City Project site and is located at 242 West Sierra Madre Boulevard, approximately 0.80 mile southwest of the Project site. Development of the proposed school facilities will not increase the current student capacity on-site. Since the student capacity will remain consistent at 550 students, service ratios will not be affected. In addition, the District will provide private security guards on the campus during school hours and a security system, which is typical for schools within the PUSD. With implementation of the

aforementioned services, Project impacts on police services and facilities would be less than significant.

c) Schools?

Less Than Significant Impact: The Project will have a positive impact on schools by providing additional school facilities within the Project site. Therefore, the Project will not adversely impact school services, but rather will increase the quality of education at the Sierra Madre School Upper Campus by providing needed facilities.

d) Parks?

Less Than Significant Impact: The maximum student capacity at the Sierra Madre School Upper Campus will remain consistent with the current student capacity at 550 students. Consequently, the total student capacity at the school site will not increase the use of parks within the City of Sierra Madre. In addition, the Project will increase the additional school facilities within the Project site. Consequently, the Project will have a positive impact on parks by providing additional school facilities within the Project site. Therefore, the Project will not adversely impact park services and will have a less than significant impact.

e) Other pubic facilities?

Less Than Significant Impact: The City of Sierra Madre Public library is located at 440 West Sierra Madre Boulevard, approximately one (1) mile west of the Project site. The public facilities would not endure a substantial increase in use due to implementation of the Project because the proposed school facilities will include a library for students. Therefore, impacts to library services will be less than significant.

14. Recreation

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Less Than Significant Impact: The proposed school complex includes the construction of recreational facilities that will be used by students. An increase in the use of existing neighborhood, regional, or other parks would not occur from implementation of the Project because it does not increase the student capacity on-site. Students would generally use on-campus recreational facilities for physical education and athletic activities as opposed to off-site facilities. Therefore, construction and operation of the

proposed school would have no direct or indirect impact on the demand or need for parks and recreation facilities in the area.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

Less Than Significant Impact: The proposed school complex includes the construction of recreational facilities. These facilities consist of a media center, multi-purpose building, gymnasium, outdoor basketball courts and a baseball/softball field. An increase in the use of existing neighborhood, regional, or other parks would not occur from implementation of the Project because it does not increase the student capacity on-site. Students would generally use on-campus recreational facilities for physical education and athletic activities as opposed to off-site facilities.

These recreation facilities are considered an integral part of the proposed school complex, and potential environmental impacts related to these facilities are evaluated in the context of the total Project, and have been discussed elsewhere in this IS. No significant impacts specific to the recreational facilities would result as part of the Project.

15. Transportation/Traffic

Discussion: This transportation section describes the existing setting for transportation and potential effects from Project implementation on the site and its surrounding area. Description and analysis in this section is based on information contained in the Focused Traffic Analysis prepared by Kunzman Associates in January 18, 2010 (See Appendix C).

Would the project:

a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?

b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?

Less Than Significant Impact: According to the Focused Traffic Analysis conducted for the Project, the existing school site generates approximately 459 daily vehicle trips, 163 of which occur during the morning peak hour and 68 of which occur during the evening peak hour. This is based on a total student population of 334, of which 85 students are bussed, and 249 are estimated to arrive and leave the campus by automobile. See Table 12 below for existing traffic generation.

Table 12: Existing Traffic Generation

Land Use	Quantity	Units[2]	Morning Peak	Evening Peak	Daily
Trip Generation Rates Middle School	249	ST	0.54	0.16	1.62
Trips Generated Middle School Buses[3]	249 7	ST BUSES	135 28[4]	40 28[4]	403 56
Total			**163**	**68**	**459**

Source: Kunzman Associates (2010), Table 1.
1 Source: Institute of Transportation Engineers, Trip Generation. 8th Edition, 2008, Land Use Category 522.
2 ST = Students
3 Buses have been converted to 2.0 Passenger Car Equivalent's (PCE's) bus ridership is estimated to be 85 pupils daily.
4 – Reflects 7 inbound and 7 outbound bus trips, adjusted to PCE. All bus trips are during peak hours..

The proposed Project is projected to generate approximately 741 daily vehicle trips, 259 of which will occur during the morning peak hour and 102 of which will occur during the evening peak hour for the proposed development traffic conditions. See Table 13, below, for Project traffic generation.

Table 13: Project Traffic Generation

Land Use	Quantity	Units[2]	Morning Peak	Evening Peak	Daily
Trip Generation Rates Middle School	413	ST	0.54	0.16	1.62
Trips Generated Middle School Buses[3]	413 9	ST BUSES	223 36[4]	66 36[4]	669 72
Total			**259**	**102**	**741**

Source: Kunzman Associates (2010), Table 2.
1 Source: Institute of Transportation Engineers, Trip Generation. 8th Edition, 2008, Land Use Category 522.
2 ST = Students
3 Buses have been converted to 2.0 Passenger Car Equivalent's (PCE's). Bus ridership is estimated to be 137 pupils daily.
4 – Reflects 9 inbound and 9 outbound bus trips, adjusted to PCE. All bus trips are during peak hours

The proposed Project compared to existing conditions is projected to generate approximately 282 more daily vehicle trips (741 - 459 = 282), 96 of which will occur during the morning peak hour (259 - 163 = 96) and 34 of which will occur during the evening peak hour (102 - 68 = 34). Based on the identified traffic generation and distribution, the Project's traffic volumes are shown in Table 14, below:

Table 14: Project Traffic Volumes

Description	Morning Peak	Evening Peak	Daily
Proposed project	259	102	741
Current Project (Existing Facility)	163	68	459
Total Increase	**96**	**34**	**282**
Source: Kunzman Associates (2010), Table 3.			

The Los Angeles County Congestion Management Program Traffic Impact Assessment Guidelines require that intersection monitoring locations must be examined if the proposed project will add 50 or more trips to an intersection during either the morning or evening weekday peak periods. The traffic analysis evaluated trip distributions to the following three road segments closest to the Project Site:

- North on Canon Avenue;
- South on Canon Avenue; and
- West on East Highland Avenue.

Projected evening and morning peak trips were all less than 50 trips for these road segments, and, therefore no intersection would receive more than 50 trips generated by the Project. The County of Los Angeles Traffic Impact Analysis Report Guidelines also recommends that a traffic report is needed only if a project generate more that 500 trips per day. As can be seen in Table 14, the proposed Project is not projected to generate 500 additional trips per day. Therefore, the Project will not significantly increase traffic or LOS volume within the Project area and impacts will be less than significant.

c) *Result in change in air traffic patterns, including either an increase in air traffic levels or a change in location that results in substantial safety risks?*

Less Than Significant Impact: The project will not affect or be affected by air traffic and, therefore, there is no additional or increased safety risks to air travel.

d) *Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?*

Less Than Significant Impact: The Project will not substantially increase hazards due to the design feature (e.g., sharp curves or dangerous intersections) because the existing roadway network is on a grid with streets meeting at right angles. Therefore, impacts in this case will be less than significant.

e) Result in inadequate emergency access?

Less Than Significant Impact: The Project proposes to provide ingress and egress points within the southern portion of the Project site, allowing easy access to the Project site. In addition, the Project will have direct access to Canon Avenue, which directly connects to Sierra Madre Boulevard and Grandview Avenue, allowing many points of access to the Project site. As is the case for any roadway design, the City of Sierra Madre should periodically review traffic operations in the vicinity of the Project once the Project is constructed to assure that the traffic operations are satisfactory.

f) Result in inadequate parking capacity?

Less Than Significant Impact: The Project will provide an adequate number of parking spaces, consistent with District requirements and standards. It is estimated that the Project site will provide a total of approximately 106 parking spaces to serve students, staff and visitors. City criteria for schools (Sierra Madre Municipal Code Section 17.68.020), calls for 1.5 spaces per classroom, plus 1 space for every 2 members of the faculty. The Project will include 28 classrooms and two (2) administration employees; 22 certificated Staff; and 23 Classified Staff (totaling 47 faculty members). Based on the City's criteria, a total of 66 spaces would be needed [28 classrooms (42 spaces needed) + 47 faculty (24 spaces needed) = 66 spaces]. The Project will provide 106 parking spaces on site, which are 40 spaces over the City's requirement. Therefore, the Project will provide well over the minimum requirements set forth in Section 17.68.020 of the Sierra Madre Municipal Code and impacts will be less than significant.

g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks)?

Less Than Significant Impact: The Project does not conflict with policies, plans, or programs supporting alternative transportation. The City of Sierra Madre provides three transportation programs to its resident, which includes the Round-A-Bout - Gateway Coach Local - (Runs during the hours of 11:00 a.m. to 3:30 p.m.), the Gold Line Shuttle - Gateway Coach Express (Runs during the hours of 7:00 a.m. to 8:00 a.m. and 5:00 p.m. to 6:00 p.m.) and Dial-A-Ride (Demand Response Transportation Service). Consequently, there are forms of alternative transportation available near the Project site. Implementation of the Project will not affect the transportation programs available near the Project site. Therefore, the Project will not conflict with alternative transportation and impacts are less than significant.

16. Utilities and Service Systems

Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Less Than Significant Impact: Development of the Project will involve an onsite system for the collection of wastewater for conveyance to offsite public wastewater facilities. Wastewater conveyed from the site would ultimately reach the Los Angeles County Sanitation District's trunk pipelines within the City. The Los Angeles County Sanitation District provides, under contract with Sierra Madre, the treatment of wastewater and the ultimate disposal of effluent and solids in compliance with the waste discharge requirements set by the California RWQCB. Wastewater conveyed from the site would undergo treatment in accordance with applicable regulations, including the requirements of the Water Quality Control Board. Therefore, impacts in this regard will be less than significant. See Impact 16 (b) for additional information on wastewater treatment.

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less Than Significant Impact: Using a Wastewater demand factor of 4,500 gallons per day, per acre (GPD/Acre) (RBF, 2006) the existing 40,410 square foot school facilities (approximately 0.93 acres) produces approximately 4,185 GPD of wastewater. Development of the proposed 72,114 square foot school facilities (1.7 acres) would result in an estimated demand for wastewater treatment of 7,650 GPD, which is approximately 3,465 GPD over existing conditions. This demand represents approximately 0.000006 percent of the 500 million GPD of wastewater conveyed to the Los Angeles County Sanitation District (LACSD, 2010). Consequently, the implementation of the Project will not produce a significant amount of additional wastewater over existing conditions.

In addition, the current school site consumes approximately 1,299,500 gallons of water per year (gal/year) or approximately 3,560 gallons of water per day (gal/day). According to the Pasadena Unified School District, the estimated average water usage for the Project will be the following: approximately 2,167,946 gallons of water per year (gal/year) for the playfield turf area, 266,562 gal/year for the interior campus turf area and approximately 985,158 gal/year for the shrub area. Therefore, the total estimated average water usage for the Project site will be approximately 3,419,666 gal/year or 9,369 gallons

per day. Consequently, the Project will consume approximately 2,120,166 gal/year or approximately 5,809 gal/day over existing conditions.

Currently, the City of Sierra Madre supplies water to the Project site. The current water demand for the City is approximately 1.57 million gallons per day. Implementation of the Project will increase the City's water demand to a total of approximately 0.004 percent over the City's existing daily water demand. Consequently, implementation of the Project will not consume a significant amount of additional water over existing conditions.

In addition, the Project will comply with Chapter 13.24 of the City of Sierra Madre Municipal Code (Mandatory Water Conservation Plan), which would lessen the Project's demand for water resources. According to Municipal Code 12.24, the mandatory water conservation plan will minimize the effects of a water shortage to the water customers of the City and will significantly reduce the delivery and consumption of water, thereby extending the period of available water to match the water, which may be supplied or delivered to the distribution system of the City. Therefore, implementation of the Project will not require the construction or expansion of existing water or wastewater treatment facilities and impacts in this regard will be less than significant.

c) *Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts?*

Less Than Significant Impact: A NPDES permit will be prepared for the Project, which requires adoption of appropriate SWPPP and implementation of Best Management Practices (BMP's). The Project's storm drainage system will be comprised of multiple treatment methods to ensure the storm water will be cleaned and retained onsite to a level equal to or greater than the NPDES mandates. The Project's BMP's will include, but are not limited to, bio-swales, pervious pavers, bio-retention, and fossil fuel absorbent sponges. Implementation of the Project's BMP's will reduce pollutants to storm water and urban runoff from the Project site. In addition, it is anticipated that the Project's storm drainage system, in combination with the SWPPP and BMP's will be adequate to convey runoff from the site. Moreover, the Project is required to provide all necessary on-site infrastructure and to pay a development impact fee for storm drain facilities within the City. Therefore, impacts to storm water drainage facilities will be less than significant.

d) *Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?*

Less Than Significant Impact: As discussed in Impact 16 (b), the current school site consumes approximately 1,299,500 gallons of water per year (gal/year) or approximately 3,560 gallons of water per day (gal/day). According to the Pasadena Unified School District, the estimated average water usage for the Project will be approximately 2,120,166 gal/year or approximately 5,809 gal/day over existing conditions.

Currently, the City of Sierra Madre supplies water to the Project site. Water is stored at five reservoir sites in Sierra Madre. These sites contain a total of eight reservoir tanks with a total capacity of approximately 7.1 million gallons. The current water demand for the City is approximately 1.57 million gallons per day. Implementation of the Project will increase the City's water demand to a total of approximately 0.004 percent over the City's existing daily water demand. Consequently, implementation of the Project will not consume a significant amount of additional water over existing conditions.

In addition, the Project would be subject to compliance with Chapter 13.24 of the City of Sierra Madre Municipal Code (Mandatory Water Conservation Plan), which would lessen the Project's demand for water resources. According to Municipal Code 12.24, the mandatory water conservation plan will minimize the effects of a water shortage to the water customers of the City and will significantly reduce the delivery and consumption of water, thereby extending the period of available water to match the water, which may be supplied or delivered to the distribution system of the City. Therefore, implementation of the Project will not require the construction or expansion of existing water or wastewater treatment facilities and impacts in this regard will be less than significant.

e) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve

Less Than Significant Impact: As discussed in Impact 16 (b), development of the proposed 72,114 square foot facilities (1.7 acres) would result in an estimated demand for wastewater treatment of 7,650 GPD, which is approximately 3,015 GPD over existing conditions. This demand represents approximately 0.000006 percent of the 500 million GPD of wastewater conveyed to the Los Angeles County Sanitation District (LACSD, 2010). Consequently, the implementation of the Project will not produce a significant amount of additional wastewater over existing conditions and impacts in this regard will be less than significant.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less Than Significant Impact: Based on an estimated waste generation rate of 0.007 pounds, per square foot of building area, per day (California Integrated Waste

Management Board, 2009 Estimated Solid Waster Generation Rates for Institutions) the existing 40,410 square feet of school facilities would generate approximately 283 pounds of solid waste per day. Using the same waste generation rate, the Project's proposed 72,114 square feet of school facilities will produce approximately 505 pounds of solid waste per day. Consequently, the Project will ultimately produce approximately 222 pounds of additional solid waste over existing conditions.

A majority of the solid waste generated at the school site is hauled to Scholl Canyon Landfill in Glendale. Currently, the landfill is located on approximately 400 acres, and receives approximately 1,500 tons of waste per day. Consequently, the production of approximately an additional 222 pounds of solid waste produced by the Project will not crate a significant increase in solid waste over existing conditions. In addition, the Project would be required to comply with all federal, state, and local statutes and regulations related to solid waste. Therefore, impacts in this regard will be less than significant.

g) Comply with applicable federal, state, and local statutes and regulations related to solid waste?

Less Than Significant Impact: Please refer to Impact 16 (f) for additional information on solid waste. The Project would be required to comply with all federal, state, and local statutes and regulations related to solid waste. Moreover, the Project does not propose land uses that would generate large quantities of hazardous waste for disposal or any other specialized activities that would affect compliance with applicable federal, state or local regulations related to solid waste. Therefore, impacts in this regard will be less than significant.

17. Mandatory Findings of Significance

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less Than Significant Impact With Mitigation: The Project site and area consists of urban development; therefore the potential of sensitive species existing onsite is considered low. However, the Project site does contain suitable nesting habitat for avian species. In addition, during site reconnaissance of the Project site, no riparian/riverine habitats, vernal pools, vernal pool habitat were observed onsite. Moreover, the Project

site does not contain flowing water or standing pools that may attract animals, nor does the site support any vegetation or resources that serves as a habitat for migratory fish or wildlife. The site does not lie within any known wildlife corridors. In addition, the site does not contain any nursery areas or resources. However, the Project site contains suitable nesting habitat for avian species. As described in Impact 4 (a), with implementation of Mitigation Measure BR-1, the Project will remove vegetation outside the breeding season, which will eliminate any impacts to nesting birds. Therefore, impacts in this regard will be less than significant.

b) *Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?*

Less Than Significant Impact: There may be slight cumulative impacts due to development of the Project. By definition, each new construction project contributes incrementally to cumulative impacts. However, in this case the level of cumulative impact would be less than significant. Impacts to air quality, traffic and noise are mitigated.

c) *Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?*

Less Than Significant Impact: The Project would not cause substantial adverse impacts to humans either directly or indirectly. It is anticipated that while temporary (i.e. Construction) impacts can on occasion cause substantial adverse effects, they are less than significant when BMPs are employed. Therefore, impacts in this regard will be less than significant.

SECTION 4: LIST OF PREPARERS

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SECTION 5: REFERENCES

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\MBA\Sierra Madre School\ProposedProject_Construction.urb924

Project Name: Sierra Madre Upper School Expansion - Proposed Project - Construction

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010 TOTALS (lbs/day unmitigated)	3.04	25.05	13.51	0.01	100.01	1.25	101.26	20.89	1.15	22.04	2,371.71
2010 TOTALS (lbs/day mitigated)	3.04	25.05	13.51	0.01	6.04	1.25	7.30	1.26	1.15	2.41	2,371.71
2011 TOTALS (lbs/day unmitigated)	19.50	9.48	9.98	0.01	0.03	0.59	0.62	0.01	0.54	0.55	1,641.67
2011 TOTALS (lbs/day mitigated)	19.50	9.48	9.98	0.01	0.03	0.59	0.62	0.01	0.54	0.55	1,641.67

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

Time Slice 7/15/2010-9/17/2010 Active Days: 47	3.04	**25.05**	**13.51**	0.00	6.04	**1.25**	7.30	1.26	**1.15**	2.41	**2,371.71**
Mass Grading 07/15/2010-09/17/2010	3.04	25.05	13.51	0.00	6.04	1.25	7.30	1.26	1.15	2.41	2,371.71
Mass Grading Dust	0.00	0.00	0.00	0.00	6.04	0.00	6.04	1.26	0.00	1.26	0.00
Mass Grading Off Road Diesel	3.00	24.99	12.46	0.00	0.00	1.25	1.25	0.00	1.15	1.15	2,247.32
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.03	0.06	1.05	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.39
Time Slice 9/20/2010-10/1/2010 Active Days: 10	2.09	17.75	9.26	0.00	0.01	0.88	0.89	0.00	0.81	0.81	1,839.03
Trenching 09/20/2010-10/01/2010	2.09	17.75	9.26	0.00	0.01	0.88	0.89	0.00	0.81	0.81	1,839.03
Trenching Off Road Diesel	2.06	17.69	8.22	0.00	0.00	0.88	0.88	0.00	0.81	0.81	1,714.64
Trenching Worker Trips	0.03	0.06	1.05	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.39
Time Slice 10/4/2010-10/15/2010 Active Days: 10	2.30	12.93	9.17	0.00	0.01	1.07	1.08	0.01	0.98	0.99	1,323.20
Asphalt 10/04/2010-10/15/2010	2.30	12.93	9.17	0.00	0.01	1.07	1.08	0.01	0.98	0.99	1,323.20
Paving Off-Gas	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.95	11.89	6.98	0.00	0.00	1.03	1.03	0.00	0.94	0.94	979.23
Paving On Road Diesel	0.07	0.93	0.36	0.00	0.00	0.04	0.04	0.00	0.03	0.04	126.28
Paving Worker Trips	0.06	0.11	1.83	0.00	0.01	0.01	0.02	0.00	0.00	0.01	217.69
Time Slice 10/18/2010-12/31/2010 Active Days: 55	1.43	10.23	10.29	0.01	0.03	0.62	0.66	0.01	0.57	0.58	1,615.41
Building 10/18/2010-08/05/2011	1.43	10.23	10.29	0.01	0.03	0.62	0.66	0.01	0.57	0.58	1,615.41
Building Off Road Diesel	1.21	9.16	4.81	0.00	0.00	0.58	0.58	0.00	0.53	0.53	893.39
Building Vendor Trips	0.07	0.78	0.64	0.00	0.01	0.03	0.04	0.00	0.03	0.03	147.77
Building Worker Trips	0.15	0.29	4.84	0.01	0.03	0.02	0.04	0.01	0.01	0.02	574.25

Time Slice 1/3/2011-4/1/2011 Active Days: 65	1.31	9.47	9.77	0.01	0.03	0.59	0.62	0.01	0.54	0.55	1,615.29
Building 10/18/2010-08/05/2011	1.31	9.47	9.77	0.01	0.03	0.59	0.62	0.01	0.54	0.55	1,615.29
Building Off Road Diesel	1.11	8.51	4.68	0.00	0.00	0.54	0.54	0.00	0.50	0.50	893.39
Building Vendor Trips	0.06	0.70	0.59	0.00	0.01	0.03	0.03	0.00	0.03	0.03	147.78
Building Worker Trips	0.14	0.26	4.50	0.01	0.03	0.02	0.04	0.01	0.01	0.02	574.12
Time Slice 4/4/2011-7/29/2011 Active Days: 85	**19.50**	9.48	9.98	**0.01**	0.03	0.59	0.62	0.01	0.54	0.55	1,641.67
Building 10/18/2010-08/05/2011	1.31	9.47	9.77	0.01	0.03	0.59	0.62	0.01	0.54	0.55	1,615.29
Building Off Road Diesel	1.11	8.51	4.68	0.00	0.00	0.54	0.54	0.00	0.50	0.50	893.39
Building Vendor Trips	0.06	0.70	0.59	0.00	0.01	0.03	0.03	0.00	0.03	0.03	147.78
Building Worker Trips	0.14	0.26	4.50	0.01	0.03	0.02	0.04	0.01	0.01	0.02	574.12
Coating 04/04/2011-07/29/2011	18.18	0.01	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26.38
Architectural Coating	18.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26.38
Time Slice 8/1/2011-8/5/2011 Active Days: 5	1.31	9.47	9.77	0.01	0.03	0.59	0.62	0.01	0.54	0.55	1,615.29
Building 10/18/2010-08/05/2011	1.31	9.47	9.77	0.01	0.03	0.59	0.62	0.01	0.54	0.55	1,615.29
Building Off Road Diesel	1.11	8.51	4.68	0.00	0.00	0.54	0.54	0.00	0.50	0.50	893.39
Building Vendor Trips	0.06	0.70	0.59	0.00	0.01	0.03	0.03	0.00	0.03	0.03	147.78
Building Worker Trips	0.14	0.26	4.50	0.01	0.03	0.02	0.04	0.01	0.01	0.02	574.12

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 7/15/2010 - 9/17/2010 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

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PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

Pasadena Unified School District - Sierra Madre Upper Campus
Estimated Structure Demolition Emissions - Phase 1

Estimated Structure Demolition Volume

Structures to be Demolished	Area (ft2)	Average Height (ft)	Volume (cu-ft)
All Bldgs except Blgd C	34083	15	511245
Total	34083		511245

Total Structure Volume	511245	cu-ft	
Total Structure Volume	18935	cu-yds	
Total Structure Volume of Debris to be Hauled	4734	cu-yds	(25% of the total Structure volume - URBEMIS assumption)

Estimated Structure Demolition Fugitive Dust Emissions

Demolition Fugitive Dust Emission Factor:	0.00042	lbs/cu-ft	<---------- URBEMIS Model
Total Demolition Fugitive Dust Emissions:	214.72	lbs	
Demolition Activity	10%	assumes demo of 10 % of the volume in a single day	
Daily Demolition Fugitive Dust Emissions (PM10):	**21.5**	lbs/day	
Daily Demolition Fugitive Dust Emissions (PM2.5):	**4.5**	lbs/day	<----- Assumes PM2.5 is 21% of PM10

Application of Mitigation to Comply with SCAQMD Rule 403

	PM10 Dust Emissions (lbs/day)
PM10 Emissions (unmitigated)	21.5
Watering 3x per day to meet Rule 403	4.6
Plus reduce speed < 15 mph	
Plus Equipment Loading/Unloading	

	PM2.5 Dust Emissions (lbs/day)
PM2.5 Emissions (unmitigated)	4.5
Watering 3x per day to meet Rule 403	1
Plus reduce speed < 15 mph	
Plus Equipment Loading/Unloading	

Estimated Structure Demolition Construction Equipment Exhaust Emissions

Construction Equipment Inventory

		Exhaust Emission Factor - SCAQMD Composite Emission Factors for 2011 in lbs/hr)							
Equipment	Number	VOC	CO	NOx	Sox	PM10	PM2.5	CO2	CH4
Concrete Saw	1	0.1179	0.4209	0.624	0.0007	0.0525	0.0483	58.5	0.0106
Rubber tired Dozer	1	0.3244	1.3284	2.8346	0.0025	0.1212	0.1212	239	0.0293
Tractor/Loader/Backhoe	2	0.0938	0.3874	0.6276	0.0008	0.0482	0.044344	66.8	0.0085
Water Truck	1	0.1140	0.5385	0.4769	0.0027	0.0142	0.013064	260	0.0103

Assumed work day: 8 hours/day

Construction Equipment Exhaust Emissions

Equipment	Daily Exhaust Emissions (lbs/day)							
	VOC	CO	NOx	SOx	PM10	PM2.5	CO2	CH4
Concrete Saw	0.943	3.367	4.992	0.006	0.420	0.386	468.000	0.085
Rubber tired Dozer	2.595	10.627	22.677	0.020	0.970	0.970	1912.000	0.234
Tractor/Loader/Backhoe	1.501	6.198	10.042	0.013	0.771	0.710	1068.800	0.136
Water Truck	0.912	4.308	3.815	0.022	0.114	0.105	2080.000	0.082
Total	**6.0**	**24.5**	**41.5**	**0.1**	**2.3**	**2.2**	**5528.8**	**0.5**

Structure Demolition Worker Vehicle Emissions

Number of Worker Vehicles:	6	<-------- URBEMIS assumption (Number of vehicles = 125% of the total pieces of equipment)
Number of Vehicle Trips	12	Trips per day
Trip Length	20	miles per round trip to nearest dump
Total VMT	240	miles/day

Composite Vehicle Emission Factors for the year 2011 from the SCAQMD

Pollutant	EF (lbs/mi)	Daily Emissions (lbs/day)
VOC	0.00085233	**0.2**
CO	0.00826276	**2.0**
NOx	0.00084460	**0.2**
Sox	0.00001077	**0.0**
PM10	0.00008879	**0.0**
PM2.5	0.00005653	**0.0**
CO2	1.10235154	**264.6**
CH4	0.00007678	**0.0**

Structure Demolition Haul Truck Emissions

Total Volume to be Hauled	4734	cu-yds
Volume of Each Haul Truck	20	cy-yds
Number of Haul Trucks	237	trucks
Number of Haul Truck Trips	473	trips
Duration of Structure Demolition	44	days (assumes 2 months)
Number of Trips per Day	11	trips/day
Hault Truck Trip Distance	20	miles
Daily VMT	215	miles per day

Composite Vehicle Emisison Factors for Heavy Duty Trucks for the year 2011 from the SCAQMD

Pollutant	EF (lbs/mi)	Daily Emissions (lbs/day)
VOC	0.00279543	**0.6**
CO	0.01112463	**2.4**
NOx	0.03455809	**7.4**
Sox	0.00003972	**0.0**
PM10	0.00166087	**0.4**
PM2.5	0.00144489	**0.3**
CO2	4.2204568	**908.1**
CH4	0.0001291	**0.0**

Paved Road Dust Emissions

Paved Road Dust Emission Factor (lb/VMT) = k x (sL/2)^0.65 x (W/3)^1.5		
sL, Silt Loading	0.02	g/m2 (assumed to be freeway travel)
W, Average Vehicle Weight (tons)	29	tons (weight of haul trucks)
k, Particulate Size Multiplier	0.016	
PM10 Emission Factor	0.024	lbs/mi (URBEMIS Model equation for paved road dust)
Daily VMT	215	miles/day
PM10 Emissions	5.2	lbs/day
PM2.5 Emissions	1.1	lbs/day - assumed to be 21% of PM10

TOTAL Structure Demolition Emissions (with mitigation)

Pollutant	Daily Total Emissions (lbs/day)	Daily Onsite Emissions (lbd/day)
VOC	**6.8**	6.0
CO	**28.9**	24.5
NOx	**49.2**	41.5
Sox	**0.1**	0.1
PM10	**12.4**	6.9
PM2.5	**4.6**	3.2
CO2	**6701.5**	5528.8
CH4	**0.6**	0.5

Annual GHG Emissions

Duration of Demolition:	20	days
Total CO2 Emissions	67	tons

References:

URBEMIS2007 Software User's Guide
SCAQMD Off-Road OFFROAD Model Mobile Source Emission Factors
SCAQMD On-Road EMFAC2007 Emission Factors

Pasadena Unified School District - Sierra Madre Upper Campus
Estimated Structure Demolition Emissions - Phase 4

Estimated Structure Demolition Volume

Structures to be Demolished	Area (ft2)	Average Height (ft)	Volume (cu-ft)
All Bldgs except Blgd C	6328	15	94920
Total	6328		94920

Total Structure Volume	94920	cu-ft	
Total Structure Volume	3516	cu-yds	
Total Structure Volume of Debris to be Hauled	879	cu-yds	(25% of the total Structure volume - URBEMIS assumption)

Estimated Structure Demolition Fugitive Dust Emissions

Demolition Fugitive Dust Emission Factor:	0.00042	lbs/cu-ft	<---------- URBEMIS Model
Total Demolition Fugitive Dust Emissions:	39.8664	lbs	
Demolition Activity	50%		assumes demo of 50 % of the volume in a single day
Daily Demolition Fugitive Dust Emissions (PM10):	**19.9**	lbs/day	
Daily Demolition Fugitive Dust Emissions (PM2.5):	**4.2**	lbs/day	<----- Assumes PM2.5 is 21% of PM10

Application of Mitigation to Comply with SCAQMD Rule 403

	PM10 Dust Emissions (lbs/day)
PM10 Emissions (unmitigated)	19.9
Watering 3x per day to meet Rule 403	4.3
Plus reduce speed < 15 mph	
Plus Equipment Loading/Unloading	

	PM2.5 Dust Emissions (lbs/day)
PM2.5 Emissions (unmitigated)	4.5
Watering 3x per day to meet Rule 403	1
Plus reduce speed < 15 mph	
Plus Equipment Loading/Unloading	

Estimated Structure Demolition Construction Equipment Exhaust Emissions

Construction Equipment Inventory

		Exhaust Emission Factor - SCAQMD Composite Emission Factors for 2011 in lbs/hr)							
Equipment	Number	VOC	CO	NOx	Sox	PM10	PM2.5	CO2	CH4
Concrete Saw	1	0.1179	0.4209	0.624	0.0007	0.0525	0.0483	58.5	0.0106
Rubber tired Dozer	1	0.3244	1.3284	2.8346	0.0025	0.1212	0.1212	239	0.0293
Tractor/Loader/Backhoe	1	0.0938	0.3874	0.6276	0.0008	0.0482	0.044344	66.8	0.0085
Water Truck	1	0.1140	0.5385	0.4769	0.0027	0.0142	0.013064	260	0.0103

Assumed work day: 8 hours/day

Construction Equipment Exhaust Emissions

Equipment	Daily Exhaust Emissions (lbs/day)							
	VOC	CO	NOx	SOx	PM10	PM2.5	CO2	CH4
Concrete Saw	0.943	3.367	4.992	0.006	0.420	0.386	468.000	0.085
Rubber tired Dozer	2.595	10.627	22.677	0.020	0.970	0.970	1912.000	0.234
Tractor/Loader/Backhoe	0.750	3.099	5.021	0.006	0.386	0.355	534.400	0.068
Water Truck	0.912	4.308	3.815	0.022	0.114	0.105	2080.000	0.082
Total	**5.2**	**21.4**	**36.5**	**0.1**	**1.9**	**1.8**	**4994.4**	**0.5**

Structure Demolition Worker Vehicle Emissions

Number of Worker Vehicles:	6	<-------- URBEMIS assumption (Number of vehicles = 125% of the total pieces of equipment)
Number of Vehicle Trips	12	Trips per day
Trip Length	20	miles per round trip to nearest dump
Total VMT	240	miles/day

Composite Vehicle Emission Factors for the year 2011 from the SCAQMD

Pollutant	EF (lbs/mi)	Daily Emissions (lbs/day)
VOC	0.00085233	**0.2**
CO	0.00826276	**2.0**
NOx	0.00084460	**0.2**
Sox	0.00001077	**0.0**
PM10	0.00008879	**0.0**
PM2.5	0.00005653	**0.0**
CO2	1.10235154	**264.6**
CH4	0.00007678	**0.0**

Structure Demolition Haul Truck Emissions

Total Volume to be Hauled	879	cu-yds
Volume of Each Haul Truck	20	cy-yds
Number of Haul Trucks	44	trucks
Number of Haul Truck Trips	88	trips
Duration of Structure Demolition	44	days (assumes 2 months)
Number of Trips per Day	2	trips/day
Hault Truck Trip Distance	20	miles
Daily VMT	40	miles per day

Composite Vehicle Emisison Factors for Heavy Duty Trucks for the year 2011 from the SCAQMD

Pollutant	EF (lbs/mi)	Daily Emissions (lbs/day)
VOC	0.00279543	**0.1**
CO	0.01112463	**0.4**
NOx	0.03455809	**1.4**
Sox	0.00003972	**0.0**
PM10	0.00166087	**0.1**
PM2.5	0.00144489	**0.1**
CO2	4.2204568	**168.6**
CH4	0.0001291	**0.0**

Paved Road Dust Emissions

Paved Road Dust Emission Factor (lb/VMT) = k x (sL/2)^0.65 x (W/3)^1.5		
sL, Silt Loading	0.02	g/m2 (assumed to be freeway travel)
W, Average Vehicle Weight (tons)	29	tons (weight of haul trucks)
k, Particulate Size Multiplier	0.016	
PM10 Emission Factor	0.024	lbs/mi (URBEMIS Model equation for paved road dust)
Daily VMT	40	miles/day
PM10 Emissions	1.0	lbs/day
PM2.5 Emissions	0.2	lbs/day - assumed to be 21% of PM10

TOTAL Structure Demolition Emissions (with mitigation)

Pollutant	Daily Total Emissions (lbs/day)	Daily Onsite Emissions (lbd/day)
VOC	**5.5**	5.2
CO	**23.8**	21.4
NOx	**38.1**	36.5
Sox	**0.1**	0.1
PM10	**7.2**	6.2
PM2.5	**3.1**	2.8
CO2	**5427.6**	4994.4
CH4	**0.5**	0.5

Annual GHG Emissions

Duration of Demolition:	5	days
Total CO2 Emissions	14	tons

References:

URBEMIS2007 Software User's Guide
SCAQMD Off-Road OFFROAD Model Mobile Source Emission Factors
SCAQMD On-Road EMFAC2007 Emission Factors

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\MBA\Sierra Madre School\CurrentProject.urb924

Project Name: Sierra Madre Upper Campus School Expansion - Existing Project

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.25	0.22	1.72	0.00	0.01	0.01	248.32
TOTALS (lbs/day, mitigated)	0.25	0.22	1.72	0.00	0.01	0.01	248.32
Percent Reduction	0.00	0.00	0.00	NaN	0.00	0.00	0.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	3.80	3.85	32.68	0.04	7.17	1.40	4,051.89

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	4.05	4.07	34.40	0.04	7.18	1.41	4,300.21

Both Area and Operational Mitigation must be turned on to get a combined mitigated total.

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Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.01	0.20	0.17	0.00	0.00	0.00	245.51
Hearth - No Summer Emissions							
Landscape	0.12	0.02	1.55	0.00	0.01	0.01	2.81
Consumer Products	0.00						
Architectural Coatings	0.12						
TOTALS (lbs/day, mitigated)	0.25	0.22	1.72	0.00	0.01	0.01	248.32

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 10% to 0%

Percentage of residences with wood fireplaces changed from 5% to 0%

Percentage of residences with natural gas fireplaces changed from 85% to 0%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Junior high school	3.80	3.85	32.68	0.04	7.17	1.40	4,051.89
TOTALS (lbs/day, unmitigated)	3.80	3.85	32.68	0.04	7.17	1.40	4,051.89

Operational Settings:

Does not include correction for passby trips

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Does not include double counting adjustment for internal trips

Analysis Year: 2011 Temperature (F): 80 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Junior high school		1.73	students	249.00	430.77	4,148.32
					430.77	4,148.32

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	61.9	0.8	99.0	0.2
Light Truck < 3750 lbs	8.8	2.7	94.6	2.7
Light Truck 3751-5750 lbs	27.6	0.4	99.6	0.0
Med Truck 5751-8500 lbs	0.0	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.0	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	0.0	64.3	35.7	0.0
School Bus	1.7	0.0	0.0	100.0
Motor Home	0.0	0.0	88.9	11.1

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Junior high school				20.0	10.0	70.0

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: C:\MBA\Sierra Madre School\CurrentProject.urb924

Project Name: Sierra Madre Upper Campus School Expansion - Existing Project

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.13	0.20	0.17	0.00	0.00	0.00	245.51
TOTALS (lbs/day, mitigated)	0.13	0.20	0.17	0.00	0.00	0.00	245.51
Percent Reduction	0.00	0.00	0.00	NaN	NaN	NaN	0.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	3.20	4.59	30.23	0.03	7.17	1.40	3,647.61

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	3.33	4.79	30.40	0.03	7.17	1.40	3,893.12

Both Area and Operational Mitigation must be turned on to get a combined mitigated total.

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Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.01	0.20	0.17	0.00	0.00	0.00	245.51
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping - No Winter Emissions							
Consumer Products	0.00						
Architectural Coatings	0.12						
TOTALS (lbs/day, mitigated)	0.13	0.20	0.17	0.00	0.00	0.00	245.51

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 10% to 0%

Percentage of residences with wood fireplaces changed from 5% to 0%

Percentage of residences with natural gas fireplaces changed from 85% to 0%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Junior high school	3.20	4.59	30.23	0.03	7.17	1.40	3,647.61
TOTALS (lbs/day, unmitigated)	3.20	4.59	30.23	0.03	7.17	1.40	3,647.61

Operational Settings:

Does not include correction for passby trips

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Does not include double counting adjustment for internal trips

Analysis Year: 2011 Temperature (F): 60 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Junior high school		1.73	students	249.00	430.77	4,148.32
					430.77	4,148.32

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	61.9	0.8	99.0	0.2
Light Truck < 3750 lbs	8.8	2.7	94.6	2.7
Light Truck 3751-5750 lbs	27.6	0.4	99.6	0.0
Med Truck 5751-8500 lbs	0.0	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.0	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	0.0	64.3	35.7	0.0
School Bus	1.7	0.0	0.0	100.0
Motor Home	0.0	0.0	88.9	11.1

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Junior high school				20.0	10.0	70.0

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\MBA\Sierra Madre School\ProposedProject_Operations.urb924

Project Name: Sierra Madre Upper School Expansion - Proposed Project - Operations

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.35	0.36	1.84	0.00	0.01	0.01	410.03

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	6.27	5.76	53.66	0.07	11.73	2.27	6,577.54

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	6.62	6.12	55.50	0.07	11.74	2.28	6,987.57

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.02	0.34	0.29	0.00	0.00	0.00	407.22
Hearth - No Summer Emissions							
Landscape	0.12	0.02	1.55	0.00	0.01	0.01	2.81
Consumer Products	0.00						
Architectural Coatings	0.21						
TOTALS (lbs/day, unmitigated)	0.35	0.36	1.84	0.00	0.01	0.01	410.03

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 10% to 0%

Percentage of residences with wood fireplaces changed from 5% to 0%

Percentage of residences with natural gas fireplaces changed from 85% to 0%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Junior high school	6.27	5.76	53.66	0.07	11.73	2.27	6,577.54
TOTALS (lbs/day, unmitigated)	6.27	5.76	53.66	0.07	11.73	2.27	6,577.54

Operational Settings:

Does not include correction for passby trips

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Does not include double counting adjustment for internal trips

Analysis Year: 2011 Temperature (F): 80 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Junior high school		1.71	students	413.00	706.23	6,800.99
					706.23	6,800.99

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	62.2	0.8	99.0	0.2
Light Truck < 3750 lbs	8.8	2.7	94.6	2.7
Light Truck 3751-5750 lbs	27.7	0.4	99.6	0.0
Med Truck 5751-8500 lbs	0.0	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.0	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	0.0	64.3	35.7	0.0
School Bus	1.3	0.0	0.0	100.0
Motor Home	0.0	0.0	88.9	11.1

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Junior high school				20.0	10.0	70.0

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: C:\MBA\Sierra Madre School\ProposedProject_Operations.urb924

Project Name: Sierra Madre Upper School Expansion - Proposed Project - Operations

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.23	0.34	0.29	0.00	0.00	0.00	407.22

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	5.27	6.93	49.61	0.05	11.73	2.27	5,912.10

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	5.50	7.27	49.90	0.05	11.73	2.27	6,319.32

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Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Junior high school	5.27	6.93	49.61	0.05	11.73	2.27	5,912.10
TOTALS (lbs/day, unmitigated)	5.27	6.93	49.61	0.05	11.73	2.27	5,912.10

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2011 Temperature (F): 60 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Junior high school		1.71	students	413.00	706.23	6,800.99
					706.23	6,800.99

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	62.2	0.8	99.0	0.2
Light Truck < 3750 lbs	8.8	2.7	94.6	2.7
Light Truck 3751-5750 lbs	27.7	0.4	99.6	0.0
Med Truck 5751-8500 lbs	0.0	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	60.0	40.0

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.0	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	0.0	64.3	35.7	0.0
School Bus	1.3	0.0	0.0	100.0
Motor Home	0.0	0.0	88.9	11.1

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Junior high school				20.0	10.0	70.0

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\MBA\Sierra Madre School\CurrentProject.urb924

Project Name: Sierra Madre Upper Campus School Expansion - Existing Project

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	45.32
TOTALS (tons/year, mitigated)	45.32
Percent Reduction	0.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	714.88

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	760.20

Both Area and Operational Mitigation must be turned on to get a combined mitigated total.

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Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Mitigated

Source	CO2
Natural Gas	44.81
Hearth	0.00
Landscape	0.51
Consumer Products	
Architectural Coatings	
TOTALS (tons/year, mitigated)	45.32

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 10% to 0%

Percentage of residences with wood fireplaces changed from 5% to 0%

Percentage of residences with natural gas fireplaces changed from 85% to 0%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	CO2
Junior high school	714.88
TOTALS (tons/year, unmitigated)	714.88

Operational Settings:

Does not include correction for passby trips

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Does not include double counting adjustment for internal trips

Analysis Year: 2011 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Junior high school		1.73	students	249.00	430.77	4,148.32
					430.77	4,148.32

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	61.9	0.8	99.0	0.2
Light Truck < 3750 lbs	8.8	2.7	94.6	2.7
Light Truck 3751-5750 lbs	27.6	0.4	99.6	0.0
Med Truck 5751-8500 lbs	0.0	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.0	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	0.0	64.3	35.7	0.0
School Bus	1.7	0.0	0.0	100.0
Motor Home	0.0	0.0	88.9	11.1

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Junior high school				20.0	10.0	70.0

Electricity - Indirect Emissions - Current Project

Project:	Sierra Madre Upper School Campus
Prepared by:	Michael Brandman Associates
Prepared on:	2/9/2010

Land Use	square feet (sf)	Electricity Use (kWh/sf-year)*	Electricity Use (kWh/year)	
Current Project - Middle School	40,411	7.46	301466.06	
			0	
			0	
			0	
Total			301466.06	
			301	MWh/year

Greenhouse Gas	Emission Factor (pounds per MWh)	Emissions (pounds/year)	Emissions (tons/year)
Carbon dioxide	724.12	218,298	109
Methane	0.0302	9	0.00
Nitrous oxide	0.0081	2	0.00

Table E-1: Overview of Energy Usage in the Statewide Service Area

Building Type	Floor Stock (kft^2)	Annual Energy Intensities			Total Annual Usage	
		Electricity (kWh/ft^2)	Natural Gas (therms/ft^2)	Natural Gas (kBtu/ft^2)	Electricity (GWh)	Natural Gas (Mtherms)
All Commercial	4,920,114	13.63	0.26	25.99	67077	1278.60
Small Office (<30k ft^2)	361,584	13.10	0.11	10.54	4738	38.10
Large Office (>=30k ft^2)	660,429	17.70	0.22	21.93	11691	144.80
Restaurant	148,892	40.20	2.10	209.98	5986	312.60
Retail	702,053	14.06	0.05	4.62	9871	32.50
Food Store	144,209	40.99	0.28	27.60	5911	39.80
Refrigerated Warehouse	95,540	20.02	0.06	5.60	1913	5.30
Unrefrigerated Warehouse	554,166	4.45	0.03	3.07	2467	17.00
School	445,106	7.46	0.16	15.97	3322	71.10
College	205,942	12.26	0.34	34.24	2524	70.50
Health	232,606	19.61	0.76	75.53	4561	175.70
Lodging	270,044	12.13	0.42	42.40	3275	114.50
Miscellaneous	1,099,544	9.84	0.23	23.34	10817	256.60
All Offices	1,022,012	16.08	0.18	17.90	16430	182.90
All Warehouses	649,706	6.74	0.03	3.44	4380	22.40

Water Conveyance, Treatment, Distribution – Current Project

Project: Sierra Madre Upper School Campus
Prepared by: Michael Brandman Associates
Prepared on: 2/9/2010

	kWh per million gallons	
Electricity Requirements	**Northern California**	**Southern California**
Water Supply, Conveyance	2,117	9,727
Water Treatment	111	111
Water Distribution	1,272	1,272
Wastewater Treatment	1,911	1,911
Total	*5,411*	*13,021*

Project		
Water Usage	5205	gallons per day
Water Usage	1.899825	million gallons per year
Energy Usage	24,738	kWh
Energy Usage	25	MWh

Greenhouse Gas	**Electricity Emission Factor (pounds per MWh)**	**Emissions (pounds/year)**	**Emissions (tons/year)**
Carbon dioxide	724.12	17,913	9
Methane	0.0302	0.75	0.000
Nitrous oxide	0.0081	0.20	0.000

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\MBA\Sierra Madre School\ProposedProject_Operations.urb924

Project Name: Sierra Madre Upper School Expansion - Proposed Project - Operations

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	74.83

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	1,159.92

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	1,234.75

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	CO2
Natural Gas	74.32
Hearth	0.00
Landscape	0.51
Consumer Products	
Architectural Coatings	
TOTALS (tons/year, unmitigated)	74.83

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 10% to 0%

Percentage of residences with wood fireplaces changed from 5% to 0%

Percentage of residences with natural gas fireplaces changed from 85% to 0%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	CO2
Junior high school	1,159.92
TOTALS (tons/year, unmitigated)	1,159.92

Operational Settings:

Does not include correction for passby trips

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Does not include double counting adjustment for internal trips

Analysis Year: 2011 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Junior high school		1.71	students	413.00	706.23	6,800.99
					706.23	6,800.99

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	62.2	0.8	99.0	0.2
Light Truck < 3750 lbs	8.8	2.7	94.6	2.7
Light Truck 3751-5750 lbs	27.7	0.4	99.6	0.0
Med Truck 5751-8500 lbs	0.0	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.0	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	0.0	64.3	35.7	0.0
School Bus	1.3	0.0	0.0	100.0
Motor Home	0.0	0.0	88.9	11.1

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Junior high school				20.0	10.0	70.0

Electricity - Indirect Emissions - Proposed Project

Project:	Sierra Madre Upper School Campus
Prepared by:	Michael Brandman Associates
Prepared on:	2/9/2010

Land Use	square feet (sf)	Electricity Use (kWh/sf-year)*	Electricity Use (kWh/year)	
Current Project - Middle School	72,130	7.46	538089.8	
			0	
			0	
			0	
Total			538089.8	
			538	MWh/year

Greenhouse Gas	Emission Factor (pounds per MWh)	Emissions (pounds/year)	Emissions (tons/year)
Carbon dioxide	724.12	389,642	195
Methane	0.0302	16	0.01
Nitrous oxide	0.0081	4	0.00

Table E-1: Overview of Energy Usage in the Statewide Service Area

Building Type	Floor Stock (kft^2)	Annual Energy Intensities			Total Annual Usage	
		Electricity (kWh/ft^2)	Natural Gas (therms/ft^2)	Natural Gas (kBtu/ft^2)	Electricity (GWh)	Natural Gas (Mtherms)
All Commercial	4,920,114	13.63	0.26	25.99	67077	1278.60
Small Office (<30k ft^2)	361,584	13.10	0.11	10.54	4738	38.10
Large Office (>=30k ft^2)	660,429	17.70	0.22	21.93	11691	144.80
Restaurant	148,892	40.20	2.10	209.98	5986	312.60
Retail	702,053	14.06	0.05	4.62	9871	32.50
Food Store	144,209	40.99	0.28	27.60	5911	39.80
Refrigerated Warehouse	95,540	20.02	0.06	5.60	1913	5.30
Unrefrigerated Warehouse	554,166	4.45	0.03	3.07	2467	17.00
School	445,106	7.46	0.16	15.97	3322	71.10
College	205,942	12.26	0.34	34.24	2524	70.50
Health	232,606	19.61	0.76	75.53	4561	175.70
Lodging	270,044	12.13	0.42	42.40	3275	114.50
Miscellaneous	1,099,544	9.84	0.23	23.34	10817	256.60
All Offices	1,022,012	16.08	0.18	17.90	16430	182.90
All Warehouses	649,706	6.74	0.03	3.44	4380	22.40

Water Conveyance, Treatment, Distribution - Proposed Project

Project:	Sierra Madre Upper School Campus	Is project in Northern California or Southern California?
Prepared by:	Michael Brandman Associates	Enter 1 for Southern and 2 for Northern
Prepared on:	2/9/2010	

Electricity Requirements	**kWh per million gallons Northern California**	**Southern California**
Water Supply, Conveyance	2,117	9,727
Water Treatment	111	111
Water Distribution	1,272	1,272
Wastewater Treatment	1,911	1,911
Total	*5,411*	*13,021*

Project

Water Usage	9369	gallons per day	<----- Supplied by the PUSD
Water Usage	3.419685	million gallons per year	
Energy Usage	44,528	kWh	
Energy Usage	45	MWh	

Greenhouse Gas	**Electricity Emission Factor (pounds per MWh)**	**Emissions (pounds/year)**	**Emissions (tons/year)**
Carbon dioxide	724.12	32,243	16
Methane	0.0302	1.34	0.001
Nitrous oxide	0.0081	0.36	0.000

Table 1
TRAFFIC NOISE IMPACT
FILE: NOIZMSTR YEAR 2011

Location: North on North Canon Avenue

Vehicle Type	Traffic Volume 24-hr volume	Traffic Volume Equiv 1-hr	Noise Reference Level (15 meters)	Noise Level (dB Ldn) Centerline Distance (feet) 50 (15 meters)	100 (30 meters)	200 (61 meters)	400 (122 meters)	800 (244 meters)	1600 (488 meters)	3200 (975 meters)
EXISTING										
Autos	344	34	44.7	44.6	40.1	35.6	31.1	26.6	22.0	17.5
Med Trucks	46	4	48.0	47.9	43.4	38.9	34.4	29.9	25.4	20.8
Hvy Trucks	69	7	57.0	56.9	52.4	47.8	43.3	38.8	34.3	29.8
TOTAL	459	45	57.7	57.6	53.1	48.6	44.1	39.6	35.0	30.5
FUTURE NO PROJECT										
Autos	344	34	44.7	44.6	40.1	35.6	31.1	26.6	22.0	17.5
Med Trucks	46	4	48.0	47.9	43.4	38.9	34.4	29.9	25.4	20.8
Hvy Trucks	69	7	57.0	56.9	52.4	47.8	43.3	38.8	34.3	29.8
TOTAL	459	45	57.7	57.6	53.1	48.6	44.1	39.6	35.0	30.5
FUTURE WITH PROJECT										
Autos	556	54	46.8	46.7	42.2	37.7	33.2	28.6	24.1	19.6
Med Trucks	74	7	50.1	50.0	45.5	41.0	36.5	32.0	27.4	22.9
Hvy Trucks	111	11	59.1	59.0	54.4	49.9	45.4	40.9	36.4	31.9
TOTAL	741	73	59.8	59.7	55.2	50.7	46.2	41.6	37.1	32.6
CHANGE FROM EXISTING										
Autos	212	21	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Med Trucks	28	3	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Hvy Trucks	42	4	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
TOTAL	282	28	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
CHANGE FROM FUTURE NO PROJECT										
Autos	212	21	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Med Trucks	28	3	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Hvy Trucks	42	4	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
TOTAL	282	28	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1

Average speed: 40.2 km/hr= 25.0 mi/hr

Time of day:

70.0%	Day
15.0%	Evening
15.0%	Night
100.0%	

Fleet Mix:

75.0%	Autos
10.0%	Medium Trucks
15.0%	Heavy Trucks
100.0%	

Notes: Based on methods of Federal Highway Administration "Highway Traffic Noise Model", FHWA-RD-77-108, December, 2008 version

Traffic data obtained from Kunzman Associates 2010 report

KUNZMAN ASSOCIATES, INC.
OVER 30 YEARS OF EXCELLENT SERVICE

January 18, 2010

Mr. Bob Prasse, Senior Project Manager
MICHAEL BRANDMAN ASSOCIATES
621 East Carnegie Drive, Suite 100
San Bernardino, CA 92408

Dear Mr. Prasse:

INTRODUCTION

The firm of Kunzman Associates, Inc. is pleased to provide this focused traffic analysis for the Sierra Madre Upper Campus School project in the City of Sierra Madre. The project site is located at 160 North Canon Avenue in the City of Sierra Madre. Figure 1 illustrates the project location map.

This report summarizes our methodology, analysis and findings. We trust that the findings, which are summarized in the front of the report, will be of immediate as well as continuing value to you and the Pasadena Unified School District in evaluating the project.

Although this is a technical report, every effort has been made to write the report clearly and concisely. To assist the reader with those terms unique to transportation engineering, a glossary of terms is provided in Appendix A.

PROJECT DESCRIPTION

The Sierra Madre Upper Campus School is a middle school for grades 6-8. The current student enrollment for the school is 334 students and will increase to 550 students. The classroom hours of the campus are from 7:40 AM to 2:30 PM. Figure 2 shows the project site plan.

The following tables have relevant land use data provided by the applicant:

Current Project					
Land Use	Number of Students	Type of Bus	Number of Buses	Average Student Bus Ridership	Average Non-Bus Ridership Students
Middle School (6-8)	334	Full Size	3	66	249
		Special Ed	4	19	
Total	334		7	85	249

1111 TOWN & COUNTRY ROAD, SUITE 34, ORANGE, CA 92868
PHONE: (714) 973-8383 • FAX: (714) 973-8821

WWW.TRAFFIC-ENGINEER.COM

Proposed Project					
Land Use	Number of Students	Type of Bus	Number of Buses	Average Student Bus Ridership	Average Non-Bus Ridership Students
Middle School (6-8)	550	Full Size	4	106	413
		Special Ed	5	31	
Total	550		9	137	413

EXISTING TRAFFIC CONDITIONS

Figure 3 identifies the existing roadway conditions for the study area roadways. The number of through lanes for existing roadways and the existing intersection controls are identified.

PROJECT TRAFFIC GENERATION

The traffic generated by the project is determined by multiplying an appropriate trip generation rate by the quantity of land use. Trip generation rates are predicated on the assumption that energy costs, the availability of roadway capacity, the availability of vehicles to drive, and our life styles remain similar to what we know today. A major change in these variables may affect trip generation rates.

Trip generation rates were determined for daily traffic, morning peak hour inbound and outbound traffic, and evening peak hour inbound and outbound traffic for the proposed land use. Tables 1 and 2 show the project traffic generation based upon the Institute of Transportation Engineers, Trip Generation, 8th Edition, 2008. By multiplying the trip generation rate by the project land use, the traffic volumes are determined.

The current project is projected to generate approximately 459 daily vehicle trips, 163 of which will occur during the morning peak hour and 68 of which will occur during the evening peak hour (see Table 1).

The proposed project projected to generate approximately 741 daily vehicle trips, 259 of which will occur during the morning peak hour and 102 of which will occur during the evening peak hour for the proposed development traffic conditions (see Table 2).

TRAFFIC GENERATION COMPARISON

The traffic generation comparison calculations are shown in Table 3. The difference in vehicle trips and percent difference in vehicle trips are calculated.

The proposed project compared to the current project is projected to generate approximately 282 more daily vehicle trips (741 – 459 = 282), 96 of which will occur during the morning peak hour (259 – 163 = 96) and 34 of which will occur during the evening peak hour (102 – 68 = 34).

PROJECT TRAFFIC DISTRIBUTION

To determine the traffic distribution for the proposed project, a peak hour traffic count of the existing directional distribution of traffic for the current project were conducted on a Thursday (January 14, 2010) between 2:25 PM and 2:45 PM at the intersection of North Canon Avenue and East Highland Avenue. Figure 4 contains the directional distribution for the proposed project.

MODAL SPLIT

The traffic reducing potential of students who walk/bike/carpool to school has not been considered in this report. Essentially the traffic projections are conservative in that walking/biking/carpooling to school will be able to reduce the traffic volumes.

PROJECT TRAFFIC VOLUMES

Based on the identified traffic generation and distribution, the project traffic volumes have been calculated and are shown below:

Location	% of Project	Additional Project Traffic Volume	
		Morning	Evening
North on North Canon Avenue	28%	27	10
South on North Canon Avenue	47%	45	16
West on East Highland Avenue	25%	24	8

CONCLUSIONS

The Los Angeles County Congestion Management Program Traffic Impact Assessment Guidelines require that intersection monitoring locations must be examined if the proposed project will add 50 or more trips during either the morning or evening weekday periods. The traffic analysis must include all monitored intersections to which the project adds traffic above 50 peak hour trips. The proposed project is not projected to add 50 additional peak hour trips to intersections in the vicinity of the project.

The County of Los Angeles Traffic Impact Analysis Report Guidelines recommends that a traffic report is generally needed if a project generates over 500 trips per day. The proposed project is not projected to generate 500 additional trips per day.

Mr. Bob Prasse, Senior Project Manager
MICHAEL BRANDMAN ASSOCIATES
January 18, 2010

It has been a pleasure to serve your needs on the Sierra Madre Upper Campus School project. Should you have any questions or if we can be of further assistance, please do not hesitate to call at (714) 973-8383.

Sincerely,

KUNZMAN ASSOCIATES, INC.

Carl Ballard
Principal Associate

KUNZMAN ASSOCIATES, INC.

William Kunzman, P.E.
Principal
Professional Registration
Expiration Date 3-31-2010

#4580

Table 1

Current Project Traffic Generation[1]

Land Use	Quantity	Units[2]	Peak Hour						Daily
			Morning			Evening			
			Inbound	Outbound	Total	Inbound	Outbound	Total	
Trip Generation Rates									
Middle School	249	ST	0.3	0.24	0.54	0.08	0.08	0.16	1.62
Trips Generated									
Middle School	249	ST	75	60	135	20	20	40	403
Buses[3]	7	BUSES	14	14	28	14	14	28	56
Total			89	74	163	34	34	68	459

[1] Source: Institute of Transportation Engineers, Trip Generation, 8th Edition, 2008, Land Use Category 522.

[2] ST = Students

[3] Buses have been converted to 2.0 Passenger Car Equivalent's (PCE's).

Table 2

Proposed Project Traffic Generation[1]

Land Use	Quantity	Units[2]	Peak Hour						Daily
			Morning			Evening			
			Inbound	Outbound	Total	Inbound	Outbound	Total	
Trip Generation Rates									
Middle School	413	ST	0.30	0.24	0.54	0.08	0.08	0.16	1.62
Trips Generated									
Middle School	413	ST	124	99	223	33	33	66	669
Buses[3]	9	BUSES	18	18	36	18	18	36	72
Total			142	117	259	51	51	102	741

[1] Source: Institute of Transportation Engineers, Trip Generation, 8th Edition, 2008, Land Use Category 522.

[2] ST = Students

[3] Buses have been converted to 2.0 Passenger Car Equivalent's (PCE's).

Table 3

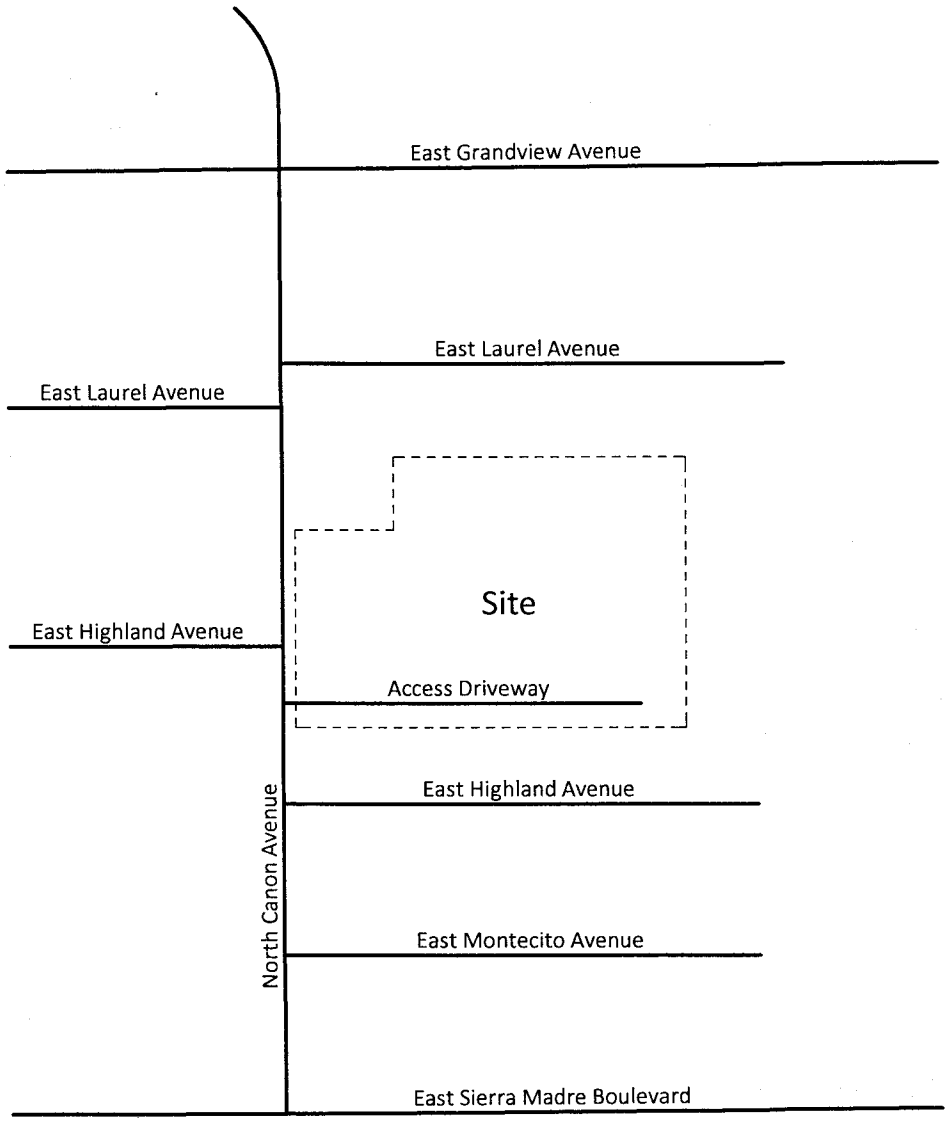
Traffic Generation Comparison

Description	Peak Hour						Daily
	Morning			Evening			
	Inbound	Outbound	Total	Inbound	Outbound	Total	
Proposed Project[1]	142	117	259	51	51	102	741
Current Project[2]	89	74	163	34	34	68	459
Increase	53	43	96	17	17	34	282

[1] See Table 2.

[2] See Table 1.

Figure 1
Project Location Map



N

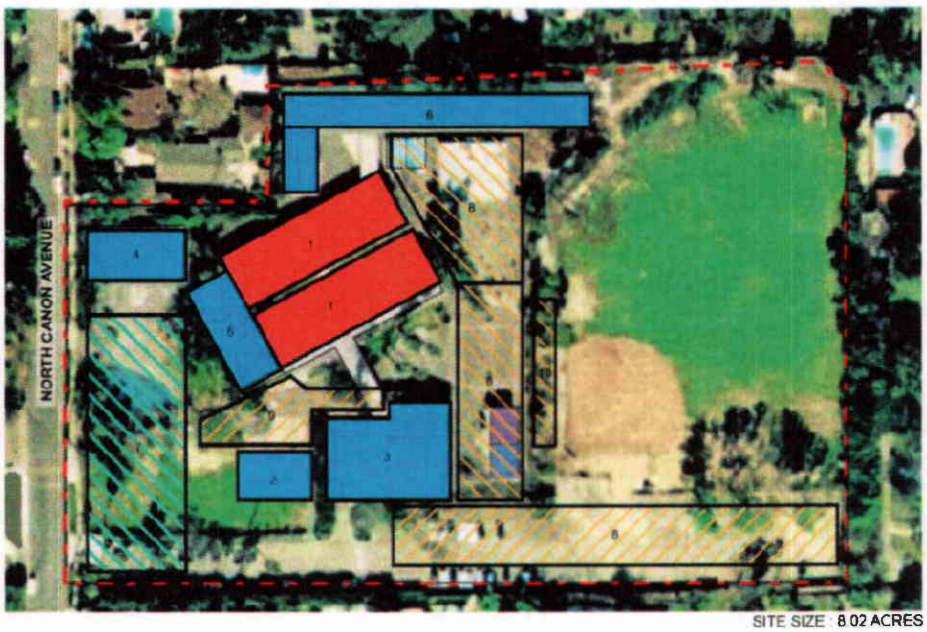
NTS

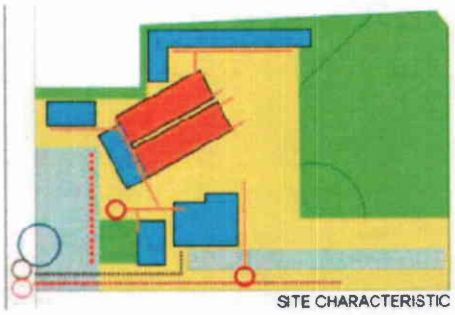
KUNZMAN ASSOCIATES, INC.

OVER 30 YEARS OF EXCELLENT SERVICE

4580/1

Figure 2
Site Plan





LEGEND

MODERNIZATION

1 CLASSROOM BUILDING

NEW CONSTRUCTION/ RECONSTRUCTION

ADMINSTRATION

GYMNASIUM / LOCKER ROOM CAFETERIA/ KITCHEN

TWO CLASSROOMS

LIBRARY / COMPUTER LAB

CLASSROOM BUILDING

SITE DEVELOPMENT

NEW DROP-OFF / FACULTY PARKING WITH FENCE / LIGHTING

RESURFACE PLAYGROUND / DRAINAGE / ADA COMPLIANCE

NEW ENTRY COURTYARD

10 NEW BLEACHERS

LEGEND

MODERNIZATION

NEW CONSTRUCTION / RECONSTRUCTION

PEDESTRIAN CIRCULATION

FIRE ACCESS

SERVICE ACCESS

DROP OFF

GRASSED AREA

PAVED AREA

PARKING

N

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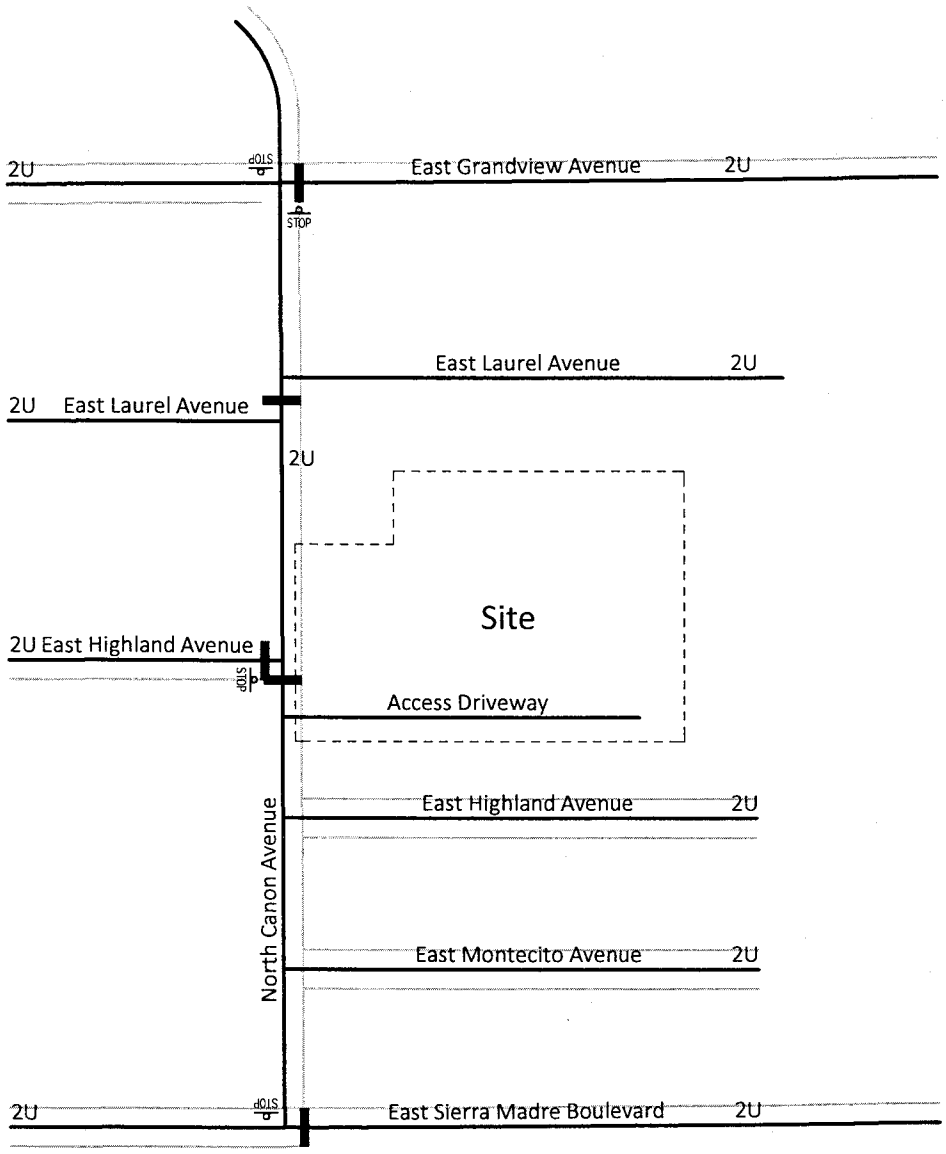
KUNZMAN ASSOCIATES, INC.

OVER 30 YEARS OF EXCELLENT SERVICE

Source: gkkworks, 2009

4580/2

Figure 3
Existing Through Travel Lanes and Intersection Controls



Legend

STOP = Stop Sign
2 = Through Travel Lanes
U = Undivided
= Crosswalk
= Sidewalk

N

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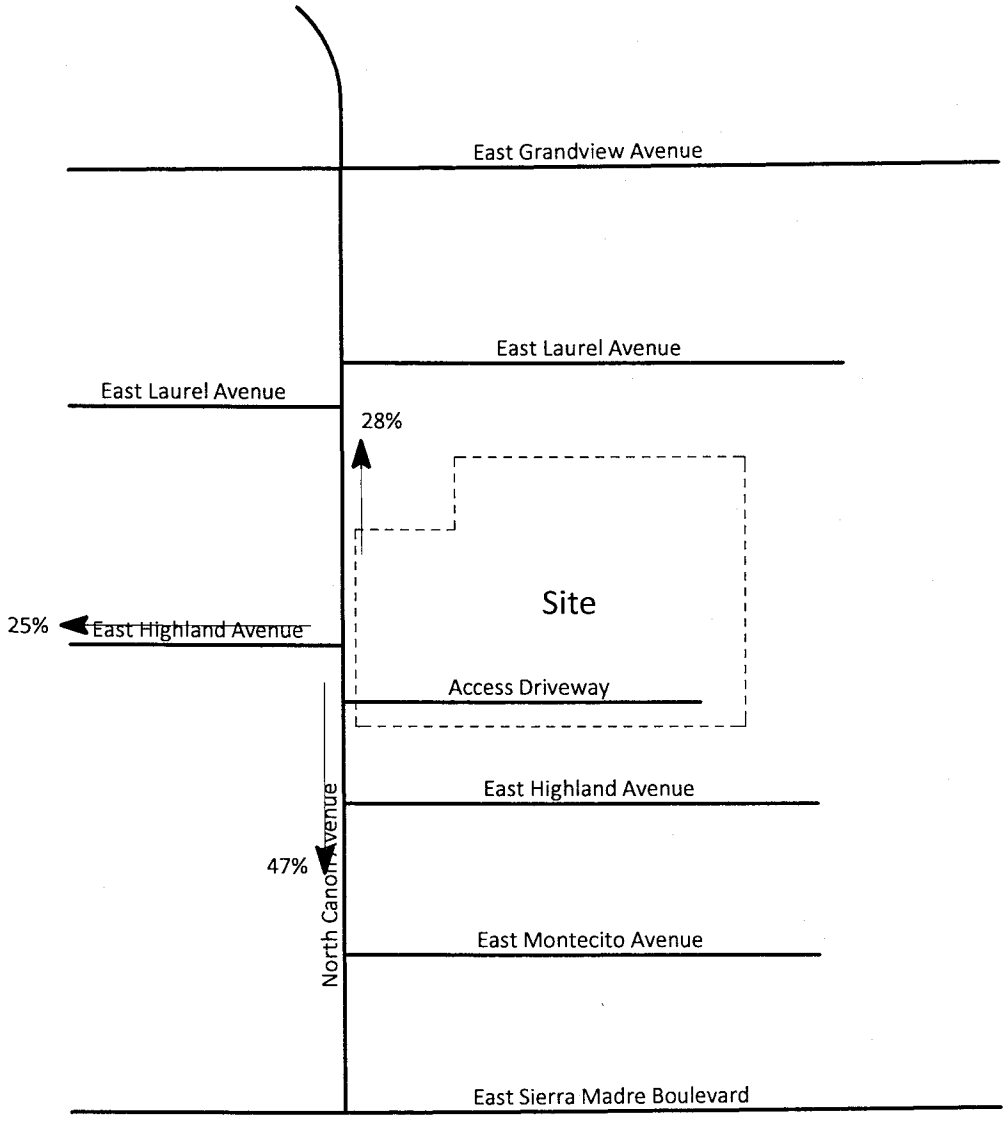
KUNZMAN ASSOCIATES, INC.

OVER 30 YEARS OF EXCELLENT SERVICE

4580/3

Figure 4
Project Traffic Distribution



Legend

10% = Percent To/From Project

N

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KUNZMAN ASSOCIATES, INC.

OVER 30 YEARS OF EXCELLENT SERVICE

4580/4

APPENDIX A

GLOSSARY OF TRANSPORTATION TERMS

GLOSSARY OF TRANSPORTATION TERMS

COMMON ABBREVIATIONS

AC:	Acres
ADT:	Average Daily Traffic
Caltrans:	California Department of Transportation
DU:	Dwelling Unit
ICU:	Intersection Capacity Utilization
LOS:	Level of Service
TSF:	Thousand Square Feet
V/C:	Volume/Capacity
VMT:	Vehicle Miles Traveled

TERMS

AVERAGE DAILY TRAFFIC: The total volume during a year divided by the number of days in a year. Usually only weekdays are included.

BANDWIDTH: The number of seconds of green time available for through traffic in a signal progression.

BOTTLENECK: A constriction along a travelway that limits the amount of traffic that can proceed downstream from its location.

CAPACITY: The maximum number of vehicles that can be reasonably expected to pass over a given section of a lane or a roadway in a given time period.

CHANNELIZATION: The separation or regulation of conflicting traffic movements into definite paths of travel by the use of pavement markings, raised islands, or other suitable means to facilitate the safe and orderly movements of both vehicles and pedestrians.

CLEARANCE INTERVAL: Nearly same as yellow time. If there is an all red interval after the end of a yellow, then that is also added into the clearance interval.

CORDON: An imaginary line around an area across which vehicles, persons, or other items are counted (in and out).

CYCLE LENGTH: The time period in seconds required for one complete signal cycle.

CUL-DE-SAC STREET: A local street open at one end only, and with special provisions for turning around.

DAILY CAPACITY: The daily volume of traffic that will result in a volume during the peak hour equal to the capacity of the roadway.

DELAY: The time consumed while traffic is impeded in its movement by some element over which it has no control, usually expressed in seconds per vehicle.

DEMAND RESPONSIVE SIGNAL: Same as traffic-actuated signal.

DENSITY: The number of vehicles occupying in a unit length of the through traffic lanes of a roadway at any given instant. Usually expressed in vehicles per mile.

DETECTOR: A device that responds to a physical stimulus and transmits a resulting impulse to the signal controller.

DESIGN SPEED: A speed selected for purposes of design. Features of a highway, such as curvature, superelevation, and sight distance (upon which the safe operation of vehicles is dependent) are correlated to design speed.

DIRECTIONAL SPLIT: The percent of traffic in the peak direction at any point in time.

DIVERSION: The rerouting of peak hour traffic to avoid congestion.

FORCED FLOW: Opposite of free flow.

FREE FLOW: Volumes are well below capacity. Vehicles can maneuver freely and travel is unimpeded by other traffic.

GAP: Time or distance between successive vehicles in a traffic stream, rear bumper to front bumper.

HEADWAY: Time or distance spacing between successive vehicles in a traffic stream, front bumper to front bumper.

INTERCONNECTED SIGNAL SYSTEM: A number of intersections that are connected to achieve signal progression.

LEVEL OF SERVICE: A qualitative measure of a number of factors, which include speed and travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, and operating costs.

LOOP DETECTOR: A vehicle detector consisting of a loop of wire embedded in the roadway, energized by alternating current and producing an output circuit closure when passed over by a vehicle.

MINIMUM ACCEPTABLE GAP: Smallest time headway between successive vehicles in a traffic stream into which another vehicle is willing and able to cross or merge.

MULTI-MODAL: More than one mode; such as automobile, bus transit, rail rapid transit, and bicycle transportation modes.

OFFSET: The time interval in seconds between the beginning of green at one intersection and the beginning of green at an adjacent intersection.

PLATOON: A closely grouped component of traffic that is composed of several vehicles moving, or standing ready to move, with clear spaces ahead and behind.

ORIGIN-DESTINATION SURVEY: A survey to determine the point of origin and the point of destination for a given vehicle trip.

PASSENGER CAR EQUIVALENTS (PCE): One car is one Passenger Car Equivalent. A truck is equal to 2 or 3 Passenger Car Equivalents in that a truck requires longer to start, goes slower, and accelerates slower. Loaded trucks have a higher Passenger Car Equivalent than empty trucks.

PEAK HOUR: The 60 consecutive minutes with the highest number of vehicles.

PRETIMED SIGNAL: A type of traffic signal that directs traffic to stop and go on a predetermined time schedule without regard to traffic conditions. Also, fixed time signal.

PROGRESSION: A term used to describe the progressive movement of traffic through several signalized intersections.

SCREEN-LINE: An imaginary line or physical feature across which all trips are counted, normally to verify the validity of mathematical traffic models.

SIGNAL CYCLE: The time period in seconds required for one complete sequence of signal indications.

SIGNAL PHASE: The part of the signal cycle allocated to one or more traffic movements.

STARTING DELAY: The delay experienced in initiating the movement of queued traffic from a stop to an average running speed through a signalized intersection.

TRAFFIC-ACTUATED SIGNAL: A type of traffic signal that directs traffic to stop and go in accordance with the demands of traffic, as registered by the actuation of detectors.

TRIP: The movement of a person or vehicle from one location (origin) to another (destination). For example, from home to store to home is two trips, not one.

TRIP-END: One end of a trip at either the origin or destination; i.e. each trip has two trip-ends. A trip-end occurs when a person, object, or message is transferred to or from a vehicle.

TRIP GENERATION RATE: The quality of trips produced and/or attracted by a specific land use stated in terms of units such as per dwelling, per acre, and per 1,000 square feet of floor space.

TRUCK: A vehicle having dual tires on one or more axles, or having more than two axles.

UNBALANCED FLOW: Heavier traffic flow in one direction than the other. On a daily basis, most facilities have balanced flow. During the peak hours, flow is seldom balanced in an urban area.

VEHICLE MILES OF TRAVEL: A measure of the amount of usage of a section of highway, obtained by multiplying the average daily traffic by length of facility in miles.

WATER RECLAMATION
SOLID WASTE MANAGEMENT

COUNTY SANITATION DISTRICTS
OF LOS ANGELES COUNTY

1955 Workman Mill Road, Whittier, CA 90601-1400
Mailing Address: P.O. Box 4998, Whittier, CA 90607-4998
Telephone: (562) 699-7411, FAX: (562) 699-5422
www.lacsd.org

STEPHEN R. MAGUIN
Chief Engineer and General Manager

May 13, 2010

File No: 15-00.04-00

Mr. Steve Brinkman, Chief Facilities Planning
Pasadena Unified School District
740 W. Woodbury Road
Pasadena, CA 91103

Dear Mr. Brinkman:

Sierra Madre School Upper Campus

The County Sanitation Districts of Los Angeles County (Districts) received a Mitigated Negative Declaration for the subject project on April 28, 2010. The proposed development is located within the jurisdictional boundaries of District No. 15. We offer the following comments regarding sewerage service:

1. The wastewater flow originating from the proposed project will discharge to a local sewer line, which is not maintained by the Districts, for conveyance to the Districts' Arcadia-Sierra Madre Trunk Sewer, Sections 2 and 5, located in Sierra Madre Boulevard at Canon Avenue. This 9-inch diameter trunk sewer has a design capacity of 2.1 million gallons per day (mgd) and conveyed a peak flow of 0.7 mgd when last measured in 2009.

2. The wastewater generated by the proposed project will be treated at the San Jose Creek Water Reclamation Plant (WRP) located adjacent to the City of Industry, which has a design capacity of 100 mgd and currently processes an average flow of 76.2 mgd, or the Whittier Narrows WRP located near the City of South El Monte, which has a design capacity of 15 mgd and currently processes an average flow of 4.8 mgd.

3. The expected increase in average wastewater flow from the project site is 4,500 gallons per day. For a copy of the Districts' average wastewater generation factors, go to www.lacsd.org, Information Center, Will Serve Program, Obtain Will Serve Letter, and click on the appropriate link on page 2.

4. The Districts are authorized by the California Health and Safety Code to charge a fee for the privilege of connecting (directly or indirectly) to the Districts' Sewerage System or increasing the strength or quantity of wastewater attributable to a particular parcel or operation already connected. This connection fee is a capital facilities fee that is imposed in an amount sufficient to construct an incremental expansion of the Sewerage System to accommodate the proposed project. Payment of a connection fee will be required before a permit to connect to the sewer is issued. For a copy of the Connection Fee Information Sheet, go to www.lacsd.org, Information Center, Will Serve Program, Obtain Will Serve Letter, and click on the appropriate link on

page 2. For more specific information regarding the connection fee application procedure and fees, please contact the Connection Fee Counter at extension 2727.

5. In order for the Districts to conform to the requirements of the Federal Clean Air Act (CAA), the design capacities of the Districts' wastewater treatment facilities are based on the regional growth forecast adopted by the Southern California Association of Governments (SCAG). Specific policies included in the development of the SCAG regional growth forecast are incorporated into clean air plans, which are prepared by the South Coast and Antelope Valley Air Quality Management Districts in order to improve air quality in the South Coast and Mojave Desert Air Basins as mandated by the CAA. All expansions of Districts' facilities must be sized and service phased in a manner that will be consistent with the SCAG regional growth forecast for the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. The available capacity of the Districts' treatment facilities will, therefore, be limited to levels associated with the approved growth identified by SCAG. As such, this letter does not constitute a guarantee of wastewater service, but is to advise you that the Districts intend to provide this service up to the levels that are legally permitted and to inform you of the currently existing capacity and any proposed expansion of the Districts' facilities.

If you have any questions, please contact the undersigned at (562) 908-4288, extension 2717.

Very truly yours,

Stephen R. Maguin

Adriana Raza
Customer Service Specialist
Facilities Planning Department

AR:ar

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

May 26, 2010

Mr. Brinkman, Chief Facilities Planning
Pasadena Unified School District
740 W. Woodbury Road
Pasadena, CA 91103

RE: The Initial Study and Mitigated Negative Declaration (MND) for the Sierra Madre School Upper Campus Project

Dear Mr. Brinkman:

Southern California Edison (SCE) appreciates the opportunity to review and provide comment on the MND for the Sierra Madre School Upper Campus Project. The project is defined as a proposal to demolish all existing structures on-site and develop a grouping of two-story, small-scale buildings, totaling approximately 72,114 square feet. The total proposed increase in square footage compared to the original facilities is approximately 31,704 square feet. The project is stated to be located directly north of East Highland Avenue, east of North Canon Avenue, south of East Laurel Avenue, and west of Sierra Vista Park at 160 North Canon Avenue.

Page 50 of the MND indicates proposed Classroom Building E once constructed will be 119 feet from a 115-kilovolt (kV) transmission line. The referenced section reads as follows:

> "Upon construction of the proposed school buildings, a 115-kilovolt (kV) electrical transmission line will be located approximately 119 feet north of classroom building E and a 37.7 kV electrical transmission line will be located approximately 339 feet east of classroom building D. The California Code of Regulations, Title 5, Section 14010(c) specifies the following setback distances for school property lines and power line easements:
>
> 1. 100 feet for 50-133 kV line;
> 2. 150 feet for 220-230 kV line; and
> 3. 350 feet for 500-550 kV line.
>
> Consequently, both power lines will be at least 100-foot from the proposed school buildings, and, impacts associated with the power line will be less than significant".

According to our records, SCE doesn't have a 115 kV transmission line or 37.7 kV distribution line within the vicinity of the proposed project. We do, however, have 16 kV

distribution circuits bordering all four sides of the project site. SCE's nearest transmission lines to the proposed project include a 66kV subtransmission line over ½ mile away and a 220kV transmission line over 1 mile away. Referenced transmission lines, therefore, must be non-SCE facilities.

We hope our comments will assist you in the environmental review of the proposed project. If you have any questions regarding this letter, do not hesitate to contact me at 323-720-5290.

Sincerely,

Ronald Garcia

Ronald Garcia
Local Public Affairs Region Manager
Southern California Edison Company

MWD
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Executive Office

May 26, 2010

Mr. Steve Brinkman, Chief Facilities Planning
Pasadena Unified School District
740 W. Woodbury Road
Pasadena, California 91103

Dear Mr. Brinkman:

Notice of a Preparation of a
Draft Environmental Impact Report for the Sierra Madre School Upper Campus Project

Thank you for your letter and a map showing the location of your proposed project at 160 North Canon Avenue in the city of Sierra Madre.

We reviewed the notice and documentation and determined the proposed Project is not regionally significant to The Metropolitan Water District of Southern California (Metropolitan). However, we support increased water conservation efforts and encourage projects to include water conservation measures such as using water efficient fixtures, drought-tolerant landscaping, and use of recycled water to offset increases in water use. Additional information on water conservation measures is available on Metropolitan's website at www.bewaterwise.com.

Should there be a change in the scope of the Project, we would appreciate the opportunity to review and comment at that time. If we can be of further assistance, please contact Mrs. Rebecca De Leon at (213) 217-6337.

Very truly yours,

Delaine W. Shane
Manager, Environmental Planning Team

RDL:
(J:\Environmental Planning-Compliance\Becky\Comment Letters Sent\2010\May\Job No. 10051202)

2010 JUN 7 PM12:43:57

Michael Brandman Associates

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

Memo

Date: June 8, 2010

To: Steve Brinkman, Chief Facilities Planning

From: Bob Prasse, Sr. Project Manager

Subject: Review of Comments on the Sierra Madre School Upper Campus MND

On April 28, 2010, Pasadena Unified School District (PUSD) circulated a Notice of Intent (NOI) to Adopt a Mitigated Negative Declaration (MND) (SCH# 2010041094) for the In Sierra Madre School Upper Campus Project, an eight (8) acre site. Implementation of the Project will demolish all existing structures on-site and will develop a grouping of two-story, small-scale buildings, totaling approximately 72,114 square feet. The total increase in square footage compared to the original facilities is approximately 31,704 square feet. The main increase in square footage is within the proposed support facilities, consistent with a modern middle school. During the 30-day public review period, which closed on May 28, 2010, two (2) comment letters were received commenting on the proposed Initial Study MND. This memorandum responds to the two comment letter (attached).

Los Angeles County Sanitation District (LACSD), May 13, 2010

LACSD Comment 1: The author states that the wastewater flow originating from the proposed project will discharge to a local sewer line, which is not maintained by the LACSD, for conveyance to the LACSD' Arcadia-Sierra Madre Trunk Sewer, Sections 2 and 5, located in Sierra Madre Boulevard at Canon Avenue. This 9-inch diameter trunk sewer has a design capacity of 2.1 million gallons per day (MGD) and conveyed a peak flow of 0.7 MGD when last measured in 2009.

Response: The author is providing background information regarding wastewater flow from the project site. The PUSD acknowledges that the proposed project will discharge to Sections 2 and 5 sewer located within the LACSD' Arcadia-Sierra Madre Trunk Sewer. No additional response is necessary.

DTSC Comment 2: The author states that the wastewater generated by the proposed project will be treated at the San Jose Creek Water Reclamation Plant (WRP) located adjacent to the City of Industry, which has a design capacity of 100 mgd and currently processes an average flow of 76.2 mgd, or the Whittier Narrows WRP located near the City of South El Monte, which has a design capacity of 15 mgd and currently processes an average flow of 4.8 mgd.

Response: The author is providing background information regarding the wastewater treatment provide for the project site. The PUSD acknowledges that the San Jose Creek WRP or the Whittier Narrows WRP will treat the project's wastewater. No additional response is necessary.

DTSC Comment 3: The author states that the expected increase in average wastewater flow from the project site is 4,500 gallons per day.

Response: As stated within the IS MND, "using a wastewater demand factor of 4,500 gallons per day, per acre (GPD/Acre) (RBF, 2006) the existing 40,410 square foot school facilities (approximately 0.93 acres) produces approximately 4,185 GPD of wastewater. Development of the proposed 72,114 square foot school facilities (1.7 acres) would result in an estimated demand for wastewater treatment of 7,650 GPD, which is approximately 3,465 GPD over existing conditions. " Consequently, the LACSD total stated amount of wastewater flow from the project site (4,500 GPD) is a total of 1,035 GPD over what was stated in the IS MND.

Although the LACSD stated wastewater flow from the project site is marginally higher than those stated in the IS MND (an increase of 1,035 GPD), the San Jose Creek WPR (23 MGD) and Whittier Narrows WRP (10.2 MGD) currently have a total of 33.2 MGD of available space, which is adequate to treat the project's total wastewater flow from the project site (a total of 8,685 GPD). Therefore, this does not change the previous conclusion that implementation of the project will have a less than significant impact to wastewater treatment and facilities.

DTSC Comment 4: The author states that the LACSD are authorized by the California Health and Safety Code to charge a fee for the privilege of connecting (directly or indirectly) to the LACSD Sewerage System or increasing the strength or quantity of wastewater attributable to a particular parcel or operation already connected. This connection fee is a capital facilities fee that is imposed in an amount sufficient to construct an incremental expansion of the Sewerage System to accommodate the proposed project. Payment of a connection fee will be required before a permit to connect to the sewer is issued.

Response: As standard construction practice, the PUSD will pay all applicable connection fees as outlined by the LACSD. No additional response is necessary.

DTSC Comment 5: The author states that in order for the LACSD to conform to the requirements of the Federal Clean Air Act (CAA), the design capacities of the LACSD' wastewater treatment facilities are based on the regional growth forecast adopted by the Southern California Association of Governments (SCAG). Specific policies included in the development of the SCAG regional growth forecast are incorporated into clean air plans, which are prepared by the South Coast and Antelope Valley Air Quality Management Districts (AQMD) in order to improve air quality in the South Coast and Mojave Desert Air Basins (MDAB) as mandated by the CAA. All expansions of LACSD' facilities must be sized and service phased in a manner that will be consistent with the SCAG regional growth forecast for the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. The available capacity of the LACSD, treatment facilities will, therefore, be limited to levels associated with the approved growth identified by SCAG. As such, this letter does not constitute a guarantee of wastewater service, but is to advise you that the LACSD intend to provide this service up to the levels that are legally permitted and to inform you of the currently existing capacity and any proposed expansion of the LACSD' facilities.

Response: The proposed project is the re-development of an existing school site. Development of the proposed Sierra Madre School Upper Campus is necessary to meet the increasing demand for school facilities at the proposed school site. The maximum student capacity will remain consistent with the current student capacity at 550 students. Consequently, the total student capacity at the school site will not increase, nor will the Project have a direct or indirect increase in population within the project area. Consequently, the project is consistent with SCAG's regional growth forecast.

Southern California Edison (SCE), May 26, 2010

SCE Comment 1: According to the author, SCE doesn't have a 115 kV transmission line or 37.7 kV distribution line within the vicinity of the proposed project. SCE does, however, have a 16 kV distribution circuits bordering all four sides of the project site. SCE's nearest transmission lines to the proposed project include a 66kV subtransmission line over 0.5 miles away and a 220kV transmission line over one (1) mile away. Referenced transmission lines, therefore, must be non-SCE facilities.

Response: The California Code of Regulations, Title 5, Section 14010(c) specifies the following setback distances for school property lines and power line easements:

1. 100 feet for 50-133 kV line;

2. 150 feet for 220-230 kV line; and

3. 350 feet for 500-550 kV line.

The four 16 kV distribution circuits, in addition to the 66kV subtransmission and the 220kV transmission line will be located outside the California Code of Regulations setback distances for school property lines and power line easements. Consequently, due to the distance to the four 16 kV distribution circuits, the 66kV subtransmission and the 220kV transmission line, impacts will remain less than significant.

Mitigation Monitoring and Reporting Plan

#	Mitigation Measure	Method of Verification	Timing of Verification	Responsible for Verification	Verification Record		
					Date	Comments	Initials
BIOLOGICAL RESOURCES							
MM BR-1	Tree removal shall occur outside of the nesting bird season (February to August). If such avoidance is not feasible, the applicant shall have a qualified biologist's survey for actively nesting birds within the nesting bird season. Any active nests identified shall have highly visible construction fencing installed within a 100-foot radius (200 foot for birds of prey) of the active nests. Disturbance shall not occur within the buffer area until the biologist determines that the young have fledged.	Nesting survey, direct observations, site inspections by a qualified wildlife biologist	Tree removal to occur during the nesting season (February through August)	PUSD Chief of Facilities or designee.			
HAZARDS AND HAZARDOUS MATERIALS							
HHM-1	Prior to demolition, for major renovation or demolition of any pre-1979 structure within the Project site, the District shall obtain documentation that demonstrates asbestos and lead-based paint issues are not applicable to the property, or that appropriate actions will be taken to correct any asbestos or lead-based paint issues prior to development of the site.	Review and approval of lead-based paint documentation	Prior to demolition	PUSD Chief of Facilities or designee			

Mitigation Monitoring and Reporting Plan (Cont.)

#	Mitigation Measure	Method of Verification	Timing of Verification	Responsible for Verification	Verification Record		
					Date	Comments	Initials
NOISE							
N-1	Prior to commencement of grading, the District shall prepare a construction noise plan that provides the following: • All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers. • During construction, stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receivers, to the extent feasible. • During construction, stockpiling and vehicle staging areas shall be located as far as practical from noise sensitive receptors during construction activities. This provision shall also be coordinated with staging and stockpiling requirements contained in the Projects SWPPP.	Review and approval of construction noise plan	Prior to commencement of grading	PUSD Chief of Facilities or designee			