DRAFT INITIAL STUDY / MITIGATED NEGATIVE DECLARATION

Fountain Square Development West: The Kensington Assisted Living Facility in Sierra Madre

Lead Agency:
City of Sierra Madre
Development Services Department
232 W. Sierra Madre Boulevard
Sierra Madre, CA 91024

Consultant to the City:
Hogle-Ireland, Inc.
201 S. Lake Avenue, Suite 308
Pasadena, CA 91101

November 30, 2011

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1.1 – Project Title

Fountain Square Development West: The Kensington Assisted Living Facility in Sierra Madre

1.2 – Lead Agency Name and Address

City of Sierra Madre
Development Services Department
232 W. Sierra Madre Boulevard
Sierra Madre, CA 91024

1.3 – Contact Person and Phone Number

Gregg Yamachika, Contract Planner
(562) 292-8323

1.4 – Project Location

The project site consists of two contiguous parcels (APN 5768-019-041 and APN 5768-019-043) totaling approximately 1.84 acres located at 235 W. Sierra Madre Boulevard in the City of Sierra Madre. The site is bounded by Sierra Madre Boulevard to the south, Hermosa Avenue to the east, residential uses to the north, and a vacant commercially zoned lot to the west.

1.5 – Project Sponsor's Name and Address

Fountain Square Development West
12701 Treeridge Terrace
Poway, California 92064

1.6 – General Plan Land Use Designation

The Land Use Element of the 1996 Sierra Madre General Plan designates the subject site as *Commercial* and *Residential High Density*. The southern parcel fronting Sierra Madre Boulevard (APN 5768-019-041) is designated *Commercial* in the General Plan. The northern parcel, with access from Hermosa Avenue (APN 5768-019-043), is designated *Residential High Density*.

1.7 – Zoning District

The project site consists of two parcels. The southern parcel fronting Sierra Madre Boulevard (APN 5768-019-041) is zoned C (Commercial). The northern parcel, with access from Hermosa Avenue (APN 5768-019-043) is zoned R-3 (Multiple Family Residential). Both parcels are also located within the Measure V Downtown Overlay area, known as the "Central Core Area."

1.8 – Project Description

Project Overview

Fountain Square Development West has submitted Specific Plan and Conditional Use Permit applications for the design, construction, and operation of an assisted living facility. The facility would provide long-term residential care for seniors and persons with disabilities, including persons with Alzheimer's disease and other memory impairments. The facility, to be licensed as a Residential Care Facility for the Elderly (RCFE) by the California Department of Social Services, would accommodate up to 96 residents. The Specific Plan, required by the General Plan, provides a means to establish unique development standards and use regulations that respond to the special design needs of an assisted living facility at this location.

The facility design consists of a two-story, "H" shaped building envelope totaling approximately 58,000 gross square feet. The facility would have 75 residential suites, plus administrative offices and resident common areas for dining and socializing. Additional components include on-site facilities for fitness, physical therapy, and wellness activities; a commercial kitchen; and a commercial laundry. Common use gardens, patios, and sitting areas would be incorporated throughout the facility grounds. Table 1 (Summary of Proposed Project Uses) provides a square footage breakdown of the various uses. Exhibits 3 through 7 illustrate the preliminary site plan, including conceptual floor plans, as well as building elevations.[1]

Table 1.8-1: Proposed Project Components

Type of Use	Estimated Building Area (Square Feet)
Care Units (guest rooms and suites)	31,600
Common Living and Social Areas	19,800
Staff Offices/Caretaker Areas	2,500
Facility Service/Operation/Maintenance Areas	4,100
Total	58,000

Assisted living services are intended for seniors (i.e., generally persons 60 years or older, as well as younger residents who may experience early on-set of debilitating memory issues) who need assistance with the activities of daily living, including eating, bathing, dressing, and medication management, but who do not require 24-hour medical or skilled nursing care. Each suite would range in size from approximately 325 square feet to 625 square feet and would include one or two sleeping areas. Each suite consists of a bedroom area, sitting area (some in a separate room), and bathroom (with sink, shower and toilet); no kitchen facilities are provided since meals are served restaurant-style in the common dining area.

Site Plan / Access / Circulation

The project site would be accessed via a single ingress/egress driveway off Sierra Madre Boulevard. The driveway would provide immediate access to a porte cochere drop-off/pick-up at building's main entrance, which would face west onto the parking lot. The driveway would then extend to the surface parking lot located at the western portion of the project site. The location of the proposed driveway and curb cut would remain in substantially the same location as those existing today, but would be widened and redesigned to accommodate current building code requirements and

[1] Final floor plans will be reviewed/approved at the time of building plan check.

proposed site grades. Pedestrian access would be accommodated from the main building entrance, with a paved pathway from the entrance down to Sierra Madre Boulevard as well. A secondary pedestrian access would be provided along Hermosa Avenue for staff, utility service personnel, and secondary emergency response access.

The H-shaped building footprint would occupy the easterly portion of the project site, with its perimeter ringed by a garden path, landscaping, and seating areas. Two open-air courtyards would be provided within the recessed areas along the north and south faces of the building. Exhibit 3 (Proposed Project Site Plan) shows the proposed site layout.

Building setbacks from residential properties along the north (rear) property line would vary from 21 and 50 feet. The parking area would have a minimum landscape setback of 10 feet from residential properties located along the north property line. Specific setback requirements and development standards, consistent with those proposed for the project, are set forth in the Specific Plan.

Loading areas and trash enclosures would be located behind the northwest corner of the building and accessed directly from parking/driveway area. These facilities would be set back five to 10 feet from the rear property line.

The proposed structure would be two stories high, with a building height roof line that peaks at 30 feet in height to screen mechanical roof-top components.

Existing easements for power and telephone service are located at the northeast corner of the site. The easements would be modified to accommodate power and telephone services to the new building.

Parking

The Specific Plan proposes 43 on-site parking spaces within a paved, surface parking lot on the west side of the property. The parking area would be configured with stalls accessed from a double-loaded driveway that loops back to connect with the main ingress/egress site entrance.

Architectural Treatment

The architectural design theme of the proposed building is based on elements of Craftsman styles commonly used for homes in Sierra Madre. The building skin would include a combination of siding and shingles. Outrigger beams and exposed rafter tails would provide the characteristic texture and details of a Craftsman façade. The Specific Plan identifies the proposed architectural elements.

Landscape and Lighting

Proposed landscaping has been designed to complement the building architecture and provide spaces for programmed activities for residents. Consistent with the City's landscaping requirements, planting materials would consist of low-maintenance, low-water-use species which are either Southern California native plants and/or drought-tolerant ornamentals. Higher water-using plant materials, such as mown turf grass and seasonal color, are proposed to be used sparingly. The proposed irrigation system would be designed to reduce water waste and comply with applicable City codes.

Lighting would be installed to illuminate the porte cochere, driveways, courtyards, walkways, and parking facility for security and safety purposes. Hooded accent lighting at the roof eave line would be installed to highlight building features. Exterior features

would include minimal low-impact lighting in compliance with the City's ordinance to avoid nuisance to other area properties.

Operational Characteristics

The estimated number of operating staff for the facility is approximately 75 part-time and full-time staff. The maximum number of staff on site at any one time would be approximately 25. The assisted living community would offer an environment in which residents enjoy communal meals, social activities, housekeeping and other services. As a part of this proposed assisted living community, care will be available for those who suffer from memory loss and dementia related diseases such as Alzheimer's.

Signage

Two project identification signs to identify the assisted living facility are proposed, including one adjacent to the main entry off Sierra Madre Boulevard and one on the corner of Hermosa Avenue. Neither sign would exceed 40 square feet in area size. Final design, size and placement of project signs will be subject to approval by the City. Secondary signage to assist with directional and safety messaging would also be provided as appropriate.

Site Preparation and Grading

The proposed development involves demolition of the existing vacant onsite institutional and residential buildings (totaling approximately 33,695 square feet combined) and removal of existing trees. Mature oleanders along the northern edge of the project that currently screen residential properties may be retained to function as a construction screen (as feasible). However, installation of a fence or wall between the project site and properties to the immediate north would most likely require removal of some of these oleanders and replacement with appropriate landscaping per the approved landscape plan.

The project would involve grading to lower the building pad by approximate three and one-half feet from current grade. Grading would require the export of approximately 9,500 cubic yards of earth from the site. Retaining walls would be incorporated to accommodate the cuts. The existing wall along Sierra Madre Boulevard and Hermosa Avenue would be rebuilt to retain the resulting grade and designed to fit the new building style and complement the landscape program. The existing retaining walls along the north property line would remain in place. A new second retaining wall (approximately four to six feet in height plus footing) would be installed in a manner stepped out approximately five feet in front of the existing walls to accommodate the new cut along the base of the north slope along this edge due to the lowering of the entire site grade by approximately three and one-half feet. The integrity of the existing north retaining walls would be maintained by this terrace effect. The west wall would be modified to accommodate the resulting grade, and a noise barrier would be constructed along portions of the north property line.

Development Schedule

Construction of the proposed project is anticipated to start during spring 2012 and be completed by summer/early fall 2013,[2] lasting approximately 16 to 18 months. Demolition of the existing structures is anticipated to start in spring 2012 and may require up to eight weeks for completion. Other site preparatory work and grading is anticipated to start in early summer 2012 and would run concurrent with demolition

[2] Actual start-up dates are contingent on the date of project approval and issuance of required building permits.

efforts, lasting approximately eight weeks. Construction is anticipated to require approximately 10 working months for completion. Site finishing work is anticipated during late spring/summer 2013, with a target occupancy/opening date in September 2013.

Construction Staging

Construction activities would be conducted in compliance with City requirements and in a manner that minimizes disruption to adjacent properties. A construction management plan, including details for project staging, haul routes, and erosion control plans, will be prepared and provided to the City for approval prior to initiation of any site preparation or construction activity. At a minimum, the project will comply with development and construction site standards established in Zoning Code Section 17.36.190. Per code, construction activity would be limited to between the hours of 7:00 A.M. and 6:00 P.M. Monday through Saturday.

The storage of construction materials and vehicle staging would be managed entirely within the property boundaries. The general contractor would be required to have a designated community liaison on site to assist with any community concerns and ensure that construction activity is managed in accordance with the approved Construction Management Plan.

1.9 – Project Objectives

The project applicant desires to accomplish the following objectives:

- Provide a range of services and care for senior citizens.
- Implement a project design that is embraces the positive physical features of the property, promotes a high quality living environment for occupants within the proposed development, and minimizes adverse influences on the surrounding community.
- Establish development standards and guidelines that are suitable for an assisted living community, consistent with city policy, and compatible with the surrounding uses.

City objectives with respect to the project include:

- Ensure that development of the site occurs in a manner that implements General Plan policies and complies with applicable zoning regulations.
- Ensure that development of the site occurs in a manner that complements surrounding uses in terms of scale, type of use, and contribution to neighborhood character.

1.10 – Surrounding Land Uses

The project site is located on the northwest corner of Sierra Madre Boulevard and Hermosa Avenue. Immediately adjacent uses include residential uses to the north (including single-family and multi-family residential) and a vacant commercial property to the west. Immediately beyond the vacant commercial property to the west is a small retail commercial center. The Sierra Madre Congregational Church New Life Center is located to the east, across Hermosa Avenue. The Sierra Madre City Hall, fire station, and Memorial Park are located to the south, across Sierra Madre Boulevard.

1.11 – Environmental Setting and Existing Conditions

The project site is located within a built-out and completely urbanized area along Sierra Madre Boulevard. The property has a gentle slope that descends south-southwest from the north. The existing project site development pad elevation is lower than the adjacent residential properties to the north, with an elevation difference of approximately 12 to 14 feet along Hermosa Avenue (east) and six to nine feet toward the west end of the project site.

The site currently is occupied by a vacant building that housed a skilled nursing care facility and a vacant single-story residential caretaker structure (all constructed in the early 1950s). Trees and landscaping surround the buildings. The majority of the site is covered with asphalt concrete for parking. The southern edges of the parking areas are supported by retaining walls along Sierra Madre Boulevard. Concrete curbing contains planter areas with trees in the parking area.

1.12 – Required Approvals

The City of Sierra Madre Zoning Code (Section 17.60.030) recognizes the unique nature of "eldercare facilities" such as "rest homes" or "homes for the aged" by allowing establishment of these uses in any zone within the City through approval of a Conditional Use Permit (CUP). Hence, to authorize the proposed assisted living facility use at this location and to establish appropriate conditions of approval, a CUP is required.

General Plan Policy L3.1 requires preparation of a Specific Plan for proposed development projects on properties exceeding one acre in size. Because the project site totals 1.84 acres, adoption of a Specific Plan is required to address proposed uses, location, development standards, and project implementation. The Kensington (Assisted Living Facility) Specific Plan will be established as an overlay zone on the existing underlying C and R-3 zoning designations, but will set forth unique development standards and guidelines that are triggered and applicable only when an assisted living facility, or similar eldercare resident or interim care use, is proposed for development on the site. The Specific Plan will be adopted by ordinance.

The proposed project would require an amendment to the Zoning Code to allow the Specific Plan to have regulatory effect on the subject site and to take precedence over the underlying C and R-3 zones.

The proposed project would also include a General Plan Amendment to clearly indicate assisted living as a permitted use in the *Commercial* General Plan land use category. Adding an additional allowed use, assisted living facilities, to the *Commercial* General Plan land use category will itself cause no environmental impacts. The use is sufficiently similar to other allowed uses in the *Commercial* land use category. Institutional uses, per General Plan policy, are permitted in the commercial business district, although they should be limited (Policy L29.1). The proposed General Plan Amendment is intended to clarify existing General Plan policy only to reflect consistency of an assisted living use in commercially designated areas where this use was not specifically listed before. The General Plan Amendment serves to provide consistency with the Zoning Code, as this use historically has been permitted with a conditional use permit in all zones in the City (with the exception of the Residential Canyon Zone). As this component of the project would have no environmental impact,

the General Plan Amendment is not be analyzed in the environmental checklist and subsequent sections of this Initial Study.

Review and consideration of the CUP, Specific Plan, and General Plan Amendment will be accompanied by review and approval of related permits to allow demolition of existing structures, grading of the site, export/import of fill material, establishment of truck haul routes and construction staging areas, infrastructure and utility connections, site plan and conceptual landscape plan approval, and similar approvals to authorize initiation of the proposed project. Building and grading permits would be obtained from the City as required following approval of the project entitlements.

1.13 – Other Public Agencies Whose Approval Is Required

None

Exhibit 1: Regional and Vicinity Map

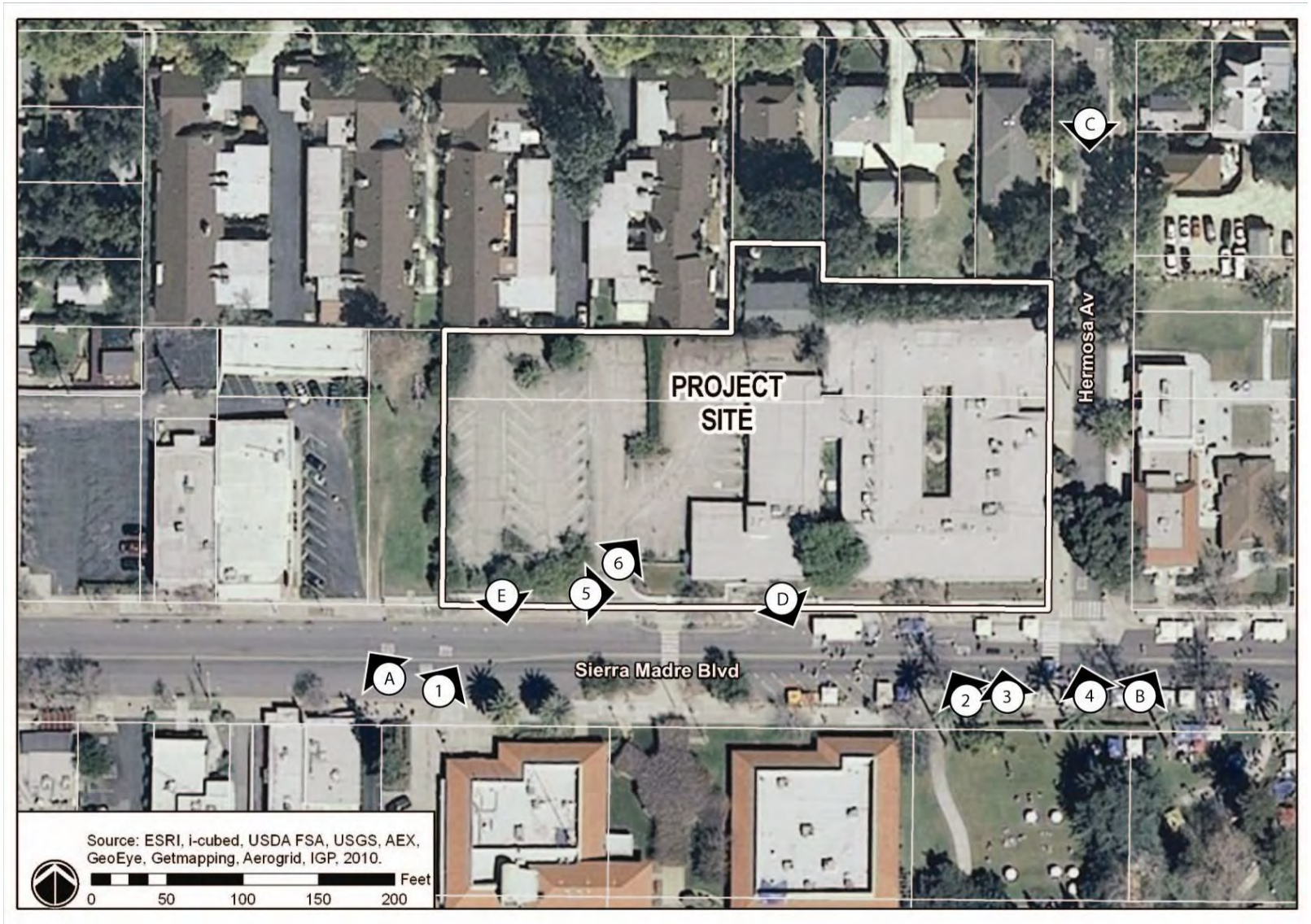

Exhibit 2: Photographic Survey Map

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1

2

3

4

5

6

Exhibit 2a: Photographic Survey

A

B

C

D

E

Exhibit 2b: Photographic Survey

hpi hill partnership, inc.
115 22nd street, newport beach, ca 92660 p. (949) 675-6442 f. (949) 675-4543 hpiarchitecture.com

site plan A1.1

08.23.2011 THE KENSINGTON ASSISTED LIVING SIERRA MADRE, CALIFORNIA

Minor adjustments to the site plan may be incorporated prior to final approval. Exhibit prepared by Hill Partnership, Inc.

Exhibit 3: Proposed Project Site Plan

Exhibit prepared by Hill Partnership, Inc.

Exhibit 4: Floor Plan - First Floor

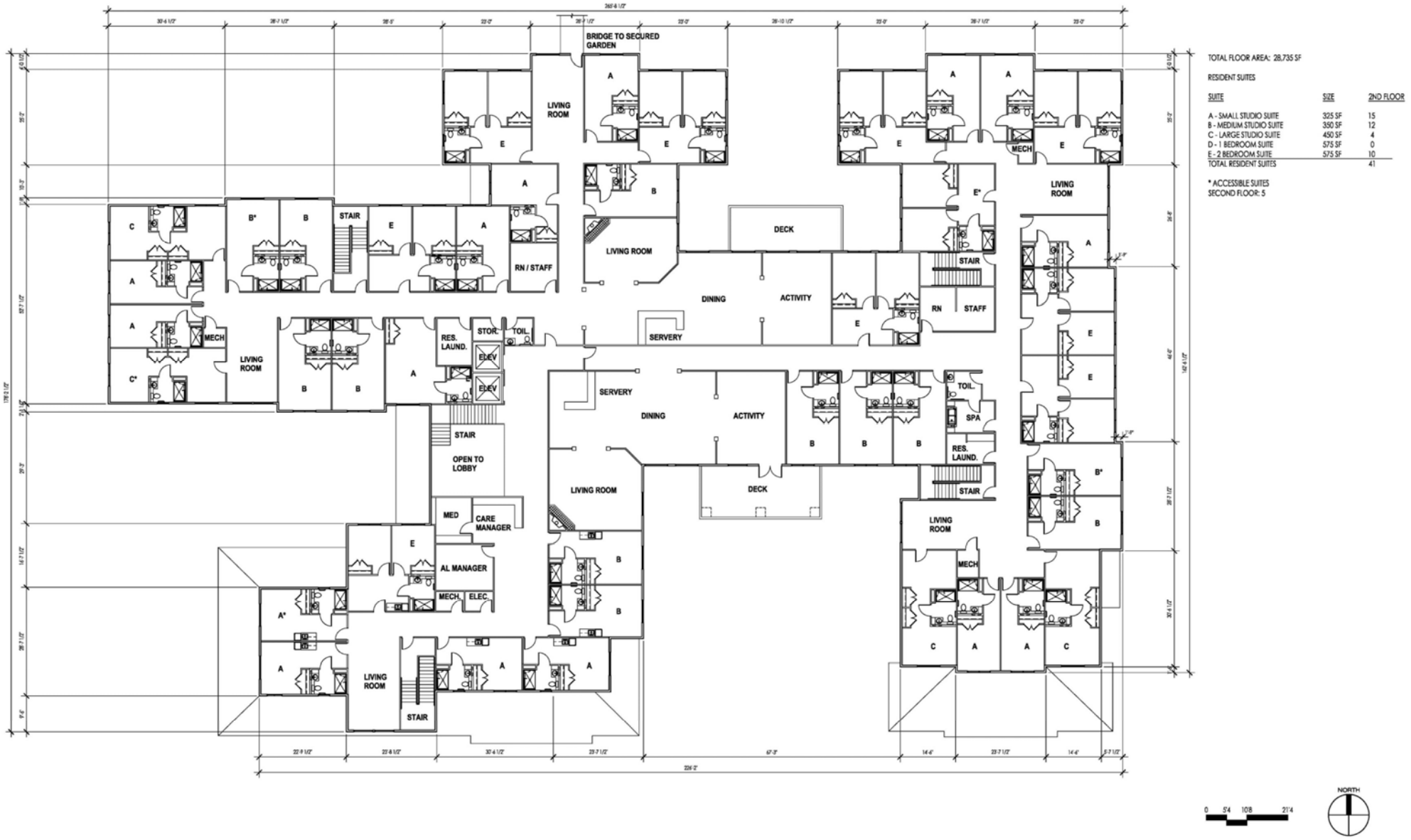

Exhibit prepared by Hill Partnership, Inc.

Exhibit 5: Floor Plan - Second Floor

VIEW FROM SIERRA MADRE AND HERMOSA

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exterior perspective A1.6

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Exhibit prepared by Hill Partnership, Inc.

Exhibit 6: Exterior Perspective (Looking Northwest)

VIEW FROM SIERRA MADRE TO PROJECT ENTRY

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exterior perspective A1.7

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Exhibit prepared by Hill Partnership, Inc.

Exhibit 7: Exterior Perspective (Looking Northeast)

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Section 2: Determination

2.1 – Environmental Factors Potentially Affected

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

2.2 – Determination

☐	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 measures 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.

Gregg Yamachika, Contract Planner _____ Date _____

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Section 3: Evaluation of Environmental Impacts

3.1 – Aesthetics

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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 buildings within view from 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?	☐	☐	☑	☐

The aesthetics impact analysis is based on review of project maps and drawings, aerial and ground-level photographs of the project area, pictorial renderings of the proposed project, and planning documents. The site is most visible from pedestrians and motorists along Sierra Madre Boulevard. The site would also be visible from adjacent residences to the north with addresses on the south side of W. Montecito Avenue (between Hermosa Avenue and Lima Street) and from uses to the south, across Sierra Madre Boulevard, including City Hall. Exhibit 6 and 7 illustrate simulations of proposed conditions with the project constructed.

Locations throughout Sierra Madre offer views of the San Gabriel Mountains. The General Plan contains Objective L14 regarding view protection for Residential Low Density–Hillside areas: "Protect the views to and from hillside areas in order to maintain the image and identity of the City as a village of the foothills." All policies pertaining to this objective are related to development in the hillside areas. No policies pertain to view retention of the foothills from other parts of the City. The General Plan does not have any objectives or policies regarding preservation of views from *Commercial* or *Residential High Density* areas.

a) **Less than Significant Impact.** A significant impact would occur if the proposed project introduces incompatible visual elements within a public field or substantially blocks a scenic vista. Scenic vistas generally can be considered: 1) focal views (visual access to a particular object, scene, or feature of interest) and 2) panoramic views (visual access to a large geographic area for which the field of view can be wide and extend into the distance). The dominant scenic vista (focal view) visible from the project site is the San

Gabriel Mountains to the north. The mountains rise steeply north of the City of Sierra Madre. The panoramic view from the San Gabriel Mountains above Sierra Madre includes the City and the San Gabriel Valley, with much of the City obscured by tree canopy. Existing conditions as of July 25, 2011 are represented in the photographs below.

Above: View from southeast corner of Hermosa Ave. and Sierra Madre Blvd looking north

Above: View from southwest of project site looking north

At the ground level, when standing across Sierra Madre Boulevard from the project site (in front of City Hall and along the block), existing structures and street trees partially obscure views of the San Gabriel Mountains. Visual simulations of the project site, as viewed from the south side of Sierra Madre Boulevard, looking northeast and northwest (see Exhibits 6 and 7), indicate that the proposed project, due to the street frontage location and height of the buildings, would incrementally obscure views of the nearby foothills, as seen from vantage points across the street from the project site. However, portions of the ridgeline and major San Gabriel Mountain peaks would continue to be visible. While the proposed structures would be one story taller than the existing structures onsite, proposed grading would lower the building pad by approximately 3.5 feet from current grade. The project would not substantially affect or alter views of the mountains. Impact would be less than significant.

With regard to panoramic views from the San Gabriel Mountains, such views would be minimally altered by the proposed project. Current views of downtown Sierra Madre from higher elevations are characterized as views of an urban area with an extensive tree canopy. The proposed project would not significantly alter this view, as the project is located on an infill site within the urban core. New trees and other landscaping and building heights consistent with the established patterns in the area will maintain existing panoramic views from higher elevations. Impact would be less than significant.

b) **No Impact.** There are no State-designated or eligible scenic highways within the City of Sierra Madre or in the vicinity.[3] Thus, adoption of the Specific Plan and development of the proposed assisted living facility would not damage the integrity of existing visual resources or historic buildings located along a State Scenic Highway. Therefore, no impact on scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway, would result.

c) **Less than Significant Impact.** The majority of buildings in the immediate vicinity of the project site are one to two stories in height. Due to the sloping topography, south-facing building façades generally are taller than the north-facing façades. Native and ornamental trees line the streets and dot parking areas. These factors contribute to a "village" character of the downtown. Most uses in the downtown area are commercial, with buildings consisting of an eclectic mix of architectural styles, including traditional Main Street, Spanish eclectic, streamline, postmodern, and cottage. Several Craftsman and California bungalow residential buildings have been converted for commercial use.

The proposed new construction will incorporate Craftsman-style architecture, including the use of wood beams, gabled roofs, and a mix of horizontal and vertical wood siding. The proposed architectural style is consistent with some properties in the immediate surrounding area and would therefore not detract from the aesthetic character of the district. Existing structures on the project site have been vacant and in minor disrepair for the past five years; the proposed project would enhance this section of Sierra Madre Boulevard relative to existing conditions.

As part of project construction, all street trees (eight in total) will be retained and protected in place. This includes five California Sycamore (*Plantus Racemosa*) and three Red Flowering Gum (*Eucalyptus ficifolia*) trees. These trees are protected under the City's Tree Preservation and Protection Ordinance (Municipal Code Chapter 12.20). All trees on

[3] California Department of Transportation. California Scenic Highway Mapping System: Los Angeles County. Accessed September 13, 2011.

the property (19 in total, including one dead tree) would be removed. Species of trees on site to be removed are Carrotwood (*Cupaniopsis anacardioides*), Canary Island Date Palm (*Phoenix canariensis*), Evergreen Elm (*Ulmus parvifolia*), and Weeping Bottlebrush (*Callistemon viminalis*). Trees on the property range in size from nine inches in diameter for a carrotwood tree to 38 inches in diameter for a palm. None of these trees is protected under Chapter 12.20 of the Municipal Code and furthermore, do not appear to be specimen trees of extraordinary aesthetic quality or to be very old. All trees would be replaced on a one-to-one basis with minimum 24 inch box plantings for the required replacement trees. Tree plantings are proposed to include California Sycamore (*Platanus racemosa*), Coast Live Oak (*Quercus agrifolia*), Jacaranda (*Jacaranda mimosifolia),* and Tipu tree (*Tipuana tipu),* all in 36-inch boxes. Additional evergreen vertical screening trees are proposed within side and rear yards adjacent to residential zones.

To assess shade and/or shadow impacts on adjacent parcels, a shade and shadow study was prepared (see Appendix A). The analysis utilized a three-dimensional massing model for morning and evening hours on four days of the year to cover each season and assess project shade: spring (March 21), summer (June 5), fall (September 21), and winter (December 11). These dates represent the most extreme northern and southern angles of the sun (solar solstice) in June and December and mid-points when the tilt of the Earth's axis is inclined neither away from nor toward the sun (solar equinox) in March and September.

The shade analysis indicates the proposed building would produce minimal shadows beyond the property boundaries. In the morning hours for the majority of the year, the proposed project's resulting shadow would occur across the associated parking lot; shade would not extend onto any adjacent residences. During the winter months, the morning shadow could extend to shade a small portion of the southern reaches of the existing multi-family residence to the north. However, the area of the residential property affected by the shadow is currently covered by a residential structure; therefore, no open portion of the property would be impacted.

During evening hours, where resulting shade is to the east, project shadows generally would not affect properties to the north, with the exception of the winter months, where the rear (southern) portion of properties may be shaded. The proposed building might also shade the church property to the east. However, this would occur late in the evening (past 6:00 P.M.), as dusk begins to fall, reducing the ability to perceive the shadow. Properties south of the project site, including open space areas and City Hall, would not be affected by shade or shadow from the proposed project. Given that project-related shadows would be relatively imperceptible beyond the project boundaries and only result in minimal winter shading on properties to the north and the adjacent church property at dusk, potential impacts would less than significant.

d) **Less than Significant Impact.** The proposed structure would be constructed primarily of wood and stone. Specifically, the structure would have features finished with batten board siding, shiplap siding, cedar shingle siding, and lattice wood panels. Wood columns and beams would be finished with stone bases. The roof is proposed to be of composite asphalt shingle. These materials would not create a substantial source of glare. In addition, the buildings would be screened from Sierra Madre Boulevard in part by existing street trees and proposed landscaping features.

The Specific Plan requires that lighting shall be used to illuminate the porte cochere, driveways, courtyards, walkways, and parking lot for security and safety purposes. Hooded accent lighting at the roof eave line will be installed to highlight building features. Exterior

features will include minimal low-impact lighting in compliance with the City ordinances to avoid damage or nuisance to other area properties. Furthermore, all lighting of the building, landscaping, parking lot or similar facilities must be shielded and directed away from adjoining properties.

Per the Specific Plan, all parking areas used after dark will have adequate lighting to facilitate safe access and enhance site security. The Specific Plan requires that “no lighting standards shall exceed the height of twelve feet to the bottom of the reflector. Lighting shall be hooded and so arranged and controlled so as not to cause a nuisance either to roadway traffic or to the living environment.” These requirements are consistent with City of Sierra Madre Municipal Code Section 17.68.110. Because the project would comply with these lighting requirements and no glare-inducing materials are proposed, impacts with regard to light and glare would be less than significant.

3.2 – Agriculture and Forest Resources

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☑
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☑
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104 (g))?	☐	☐	☐	☑
d) Result in loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☑
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☑

The project would be located in a fully developed, commercial area that does not contain agriculture or forest uses. The property is zoned C, Commercial, and R-3, Multiple Family Residential; neither zone is intended for agricultural uses or timber/forest land.

a-b) **No Impact.** The California Department of Conservation (CDC) Farmland Mapping and Monitoring Program (FMMP) designates agricultural land based on soil quality and irrigation status into eight categories. Based on the FMMP data, the project site is located within an area designated as "Urban and Built-up Land."[4] No Williamson Act contract applies to the

[4] California Department of Conservation. Farmland Mapping and Monitoring Program, 2008.

project site.[5] The property is zoned C, Commercial, which is not intended for agricultural uses. No impact could occur.

c-d) **No Impact.** The project site does not contain any forest products, and the site is not zoned for timber harvest. The Land Cover Mapping and Monitoring Program (LCMMP) is a satellite photo survey conducted jointly by the California Department of Forestry and Fire Protection (CALFIRE) and the United States Department of Agriculture Forest Service Region 5. The LCMMP identifies the project site and all immediate surroundings as non-forest/urban.[6] The proposed project would have no impact related to timberland harvest or conflicts with land zoned for forestry or timber harvest. No impact would occur.

e) **No Impact.** As noted in the above responses, the project would not encroach on agricultural land, and the site does not have any farmland or timberland. The majority of the site is currently paved or covered by buildings. While some trees would be removed to allow for project construction, these trees do not constitute a forest resource. Furthermore, all existing trees to be removed (19 in total, including one dead tree) would be replaced on a one-to-one basis with minimum 24-inch box plantings. Proposed tree plantings include two species that would become protected by the City's Tree Protection Ordinance: California Sycamore *(Plantanus racemosa*) and Coast Live Oak (*Quercus agrifolia*). The proposed project would have no impact related to conversion of farmland or forest land to a non-agricultural/non-forest use.

[5] California Department of Conservation. Williamson Act Program, 2007.
[6] California Department of Forestry and Fire Protection and the USDA Forest Service. California Land Cover Mapping and Monitoring Program (LCMMP) <http://frap.cdf.ca.gov/data/frapgisdata/select.asp> [Accessed September 8, 2011]

3.3 – 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:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	☐	☑	☐	☐
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?	☐	☐	☑	☐

a) **Less than Significant Impact.** A significant impact could occur if the proposed project conflicts with or obstructs implementation of the South Coast Air Basin 2007 Air Quality Management Plan (AQMP). Conflicts and obstructions that hinder implementation of the AQMP can delay efforts to meet attainment deadlines for criteria pollutants and maintaining existing compliance with applicable air quality standards. Pursuant to the methodology provided in Chapter 12 of the South Coast Air Quality Management District's 1993 *CEQA Air Quality Handbook*, consistency with the South Coast Air Basin 2007 AQMP is affirmed when a project: 1) does not increase the frequency or severity of an air quality standards violation or cause a new violation, and 2) is consistent with the growth assumptions in the AQMP.

The analysis below concludes that the proposed project would result in short-term construction and long-term pollutant emissions that are less than the CEQA significance emissions thresholds established by the South Coast Air Quality Management District (SCAQMD). Therefore, the project would not result in an increase in the frequency or

severity of any air quality standards violation and would not cause a new air quality standard violation.

The CEQA Air Quality Handbook indicates that consistency with AQMP growth assumptions must be analyzed for new or amended General Plan elements, Specific Plans, and "significant projects." Significant projects include airports, electrical generating facilities, petroleum and gas refineries, designation of oil drilling districts, water ports, solid waste disposal sites, and off-shore drilling facilities. Because the project is a Specific Plan, it is analyzed for AQMP consistency.

The 2007 AQMP long-term emissions inventory was modeled from the growth projections utilized in the 2004 Regional Transportation Plan (RTP) prepared by the Southern California Association of Governments (SCAG). RTP growth projections are developed utilizing a comprehensive analysis of fertility, mortality, migration, labor force, housing units, and local policies such as land use plans. Regional growth forecasts for the RTP were updated in 2008 and have been updated again to be reflected in the 2012 RTP (not yet adopted). Growth projections in the 2008 RTP project a 2015 population in Sierra Madre of 11,084 persons. The projection for 2020 is 11,089 persons, and 11,099 persons in 2030 (an increase of 39, 44, and 54 persons, respectively, from an estimated baseline 11,045 persons in 2005).[7]

The total growth in terms of population, as reported in the RTP, does not reflect actual conditions (as reported by the U.S. Census). The 2010 U.S. Census reported that Sierra Madre's total population was 10,917 persons.[8] The total population in Sierra Madre, including the population increase associated with the proposed project, would not exceed total population estimates identified in the RTP. The RTP projection for year 2015 is 11,084 persons. The City's 2010 baseline population is 10,917 persons. To be conservative and account for any potential growth that may have occurred in the last year, the 2011 population estimate (DOF) of 10,948 persons may be used, which yields a difference of 136 persons (2011) or 167 persons (2010) between current and 2015 conditions. Thus, the proposed project population of 96 residents falls within the total population projections contained in the RTP and the AQMP, when compared against either the 2010 Census population count or 2011 DOF estimates.

Growth projections for the 2008 RTP assume citywide employment in 2020 would total 3,620 jobs. The 2008 RTP estimated that in 2005 and 2010, there were 3,311 jobs and 3,445 jobs, respectively, in the City. This project's estimated 75 jobs represent approximately 43 percent of the difference between the estimated 2010 and 2020 employment levels. No other 2010 or 2011 employment estimates were available at the time of this writing. While the proposed project's employment would theoretically represent a large portion of the estimated employment growth, not all of the 75 jobs would be full-time positions; some would be part time. Furthermore, the number of jobs associated with this project fall within the growth forecasts developed for the RTP. Therefore, the project is consistent with the RTP and AQMP.

While the actual change in population projected by SCAG is less than the number of residents anticipated to live in the proposed assisted living facility, because of decreasing household size in the City (and/or overestimates in 2005 by SCAG), the proposed project would not exceed the total population assumed in the RTP. Furthermore, the proposed

[7] <http://www.scag.ca.gov/forecast/downloads/excel/RTP07_CityLevel.xls> [Accessed October 6, 2011.]
[8] U.S. Census. Profile of General Population and Housing Characteristics: 2010, Sierra Madre City.

project is not a traditional residential use. Rather, it fits into an institutional use category, or a quasi-public use. The residents of the proposed project—generally seniors needing care for memory loss and assistance with everyday activities—are far less likely to drive than a typical resident, as the factors that qualify them for occupancy in the assisted living facility would often limit their driving capabilities. Also, given the small size of living units and communal nature of the dining facilities, the per capita average use of water and electricity would be less than that associated with a typical residential household in Sierra Madre.

Based on the consistency analysis presented above, the proposed project would not conflict with the AQMP; impact would be less than significant.

b) **Less than Significant Impact with Mitigation Incorporation.** A project may have a significant impact if project-related emissions would exceed Federal, State, or regional standards or thresholds, or if project-related emissions would substantially contribute to an existing or project air quality violations.

The proposed project is located within the South Coast Air Basin, where efforts to attain state and federal air quality standards are governed by the SCAQMD. Both the State of California and the Federal government have established health-based ambient air quality standards (AAQS) for seven air pollutants (known as "criteria pollutants"). These pollutants include ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), inhalable particulate matter with a diameter of 10 microns or less (PM_{10}), fine particulate matter with a diameter of 2.5 microns or less ($PM_{2.5}$), and lead (Pb). California has also established AAQS for additional pollutants. The AAQS are designed to protect the health and welfare of the populace within a reasonable margin of safety. Where the State and Federal standards differ, California AAQS are more stringent than the national AAQS.

Air pollution levels are measured at monitoring stations located throughout the air basin. Areas that are in nonattainment with respect to Federal or State AAQS are required to have plans and implement measures that will bring the region into attainment. Table 3.3-1 (South Coast Air Basin Attainment Status) summarizes the attainment status in the Basin for the criteria pollutants. Discussion of potential impacts related to short-term construction impacts and long-term area source and operational impacts are presented below.

Table 3.3-1: South Coast Air Basin Attainment Status

Pollutant	Federal	State
O_3 (1-hr)	N/A	Nonattainment
O_3 (8-hr)	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment	Attainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
Pb	Attainment	Attainment

Sources: CARB 2010, USEPA 2010

Construction Emissions

The California Emissions Estimator Model (CalEEMod) version 2011.1.1 was utilized to estimate emissions from the proposed demolition and construction activities (see Appendix B, Air Quality Modeling Data). The entire construction program is anticipated to be completed in a total of approximately 16 to 18 months, with an estimated 250 working days,[9] beginning in spring/summer 2012, as summarized in Table 3.3-2:

Table 3.3-2: Tentative Construction Schedule

Phase	Start	End	Days
Demolition	05/07/12	06/01/12	20
Site Preparation	06/04/12	06/22/12	15
Grading	06/25/12	07/06/12	10
Building Construction	07/09/12	01/04/13	130
Paving	01/07/13	01/18/13	10
Architectural Coating	01/21/13	04/19/13	65
Total			**250**

Note: Dates have been provided by the applicant and are tentative and subject to change; durations are considered firm estimates.

Key estimates utilized in CalEEMod to calculate construction emissions include:

- 9,500 cubic yards (CY) of soil export
- 190.4 tons of asphalt/concrete demolition and 33,695 square feet of building demolition and disposal
- The project would not include wood-burning stoves. All fireplaces will be gas.

The maximum (summer or winter) results of the analysis are summarized in Table 3.3-3 (Unmitigated Maximum Daily Construction Emissions). The model indicates that no criteria pollutants would exceed the daily emissions thresholds established by SCAQMD; therefore, construction impacts would be less than significant.

The analysis summarized in Table 3.3-3 assumes that the 9,500 CY of soil will be required to be exported from the site and will be hauled no more than 15 miles.[10],[11] The Los Angeles County Solid Waste Management Department was consulted to identify public facilities within 15 miles that could accept soil as part of the County's construction and demolition debris recycling program. The Azusa Land Reclamation Landfill, located at 1211 West Gladstone Street in Azusa, lies approximately 10.1 miles from the project site. Other facilities located less than 15 miles from the project site include Irwindale and Montebello, also able to accept the soil. To ensure that emissions thresholds are not exceeded

[9] Total construction schedule (16 to 18 months) accounts for potential delays due to rain and other unforeseen delays, although approximately 12 months of working time is estimated. As a result, Table 3.3-2 indicates a construction completion date prior to the anticipated completion date of September 2013.

[10] The 15-mile distance limitation applies only to hauling/disposal of export soil; a similar limitation does not apply to disposal sites for other construction debris (that may be hauled to specialized demolition recyclers) or disposal of hazardous material items (e.g. asbestos containing materials or lead based paint).

[11] The air quality analysis assumes a total of 1,188 hauling trips associated with removal of the soil associated with grading by a HHDT Vehicle Class hauling vehicle, with a maximum trip length of 15 miles.

(particularly the NO_X threshold) due to soil export activities, Mitigation Measure A-1 will be incorporated into project conditions of approval to limit soil hauling to 15 miles or less. Incorporation of Mitigation Measure A-1 will ensure that impacts related to soil export are less than significant.

Table 3.3-3: Unmitigated Maximum Daily Construction Emissions (lbs/day)

Activity	ROG VOC*	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
2012						
Demolition (buildings)	6.10	47.37	28.97	0.05	8.76	2.78
Demolition (parking lot)	5.72	43.34	26.75	0.04	4.05	2.62
Site Preparation	4.23	33.64	19.88	0.03	7.25	4.64
Grading	9.12	85.53	50.30	0.10	29.72	6.20
Building Construction	5.53	27.32	22.05	0.04	2.76	1.87
2012 Daily Maximum	*9.12*	*85.53*	*50.30*	*0.10*	*29.72*	*6.20*
2013						
Building Construction	5.07	25.54	21.20	0.04	2.60	1.71
Paving (Building Parking)	3.17	18.62	12.86	0.02	1.76	1.59
Architectural Coating	13.66	3.04	2.66	0.00	0.43	0.28
2013 Daily Maximum	*13.66*	*25.54*	*21.20*	*0.04*	*2.60*	*1.71*
Maximum Emissions	**13.66**	**85.53**	**50.30**	**0.10**	**29.72**	**6.20**
SCAQMD Threshold	**75**	**100**	**550**	**150**	**55**	**150**
Exceeds Screening Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: *CalEEMod v. 2011.1.1* - Hogle-Ireland 2011. Calculation sheets are provided in Appendix B.
*Volatile organic compounds (VOC) are measured as reactive organic compounds (ROG).
*NO_x represents cumulative NO and NO_2 emissions.

Mitigation Measure A-1
Prior to issuance of grading permits, the City Director of Public Works shall verify that grading plans submitted by the project proponent identify the location where exported soil is to be disposed of and that the identified location is 15 miles or less from the project site. The applicant may propose a disposal site that is more than 15 miles from the project site only if the applicant also proposes and documents a reduced number of total hauling trips equivalent to the 15-mile trip limitation (which assumes a total of 1,188 hauling trips). Any substitutions would be subject to approval of the Director of Public Works.

This measure shall be verified in light of the performance standard that criteria pollutant emissions from soil hauling shall not exceed the daily emissions thresholds established by the South Coast Air Quality Management District. The applicant shall bear the cost of implementing this mitigation.

Operational Emissions

Long-term criteria air pollutant emissions will result from the operation of the proposed assisted living facility. Long-term emissions are categorized as area source emissions, energy demand emissions, and operational emissions. Operational emissions will result from automobile and other vehicle sources associated with daily trips to and from the proposed facility. The CalEEMod model was utilized to estimate mobile source emissions. Trip generation (264 daily weekday trips) is based on the project traffic study prepared by Linscott, Law & Greenspan, Engineers (see Appendix C). Area source emissions are the

combination of many small emission sources that include use of outdoor landscape maintenance equipment, use of consumer products such as cleaning products, and periodic repainting of the proposed building. Energy demand emissions result from use of electricity and natural gas. Emissions from area sources were estimated using CalEEMod using program default values for area and energy demand emissions. Operational emissions are summarized in Table 3.3-4 (Long-Term Daily Emissions).

Long-term emissions will not exceed the daily thresholds established by SCAQMD; impact would be less than significant.

Table 3.3-4: Long-Term Daily Emissions (lbs/day)

Source	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Summer						
Area Sources	1.72	0.00	0.00	0.00	0.00	0.00
Energy Demand	0.03	0.28	0.12	0	0.02	0.02
Mobile Sources	1.05	2.48	10.55	0.02	2.04	0.12
Summer Total	*2.8*	*2.76*	*10.67*	*0.02*	*2.06*	*0.14*
Winter						
Area Sources	1.72	0.00	0.00	0.00	0.00	0.00
Energy Demand	0.03	0.28	0.12	0	0.02	0.02
Mobile Sources	1.11	2.68	10.3	0.02	2.03	0.14
Winter Total	*2.86*	*2.96*	*10.42*	*0.02*	*2.05*	*0.16*
Threshold	55	55	550	150	150	55
Significant Impact?	No	No	No	No	No	No

Source: CalEEmod v. 2011.1.1 – Hogle-Ireland, Inc., 2011. Calculation worksheets are provided in Appendix B.

c) **Less than Significant Impact.** Cumulative short-term, construction-related emissions and long-term, operational emissions from the project would not contribute considerably to any potential cumulative air quality impact because short-term project construction emissions and operational emissions would not exceed any SCAQMD daily threshold, and therefore, would be less than significant. Furthermore, other concurrent construction projects and operations in the region would be required to implement standard air quality regulations and mitigation pursuant to State CEQA requirements, just as this project would be. Such measures include compliance with SCAQMD Rule 403, which requires daily watering to limit dust and particulate matter emissions. Impacts would be less than significant.

d) **Less than Significant Impact.** Sensitive receptors are those segments of the population that are most susceptible to poor air quality, such as children, the elderly, the sick, and athletes who perform outdoors. Land uses associated with sensitive receptors include residences, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes.

The project is considered a sensitive use because the proposed assisted living facility is intended to house elderly and potentially infirm persons. Residential land uses near the project site and Sierra Madre Elementary School (located ¼-mile from the project site) are also considered to be sensitive receptors. The proposed project is located in an existing commercial area, adjacent to a residential neighborhood, and is not within one-quarter mile of any industrial uses that emit toxic air contaminants; therefore, the project would not be sited in an area that could expose residents to substantial point-source emissions. Toxic Air Contaminants (TAC), carbon monoxide hot-spots, and localized significance thresholds (LSTs) are discussed below.

Toxic Air Contaminants

The proposed assisted living facility would not generate toxic or criteria pollutant emissions since the quasi-residential/institutional use does not produce such emissions. As noted in the response to item 3.2b above, construction-phase emissions and long-term emissions would be below the daily thresholds for all criteria pollutants. The proposed assisted living facility, therefore, would not result in any point-source toxic emissions impacts. Section 3.8 (Hazards and Hazardous Materials) addresses the potential for airborne contaminants from asbestos-containing materials, lead-based paint, and other toxic hazards that may be encountered during demolition.

Carbon Monoxide (CO)

A CO hotspot is an area of localized CO pollution caused by severe vehicle congestion on major roadways, typically near intersections. CO hotspots have the potential for violation of State and Federal CO standards at study area intersections, even if the broader Basin is in attainment for Federal and State levels. In general, SCAQMD and the California Department of Transportation Project-Level Carbon Monoxide Protocol (CO Protocol) recommend analyzing CO hotspots when a project has the potential to result in higher CO concentrations within the region and increase traffic congestion at an intersection operating at level of service (LOS) D or worse by more than two percent. (See level of service discussion in Section 3.16 below.)

The traffic study prepared by Linscott, Law & Greenspan, Engineers (Appendix C) determined that the two study intersections (Sierra Madre/Michillinda and Sierra Madre/Baldwin) currently operate and would continue to operate at LOS C in the future with the addition of project-related traffic. Furthermore, project-related trip generation is anticipated to result in a 0.3 percent increase to the volume/capacity ratio, which is significantly below the two percent threshold increase. See the Transportation and Traffic section analysis (Section 3.16) of this Initial Study for further details. Impact related to CO hotspots would be less than significant.

e) **Less Than Significant Impact.** According to the *CEQA Air Quality Handbook,* land uses associated with odor complaints include agricultural operations, wastewater treatment plants, landfills, and certain industrial operations (such as manufacturing uses that produce chemicals, paper, etc.). Odors are typically associated with industrial projects involving the use of chemicals, solvents, petroleum products, and other strong-smelling elements used in manufacturing processes, as well as sewage treatment facilities and landfills. No such uses that produce substantial odors are located near the project site; furthermore, the proposed assisted living facility would not release odors produced by small-level applications of chemical substances outside of the building. As the proposed project involves no elements related to industrial projects, agricultural operations, wastewater treatment, or landfills, no objectionable odors are anticipated.

A common general potential source of odor comes from outdoor solid waste disposal bins. In accordance with current practices and City ordinances, all waste will be disposed of in covered receptacles and routinely removed, thereby limiting the escape of odors to the open air. Furthermore, the solid waste receptacles associated with the proposed project would be located within an enclosed structure. The bins may be emptied up to three times per week. Impacts related to odors would be less than significant.

3.4 – Biological Resources

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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 or U.S. Fish and Wildlife Service?	☐	☐	☑	☐
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 California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☐	☑
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (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 native 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, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☑

a) **Less Than Significant Impact.** The proposed project is located on an infill site in downtown Sierra Madre, a fully urbanized area. The project site is largely paved and covered with structures. No natural or disturbed native habitat exists on site. Existing landscaping is minimal and includes 18 trees (one of which is dead) of varying heights , all of which would be removed prior to construction. Trees would be replaced on a one-to-one basis with at least 24-inch box plantings for the required replacement trees. Some new trees to be planted include native species that would become protected by the City's Tree Protection Ordinance: California Sycamore (*Plantanus racemosa)* and Coast Live Oak (*Quercus agrifolia*). Impact would be less than significant.

b) **No Impact.** The project site is located on land that has been previously developed in a primarily commercial portion of the City. No riparian habitat or other sensitive natural communities exist on the project site.[12] The site is covered by paving and buildings. Landscape planting consists mostly of ornamental plants and trees. No impact to riparian habitat or other sensitive natural habitat would occur.

c) **No Impact.** No protected wetlands exist on the project site,[13] as the entire site consists of paved areas, structures, and limited trees and landscaping. Therefore, the project would not result in the removal, fill, or hydrologic interruption of federally protected wetlands. No impact to wetlands would occur.

d) **Less Than Significant Impact with Mitigation Incorporation.** Wildlife corridors are features that provide connections between two or more areas of habitat that would otherwise be isolated and unusable. Often drainages, creeks, or riparian areas are used by wildlife as movement corridors, as these features can provide cover and access across various terrain.

The project site is currently occupied by paving for parking areas, a single-family house, and a vacant skilled nursing facility, and thus does not contain any wildlife corridors. Construction would occur on approximately the same footprint as the skilled nursing facility. Therefore, the proposed project could not impede wildlife movement through the site.

All migratory non-game native bird species are protected by international treaty under the Federal Migratory Bird Treaty Act (MBTA) of 1918 (50 C.F.R. Section 10.13). Pursuant to the MBTA, it is unlawful to "take" (i.e., capture, kill, pursue, or possess) migratory birds or their nests. Virtually all native bird species are covered by the MBTA.

[12] Hogle-Ireland, Inc. Confirmed on site visit, July 25, 2011.
[13] United States Fish and Wildlife Service. National Wetlands Inventory. Accessed September 13, 2011. www.fws.gov/wetlands/Data/Mapper.html.

The potential for nesting raptors to occur on the project site exists due to the existing mature onsite trees. Removal and disturbance of onsite trees has the potential to impact sensitive raptor species should they be nesting at time of construction (generally from February through August). As such, mitigation has been included requiring that a raptor nesting assessment be conducted if construction is to occur between February 1st to August 31st. Such assessment will ascertain the potential for nesting raptors and identify appropriate mitigation based on the judgment of a qualified biologist. Appropriate mitigation could include delay of construction activities or avoidance of the nest until the young have left. Incorporation of Mitigation Measure B-1 will ensure that impacts to raptors and their nesting sites would be less than significant.

Mitigation Measure B-1
Prior to commencement of demolition activities, construction activities, or tree removal, should these activities occur at any time between February 1st to August 31st, a qualified biologist shall assess the project site at least 10 days, but no more than 30 days, in advance of initiation of demolition activities, construction activities, or tree removal, to determine if raptor species are actively nesting in on-site vegetation. If no active nests are found, no further action is required. If active raptor nesting is confirmed, the qualified biologist shall develop a mitigation plan and submit for review and approval by the Development Services Director. The plan shall identify measures and protocols to avoid or minimize impacts to nesting raptors and their young that may include, but are not limit to, avoidance and buffering of the nests until young have fledged, delay of demolition activities and/or construction activities and/or tree removal, and monitoring to ensure nest abandonment. If demolition or construction activities would be conducted during the non-breeding season for raptors (September 1 through January 31), then no site assessment shall be required. This mitigation measure shall be implemented at the expense of the project proponent.

e) **Less than Significant Impact.** The project would involve the removal of 19 trees, one of which is dead. City of Sierra Madre Municipal Code Chapter 12.20, Tree Preservation and Protection, requires that protected trees, which include any Southern California Black Walnut (*Juglans californica*), Engelmann Oak (*Quercus engelmannii*), Coast Live Oak (*Quercus agrifolia*), or Western Sycamore (*Platanus racemosa*) tree whose trunk (or collective trunks) exceed a diameter of four inches measured four feet above natural ground level, be replaced within one year of removal by a minimum of one tree of the same species for each tree removed, or a suitable alternative recommended by the tree expert. Chapter 12.20 requires replacement trees to be at least 24-inch box.

During project construction, all street trees, including five California Sycamore trees and three Red Flowering Gum trees, would be retained and protected in place. The proposed project applicant proposes to remove and replace the 19 other trees on site at least one-for-one, all of which will be at least 24-inch box and some of which would be 36-inch box. Trees scheduled for removal are of the species Carrotwood (*Cupaniopsis anacardioides*), Canary Island Date Palm (*Phoenix canariensis*), Evergreen Elm *(Ulmus parvifolia*), and Weeping Bottlebrush (*Callistemon viminalis*). No trees scheduled for removal have been identified as protected trees per Chapter 12.20 of the City's Municipal Code. As such, the project would comply with the City's Tree Preservation Ordinance and would not conflict with local policies. Impact would be less than significant.

f) **No Impact.** No adopted Habitat Conservation Plan areas[14] or any Natural Community Conservation Plan areas[15] apply to the project site. Neither are there any Significant Ecological Areas, or SEAs (ecologically important land and water areas, designated by Los Angeles County, that are valuable as plant and/or animal communities) near the site; the nearest SEA is the San Gabriel Canyon SEA, about 6.3 miles to the southeast.[16] No impact would occur.

[14] US Fish & Wildlife Services. Habitat Conservation Plans: Summary Report. <www.ecos.fws.gov/conserv_plans/servlet/gov.doi.hcp.servlets.PlanReport> [Accessed August 30, 2011]
[15] California Department of Fish and Game. Natural Community Conservation Planning: Status of NCCP Planning Efforts. < http://www.dfg.ca.gov/habcon/nccp/ l> [Accessed August 30, 2011]
[16] Los Angeles County Department of Regional Planning. *Public Review Draft 2035 General Plan*. April 5, 2011. Chapter 6: Conservation and Open Space Element and Figure 6.2: Significant Ecological Areas.

3.5 – Cultural Resources

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	☐	☐	☑	☐

a) **Less Than Significant Impact.** The existing buildings on the project site are not listed on the National Register of Historic Places[17] or the California Register of Historical Resources.[18] Furthermore, the existing buildings are not located on the City of Sierra Madre's designated list of historical buildings.[19] The buildings on the property were built in the early 1950s; however, none of the buildings are designated as a historical structure by the City of Sierra Madre. Moreover, none of the buildings are considered a unique historical resource because they were not designed with distinctive architectural characteristics, do not contribute to the history of California, are not associated with any historical figure, and would not contribute any knowledge important in history or prehistory. Therefore, impact to historical resources, as defined in §15064.5 of the CEQA Guidelines, would be less than significant.

b) **Less Than Significant Impact.** As part of the City's 1996 General Plan, an archaeological resources records search was conducted in 1995 by consulting records at the Institute of Archaeology at University of California, Los Angeles and the San Bernardino County Museum. The records search indicated that no historic or archaeological sites have been identified in the City, including at the project site.[20]

Implementation of the proposed project would involve soil disturbance (i.e., removal of fill, grading, etc.). Although no known archaeological sites are documented within the project site, the potential exists to encounter previously undiscovered cultural material during

[17] National Park Service, U.S. Department of the Interior. National Register of Historic Places. <http://nrhp.focus.nps.gov/natreghome.do?searchtype=natreghome> Accessed September 12, 2011.
[18] Office of Historic Preservation, California State Parks. California Register of Historical Resources. <http://ohp.parks.ca.gov/listed_resources/> Accessed September 12, 2011.
[19] City of Sierra Madre. Sierra Madre Designated Historical Landmarks. November 17, 2008.
[20] City of Sierra Madre. *General Plan Update Environmental Impact Report.* 1995. p. 206.

project related ground disturbing activities. The potential for uncovering such significant resources is considered remote, given that no such resources were discovered during prior development activity on the site. Furthermore, the 1995 General Plan EIR includes mitigation (Mitigation Measure #15),[21] which states that construction activities shall cease if unanticipated archaeological resources are encountered on a site. That mitigation measure is applicable to all development within the boundary of the General Plan, including the project site. Impact would be less than significant.

c) **Less Than Significant Impact.** As part of the City's 1996 General Plan, a literature review and records search on paleontological sites in the City was conducted at the San Bernardino County Museum, Department of Community and Cultural Resources. The review indicated that no paleontological resources have been recorded within the City or within the immediate surroundings of the City.[22]

The property is a developed site in an urbanized area, with no unique geological resources on or near the project site. Removal of surface fill would be undertaken as part of the project to adjust the grade; therefore, some potential exists to uncover paleontological resources (fossil evidence of life from past geologic time frames); however, this is considered unlikely given the previously disturbed nature of the site. Furthermore, the 1995 General Plan EIR includes mitigation (Mitigation Measure #14),[23] which states that earthmoving activities shall cease if unanticipated paleontological resources are encountered on a site. That mitigation measure is applicable to all development within the boundary of the General Plan, including the project site. Impact would be less than significant.

d) **Less Than Significant Impact.** It is unlikely that human remains could be uncovered during grading operations considering that the project site was previously disturbed during construction of the existing structures. Nonetheless, should suspected human remains be encountered, the contractor would be required to notify the County Coroner, in accordance with Section 7050.5 of the California Health and Safety Code, who must then determine whether the remains are of forensic interest. If the Coroner, with the aid of a supervising archaeologist, determines that the remains are or appear to be of a Native American, he/she would contact the Native American Heritage Commission for further investigations and proper recovery of such remains, if necessary. Through this existing regulatory procedure, impacts to human remains can be avoided. Impact would be less than significant with implementation of existing regulations.

[21] City of Sierra Madre. *General Plan Update Environmental Impact Report*. 1995. p. 214.
[22] City of Sierra Madre. *General Plan Update Environmental Impact Report*. 1995. p. 203.
[23] City of Sierra Madre. General Plan *Update Environmental Impact Report.* 1995. p. 214.

3.6 – Geology and Soils

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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 (1997), creating substantial risks to life or property?	☐	☐	☑	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☑

A geotechnical report was prepared for the subject property in 2006 for a proposed mixed-use development, the Wisteria Village Mixed Use Project.[24] The Wisteria Village Mixed Use project did not proceed and has no bearing on the proposed Kensington Assisted Living proposed project. However, the prior 2006 geotechnical study contains information that can be applied to the analysis of geology and soils conditions since those conditions have not changed since 2006 (due to no change in conditions on the subject property).

A new geotechnical report for the Kensington Assisted Living project has not yet been completed because soils samples performed while the existing buildings remain on the site would be limited to the parking area (similar to the Wisteria Village Mixed Use project geotechnical report). The applicant will perform soils testing and complete a project-specific geotechnical report following building demolition, but prior to construction of the proposed project. This approach will allow the soils samples to be drilled in the area of the proposed building footprint, which is currently inaccessible due to the existing structure. The new geotechnical report will also identify site-specific and building-specific geotechnical engineering measures that are appropriate to incorporate into the project design to minimize soil and seismic concerns. The new geotechnical report will be reviewed by the City Engineer.

a.i) **Less than Significant Impact.** Although the project site is located in seismically active Southern California, the site is not located within an Alquist-Priolo Earthquake Fault Zone.[25] According to the City's 1996 General Plan, the Sierra Madre fault zone is an active fault located in the City which has the potential to cause ground rupture. However, the project site is not located within the Sierra Madre Fault Zone. Geotechnical evaluations conducted on the site for the previous project revealed that no active faults have been identified at the ground surface of the project site.[26] Thus, hazards due to ground rupture are considered less than significant.

a.ii) **Less than Significant Impact.** The project site is subject to strong seismic ground shaking, as are virtually all properties in Southern California. The project site is located within close proximity to the Raymond Fault. Significant ground shaking may occur[27] if an earthquake were to occur along that fault line. The 2007 California Building Code (CBC; Title 14, California Code of Regulations, Part 2) contains seismic safety provisions with the aim of preventing building collapse during a design earthquake, so that occupants would be able to evacuate after the earthquake. A design earthquake is one with a two percent chance of exceedance in 50 years, or an average return period of 2,475 years. Compliance with existing CBC regulations would limit hazards from strong ground shaking to less than significant. Furthermore, the geotechnical report to be required by the City must include site-specific soils preparation and construction recommendations based on localized soil conditions, distance from active faults, and estimated energy levels from potential earthquakes. A site-specific ground motion hazard analysis will also be prepared in accordance with the 2007 California Building Code (CBC) and ASCE 7-05 (Minimal Design Loads for Buildings and Other Structures). The recommendations of the geotechnical report will be implemented during preparation of construction drawings for review and approval by the City. Compliance with the CBC and other requirements required by the

[24] GeoLogic Associates. *Geotechnical Design Report for Proposed Wisteria Village 245 West Sierra Madre Boulevard.* November 16, 2006

[25] California State Department of Conservation. California Geological Survey, Alquist-Priolo Earthquake Fault Zone Maps. Mt. Wilson Quadrangle, January 1, 1977.

[26] GeoLogic Associates. *Geotechnical Design Report for Proposed Wisteria Village 245 West Sierra Madre Boulevard.* November 16, 2006. p. 5.

[27] GeoLogic Associates. *Geotechnical Design Report for Proposed Wisteria Village 245 West Sierra Madre Boulevard.* November 16, 2006. p. 5.

City will provide adequate safeguards in the building design to reduce potential impacts due to strong seismic ground shaking to a less-than-significant level.

a.iii) **No Impact.** Liquefaction is a phenomenon that occurs when soil undergoes transformation from a solid state to a liquefied condition due to the effects of increased pore-water pressure. This typically occurs where susceptible soils (particularly the medium sand to silt range) are located over a high groundwater table. Affected soils lose all strength during liquefaction and foundation failure can occur.

The geotechnical report prepared for a previous project on the current project site indicates that due to the absence of shallow groundwater and the presence of dense soils, liquefaction potential is not considered to be a design issue at this site.[28] No impact would occur.

a.iv) **Less than Significant Impact.** The project site slopes gently to the southeast, resulting in a grade change of approximately nine feet; street grade elevation is approximately four feet lower than the lowest point on the site due to a retaining wall. The site does not contain the steep terrain necessary to induce earthquake related landslides. According to the Seismic Hazard Evaluation of the Mt. Wilson 7.5 minute quadrangle, the site is not located in an Earthquake-Induced Landslide Zone.[29] This indicates a low probability for landslides; therefore, impact associated with landsliding would be less than significant. Engineered slopes and retaining walls along the north property line would serve to stabilize slopes. Impact would be less than significant.

b) **Less than Significant Impact.** Topsoil is used to cover surface areas for the establishment and maintenance of vegetation due to its high concentrations of organic matter and microorganisms. Little, if any, native topsoil is likely to occur on site since the site is covered with paving and structures. The underlying soils consist predominantly of silty fine to medium or fine to coarse sands, with minor quantities of clay and gravel. A portion of this earth will be removed to lower the site prior to building construction. Once removed, the surface will again largely be covered by new paving and buildings. No long-term impacts with regard to erosion or loss of topsoil would occur.

The project has the potential to expose surficial soils to wind and water erosion during construction activities. Wind erosion will be minimized through soil stabilization measures required by South Coast Air Quality Management District (SCAQMD) Rule 403 (Fugitive Dust), such as daily watering. Water erosion will be prevented through the City's standard erosion control practices required pursuant to the California Building Code and the National Pollution Discharge Elimination System (NPDES), such as silt fencing or sandbags. Following project construction, the site would be covered completely by paving, structures, and landscaping. Impacts related to soil erosion would be less than significant with implementation of existing regulations.

c) **Less than Significant Impact.** Impacts related to liquefaction and landslides are discussed above in Section 3.6.a. Lateral spreading is the downslope movement of surface sediment due to liquefaction in a subsurface layer. The downslope movement is due to gravity and earthquake shaking combined. Such movement can occur on slope gradients

[28] GeoLogic Associates. Geotechnical Design Report for Proposed Wisteria Village 245 West Sierra Madre Boulevard. November 16, 2006. p. 6.
[29] California State Department of Conservation. California Geological Survey, Seismic Hazard Zones. Mt. Wilson Quadrangle, March 25, 1999.

of as little as one degree. Lateral spreading typically damages pipelines, utilities, bridges, and structures.

Localized lateral spreading is not considered a substantial hazard, as the site is not within a Zone of Required Investigation for liquefaction and the project would comply with CBC regulations for minimizing liquefaction hazards.

The project applicant would be required by Section 1802 of the CBC to have a preliminary soil report prepared and submitted to the City before the City issues a building permit. The soil report would need to conclude that site soils would be capable of supporting proposed structures after grading and compaction. The CBC includes a requirement that any City-approved recommendations contained in the soil report be made conditions of the building permit. Compliance with existing CBC regulations would limit hazard impacts arising from unstable soils to less than significant, and no mitigation is needed.

d) **Less than Significant Impact.** As part of the prior geotechnical report, the researchers drew six soil samples, none of which tested to consist of expansive soils. The report indicates that soils on site consist of non-expansive sands that are typically in a medium dense to dense condition.[30] The CBC requires special design considerations for foundations of structures built on soils with expansion indices greater than 20. The project applicant would be required to complete a project-specific soil report prior to project construction. The soil report would include testing of site soil samples within the proposed building footprint for expansion potential. Compliance with CBC requirements would limit hazards related to expansive soil to less than significant, and no mitigation is required.

e) **No Impact.** The proposed project would not include the use of septic systems or other alternative wastewater disposal systems; rather, connection to sanitary sewers would be required. Therefore, no impact would result.

[30] GeoLogic Associates. *Geotechnical Design Report for Proposed Wisteria Village 245 West Sierra Madre Boulevard.* November 16, 2006. p. 5.

3.7 – Greenhouse Gas Emissions

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☑	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☑

a) **Less than Significant Impact.** Climate change is the distinct change in measures of climate for a long period of time.[31] Climate change is the result of numerous, cumulative sources of greenhouse gas emissions all over the world. Natural changes in climate can be caused by indirect processes such as changes in the Earth's orbit around the Sun or direct changes within the climate system itself (i.e. changes in ocean circulation). Human activities can affect the atmosphere through emissions of greenhouse gases (GHG) and changes to the planet's surface. Human activities that produce GHGs are the burning of fossil fuels (coal, oil and natural gas for heating and electricity, gasoline and diesel for transportation); methane from landfill wastes and raising livestock, deforestation activities; and some agricultural practices.

Greenhouse gases differ from other emissions in that they contribute to the "greenhouse effect." The greenhouse effect is a natural occurrence that helps regulate the temperature of the planet. The majority of radiation from the Sun hits the Earth's surface and warms it. The surface in turn radiates heat back towards the atmosphere, known as infrared radiation. Gases and clouds in the atmosphere trap and prevent some of this heat from escaping back into space and re-radiate it in all directions. This process is essential to supporting life on Earth because it warms the planet by approximately 60° Fahrenheit. Emissions from human activities since the beginning of the industrial revolution (approximately 150 years ago) are adding to the natural greenhouse effect by increasing the gases in the atmosphere that trap heat, thereby contributing to an average increase in the Earth's temperature. Greenhouse gases occur naturally and from human activities. Greenhouse gases produced by human activities include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Since 1750, it is estimated that the concentrations of carbon dioxide, methane, and nitrous oxide in the atmosphere have increased over 36 percent, 148 percent, and 18 percent, respectively, primarily due to human activity. Emissions of greenhouse gases affect the atmosphere directly by changing its chemical composition while changes to the land surface indirectly affect the atmosphere by changing the way the Earth absorbs gases from the atmosphere.

[31] *United States Environmental Protection Agency. Frequently Asked Questions About Global Warming and Climate Change. Back to Basics. April 2009.*

GHG emissions for the project were quantified utilizing the California Emissions Estimator Model (CalEEMod) version 2011.1.1 to determine if the project could have a cumulatively considerable impact related to greenhouse gas emissions (see Appendix B, Air Quality Modeling Data), and summarized in Table 3.7-1. The emissions inventory accounts for GHG emissions from construction activities and operational activities.

Operation emissions associated with the proposed project would include GHG emissions from mobile sources (transportation), energy, water use and treatment, waste disposal, and area sources. GHG emissions from electricity use are indirect GHG emissions from the energy (purchased energy) that is produced offsite. Area sources are owned or controlled by the project (e.g., natural gas combustion, boilers, and furnaces) and produced onsite. Construction activities are short term and cease to emit greenhouse gases upon completion, unlike operational emissions that are continuous year after year until operation of the use ceases. Because of this difference, SCAQMD recommends amortizing construction emissions over a 30-year operational lifetime. This normalizes construction emissions so that they can be grouped with operational emissions in order to generate a precise project-based GHG inventory.

Table 3.7-1: Greenhouse Gas Emissions Inventory

Source	GHG Emissions (MT/YR)			
	CO_2	CH_4	N_2O	TOTAL*
Construction				
2012				
Demolition (buildings)	33.49	0.00	0.00	33.57
Demolition (parking lot)	9.96	0.00	0.00	9.98
Site Preparation	22.69	0.00	0.00	22.74
Grading	46.39	0.00	0.00	46.45
Building Construction	199.29	0.00	0.00	199.88
2012 Total	**311.82**	**0.00**	**0.00**	**312.62**
2013				
Building Construction	6.31	0.00	0.00	6.32
Paving (Building Parking)	8.37	0.00	0.00	8.39
Architectural Coating	11.86	0.00	0.00	11.90
2013 Total	**26.54**	**0.00**	**0.00**	**26.61**
Total Construction Emissions	338.36	0.00	0.00	339.23
30-Year Amortization	11.28	0.00	0.00	11.31
Operational				
Area	1.87	0.00	0.00	1.91
Energy	134.94	0.00	0.00	135.77
Mobile	273.58	0.01	0.00	273.82
Waste	13.89	0.82	0.00	31.13
Water	5.46	0.12	0.00	8.8
Total Operational Emissions	**429.74**	**0.95**	**0.00**	**451.43**
GRAND TOTAL	**441.02**	**0.95**	**0.00**	**462.74**
Proposed SCAQMD Screening Threshold				**3,000**
Exceeds Screening Threshold?				**No**

Source: Hogle-Ireland, Inc. 2011
* MTCO2E/YR
Note: Slight variations may occur due to rounding

A numerical threshold for determining the significance of greenhouse gas emissions in the South Coast Air Basin (Basin) has not officially been adopted by the SCAQMD. As an interim threshold based on guidance provided in the CAPCOA *CEQA and Climate Change* white paper, a non-zero threshold based on Approach 2 of the handbook will be used.[32] Threshold 2.5 (Unit-Based Thresholds Based on Market Capture) establishes a numerical threshold based on capture of approximately 90 percent of emissions from future development. The latest threshold developed by SCAQMD using this method is 3,000 metric tons carbon dioxide equivalent ($MTCO_2E$) per year for residential and commercial projects.[33] This threshold is based on the review of 711 CEQA projects.

Greenhouse gas emissions associated with the proposed project would not exceed the 3,000 $MTCO_2E$ threshold; therefore, impact would be less than significant.

b) **No Impact.** The City of Sierra Madre does not have any plans, policies, standards, or regulations related to climate change and GHG emissions. Also, no other government-adopted plans or regulatory programs in effect at this time have established a specific performance standard to reduce GHG emissions from a single building project. Therefore, no impact to plans and policies is identified.

[32] California Air Pollution Control Officers Association. *CEQA and Climate Change.* January 2008

[33] South Coast Air Quality Management District. CEQA Significance Thresholds Working Group. Meeting # 15, Main Presentation. September 28, 2010

3.8 – Hazards and Hazardous Materials

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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 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 in 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?	☐	☐	☑	☐

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☑

a) **No Impact.** The routine use, transport, or disposal of hazardous materials is primarily associated with industrial uses which require such materials for manufacturing operations or produce hazardous wastes as by-products of production applications. The project does not propose or facilitate any activity involving significant use, routine transport, or disposal of hazardous substances as part of its assisted living use. No impact would occur.

b) **Less than Significant Impact with Mitigation Incorporation.** Activities associated with the demolition of the existing caretaker house and skilled nursing facility building, both constructed in the 1950s, may pose a hazard with regard to existing hazardous materials, especially asbestos containing materials (ACM) and lead-based paints (LBP).

Asbestos-Containing Materials

ACMs were used on a widespread basis in building construction prior to and into the 1980s. Asbestos generally does not pose a threat when it remains intact. However, when asbestos is disturbed and becomes airborne, such as during demolition activities, significant impacts to human health may occur. Construction workers completing demolition activities, as well as surrounding uses, have the potential to be exposed to airborne asbestos emissions due to the potential presence of ACM.

SCAQMD Rule 1403 (Asbestos Emissions from Demolition/Renovation Activities) requires work practices that limit asbestos emissions from building demolition and renovation activities including the removal and disturbance of ACM.[34] This rule is generally designed to protect uses surrounding demolition or renovation activity from exposure to asbestos emissions. Rule 1403 requires surveys of any facility being demolished or renovated for the presence of all friable and Class I and Class II non-friable ACM. Rule 1403 also establishes notification procedures, removal procedures, handling operations, and warning label requirements, such as HEPA filtration, the "glovebag" method, wetting, and some methods of dry removal.

A Hazardous Material Survey was conducted on the subject property to identify asbestos-containing materials, lead-based paint, and lead ceramic tile in the existing structures. In addition, the survey noted polychlorinated biphenyls (PCB) light ballasts, mercury switches, fluorescent light bulbs, and refrigerant gas. Asbestos was detected in a variety of materials, including floor tile, acoustic ceiling texture, interior wall and ceiling plaster, acoustic ceiling tiles, mastic for mirrors and roof penetrations, fireproofing, pipe and elbow insulation, and cementitious pipe through the roof.

[34] South Coast Air Quality Management District. Rule 1403: Asbestos Emissions from Demolition/Renovation Activities. Amended October 5, 2007.

Specific removal and contractor licensing requirements apply if ACM with levels of asbestos present in an amount greater than 0.1% will be disturbed. The survey found ACM with levels of asbestos above the threshold in a number of materials. One noticeable exception was the plaster in walls and ceiling in the house and the health clinic portion of the nursing facility; levels in these materials were less than the threshold. However, due to the trace amounts of asbestos in the materials, additional removal precautions should be employed. The wall and ceiling plaster materials from the remaining portions of the nursing facility were identified to be greater than the threshold, along with a variety of other materials as outlined in the hazardous material survey completed for the project.[35] As such, work involving the disturbance of these materials is regulated as Class II asbestos work under the asbestos in construction standard in CCR Title 8, Section 1529. Applicable Department of Occupational Safety and Health (DOSH) requirements require a registered asbestos removal contractor with DOSH perform the work utilizing proper Class II methods and DOSH notification.

To reduce the potential impact with regard to asbestos to a less-than-significant level, Mitigation Measure H-1 will be applied to the project, requiring conformance with Rule 1403 and California Division of Occupational Safety and Health. Impacts related to exposure to ACMs would be less than significant with mitigation incorporated.

Mitigation Measure H-1
The project applicant shall comply with all recommendations of the Hazardous Material Survey report, including appropriate notices, permits, and licenses necessary for abatement work, as well as all related requirements imposed by the City. The City shall ensure compliance through the City's routine plan check and permitting processes. Prior to commencement of demolition activities, applicable procedures to minimize emissions of asbestos shall be determined based on the type of asbestos present and implemented by a registered contractor at the expense of the project proponent. ACM identified to contain asbestos at levels less than 0.1% shall be removed as specified in CCR Title 8, Section 1529 as Other Asbestos Work, which includes: 1) providing personnel with hazard awareness training, 2) use of wet methods during removal or disturbance, 3) personal exposure monitoring to document that DOSH permissible exposure limits are not exceeded and 4) waste debris is containerized quickly while on site in leak tight containers. All ACM with asbestos levels greater than 0.1% is required to be removed by State licensed asbestos removal contractors pursuant to the California Asbestos Standards in Construction. Documentation certifying that ACMs have been removed to satisfactory levels and in conformance with CCR Title 8, Section 1529 shall be delivered to the Development Services Director prior to demolition of existing structures onsite.

Lead
Exposure of construction workers to lead-based paint during demolition activities is also of concern, similar to exposure to asbestos. Interior and exterior finishes of both existing structures were evaluated for lead; lead was identified in 19 of 27 coatings sampled from the existing nursing facility and health clinic. Lead was not identified in the loose and flaking paint sample collected from the residence. Ceramic tiles and building composite were also sampled for lead in both the house and the existing nursing facility/health clinic. Three of four tiles sampled (two in the house and one in the nursing facility) were over the

[35] Professional Service Industries, Inc. *Hazardous Material Survey Nursing Facility, Health Clinic, and Adjacent House at 245 W. Sierra Madre Boulevard*. February 28, 2011.

1,000 mg/kg threshold and are therefore considered hazardous waste. Building composite samples were found to be non-hazardous waste.

Exposure of surrounding land uses to lead from demolition activities is generally not a concern because demolition activities do not result in appreciable emissions of lead.[36] The primary emitters of lead are industrial processes. Any lead-based paint utilized on the exterior and interior of the buildings would generally remain inside the structure or close to the exterior of the building.

8 CCR Section 1532.1 (California Construction Safety Orders for Lead) is applicable to the demolition of the skilled nursing facility/health clinic and the single-family residence. Mitigation Measure H-2 will be required to ensure implementation of the California Construction Safety Orders for Lead. Impact related to lead exposure would be less than significant with mitigation incorporated.

Mitigation Measure H-2
The project applicant shall comply with all recommendations of the Hazardous Material Survey report and other related requirements imposed by the City. The City shall ensure compliance through the City's routine plan check and permitting processes. The ceramic tiles in all existing onsite structures shall be removed by an abatement contractor prior to demolition of the buildings. Demolition debris and waste categorized as hazardous waste shall be handled, transported, and disposed of in accordance with applicable Federal, State, and local laws and rules to ensure that potential impacts of health and the environment are minimized. Specifically, employees who perform trigger tasks, such as manual demolition, are required to receive employer provided training, air monitoring, protective clothing, respirators, and hand washing facilities. Standard work practices required by CCR Title 17, Division 1, Chapter 8 also include the use of wet methods and HEPA vacuums. Documentation verifying appropriate disposal of hazardous wastes shall be provided to the Development Services Director prior to completion of the proposed assisted living facility.

Other Hazardous Materials
Other hazardous materials were surveyed visually in the existing structures on the project site. The following hazardous materials were identified:

- Fluorescent bulbs: 721
- Ballasts: 458
- Mercury switches: 30
- Refrigerant gases: 15 roof top air conditioning units, 2 window units, 2 refrigerators, 2 freezers, 1 attic air conditioning unit

Mitigation Measure H-3 will be required to ensure proper disposal of these hazardous materials.

[36] California Department of Toxic Substances. *Draft Lead Report*. June 2004

Mitigation Measure H-3
The project applicant shall implement all recommendations of the Hazardous Material Survey report, including appropriate handling and disposal of all hazardous materials identified. The City shall ensure compliance through the City's routine plan check and permitting processes.

Operation of Proposed Facility
With regard to operations of the proposed assisted living facility, the proposed assisted living facility does not require or produce hazardous materials or wastes as part of its operations. Common usage will include cleaners and waxes for hard surface floors and disinfectants, scrubbers, and bleach for bathrooms and showers. Use and production of these materials and wastes are common in residential and commercial developments throughout town. Handling and disposal of these materials and wastes will occur in accordance with their labeling and pursuant to an extensive Federal and State framework of laws and regulations. Standard activities associated with this project will not result in significant impacts related to the routine use, transport, or disposal of hazardous materials or wastes.

c) **Less than Significant Impact.** Residential and commercial uses associated with the assisted living facility would not be a substantial source of hazardous materials or waste that would have the potential to result in significant environmental impacts. Hazardous materials use and storage associated with the uses on the property would be limited to small amounts of common household cleaning and gardening supplies, such as cleansers, paint, and pesticides. However, an assisted care facility also involves distributing medications to patients who cannot do so themselves. Such actions could generate medical waste that must be handled in accordance with State laws. The potential exists for some medical waste to be generated by the proposed project. All medical waste, however, would be disposed of with a licensed service, operating in compliance with all Federal, State, and County regulations. Biohazard waste (blood, infectious material, sharps, etc.) would be stored on-site in approved containers and removed by a contract service. Aside from the possible generation of normal medical waste, the assisted living activities would not generate any hazardous emissions. Thus, the storage, handling, production, or disposal of acutely hazardous materials is not required or proposed for any aspect of this project.

The project site is located within one-quarter mile of Sierra Madre Elementary School. Existing regulations and procedures required for the handling of medical waste reduce any impacts associated with the routine use, transport, and disposal of these materials reduce potential impact to a less-than-significant level. The operation of the proposed assisted living project is not anticipated to present any significant impacts to this school.

Construction of the proposed project will involve the use of diesel fuel equipment and could result in an increase in diesel emissions in the area. Per the air quality study prepared for the project, no sensitive receptors are expected to be subject to pollutant concentrations that exceed the SCAQMD's regional or localized thresholds for short-term construction and long-term operational activity. This is based on the determined local significance thresholds for ROG, NO_x, CO, SO_2, PM_{10}, and $PM_{2.5}$. Therefore, impact would be less than significant impact.

d) **No Impact.** According to records maintained by the California Environmental Protection Agency known as the Cortese List,[37] the project site is not:

- Listed as a hazardous waste and substance site by the Department of Toxic Substances Control (DTSC),
- Listed as a hazardous solid waste disposal site by the SWRCB (State Water Resources Control Board), or
- Currently subject to a Cease and Desist Order (CDO) or a Cleanup and Abatement Order (CAO) as issued by the SWRCB.

The Phase I Environmental Site Assessment completed for the project identified a previous release of gasoline into shallow soils during removal of an underground storage tank in 2003. Under the supervision of the Los Angeles County Department of Public Works, a soil vapor extraction remediation system was installed on the subject property and operated for a period of three months. Post-remediation confirmation sample analysis completed in 2005 indicated that the impacted area contained concentrations of petroleum hydrocarbons below the remedial action goals and that no further action was required.[38] The SWRCB recognized the site as a cleanup site (case closed), and does not indicate any current leaking underground storage tanks. A 250-gallon above-ground storage tank (AST) was recorded in the Phase I Environmental Site Assessment. No evidence of leaks or spills was identified; the AST was not considered to represent a recognized environmental condition.

No other site contamination that would be considered a hazardous material has been identified at the proposed project site; therefore, no impact would occur.

e) **No Impact.** The project site is not located within two miles of an airport or airport land use plan. The nearest airport is the El Monte Airport, which is located approximately five miles south of the project site. Therefore, no impact would occur.

f) **No Impact.** No private airstrips or heliports exist in the vicinity of the project site.[39] The project would not result in a safety hazard for people on or near the site, and no impact would occur.

g) **Less than Significant Impact.** The project would include development of one building, the 58,000 square-foot, two-story multipurpose building; the building would have a maximum capacity of 96 residents. The maximum number of staff on site at any one time would be approximately 25. Per City Fire and Building Codes, sufficient space will have to be provided around the building for emergency personnel and equipment access and emergency evacuation. All project elements, including landscaping, would be sited with sufficient clearance from existing and proposed structures so as not to interfere with emergency access to and evacuation from the facility. The project would comply with the California Fire Code (Title 24, California Code of Regulations, Section 9) and the Los Angeles County Fire Code (Title 32, Los Angeles County Code of Ordinances). The site plan includes a secondary access to the rear of the building from Hermosa Avenue. The project would not alter roadways or sidewalks in the vicinity of the project site and so would have no impact on emergency evacuation from the surrounding neighborhood.

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[37] California Environmental Protection Agency. Cortese List. <www.calepa.ca.gov/SiteCleanup/CorteseList/> Accessed September 14, 2011.

[38] Professional Service Industries, Inc. *Report of Phase I Environmental Site Assessment, Proposed Senior Living Facility at 245 W. Sierra Madre Boulevard*. February 10, 2011.

[39] <Airnav.com> Accessed September 14, 2011.

No public street or lane closures are anticipated during or following project construction. Construction work in the street would be limited to taps for water and sewer, which would be limited to a few hours of potential lane closure. Traffic control would be provided for any lane closures.

The project driveway would allow emergency access and evacuation from the site and would be constructed to California Fire Code specifications. The Specific Plan includes a section addressing emergency response (Section 3.5.6). The project would not impair implementation of or physically interfere with an adopted emergency response plan or evacuation plan. Project impacts would be less than significant.

h) **No Impact.** The project site is located in an urban area surrounded by commercial and residential uses, and is not located within a Fire Hazard Zone, as identified on the latest Fire Hazard Severity Zone (FHSZ) maps prepared by the California Department of Forestry and Fire Protection (CALFIRE).[40] No impact would occur.

[40] California Department of Forestry and Fire Protection. Incorporated Fire Hazard Severity Zone: City of Sierra Madre. 2007.

3.9 – Hydrology and Water Quality

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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 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 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?	☐	☐	☑	☐
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?	☐	☐	☐	☑

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	☐	☐	☑	☐

a) **Less than Significant Impact.** Discharges into stormwater drains or channels from construction sites of one acre or larger are regulated by the General Permit for Storm Water Discharges Associated with Construction Activity (General Permit: Water Quality Order 99-08-DWQ) issued by the State Water Quality Control Board in August 1999 and modified in April 2001. The General Permit was issued pursuant to National Pollutant Discharge Elimination System (NPDES) regulations of the Environmental Protection Agency (EPA), as authorized by the Clean Water Act. Compliance with the General Permit involves developing and implementing a Storm Water Pollution Prevention Plan (SWPPP) specifying best management practices (BMPs) that the project would use to minimize pollution of stormwater. The SWPPP BMPs would follow the guidelines set forth by the State Water Resources Control Board (SWRCB).

The project applicant will be required to comply with NPDES permit requirements through the preparation and implementation of a SWPPP for construction activities. The City's Public Works Director will review the application for compliance with applicable regulations and to ensure that no water quality standards or discharge requirements are violated. Given required compliance with existing laws, project impacts on water quality standards would be less than significant, and no mitigation is required.

With regard to long-term stormwater management, the project applicant/developer is required to comply with Sierra Madre Municipal Code Section 15.48.240, the stormwater retention requirements. These requirements include designing drainage provisions to retain stormwater on site or carry stormwater to the nearest onsite landscaped area. Pervious pavements must be used in driveways, walkways, patios, and other areas of similar use to reduce surface water runoff. In addition, the applicant/developer will be required to prepare a water quality management plan (WQMP) to implement measures as outlined by the Los Angeles RWQCB, which typically include, but are not limited to: 1) guidance, operation and maintenance for all source control, site design, and treatment control BMPs; and 2) operation and maintenance activities, 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 requirements, sufficiently address stormwater runoff and would reduce impacts to water quality standards or waste discharge requirements to a less-than-significant level with implementation of the standard regulatory requirements.

b) **Less than Significant Impact with Mitigation Incorporation.** The City operates its own municipal water supply and distribution system. The sole source of water supply is local groundwater, which is delivered to the distribution system by four wells. Emergency supplies are available from the City of Pasadena and the City of Arcadia. According to the City of Sierra Madre Draft *2010 Urban Water Management Plan* (UWMP), groundwater is drawn from the Santa Anita Sub-area (Eastern Unit) of the Raymond Basin. Through adjudication, the City has the rights to pump 1,764 acre-feet per year from the basin. The City also has the right to obtain credit for "salvage water," which is surface water percolated into the Santa Anita Sub-area minus losses for natural percolation and subsurface outflow. In addition to the adjudicated water rights to the Raymond Basin, the City also owns two tunnels located in the Little Santa Anita Canyon. These tunnels act as horizontal wells and produce water by gravity flow.

Over the past five years, the City has been able to rely on the Raymond Basin and salvage water credits to meet groundwater demand. In the calculations for long-term water demand, the 2010 UWMP based future estimates on historic consumption/demand dating back to 1994.[41] The 2010 UWMP anticipates no substantial increase in population in Sierra Madre (that is, demand will remain consistent with historic levels) and therefore concludes that water demand will be consistent with past levels, absent any conservation measures. The UWMP establishes goals for reductions in per capita water use. The UWMP lists a number of future projects that would provide additional water supply sources, including construction of a new water supply well, rehabilitation of two existing water supply wells, and replacement of water transmission lines and distribution pipelines (to address any leaking in aging pipes), among others. As noted, Sierra Madre also maintains connections with systems serving the cities of Pasadena and Arcadia for emergency water supply. The City is also pursuing an emergency interconnection that will allow the City to access treated imported water from the Metropolitan Water District in the event of such need.[42]

The proposed project would generate a marginal increase in additional demand for water, relative to overall existing citywide demand. According to the City of Sierra Madre General Plan, given the City's built-out nature, negative population growth in recent years, and land use and zoning approaches that maintain current density of development, the City does not foresee a significant increase in water demand on the current system.[43] Consequently, the proposed project would not significantly burden existing water service capability of the City Water Department. Furthermore, the project would be required to 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. Also, the City's tiered commodity rate for water became effective on July 1, 2011. The tiered water rate structure encourages water conservation by imposing higher water rates for those customers using higher amounts of water. Finally, Title 24 water efficiency measures require a demonstrated 20 percent reduction in the use of potable water.

The project's landscaping plans include the following water conservation measures:

[41] It should be noted that the 2010 UWMP's use of historic water demand levels dating back to 1994 would include water demand associated with previous use of the project site as a skilled nursing facility.
[42] City of Sierra Madre. *Final Draft 2010 Urban Water Management Plan.* March 2011. p. 5-1.
[43] City of Sierra Madre. *General Plan.* 1996. p. 116.

- Low water-use plant materials representing native and/or drought tolerant plants
- State-of-the-art irrigation technologies, such as flow sensors, rain sensors, and ET-based automatic controllers, designed to reduce water waste

Compliance with Title 24, the City's Mandatory Water Conservation Plan (SMMC Chapter 13.24), and the City's Water Efficient Landscape Ordinance (SMMC Chapter 15.60) will reduce the proposed project's impacts to groundwater supplies to a level of less than significant. Water supply is further discussed in Checklist Response 3.17d.

With regard to groundwater recharge, natural recharge to the Raymond Basin is mainly from direct percolation of precipitation and percolation of ephemeral stream flow from the San Gabriel Mountains in the north. The Santa Anita Sub-area is replenished only by local storm runoff that is percolated in the Santa Anita and Sierra Madre Spreading Grounds. Currently, no means exist to deliver untreated imported water into the Santa Anita Sub-area. As such, water levels in the Santa Anita Sub-area of the Raymond Basin have declined by over 100 feet in the past 10 years. Consequently, the yield from the City's wells has also fluctuated and has demonstrated a concurrent decrease.[44]

Construction of the proposed project would not appreciably increase the net area of impermeable surfaces on the site because most of the site is currently covered by concrete paving for parking areas and existing structures. The proposed building footprint is similar to existing built conditions. The project includes additional enhanced landscape areas relative to existing conditions, which would allow for some groundwater percolation. Chapter 15.60 of the City's Municipal Code, the Water Efficient Landscape Ordinance, requires certain categories of proposed and existing landscaped areas to retain any net increase in runoff on site; the project would be required to comply. Section 15.60.110 requires that runoff not leave the target landscape due to overspray or other conditions where water flows onto adjacent property, sidewalks, parking lots, etc. The project would be required to comply with these existing regulations. To further offset increases in stormwater runoff, the following mitigation measure is included:

Mitigation Measure HY-1
Parking and onsite sidewalk areas shall incorporate permeable paving or other measures, as determined by the Director of Public Works, to reduce stormwater runoff from the site. Prior to issuance of building permits, the applicant shall provide details of specific Best Management Practices (BMPs) to reduce stormwater runoff including, but not limited to, landscaping to reduce impervious surface area and permeable paving to the satisfaction of the Director of Public Works.

With proposed mitigation, the proposed project would not substantially interfere with groundwater recharge; impact would be less than significant.

c) **Less than Significant Impact.** No streams cross the project site; thus, the project would not alter any stream course. On-site drainage facilities consisting of small catch basins and pipes have been incorporated into the grading design in accordance with City requirements. The on-site system would convey the runoff to the existing streets or to existing drainage systems. The project site is proposed to be graded to lower the elevation

[44] City of Sierra Madre. *Final Draft 2010 Urban Water Management Plan.* March 2011.

of the building site and parking area by approximately three and one-half feet from the current grade. Existing retaining walls along the east, south and west property lines will be modified, and additional retaining walls added along the rear (north) property line, to accommodate the final site grade. The final grading elevations and precise wall locations would be approved by the City Engineer during plan check review. Erosion and siltation reduction measures would be implemented during construction consistent with an approved SWPPP, which will demonstrate compliance with the State NPDES permit. The applicant/developer must submit the SWPPP to the RWQCB prior to commencement of grading activities, which is consistent with Federal and State standards. At the completion of construction, the project would consist of impervious surfaces and landscaped areas, and would therefore not be prone to substantial erosion. Impact would be less than significant.

d-e) **Less than Significant Impact.** No streams cross the project site; thus, the project would not alter any stream course. During construction, the applicant/developer would develop and implement a SWPPP as required by law; this will prevent polluted runoff from leaving the construction site. Construction of the proposed project would not appreciably increase the net area of permeable surfaces on the site because most of the site is currently covered by paving or existing structures. The proposed building footprint is similar to existing built conditions. The project would comply with the City ordinance requiring certain proposed and existing landscaped areas to retain any net increase in runoff (Municipal Code Chapter 15.60). Existing storm drain catch basins in Sierra Madre Boulevard and Hermosa Avenue at the southeast corner of the site will serve the development. The catch basins are connected to an existing 24-inch reinforced concrete pipe storm drain system with 18-inch laterals from the catch basins. The existing storm drain system terminates at this location. There are no anticipated changes in the existing public drainage system. Impact would be less than significant.

f) **Less than Significant Impact.** The project will be required to comply with water quality requirements of the U.S. EPA, Los Angeles RWQCB, and the City of Sierra Madre. Compliance with existing requirements would reduce water quality impacts to a less-than-significant level; no mitigation is needed.

g-h) **No Impact.** The proposed project is not located within a 100-year flood hazard area, as mapped by the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps. The project site is identified as Zone X, which is defined by FEMA as areas outside the 0.2-percent annual chance floodplain.[45] Therefore, no impact to housing or flood hazard area structures would occur.

i) **Less than Significant Impact.** According to the City's General Plan, flooding as a result of dam failure represents a potential hazard within Sierra Madre. Portions of the City are included in the inundation area for the Little Santa Anita Dam/Sierra Madre Dam. However, due to the method of construction of this dam, it has performed well in earthquakes, and failure is not expected.[46] Furthermore, the project site is located outside of the dam inundation area for the Sierra Madre Dam.[47]

The Big Santa Anita Dam is located two miles northeast of the City. The City is also included in the general inundation area of this dam. However, the Big Santa Anita Dam is

[45] Federal Emergency Management Agency. Flood Insurance Rate Map. Map Number 06037C1400F. September 26, 2008.
[46] City of Sierra Madre. *General Plan.* 1996. p. 133.
[47] California Office of Emergency Services. Dam Inundation Maps: Sierra Madre and Santa Anita. 2009.

not considered to be a large threat because it operates as a dry dam, only containing water during rainstorms as a flood control device.[48] Thus, the project is not anticipated to result in the exposure of persons or structures to risk of hazards associated with dam inundation. Impact would be less than significant.

j) **Less Than Significant Impact:** The proposed project site is not near a large body of water. Due to the project's inland location, the site would not be affected by tsunamis.

According to the General Plan, historical mudslides have occurred in several locations within the northern portion of the City. However, the project site is located more than 0.5 miles south of the Angeles National Forrest foothills (nearest hillside to site) and is located within an urbanized area surrounded by commercial and residential uses. Impacts related to seiche, tsunami, or mudflow would be less than significant.

[48] City of Sierra Madre. *General Plan*. 1996. p. 133.

3.10 – Land Use and Planning

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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 habitat conservation plan or natural community conservation plan?	☐	☐	☐	☑

a) **No Impact.** The uses surrounding the project site primarily consist of single-family and multiple-family residential uses to the north, and commercial and institutional uses along Sierra Madre Boulevard. The proposed project would replace the vacant skilled nursing facility and caretaker house currently on the site, which have been vacant for approximately five years. The proposed project is consistent and compatible with the surrounding land uses and would not divide an established community. The project does not propose construction of any roadway, flood control channel, or other structure that would physically divide any portion of the community. Therefore, no impact would occur.

b) **Less than Significant Impact.** Two General Plan land use designations apply to the project site: the front portion is designated *Commercial* and the rear portion, adjacent to residences, is designated *Residential Medium Density*. Implementing commercial and residential zones have been applied consistently. The proposed project includes a General Plan Amendment application to clearly identify assisted living as a permitted use in the *Commercial* General Plan land use designation. Implementing zoning regulations permit such uses with a CUP.

General Plan Policy L3.1 requires that development proposals on parcels cumulatively totaling one acre or more be comprehensive planned (e.g., specific plan) prior to approval. The project site is 1.84 acres and therefore requires preparation of a Specific Plan. By law, the Specific Plan must be consistent with, and implement the policies of, the adopted General Plan. The Specific Plan includes regulations to provide for compatibility with surrounding uses, including setbacks, limits on delivery times, and height limits consistent with the established character of buildings along Sierra Madre Boulevard.

The existing zoning on the site is C (Commercial) on the southern parcel and R-3 (Multiple Family residential) on the northern parcel. The Zoning Code (Section 17.60.030) permits "eldercare facilities" such as "rest homes" or "homes for the aged" in any zone except the R-C (Residential Canyon) Zone through approval of a CUP. To authorize the proposed assisted living facility use at this location and to establish appropriate conditions of approval, the project includes a CUP application. The Specific Plan establishes site-specific development standards that are appropriate to accommodate an assisted living facility development at the project site while simultaneously addressing the intent of the underlying C and R-3 zones through equivalent regulations. The CUP will reinforce these standards. Impact would be less than significant.

The proposed project is within the Central Core Area, as defined by Section 17.35 of the Zoning Code. The proposed project is consistent with requirements of this section with regard to applicable height limits (30 feet and two stories). The proposed assisted living facility is an institutional use, and therefore the project's intensity is not defined in terms of dwelling units per acre. As such, the density limit of Section 17.35.040 does not apply.

The project would not conflict with any policy designed to mitigate environmental impacts, and impact would be less than significant.

c) **No Impact.** As discussed in Checklist Response 3.4f above, the project site and surrounding areas are not part of any habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. As such, no impact would occur.

3.11 – Mineral Resources

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☑

a-b) **No Impact.** The project site, located within the fully urbanized downtown of the City of Sierra Madre, contains vacant commercial and residential uses. Surrounding uses are also commercial and residential in nature. No mineral resource areas exist in the immediate vicinity. Development would not result in the loss of a known mineral resource. No impact would occur.

3.12 – Noise

Would the project result in:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☑

A noise study was conducted for the proposed project by Wieland Acoustics in November, 2011.[49] The study is attached as Appendix D. The analysis and conclusions are presented here. For a comprehensive discussion of noise metrics and study methodology, please refer to Appendix D. The noise study addresses both construction impacts and impacts associated with long-term operations of the facility, including onsite activities and truck deliveries.

The criteria used for assessing noise impacts associated with the proposed project include the interior noise standards set forth in Title 24, Part 2 of the California Code of Regulations, the City of Sierra Madre Noise Ordinance (Chapter 9.32 of the Municipal Code), and noise policies in the Sierra Madre General Plan. Also, groundbourne vibrations were analyzed using criteria established by the Federal Transit Administration since the City does not have any thresholds for assessing vibration impacts.

Thresholds for Assessing Impact

The thresholds used to assess the levels of construction noise, operational noise, and groundbourne vibrations are as follows:

A significant impact would result if the proposed project resulted in:

A) Exposure of persons to or generation of noise levels in excess of standards established in the Sierra Madre General Plan and Section 9.32 of the Sierra Madre Municipal Code, or applicable standards of other agencies. This impact would occur if:

1. The interior Community Noise Equivalent Level (CNEL) exceeds 45 decibels (dB) within the proposed facility; or
2. Mechanical equipment at the proposed facility exceeds 80 A-weighted decibels (dBA) at a distance of 25 feet from the source between the hours of 7:00 A.M. and 9:00 P.M. on Monday through Saturday, or between the hours of 10:00 A.M. and 6:00 P.M. on Sundays and holidays; or
3. Mechanical equipment and activities at the proposed facility produce a noise level more than 8 dBA above the local ambient at any point beyond the property line.

B) Exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels. This impact would occur if:

1. Any project construction activity causes the vibration velocity level (L_v) to exceed 72 vibration velocity level in decibels (VdB) at any residential building or 75 VdB at any office or institutional building; or
2. The peak particle velocity (PPV) at any off-site building due to project construction exceeds 0.20 inches per second (in/s).

C) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. This impact would occur if:

1. Project traffic increases the CNEL at any off-site noise-sensitive receptor[50] by a perceptible amount of 3 dB or more; or

[49] Wieland Acoustics. *Environmental Noise Study for the Proposed Kensington Assisted Living Community in Sierra Madre, CA.* November 30, 2011

[50] For the purposes of this study, an off-site noise-sensitive receptor is considered to be a single- or multi-family residence, school, convalescent or acute care hospital, park or recreational area, or church.

2. Mechanical equipment and activities at the proposed facility produce a noise level more than 8 dBA above the local ambient at any point beyond the property line.

D) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. This impact will occur if the construction noise level at any point beyond the property line exceeds 85 dBA.

E) Exposure of persons residing or working on the project site to excessive noise levels as a result of activities at an airport. Since there are no airports in the vicinity of the project, this threshold will not be considered further in this study.

a, c, and d)

Less Than Significant With Mitigation Incorporation. The noise study concludes that the proposed project has the potential to result in construction noise levels that exceed City noise ordinance standards. This impact would occur at all property lines. Also, once the project is operational, noise associated with truck deliveries and monthly testing of the emergency generator could result in noise levels that impact residences immediately north of and adjacent to the project site. As the discussion below indicates, mitigation measures are required to address these impacts.

Construction Noise

Construction of the proposed project is anticipated to start during spring 2012 and be completed by summer/early fall 2013, lasting approximately 16 to 18 months. Construction noise levels in the vicinity of the project will fluctuate depending on the particular type, number, and duration of use of various pieces of construction equipment. The noisiest piece of construction equipment to be used is expected to produce a maximum noise level of about 85 dBA at a distance of 50 feet. Since construction equipment will operate closer than 50 feet from the property line, it may be concluded that the maximum construction noise level will exceed the threshold of 85 dBA. This impact is potentially significant and can be reduced with application of the following mitigation measure. The impact would be temporary and would cease upon completion of construction activity.

Mitigation Measure N-1

To minimize construction noise levels at the nearby properties, the contractor shall, to the extent practical, effectuate the following noise abatement measures. These measures shall be incorporated into the construction management plan.

1. All construction and demolition equipment shall be fitted with properly sized mufflers.

2. Noisy construction equipment items shall be located as far as practicable from adjacent residential properties.

3. In order to minimize the time during which any single noise-sensitive receptor is exposed to construction noise, construction shall be completed as rapidly as possible.

4. The quietest construction equipment owned by the contractor (or sub-contractor, as applicable) shall be used. The use of electric powered equipment is typically quieter than diesel, and hydraulic powered equipment is quieter than pneumatic power. If compressors powered by diesel or gasoline engines are to be used, they shall be contained or have baffles to help abate noise levels.

Mitigation Measure N-1 (continued)

5. All construction equipment shall be properly maintained. Poor maintenance of equipment typically causes excessive noise levels.

6. Noisy equipment shall be operated only when necessary, and shall be switched off when not in use.

7. Storage areas shall be located away from the residences. Where this is not possible, the storage of waste materials, earth, and other supplies shall be positioned in a manner that will function as a noise barrier to the closest sensitive receivers.

8. Public notice shall be given prior to construction identifying the location and dates of construction, together with the name and phone number of the contractor's contact person in case of complaints. The public notice shall encourage the residents to call the contractor's contact person rather than the Sierra Madre Police in case of complaint. Residents shall also be kept informed of any changes to the schedule. The contractor's designated contact person shall be on site throughout project construction with a mobile phone. If a complaint is received, the contractor's contact person shall take whatever reasonable steps are necessary to resolve the complaint. If possible, a member of the contractor's team shall also travel to the complainant's location to understand the nature of the disturbance.

Operational Noise – General Activities

Once the project is operational, the facility would introduce a number of new noise sources into the area: 1) additional traffic on the local streets, 2) onsite equipment and activities (including people talking in the courtyard and parking lot), 3) rooftop mechanical equipment, 4) occasional noise associated with truck deliveries, trash pick up, and testing of the emergency generator. With regard to additional traffic, the noise study concludes that the additional 264 trips per day would increase traffic-related noise by 0.1 dB, well below the 3.0 dB threshold of significance; no noise impact associated project traffic would result.

With regard to onsite activities, the noise consultant modeled potential noise impacts on adjacent properties accounting for the following noise sources: parking lot activity, people talking in open courtyard areas, and rooftop heat pumps and condensing units.

Table 3.12-1 summarizes estimated worst-case noise levels at off-site properties due to onsite operations. (Figure 10-1 on page 21 of the study in Appendix D presents a noise contour map of the noise exposure zones.) As Table 3.12-1 indicates, under normal baseline operating conditions (excluding truck activity, emergency generator testing, and trash collection, which is discussed below), the project would not exceed the 8 dBA limit set forth in the noise ordinance and would have no significant impact.

Table 3.12-1: Summary of Estimated Project Noise Levels at Off-Site Receptors (Not Including Truck Operations)

Receptor Location	Estimated Project Noise Level	Measured Ambient Noise Level	Project – Ambient Noise Level	Assessment of Impact
Existing residential to the north				
Adj. to NW portion of site	43-45 dBA	51.0 dBA	<0 dBA	Not significant
Adj. to outside courtyard	47-56 dBA	51.0 dBA	<0-5 dBA	Not significant
Adj. to NE portion of site	32-53 dBA	51.0 dBA	<0-2 dBA	Not significant
Existing church to the east	<36 dBA	50.8 dBA	<0 dBA	Not significant
Existing City Hall to the south	<48 dBA	59.5 dBA	<0 dBA	Not significant
Existing commercial to the west	48 dBA	53.2 dBA	<0 dBA	Not significant

Operational Noise: Temporary/Periodic

To assess temporary periodic noise impacts, the noise consultant analyzed the following noise sources: 1) truck deliveries, 2) emergency generator maintenance and operation, and 3) trash pickups.

Truck Deliveries

Deliveries of supplies to the project will occur on a semi-regular basis to a loading area located on the north side of the building. The noise analysis assumed 10 deliveries would occur per week. Table 3.12-2 summarizes estimated worst-case noise levels at off-site properties due to onsite operations, including truck deliveries. (Figure 10-2 on page 24 of the study in Appendix D presents a noise contour map of the noise exposure zones.)

Table 3.12-2: Summary of Estimated Project Noise Levels at Off-Site Receptors Due to Typical Daily Operations Plus Truck Deliveries

Receptor Location	Estimated Project Noise Level	Measured Ambient Noise Level	Project – Ambient Noise Level	Assessment of Impact
Existing residential to the north				
Adj. to NW portion of site	53-65 dBA	51.0 dBA	2-14 dBA	Potentially significant
Adj. to outside courtyard	53-65 dBA	51.0 dBA	2-14 dBA	Potentially significant
Adj. to NE portion of site	34-53 dBA	51.0 dBA	<0-2 dBA	Not significant
Existing church to the east	<37 dBA	50.8 dBA	<0 dBA	Not significant
Existing City Hall to the south	<66 dBA	59.5 dBA	<6.5 dBA	Not significant
Existing commercial to the west	55 dBA	53.2 dBA	1.8 dBA	Not significant

As Table 3.12-2 indicates, residential properties immediately northwest of and adjacent to the site could be exposed to an increase in noise levels of up to 14 dBA during truck deliveries, which exceeds the 8 dBA limit set forth in the noise ordinance. The impact associated with truck delivery at the project site is potentially significant, and mitigation measures N-2 and N-3 (see below) are required to reduce the level of impact to comply with noise ordinance standards.

Emergency Generator Maintenance

The project would include an emergency generator. Based on information provided by the equipment manufacturer, this unit produces a sound pressure level of 68 dBA at a distance of 23 feet, which is approximately equivalent to a sound power level of 95.8 dBA. It is assumed that the emergency generator is only required to comply with the City's noise standards during monthly maintenance testing; that is, compliance is not required when the generator is operating under emergency conditions. For purposes of the noise study,

the analysis assumed that generator testing would occur only during daytime hours and only on weekdays. It was further assumed that testing would occur only during times when a delivery truck was not on site. The results of the noise impact analysis associated with emergency generator are presented in Table 3.12-3. (Figure 10-4 on page 28 of the study in Appendix D presents a noise contour map of the noise exposure zones.)

Table 3.12-3: Summary of Estimated Project Noise Levels with Generator at Off-Site Receptors

Receptor Location	Estimated Project Noise Level	Measured Ambient Noise Level	Project – Ambient Noise Level	Assessment of Impact
Existing residential to the north				
Adj. to NW portion of site	52-70 dBA	51.0 dBA	1-19 dBA	Potentially significant
Adj. to outside courtyard	50-71 dBA	51.0 dBA	<0-20 dBA	Potentially significant
Adj. To NE portion of site	35-54 dBA	51.0 dBA	<0-3 dBA	Not significant
Existing church to the east	<36 dBA	50.8 dBA	<0 dBA	Not significant
Existing City Hall to the south	<48 dBA	59.5 dBA	<0 dBA	Not significant
Existing commercial to the west	56 dBA	53.2 dBA	2.8 dBA	Not significant

As Table 3.12-3 indicates, during testing of the generator, residential properties immediately north of and adjacent to the site could be exposed to increases in noise levels of up to 20 dBA during emergency generator maintenance; these increases exceed the limit of 8 dBA set forth in the noise ordinance. The impact associated with emergency generator maintenance is potentially significant. Mitigation measures N-2 and N-3 are required.

Mitigation Measure N-2
A noise barrier shall be constructed along a portion of the northern property line as shown in Figure 13-1 of Appendix D of this Initial Study. The barrier shall be constructed of a material with a minimum surface density of 4 lbs/ft^2. Such materials include concrete block, stucco-on-wood, wood, tempered glass, Plexiglas, acrylic, or any combination of these materials. (It is noted that the minimum thickness required to achieve the required surface density of 4 lbs/ft^2 will vary depending on the specific material selected.) The barrier shall be a continuous structure without gaps (including gaps for drainage) or gates.

Mitigation Measure N-3
Testing of the emergency generator shall be restricted to time periods when truck deliveries are not scheduled.

The projected noise levels were reevaluated to include reductions in noise associated with Mitigation Measures N-2 and N-3. Tables 3.12-4 and 3.12-5 summarize the results of the noise analyses for operational noise levels with truck deliveries and with emergency generator maintenance, respectively, with the proposed noise barrier constructed along the portion of the northern property line as indicated in Figure 13-1 of Appendix D of this Initial Study. Figures 14-1 and 14-2 in Appendix D of this Initial Study present the results graphically with noise contours mapped. With implementation of Mitigation Measures N-2 and N-3, impacts would be reduced to less-than-significant levels.

Table 3.12-4: Summary of Estimated Project Noise Levels at Off-Site Receptors Due to Typical Daily Operations Plus Truck Deliveries, with Mitigation

Receptor Location	Estimated Project Noise Level	Measured Ambient Noise Level	Project – Ambient Noise Level	Preliminary Assessment of Impact
Existing residential to the north				
Adj. to NW portion of site	50-58 dBA		<0-7 dBA	Not significant
Adj. to outside courtyard area	43-52 dBA		<0-1 dBA	Not significant
Adj. to NE portion of site	34-55 dBA	51.0 dBA	<0-4 dBA	Not significant
Existing church to the east	<36 dBA	50.8 dBA	<0 dBA	Not significant
Existing City Hall to the south	<66 dBA	59.5 dBA	6.5 dBA	Not significant
Existing commercial to the west	55 dBA	53.2 dBA	1.8 dBA	Not significant

Table 3.12-5: Summary of Estimated Project Noise Levels at Off-Site Receptors Due to Typical Daily Operations Plus Emergency Generator, with Mitigation

Receptor Location	Estimated Project Noise Level	Measured Ambient Noise Level	Project – Ambient Noise Level	Preliminary Assessment of Impact
Existing residential to the north				
Adj. to NW portion of site	46-54 dBA	51.0 dBA	<0-3 dBA	Not significant
Adj. to outside courtyard area	43-55 dBA		<0-4 dBA	Not significant
Adj. to NE portion of site	35-54 dBA		<0-3 dBA	Not significant
Existing church to the east	<36 dBA	50.8 dBA	<0 dBA	Not significant
Existing City Hall to the south	<48 dBA	59.5 dBA	<0 dBA	Not significant
Existing commercial to the west	56 dBA	53.2 dBA	2.8 dBA	Not significant

Trash Pickups

The project would include onsite trash pickups approximately three times per week. The trash collection and pickup area is proposed to be located within an enclosure with doors opening to the outside. Consistent with current practice by the City's licensed trash hauler, it is anticipated that the contracted collector will pull the containers out of the trash room and load refuse into a "scout vehicle" (small truck or tractor). The scout vehicle functions similar to a fork lift by lifting the bin onto loading arms. The scout vehicle would then take the refuse bin to an awaiting larger trash truck on Sierra Madre Boulevard, where the contents would be emptied. The scout truck would return the empty containers to the trash enclosure. The results of the noise impact analysis associated with trash pickups are presented in Table 3.12-6. (Figure 10-3 on page 26 of the study in Appendix D presents a noise contour map of the noise exposure zones.)

Table 3.12-6: Summary of Estimated Project Noise Levels at Off-Site Receptors Due to Typical Daily Operations Plus Trash Pickups

Receptor Location	Estimated Project Noise Level	Measured Ambient Noise Level	Project – Ambient Noise Level	Preliminary Assessment of Impact
Existing residential to the north				
Adj. to NW portion of site	47-58 dBA	51.0 dBA	<0-7 dBA	Not significant
Adj. to outside courtyard	50-56 dBA	51.0 dBA	<0-5 dBA	Not significant
Adj. To NE portion of site	33-53 dBA	51.0 dBA	<0-2 dBA	Not significant
Existing church to the east	<36 dBA	50.8 dBA	<0 dBA	Not significant
Existing City Hall to the south	<57 dBA	59.5 dBA	<0 dBA	Not significant
Existing commercial to the west	48 dBA	53.2 dBA	<0 dBA	Not significant

As Table 3.12-6 indicates, noise associated with trash pickup activity would not exceed applicable thresholds; impact would be less than significant.

The use of trash containers on a daily basis would also generate noise. These noise sources include the creaking and banging of the gates to the container room, container lids dropped onto the trash containers, and trash (particularly bottles and cans) dropped into the containers. While it is unlikely that, due to the short duration and sporadic nature, the noise levels generated by these sources will exceed the thresholds of significance (i.e., an increase of 8 dBA in the ambient noise level). However, such noise can be annoying, particularly if it occurs during the late evening and early morning hours. Therefore, the impact could be considered potentially significant at residential properties immediately north of the project site and adjacent to the property line. Mitigation measure N-4 is included to reduce the impacts to a less-than significant level.

Mitigation Measure N-4
To minimize annoyance associated with the use of the trash containers and with trash pickups, the project operator shall, to the extent practical, put in place and practice the following noise abatement measures:

- The gates to the trash room shall be designed and constructed so that they do not sag and do not drag across the pavement as they are opened and closed.

- The project operator shall put into place administrative controls that will instruct employees on the noise sensitivity of the residential properties to the north, and train them in ways that will reduce noise associated with the use of the trash containers. At a minimum:

  1) Trash shall not be dumped into the container bins between the hours of 10:00 P.M. and 8:00 A.M.
  2) The trash room gates shall not be slammed closed or permitted to strike the building when opened.
  3) The maintenance crew shall be instructed to keep the gate hinges well lubricated at all times to prevent squeaking.
  4) The lids to the trash containers shall not be allowed to drop when they are closed.
  5) The maintenance crew shall be required to place and maintain in good condition neoprene rubber strips around the perimeter of the trash containers so that there is no metal-on-metal contact when the container lids are closed.
  6) Trash consisting of bottles, cans or particularly heavy items shall be placed or lowered into the trash container, not dropped.

With incorporation of Mitigation Measures N-1 through N-4, operational noise impacts would be reduced to less-than-significant levels.

b) **Less than Significant with Mitigation Incorporation.** The primary vibratory source during project construction would be large bulldozers. Based on published data, typical bulldozer activities generate a peak particle velocity (PPV) of 0.089 in/s and a vibration level (Lv) of 87 VdB at a distance of 25 feet. Using these values, an analysis was conducted to estimate the groundborne vibration levels that would be experienced at the nearest adjacent buildings during construction of the project. The results of this analysis are summarized in Table 3.12-5.

Table 3.12-5: Estimated Construction Vibration Levels

Location	Distance	Estimated PPV	Estimated L_V
Nearest residential building	20 ft	0.124 in/s	90 VdB
Nearest church building	50 ft	0.031 in/s	78 VdB
Nearest City Hall building	100 ft	0.011 in/s	69 VdB
Nearest commercial building	60 ft	0.024 in/s	76 VdB

The PPV is not expected to exceed the threshold of 0.200 in/s at the nearest residential buildings north of and adjacent to the project site during construction. Therefore, the impact at these locations is less than significant.

The L_V threshold of 72 VdB is expected to be exceeded at the residential properties north of and adjacent to the project site, and the L_V threshold of 75 VdB is expected to be exceeded at the nearest church building to the east and at the nearest commercial building to the west. Therefore, the impact is potentially significant at these locations. The impact would occur for a short term only during construction activity and only when heavy equipment operates near a property line. No significant impact is expected at the City Hall buildings to the south.

Mitigation Measure N-5 is required to reduce short-term vibration impacts during the project construction phase.

Mitigation Measure N-5
To minimize annoyance associated with short-term construction activity vibration to nearby residential uses, the project applicant shall:

- Operate earth-moving equipment on the construction lot as far away from vibration-sensitive sites as possible.
- Phase demolition, earth-moving, and ground-impacting operations so as not to occur simultaneously. Wherever possible, excavators, bulldozers, backhoes, loaders, graders, or similar equipment shall not be used within 15 feet of any building on an adjacent property, and vibratory rollers shall not be used within 20 feet of any building on an adjacent property.

e-f) **No Impact.** No airport land use plans apply to the area, and the proposed project site is not located within two miles of an airport. The airport closest to the project site is the El Monte (EMT) Airport, which is approximately five miles south of the project site. No impacts to airport land use plans or airports could occur. There are also no private airstrips in the project vicinity; there would be no impacts related to excessive noise near a private airstrip.

3.13 – Population and Housing

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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)?	☐	☐	☑	☐
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☑	☐
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑

a) **Less than Significant Impact.** The project does not involve the construction of any major public facilities, such as extension of water or sewer lines or roads into uninhabited areas, which would facilitate other growth in the area. New jobs associated with the project would be limited to 25 full- and part-time positions. This does not represent substantial employment growth which would increase housing demand.

The 2010 Census indicates that the population of Sierra Madre is 10,917 persons. The California Department of Finance, Demographic research unit estimates that one year later, the population was 10,948 persons (as of January 1, 2011). The proposed project would result in an estimated 0.88 percent increase in population. SCAG projects a year 2015 population in Sierra Madre of 11,084.[51] The increase in population associated with the project would be consistent with SCAG projections. Impact would be less than significant.

b) **Less than Significant Impact.** Construction and operation of the proposed project would result in demolition of one vacated single-family house and a vacated convalescent facility. Because the facilities are vacant, the project would not displace any current resident.

The U.S. Census reports that in 2010, the Sierra Madre population was 10,917, with a total of 5,113 housing units (4,837 of which were occupied by households).[52] The California Department of Finance, Demographic Research Unit (DOF) estimates the 2011 population in Sierra Madre increased to 10,948 persons living and the number of housing

[51] See also complete analysis of SCAG population estimates in Section 3.3a of this Initial Study.
[52] U.S. Census. Profile of General Population and Housing Characteristics: 2010, Sierra Madre City.

units remained 5,113.[53] The Census and DOF report a 5.4 percent vacancy rate in the City, indicating that approximately 276 housing units were vacant at the time. Given that only one housing unit is being demolished, that it is currently vacant, and that other housing vacancies exist in the City, impacts related to the loss of housing would be less than significant.

c) **No Impact.** "Displacement," in the context of housing, can generally be defined as persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence.[54] The existing single-family house is currently vacant; as such, there is no "forced or obliged" removal of persons, and therefore no displacement. No impact would occur.

[53] California Department of Finance. E-5 Population and Housing Estimates for Cities, Counties, and the State, 2010-2011. May 2011.
[54] The Brookings Institute. Handbook for Applying the Guiding Principles on Internal Displacement. 1999.

3.14 – 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:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Fire protection?	☐	☐	☑	☐
b) Police protection?	☐	☐	☑	☐
c) Schools?	☐	☐	☑	☐
d) Parks?	☐	☐	☑	☐
e) Other public facilities?	☐	☐	☑	☐

a) **Less than Significant Impact.** Fire protection to the project site is provided by the Sierra Madre Fire Department from the fire station located directly across the street from the project site at 242 W. Sierra Madre Boulevard. The Sierra Madre Fire Department has one Fire Chief, three Battalion Chiefs, one Fire Marshal, one Captain Paramedic Coordinator, six Captains, six Engineers, and 30 firefighters, consisting of five crews on a rotating platoon basis. The Sierra Madre Fire Department fleet includes four Type 1 Engines, one water tender (2,800 gallons), two rescue ambulances, one Urban Search and Rescue (USAR) trailer, one chief's vehicle, one command vehicle, and one utility truck. The Department currently has an Insurance Services Office (ISO) rating of 4 (with 1 being the highest).[55]

The project would replace an existing vacant use, and as such could result in an increase in calls for fire protection and emergency medical services, particularly given that the facility would house frail or infirm elderly persons. Whether a specific project results in a need for new or expanded fire protection facilities depends partly on the level of demand for fire protection the project generates, and partly on the distance from the project site to the nearest existing fire station. As the project is expected to result in a relatively small increase in demand for fire protection, if any, and the closest fire station is less than 0.1 mile from the site (directly across the street), project development would not require construction of new or expanded fire protection facilities. Impact would be less than significant.

[55] City of Sierra Madre. <http://www.cityofsierramadre.com/departments/fire-department/213-fire-department> Accessed September 15, 2011.

For a 58,000-square-foot building, the State Fire Code requires a fire-flow of 2,500 gallons per minute. The code allows a reduction in required fire-flow of up to 75 percent when a building is provided with an approved automatic sprinkler system; however, the minimum required fire-flow shall not ever be reduced below 1,500 gallons per minute. The project would be installed with automatic sprinklers, so required fire-flow would be 1,500 gallons per minute.

The project site is currently served by an eight-inch water main. Recent testing of the nearest fire hydrants (at the fire station across the street and on Hermosa Avenue) indicates that fire-flows at this location (2,185 gallons per minute and 3,047 gallons per minute, respectively)[56,57] meet the requirements of the California Fire Code for the type of project proposed, and impacts are less than significant.

b) **Less than Significant Impact.** The Sierra Madre Police Department, located at 242 West Sierra Madre Boulevard (directly across the street), provides police protection to the project site. The Sierra Madre Police Department has 22 full-time members, including the Chief of Police, a police captain, four sergeants, two corporals, one detective, one traffic officer, and seven police officers, along with four non-sworn desk officer-dispatchers and one non-sworn code compliance officer. The Department also has several part-time employees and volunteers who contribute to maintaining a safe community.[58] The Police Department aims to maintain a population ratio of one officer per 1,000 residents. With its current staffing of 17 sworn officers, and using the Department of Finance's January 2011 population estimate of 10,948 persons, the existing ratio is one officer per 644 persons, consistent with the Department's goal. Although demand for police services may incrementally increase as associated with the proposed project, the project is required to pay the safety impact fee payment for police services to mitigate potential impacts. Furthermore, the Police Department's population ratio to sworn officers would remain well within the Department goal. Impact would be less than significant.

c) **Less than Significant Impact.** The project site is located within the Pasadena Unified School District. The District has a total of 32 schools, including three charter schools. Enrollment as of October 2009 was 20,526 students. Pasadena Unified School District assesses development impact fees on new development. The proposed project will be subject to school fees based on the floor area of the facility. Furthermore, since it is an assisted living facility where residents are anticipated generally to be seniors, the project is not anticipated to generate any new students within the Pasadena Unified School District. Impact would be less than significant.

d) **Less than Significant Impact.** The City of Sierra Madre currently maintains four parks: Bailey Canyon Wilderness Park, Memorial Park, Mt. Wilson Trail, and Sierra Vista Park, which total 23.8 acres of parkland. Memorial Park, located at 222 West Sierra Madre Boulevard, is 3.5 acres and located across the street from the project site. Chapter 16.44 of the Sierra Madre Municipal Code and the 1995 Sierra Madre General Plan Update EIR utilize a parkland ratio goal of three acres per 1,000 residents. Using this ratio and the

[56] City of Sierra Madre Fire Department, Fire Prevention Bureau. Fire Flow Report: 245 W. Sierra Madre Blvd. November 9, 2011.
[57] City of Sierra Madre Public Works Department. Letter to Mr. William D. Shields from Mr. Bruce Inman Re: Fire Flow Availability for Development Proposed at 245 West Sierra Madre Boulevard. November 29, 2011.
[58] City of Sierra Madre. <http://www.cityofsierramadre.com/administration> Accessed September 15, 2011.

2011 population estimate of 10,948 persons,[59] the City has 2.17 acres of parkland per resident.

The project does not propose any new park facilities. The proposed project would allow up to 96 residents to live in the assisted living facility, which may have the potential to increase the use of existing parks and facilities as a result of the increased population. Using the parkland ratio of three acres per 1,000 people, this population increase would create a demand for an additional 0.288 acres. The proposed project provides over 20,000 square feet (0.46 acres) of landscaping in the form of a rose garden, outdoor walking paths, decorative arbors, garden art, and outdoor seating areas. Given the project's landscape plan, provision of onsite services, and limited mobility of future senior residents, impacts on park land would be less than significant.

e) **Less than Significant Impact.** The City of Sierra Madre will require that public facilities fees be paid as part of this project. The purpose of the public facilities impact fees is to offset impacts related to proposed development and the increase in population that may result from new projects. These fees include general government, library, public safety, traffic, water, and sewer fees. With the payment of public facilities fees, the proposed project would have a less than significant impact on other public facilities.

[59] California Department of Finance, E-5 Population and Housing Estimates for Cities, Counties, and the State, 2010-2011. May 2011.

3.15 – Recreation

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☑

a) **Less than Significant Impact.** Residents will occasionally use local recreational facilities. Residents are perhaps most likely to use Memorial Park, given its close proximity to the project site. On average, the oldest resident in an assisted living facility designed for the elderly is 94 years old, while the youngest is 66 years old.[60] Since the "typical" resident in an assisted care facility like the proposed project is elderly and may need some ambulatory assistance, the recreation needs are more passive in nature. It is not anticipated that many residents will use City parks other than the passive facilities at Memorial Park. The assisted care facility will provide onsite private open space in the form of 20,000 square feet of landscaped grounds, including walking paths, rose gardens, arbors, garden art, and outdoor seating areas. Given that use of public recreation facilities by project residents would be minimal, the project is not expected to require new trails or the construction of new facilities. Impact on recreational facilities would be less than significant.

b) **No Impact.** The proposed project does not involve the development of any public recreational facilities. All landscaping and outdoor amenities on the site will facilitate passive enjoyment of the outdoors by residents. No impact would result.

[60] National Center for Assisted Living. *Facts and Trends: The Assisted Living Sourcebook*. 2001. Prepared by Kevin Kraditor, M.A. p. 2.

3.16 – Transportation and Traffic

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☑	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards 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?	☐	☐	☑	☐
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☑	☐

a) **Less than Significant Impact.** A traffic analysis, prepared by Linscott, Law & Greenspan, Engineers, dated November 28, 2011,[61] (Appendix C) was prepared to assess project traffic and parking impacts. The traffic analysis evaluated potential project-related traffic impacts at two key intersections and one street segment in the vicinity of the project site. The street segment analyzed was Sierra Madre Boulevard adjacent to the project site. The two area intersections analyzed in the traffic study were:

- Michillinda Avenue/Sierra Madre Boulevard (signalized)
- Baldwin Avenue/Sierra Madre Boulevard (unsignalized; four-way stop sign)

The traffic study presents existing traffic volumes, forecasts existing-plus-project traffic volumes, forecasts future traffic volumes with and without the proposed project, and identifies project-related impacts using the methodology outlined in Appendix C.

Street Network

Sierra Madre Boulevard is an east-west oriented roadway that borders the site to the south. Sierra Madre Boulevard east of Michillinda Avenue is classified as a Collector Street in the City of Sierra Madre General Plan. One through travel lane is provided in each direction on Sierra Madre Boulevard in the project vicinity. Sierra Madre Boulevard is posted for a speed limit of 30 miles per hour in the project vicinity.

Michillinda Avenue is a north-south oriented roadway that is located west of the project site. Michillinda Avenue is classified as a Major Street in the City of Sierra Madre General Plan. Two through travel lanes are generally provided in each direction on Michillinda Avenue. Michillinda Avenue is posted for a speed limit of 35 miles per hour in the project vicinity.

Baldwin Avenue is a north-south oriented roadway that is located east of the project site. Baldwin Avenue north of Orange Grove Avenue is classified as a Collector Street in the City of Sierra Madre General Plan. Baldwin Avenue south of Orange Grove Avenue is classified as a secondary arterial in the Arcadia General Plan Circulation and Infrastructure Element. One through travel lane is generally provided in each direction on Baldwin Avenue. Baldwin Avenue is posted for a speed limit of 25 miles per hour in the project vicinity.

Thresholds of Significance

The morning and evening peak hour operating conditions for the two study intersections were evaluated using the Intersection Capacity Utilization (ICU), which determines volume-to-capacity (V/C) ratios on a critical lane basis. The overall intersection V/C ratio is subsequently assigned a Level of Service (LOS) value to describe intersection operations. LOS is defined on a scale of A through F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. LOS A is characterized as having free-flowing traffic conditions with no restrictions on maneuvering or operation speeds, where traffic volumes are low and travel speeds are high. LOS F is characterized as having forced flow with many stoppages and low operating speeds.

The City of Sierra Madre does not have an official policy for significance thresholds. Consistent with other traffic studies previously prepared for the City of Sierra Madre, the significance of the potential impacts of project generated traffic at the study intersections

[61] Linscott, Law & Greenspan, Engineers. *Traffic Impact Analysis: Fountain Square Assisted Living Project, City of Sierra Madre, California.* November 28, 2011.

were identified using criteria set forth in the *2010 Congestion Management Program*. A significant transportation impact is determined based on a change in the calculated *v/c* ratio of two percent (0.02) or more due to project-related traffic for an intersection operating at LOS F or worse (*v/c* > 1.00). As such, a project would not have a significant impact if the analyzed location is operating at LOS E or better after the addition of project traffic.

The Michillinda Avenue/Sierra Madre Boulevard intersection is jointly shared with the City of Pasadena. Thus, this intersection was evaluated for potential traffic impacts using the more stringent criteria of the City of Pasadena. The significance of the potential impacts of project generated traffic at the Michillinda Avenue/Sierra Madre Boulevard intersection was identified using criteria set forth in the City of Pasadena's *Transportation Impact Review Current Practice and Guidelines.*[62] According to the City's Sliding Scale Method for calculating the level of impact due to traffic generated by the proposed project, a significant transportation impact is determined based on the criteria presented in Table 3.16-1.

Table 3.16-1: City of Pasadena Intersection Impact Threshold Criteria

Final *v/c*	Level of Service	Project Related Increase in *v/c*
0.000 - 0.600	A	equal to or greater than 0.06
> 0.600 - 0.700	B	equal to or greater than 0.05
> 0.700 - 0.800	C	equal to or greater than 0.04
> 0.800 - 0.900	D	equal to or greater than 0.03
> 0.900 - 1.000	E	equal to or greater than 0.02
> 1.000	F	equal to or greater than 0.01

Existing Traffic Volumes

Manual counts of vehicular turning movements were conducted in September 2011 when local schools were in session at each of the two study intersections during the weekday morning and afternoon commuter periods to determine the peak-hour traffic volumes. The manual counts were conducted at the study intersections from 7:00 to 9:00 A.M. to determine the weekday morning peak commuter hour, and from 4:00 to 6:00 P.M. to determine the weekday afternoon/evening peak commuter hour. Automatic 24-hour machine traffic counts of the study street segment (Sierra Madre Boulevard near the project site) were conducted in September 2011 during a weekday condition.

At the time the traffic count data was collected, the Sierra Madre Boulevard Water Main Project was on-going, which resulted in some traffic movement diversions east of Baldwin Avenue. As a result, historical traffic count data were reviewed and utilized for the Baldwin Avenue/Sierra Madre Boulevard intersection since they were higher than the recent counts. The traffic count data conducted for the Michillinda Avenue/Sierra Madre Boulevard intersection did not appear to be affected by the City's Water Main Project.

The two study intersections are presently operating at LOS C during the weekday morning and afternoon/evening peak hours.

[62] *Transportation Impact Review Current Practice and Guidelines*, Transportation Planning & Development Division, City of Pasadena Department of Transportation, August 24 2005.

Forecasted Traffic Volumes and Intersection Conditions
The project would generate an average of 264 vehicle trips per day (cars and delivery vehicles), with 16 trips occurring during the morning peak hours and 28 trips occurring in the afternoon/evening peak period.

To determine the operating conditions of the street system under existing plus project conditions, traffic to be generated by the proposed project was added to the year 2011 existing traffic conditions. As shown in detail in Appendix C (Table 8-2 on page 24), the Future 2013 conditions with the project would result in a minor, incremental increase in traffic and a continued LOS C during both peak hours. Impact would be less than significant. No mitigation measures or changes to the roadway would be required.[63]

With regard to the street segment on Sierra Madre Boulevard, the level of impact of project generated traffic at the street segment was identified based on the *City of Sierra Madre General Plan Traffic and Parking Section*.[64] As a result of the project, the V/C ratio is anticipated to increase by 0.011 or 1.1 percent (Appendix C, Table 9-1). This level of increase is determined to be less than significant based on 2010 Congestion Management Program threshold criteria, as discussed above. The proposed project is not anticipated to significantly impact the analyzed street segment. Thus, no mitigation measures are required.

The payment of standard traffic impact fees would diminish any incremental impacts on area roadways and intersections from the project. Impact would be less than significant.

b) **Less than Significant Impact.** Pursuant to the Los Angeles County Metropolitan Transportation Authority Congestion Management Plan (CMP), any project that adds 150 or more vehicle trips to freeway segments or 50 or more vehicle trips to roadway segments during peak hours must be examined for impact of CMP roadways and intersections.

The following CMP intersection monitoring location in the project vicinity has been identified: CMP Station No. 121: Rosemead Boulevard/Foothill Boulevard Intersection. The proposed project will not add 50 or more trips, during the morning or afternoon/evening peak hours at any CMP monitoring intersections,[65] which is the threshold for preparing a traffic impact assessment, as stated in the CMP manual; no impact would occur.

The following CMP freeway monitoring locations in the project vicinity have been identified: CMP Station No. 1061: I-210 Freeway at Rosemead Boulevard segment and CMP Station No. 1062: I-210 Freeway west of I-605 Freeway segment. The proposed project will not add 150 or more trips (in either direction), during either the morning or afternoon/evening weekday peak hours to any CMP freeway monitoring locations, which is the threshold for preparing a traffic impact assessment, as stated in the CMP manual; no impact would not occur.

[63] The traffic study also examined conditions in the future assuming ambient growth in background traffic. For CEQA purposes, however, the future condition against which to assess impact is Existing Plus Project traffic which, as noted above, would not result in traffic impacts. It is interesting to note that with regard to the Ambient Growth Plus Project Conditions, the conclusion remains the same, with LOS C retained.
[64] *City of Sierra Madre General Plan Traffic and Parking Section,* City of Sierra Madre, adopted June 11, 1996.
[65] Linscott, Law & Greenspan, Engineers. *Traffic Impact Analysis: Fountain Square Assisted Living Project, City of Sierra Madre, California*. November 28, 2011.

The project would not, therefore, conflict with an applicable congestion management program or level of service standard established by the congestion management agency. Impacts would be less than significant.

c) **No Impact.** The project is located approximately five miles from the El Monte Airport, a general aviation airport of approximately 100 acres, with an aircraft runway limited to craft weighing less than 12,500 pounds. Private and business light single and multi-engine aircraft and helicopters account for the majority of activity.[66] The proposed project is a two-story assisted living facility, and is not anticipated to draw regional air traffic or increase air travel demand. Furthermore, the proposed 30-foot maximum building height would not affect airport approach or departure spaces or any air traffic patterns.

d) **No Impact.** The proposed project does not involve changes in the alignment of Sierra Madre Boulevard or Hermosa Avenue, the two streets adjacent to the project site. One access drive is proposed on Sierra Madre Boulevard, in the same general location as the existing access drive. No additional access driveways are proposed on Hermosa Avenue. The proposed retaining wall has a 15-foot sight-line setback at the intersection of Hermosa Avenue and Sierra Madre Boulevard. This project would not result in a traffic safety hazard due to any design features.

e) **Less Than Significant Impact.** The project proposes a new access driveway on Sierra Madre Boulevard that is at least 25 feet wide. This width is of sufficient length to provide access to fire and emergency vehicles and is consistent with the California Fire Code Standard 530.2.1 that requires a minimum width of 20 feet. All portions of the proposed assisted living facility would be accessible within 150 feet of a fire hydrant or a drive aisle accessible by fire truck. All access features are subject to and must satisfy the City of Sierra Madre design requirements. This project would not result in adverse impacts with regard to emergency access.

f) **Less than Significant Impact.** Public bus transit service in the project vicinity is currently provided by the Metropolitan Transportation Authority (Metro), the City of Pasadena Area Rapid Transit System (ARTS) and the City of Sierra Madre. Metro operates two transit bus routes on Sierra Madre Boulevard near the project site: Route 268, which runs mainly southeast-northwest between El Monte and Altadena, and Route 487/489, running mainly northeast-southwest between El Monte and central Los Angeles. The City of Sierra Madre operates the Gateway Coach bus route round-a-bout, via the Recreation Center to the Gold Line Station, Sierra Madre Boulevard, and Michillinda to Sierra Vista Park. Pasadena ARTS Route 60 operates on Sierra Madre Boulevard near the project site and continues west into Pasadena. There is a bus stop located immediately adjacent to the project site on Sierra Madre Boulevard near Hermosa Avenue.

To estimate transit trip generation associated with the project, the project trip generation was adjusted by values set forth in the CMP (i.e., person trips equal 1.4 times vehicle trips, and transit trips equal 3.5 percent of the total person trips). Pursuant to the CMP guidelines, the proposed project is forecast to generate demand for 1 transit trip during the weekday morning peak hour, 2 transit trips during the weekday evening peak hour, and 13 daily transit trips during the weekday. The four bus routes discussed above are provided adjacent to or in close proximity to the project site. These four transit lines provide service for a total of 13 buses serving the project area during the weekday morning and evening peak hours. Transit trip generation due to the proposed project

[66] Los Angeles County Airport Land Use Commission. *Los Angeles County Airport Land Use Plan.* Adopted December 19, 1991.

would correspond to an average of less than one new transit rider. The existing transit service in the project area will adequately accommodate the project generated transit trips. Thus, given the low number of generated transit trips per bus, no impacts on existing or future transit services in the project area would occur as a result of the proposed project.

The proposed project would not result in any changes to lane or street configuration of Sierra Madre Boulevard, Hermosa Avenue, or to existing sidewalks that could affect performance or safety of alternative transportation facilities. Impact would be less than significant.

3.17 – Utilities and Service Systems

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☑	☐
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?	☐	☐	☐	☑

Infrastructure, Utilities, and Services

The City of Sierra Madre operates its own water utility service. Sewer service is provided the Sanitation Districts of Los Angeles County. Local flood control facilities are maintained by the City, with regional facilities under the jurisdiction of the Los Angeles County Department of Public Works.

Water services for domestic use and fire protection would be served from the water line in Sierra Madre Boulevard and tapped from the same approximate locations as for the existing building. As described in Section 3.14(a) – Public Services, the current water line provides the appropriate pressure needed to achieve minimum fire-flow requirements. Existing fire hydrants at the corner of Sierra Madre Boulevard/Hermosa Avenue and on the south side of Sierra Madre Boulevard across from the southwest corner of the site currently serve the site and are anticipated to continue as fire service.

The 10-inch sanitary sewer line in Sierra Madre Boulevard would serve the project.

Storm drain catch basins are present in Sierra Madre Boulevard and Hermosa Avenue at the southeast corner of the site. The catch basins are connected to an existing 24-inch storm drain system with 18-inch laterals from the catch basins. The existing storm drain system terminates at this location. The project would not involve any changes in the existing drainage system. On-site drainage facilities would consist of small catch basins and pipes that would be incorporated into the grading design. The system would be designed to comply with NPDES requirements, with runoff ultimately released to the existing drainage systems. Final drainage designs must conform to the drainage requirements of SMMC Section 15.48.240 (Design Standards for Drainage) and be approved by the City Public Works Director.

Power, telephone, and cable television/communications services would be served from overhead facilities in Hermosa Avenue located near the rear property line. Any new facilities would be placed underground to the service connections for the building.

a) **Less Than Significant Impact:** Development of the proposed project would provide for the collection of all wastewater to the 10-inch sanitary sewer line in Sierra Madre Boulevard. From there, sewage would flow into trunk lines for conveyance to offsite public wastewater treatment facilities. The Sanitation Districts of Los Angeles County, under contract with Sierra Madre, collects and treats wastewater at regional facilities located in Whittier and Carson. The ultimate disposal of effluent and solids occur in compliance with 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 RWQCB. Therefore, impact would be less than significant.

b) **Less than Significant Impact.** Currently, a 10-inch sewer line exists in Sierra Madre Boulevard. There are three existing sewer laterals from the project site to the sewer line in Sierra Madre Boulevard. The project applicant/developer may be required to remove some of the laterals or construct additional laterals from the project site to connect to the existing line. The Civil Feasibility Study prepared for the proposed project found that the existing lines have adequate capacity to serve the project.[67] The existing sewer laterals will be verified and inspected for use to accommodate the new development. If not usable, a new sewer lateral would be constructed to connect to the existing line in Sierra Madre Boulevard, subject to review and approval by the City's Public Works Department. Modifications to the existing sewer system are not otherwise anticipated. Connection to the existing line would not result in a substantial environmental impact because it would not

[67] Fountain Square Development West. Civil Feasibility Study for Sierra Madre.

disturb any undeveloped area and requires only nominal trenching activities as part of the construction process. Connection to the sewer line is not anticipated to require complete closure of any public or private roadway. Any lane closures required for installation of the sewer line would be conducted using standard traffic detours and is not anticipated to cause substantial traffic congestion.

Expansion of the Sanitation Districts of Los Angeles County's reclamation facility will not be required in order to serve the project (See Section 3.17.e for further discussion). Impact would be less than significant.

The City operates water treatment facilities that filter and/or disinfect water before it is delivered to customers. The City of Sierra Madre Water Division provides water to the City from two sources: groundwater from wells in the East Raymond Basin and springs in the foothills of the San Gabriel Mountains. The project would not alter any existing water treatment facilities. No impact would occur.

c) **Less Than Significant Impact.** A NPDES permit will be required for the proposed project, which requires adoption of appropriate Stormwater Pollution Prevention Plan (SWPPP) and implementation of Best Management Practices (BMPs). The proposed project's storm drainage system would include treatment methods to ensure the storm water would be cleaned and retained onsite to a level equal to or greater than the NPDES mandates. Implementation of BMPs would reduce pollutants in stormwater and urban runoff from the project site. The proposed storm drainage system, in combination with the SWPPP and BMPs, must be designed to the satisfaction of the City's Public Works Director and in conformance with all applicable permits and regulations. The project applicant/developer would be required to provide all necessary on-site infrastructure and pay a development impact fee for storm drain facilities within the City. Project impacts on stormwater and stormwater drainage facilities are also discussed above in Section 3.9. Impacts would be less than significant, and no mitigation beyond compliance with existing laws is required.

d) **Less than Significant Impact.** As discussed in Section 3.9 above, the City of Sierra Madre's primary source of water is local groundwater. The City's 2010 Urban Water Management (UWMP) anticipates a limited population growth and therefore fairly consistent water demand over the next 20 years. The UWMP assumes that the City's population in 2030 will be 11,099 persons (consistent with SCAG projections established for the 2008 Regional Transportation Plan, which is discussed in more detail in Section 3.3a above). The U.S. Census reports that the City's 2010 population is 10,917 persons. Current population (2011) estimates provided by the California DOF estimate the City's population at 10,948 persons. Given that the project would result in a maximum total of 96 new residents in the assisted living facility, for a total City population estimated at 11,044, the project would not exceed the total population anticipated in the 2010 UWMP (11,099 persons).

The project is estimated to have a water demand of 12.96 AFY,[68] accounting for approximately 0.5 percent of the Sierra Madre's total projected water demand in 2030

[68] Project estimated water demand based on sum of plumbing fixture units applied to fixtures list provided by applicant. Irrigation estimated based on California Department of Water Resources Water Budget workbook, which calculates Maximum Applied Water Allowance and Estimated Total Water Use based on Sierra Madre reference evapotranspiration from the Water Efficiency Landscape Ordinance (SMMC Section 15.60.020).

(total demand is anticipated to be 2,611 AFY).[69] Estimated water usage for the project site accounts for mandatory state water conservation in landscaping requirements.

The UWMP estimates that current per capita demand for water (averaged over five years) is approximately 265 gallons per capita per day (GPCD). The UWMP sets a use target of 236 GPCD in 2015 and 210 GPCD in 2020, representing a 20 percent reduction in demand citywide. The proposed project would house 96 residents in the assisted living facility and require an estimated 12.96 AFY, or 12,436.59 gallons per day. This equates to 129.55 GPCD, significantly less than the 2020 target of 210 GPCD (80.45 GPCD less). As the project is consistent with SCAG population projections over the long-term as utilized in the UWMP, and would meet reductions in water demand targets prescribed by the UWMP, impact would be less than significant**.**

e) **Less than Significant Impact**. Wastewater treatment is provided to the City by the Sanitation Districts of Los Angeles County (Districts). The wastewater from the City's service area primarily flows to the San Jose Creek Reclamation Plant in Los Angeles County near the City of Whittier.[70] Wastewater would flow to the west part of the plant; the west part of San Jose Creek Reclamation Plant has a capacity of 37.5 million gallons per day (mgd), and in 2010 treated an average 22 mgd, for a residual capacity of roughly 15.5 mgd.[71]

Estimated wastewater generation by the assisted living facility would be 50 gallons per day per bedroom[72], for a total of 4,400 gallons per day (gpd). The estimated 4,400 gpd increase in wastewater generation from the proposed multipurpose building would be about 0.028 percent of the residual capacity at the San Jose Creek Water Reclamation Plant. There are adequate wastewater treatment facilities in the region to treat project-generated wastewater, and project development would not require the construction or expansion of wastewater treatment facilities.

f) **Less than Significant Impact.** The City contracts exclusively with Athens Services for the collection and disposal of solid waste and recyclables. Athens disposes of waste at several area landfills, including Puente Hills Landfill and Scholl Canyon. The Puente Hills Landfill has a permitted daily capacity of 13,200 tons (4,821,300 tons per year), with a permitted total capacity of 106,400,000 cubic yards and a remaining capacity of 62,291,000 cubic yards. This landfill is projected to close in 2013. The Scholl Canyon Landfill has a permitted daily capacity of 3,400 tons (1,241,850 tons per year), with a permitted capacity of 69,200,000 cubic yards and a remaining capacity of 11,723,400 cubic yards. The Scholl Canyon Landfill is estimated to close in 2019.

Different uses have varying levels of estimated solid waste production. For example, a multi-family unit can be expected to produce eight pounds of trash per day, an office building can be expected to produce one pound for every 100 square feet of office space, and a nursing home (a use similar to the proposed assisted living facility) can be expected to produce five pounds per person per day.[73] Using this typical solid waste generation rate for nursing homes, the proposed project would generate approximately 87.66 tons of solid waste per year. This is 0.002 percent and 0.007 percent of residual permitted capacity at

[69] City of Sierra Madre. *Final Draft 2010 Urban Water Management Plan.* March 2011.
[70] City of Sierra Madre. *2010 Urban Water Management Plan.* March 2011. p. 4-20.
[71] Personal communication with Ann Heil, Los Angeles County Sanitation District Supervising Engineer, October 7, 2011.
[72] City of Los Angeles. *LA CEQA Thresholds Guide*. 2006. p. M.2-24.
[73] Republic Waste Services of Southern California, July 2011.

Puente Hills Landfill and Scholl Canyon Landfill, respectively. Although these existing landfills currently used by Athens are anticipated close in 2013 and 2019, other regional landfills have remaining capacity. Also, regional plans are underway to transport waste by rail to landfill sites in the desert areas to the east. There is adequate landfill capacity in the region to accommodate project-generated waste. Considering the availability of landfill capacity and the relatively nominal amount of solid waste generation from the proposed project, project solid waste disposal needs can be adequately met without a significant impact on the capacity of the nearest and optional, more distant, landfills. Furthermore, Athens Services operates a Materials Recovery Facility (MRF) in the City of Industry. Sierra Madre's commercial area solid waste is collected by Athens Services and transported to the MRF, where recyclables are separated from the waste stream. It is therefore not expected that the proposed project would impact the City's compliance with State-mandated (AB 939) waste diversion requirements. Impacts would be less than significant.

g) **No Impact.** The proposed project is required to comply with all applicable Federal, State, County, and City statutes and regulations related to solid waste as a standard project condition of approval. Therefore, no impact would occur.

3.18 – Mandatory Findings of Significance

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	☐	☑	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable?	☐	☑	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☑	☐

a) **Less than Significant Impact with Mitigation Incorporated**. The proposed project would not substantially impact any scenic vistas, scenic resources, or the visual character of the area, as discussed in Section 3.1, and would not result in excessive light or glare. The project site is located within an urbanized area with no natural habitat. The project would not significantly impact any sensitive plants, plant communities, fish, wildlife or habitat for any sensitive species after incorporation of mitigation, as discussed in Section 3.4. Adverse impacts to archaeological and paleontological resources would not occur. Construction-phase standard procedures would be implemented in the event any important archaeological or paleontological resources are discovered during grading. This site is not known to have any association with an important example of California's history or prehistory. Based on the preceding analysis of potential impacts in the responses to items 3.1 thru 3.17, no evidence is presented that this project would degrade the quality of the environment.

b) **Less than Significant Impact with Mitigation Incorporated.** Cumulative impacts can result from the interactions of environmental changes resulting from one proposed project with changes resulting from other past, present and future projects that affect the same resources, utilities and infrastructure systems, public services, transportation network elements, air basin, watershed, etc. Such impacts could be short term and

temporary, usually consisting of overlapping construction impacts, as well as long term, due to the permanent land uses changes involved in the projects.

To assess potential cumulative impacts associated with this project, an inventory of other proposed development projects was prepared. Other projects currently being planned to occur within the same approximate time frame as the proposed project are identified below.[74]

Table 3.18-1: Other Planned/Pending Projects for Cumulative Impact Consideration

Project/Location	Characteristics	Estimated Time Frames
1. 1 Carter	Subdivide 63 acres into 32 residential lots on 34.5 acres (remaining for open space, roadways, and flood control)	Subdivision approved. Infrastructure in place.
2. Sierra Place/Sierra Madre Blvd	6-unit residential condominium	Pending
3. 147 W. Sierra Madre Blvd	7,000 SF 2-story medical office building	Pending

Source: City of Sierra Madre Planning Department, September 2011

The first project is located approximately one mile north of the project site, near the foothills. Given the separation between the two sites, temporary construction impacts would not overlap in any significant way. Also, given the direct convenience of vehicular access from Baldwin Avenue to 1 Carter, traffic impacts from this project are expected to interact to a negligible extent with the impacts of the proposed project. The traffic study for the proposed project assessed project impacts relative to future traffic levels, assuming an annual one percent increase in traffic flows; it was determined that future plus project traffic volumes would not exceed the City's level of service standards.

Project 2 would occur on a vacant site, approximately 0.5 miles east from the proposed project. Project 3 is located one block east of the proposed project. Since these infill projects are limited in size, no significant construction phase cumulative impacts are anticipated. Future traffic levels, as would be associated with these projects, were accounted for in the traffic study for the proposed project. As discussed in the response to Checklist item 3.15b, cumulative traffic impacts would not be significant.

All three of these projects are low in intensity; the proposed project, in combination with these projects, would not significantly cumulatively affect the environment. Water supplies have been studied in the Urban Water Management Plan, and the UWMP assumes a limited level of development. Continued efforts towards water conservation, as required by State law, would reduce water demands; the project would result in a less than significant cumulative impact on water supply and other resources.

c) **Less than Significant Impact.** Based on the analysis of the proposed project's impacts in the responses to items 3.1 thru 3.17, there is no indication that this project could result in substantial adverse effects on human beings. While limited temporary adverse effects would occur during construction (noise, dust, and diesel emissions), these would be minimized to acceptable levels through implementation of routine construction control measures. Adverse long-term impacts would include incrementally increased vehicular traffic; however, the applicable system performance standards would be maintained. With

[74] The project traffic study took a more conservative approach to the cumulative analysis by assuming a growth in ambient traffic volumes through year 2013..

increased traffic, vehicular emissions would also increase, as would roadway traffic noise, with a majority of these impacts affecting adjacent roadway segments and intersections. Projected emission levels would be below the thresholds of significance recommended by the South Coast Air Quality Management District. Project-related traffic would represent a small percentage increase in traffic volumes along nearby roadways and would have a less-than-significant impact on roadway noise levels.

Section 4: References

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4.3 – References

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Section 5: Summary of Mitigation Measures

Mitigation Measure A-1
Prior to issuance of grading permits, the City Director of Public Works shall verify that grading plans submitted by the project proponent identify the location where exported soil is to be disposed of and that the identified location is 15 miles or less from the project site. The applicant may propose a disposal site that is more than 15 miles from the project site only if the applicant also proposes and documents a reduced number of total hauling trips equivalent to the 15-mile trip limitation (which assumes a total of 1,188 hauling trips). Any substitutions would be subject to approval of the Director of Public Works.

This measure shall be verified in light of the performance standard that criteria pollutant emissions from soil hauling shall not exceed the daily emissions thresholds established by the South Coast Air Quality Management District. The applicant shall bear the cost of implementing this mitigation.

Mitigation Measure B-1
Prior to commencement of demolition activities, construction activities, or tree removal, should these activities occur at any time between February 1st to August 31st, a qualified biologist shall assess the project site at least 10 days, but no more than 30 days, in advance of initiation of demolition activities, construction activities, or tree removal, to determine if raptor species are actively nesting in on-site vegetation. If no active nests are found, no further action is required. If active raptor nesting is confirmed, the qualified biologist shall develop a mitigation plan and submit for review and approval by the Development Services Director. The plan shall identify measures and protocols to avoid or minimize impacts to nesting raptors and their young that may include, but are not limit to, avoidance and buffering of the nests until young have fledged, delay of demolition activities and/or construction activities and/or tree removal, and monitoring to ensure nest abandonment. If demolition or construction activities would be conducted during the non-breeding season for raptors (September 1 through January 31), then no site assessment shall be required. This mitigation measure shall be implemented at the expense of the project proponent.

Mitigation Measure H-1
The project applicant shall comply with all recommendations of the Hazardous Material Survey report, including appropriate notices, permits, and licenses necessary for abatement work, as well as all related requirements imposed by the City. The City shall ensure compliance through the City's routine plan check and permitting processes. Prior to commencement of demolition activities, applicable procedures to minimize emissions of asbestos shall be determined based on the type of asbestos present and implemented by a registered contractor at the expense of the project proponent. ACM identified to contain asbestos at levels less than 0.1% shall be removed as specified in CCR Title 8, Section 1529 as Other Asbestos Work, which includes: 1) providing personnel with hazard awareness training, 2) use of wet methods during removal or disturbance, 3) personal exposure monitoring to document that DOSH permissible exposure limits are not exceeded and 4) waste debris is containerized quickly while on site in leak tight containers. All ACM with asbestos levels greater than 0.1% is required to be removed by State licensed asbestos removal contractors pursuant to the California Asbestos Standards in Construction. Documentation certifying that ACMs have been removed to satisfactory levels and in conformance with CCR Title 8, Section 1529 shall be delivered to the Development Services Director prior to demolition of existing structures onsite.

Mitigation Measure H-2
The project applicant shall comply with all recommendations of the Hazardous Material Survey report and other related requirements imposed by the City. The City shall ensure compliance through the City's routine plan check and permitting processes. The ceramic tiles in all existing onsite structures shall be removed by an abatement contractor prior to demolition of the buildings. Demolition debris and waste categorized as hazardous waste shall be handled, transported, and disposed of in accordance with applicable Federal, State, and local laws and rules to ensure that potential impacts of health and the environment are minimized. Specifically, employees who perform trigger tasks, such as manual demolition, are required to receive employer provided training, air monitoring, protective clothing, respirators, and hand washing facilities. Standard work practices required by CCR Title 17, Division 1, Chapter 8 also include the use of wet methods and HEPA vacuums. Documentation verifying appropriate disposal of hazardous wastes shall be provided to the Development Services Director prior to completion of the proposed assisted living facility.

Mitigation Measure H-3
The project applicant shall implement all recommendations of the Hazardous Material Survey report, including appropriate handling and disposal of all hazardous materials identified. The City shall ensure compliance through the City's routine plan check and permitting processes.

Mitigation Measure HY-1
Parking and onsite sidewalk areas shall incorporate permeable paving or other measures, as determined by the Director of Public Works, to reduce stormwater runoff from the site. Prior to issuance of building permits, the applicant shall provide details of specific Best Management Practices (BMPs) to reduce stormwater runoff including, but not limited to, landscaping to reduce impervious surface area and permeable paving to the satisfaction of the Director of Public Works.

Mitigation Measure N-1
To minimize construction noise levels at the nearby properties, the contractor shall, to the extent practical, effectuate the following noise abatement measures. These measures shall be incorporated into the construction management plan.

1. All construction and demolition equipment shall be fitted with properly sized mufflers.

2. Noisy construction equipment items shall be located as far as practicable from adjacent residential properties.

3. In order to minimize the time during which any single noise-sensitive receptor is exposed to construction noise, construction shall be completed as rapidly as possible.

4. The quietest construction equipment owned by the contractor (or sub-contractor, as applicable) shall be used. The use of electric powered equipment is typically quieter than diesel, and hydraulic powered equipment is quieter than pneumatic power. If compressors powered by diesel or gasoline engines are to be used, they shall be contained or have baffles to help abate noise levels.

5. All construction equipment shall be properly maintained. Poor maintenance of equipment typically causes excessive noise levels.

6. Noisy equipment shall be operated only when necessary, and shall be switched off when not in use.

7. Storage areas shall be located away from the residences. Where this is not possible, the storage of waste materials, earth, and other supplies shall be positioned in a manner that will function as a noise barrier to the closest sensitive receivers.

8. Public notice shall be given prior to construction identifying the location and dates of construction, together with the name and phone number of the contractor's contact person in case of complaints. The public notice shall encourage the residents to call the contractor's contact person rather than the Sierra Madre Police in case of complaint. Residents shall also be kept informed of any changes to the schedule. The contractor's designated contact person shall be on site throughout project construction with a mobile phone. If a complaint is received, the contractor's contact person shall take whatever reasonable steps are necessary to resolve the complaint. If possible, a member of the contractor's team shall also travel to the complainant's location to understand the nature of the disturbance.

Mitigation Measure N-2
A noise barrier shall be constructed along a portion of the northern property line as shown in Figure 13-1 of Appendix D of this Initial Study. The barrier shall be constructed of a material with a minimum surface density of 4 lbs/ft^2. Such materials include concrete block, stucco-on-wood, wood, tempered glass, Plexiglas, acrylic, or any combination of these materials. (It is noted that the minimum thickness required to achieve the required surface density of 4 lbs/ft^2 will vary depending on the specific material selected.) The barrier shall be a continuous structure without gaps (including gaps for drainage) or gates.

Mitigation Measure N-3
Testing of the emergency generator shall be restricted to time periods when truck deliveries are not scheduled.

Mitigation Measure N-4
To minimize annoyance associated with the use of the trash containers and with trash pickups, the project operator shall, to the extent practical, put in place and practice the following noise abatement measures:

- The gates to the trash room shall be designed and constructed so that they do not sag and do not drag across the pavement as they are opened and closed.

- The project operator shall put into place administrative controls that will instruct employees on the noise sensitivity of the residential properties to the north, and train them in ways that will reduce noise associated with the use of the trash containers. At a minimum:

  1) Trash shall not be dumped into the container bins between the hours of 10:00 P.M. and 8:00 A.M.
  2) The trash room gates shall not be slammed closed or permitted to strike the building when opened.
  3) The maintenance crew shall be instructed to keep the gate hinges well lubricated at all times to prevent squeaking.
  4) The lids to the trash containers shall not be allowed to drop when they are closed.
  5) The maintenance crew shall be required to place and maintain in good condition neoprene rubber strips around the perimeter of the trash containers so that there is no metal-on-metal contact when the container lids are closed.
  6) Trash consisting of bottles, cans or particularly heavy items shall be placed or lowered into the trash container, not dropped.

Mitigation Measure N-5

To minimize annoyance associated with short-term construction activity vibration to nearby residential uses, the project applicant shall:

- Operate earth-moving equipment on the construction lot as far away from vibration-sensitive sites as possible.

- Phase demolition, earth-moving, and ground-impacting operations so as not to occur simultaneously. Wherever possible, excavators, bulldozers, backhoes, loaders, graders, or similar equipment shall not be used within 15 feet of any building on an adjacent property, and vibratory rollers shall not be used within 20 feet of any building on an adjacent property.

Appendix Materials

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Appendix A
Shade/Shadow Study

Prepared by:

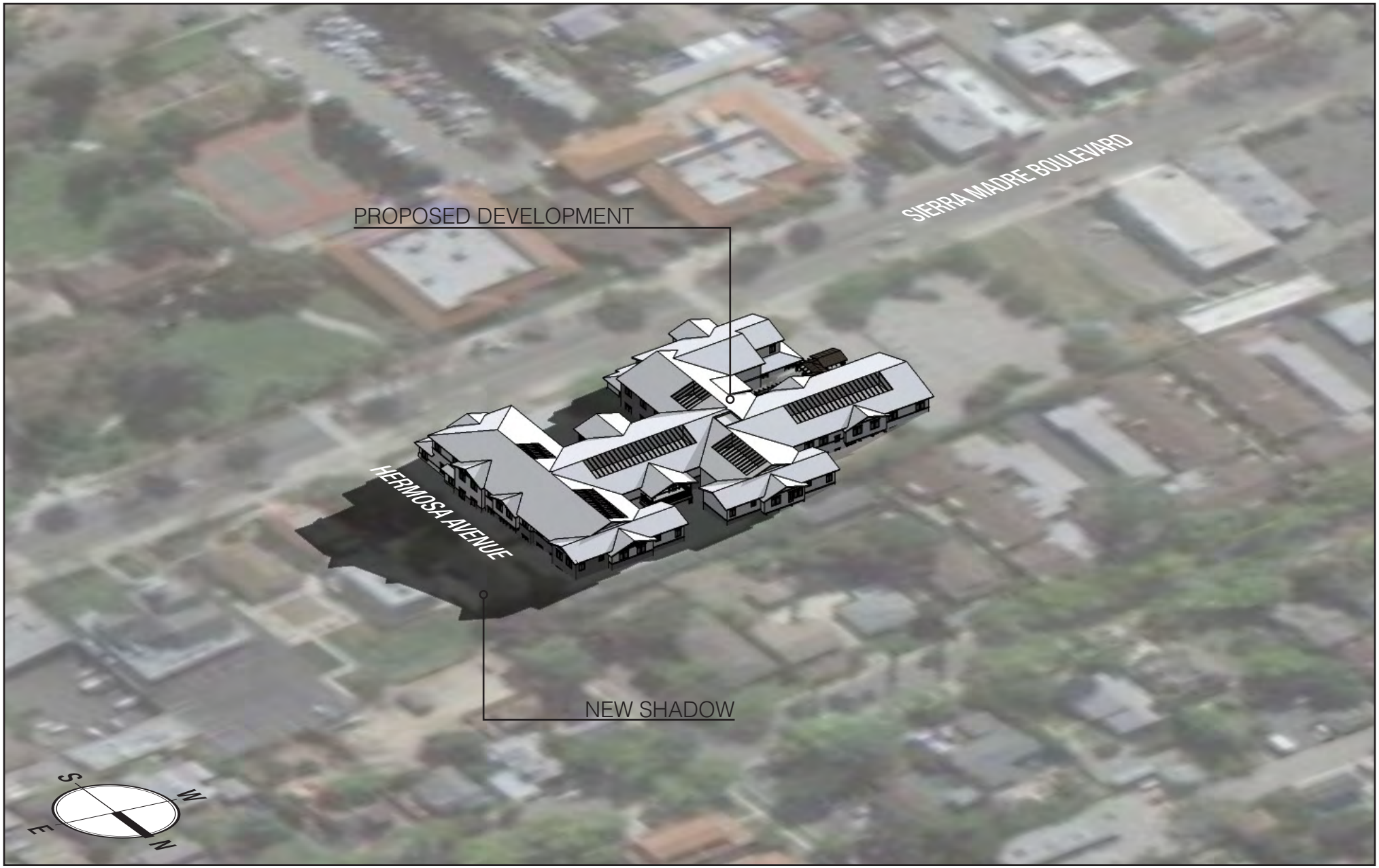
Hogle-Ireland, Inc.
1500 S. Iowa Avenue, 1st Floor
Riverside, California 92501

Shade Analysis

The dates selected for the shade analyses are based on the azimuth angle of the sun or solar equinox and solstice. In Southern California the sun's sunrise azimuth ranges between 62-118 degrees, the sunset azimuth angle range from 298-242 degrees. For reference north has an azimuth value of 0 degrees, east is 90 degrees, south is 180 degrees, and west is 270 degrees. The selected dates represent the most extreme northern and southern azimuth angles (solar solstice) and mid-points when the tilt of the earth's axis is inclined neither away from nor towards the sun (solar equinox).

Dates and Times of solstices and equinoxes

Date	Time	Azimuth Angle	
March 21, 2011	6:30 am	89°	Equinox
	4:45 am	271°	
June 5, 2011	5:45 am	62°	Solstice
	6:05 pm	298°	
September 21, 2011	6:22 am	89°	Equinox
	4:28 pm	271°	
December 11, 2011	7:18 am	118°	Solstice
	3:00 pm	242°	

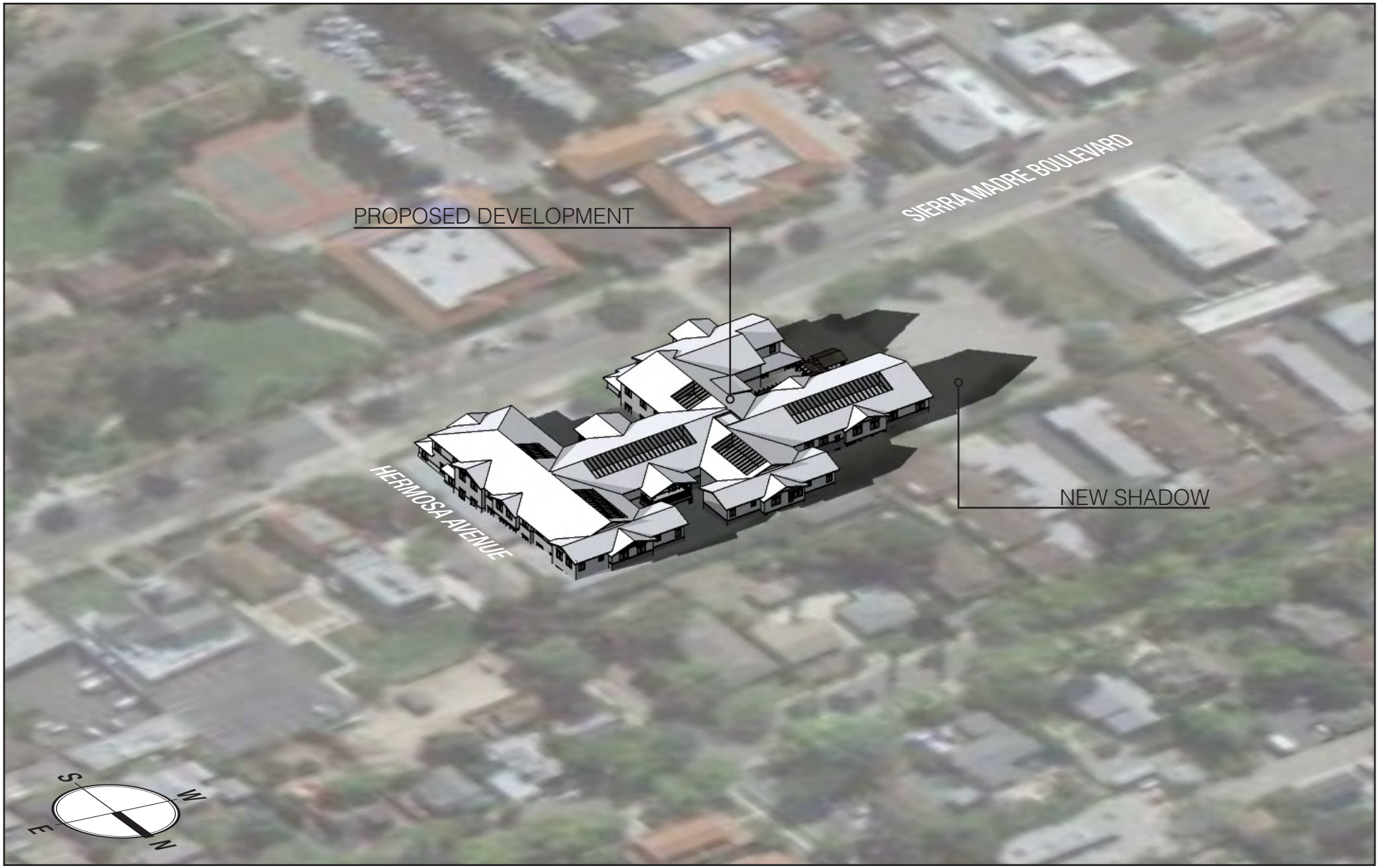


Date: 3/21
Time: 6:00 PM (UTC: -07:00)

Hogle-Ireland
A Land Planning & Development Consulting Firm
www.hogleireland.com • 951-787-9222

Shadow Study

The Kensington Assisted Living Facility
City of Sierra Madre, CA
September 29, 2011



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Time: 8:00 AM (UTC: -07:00)

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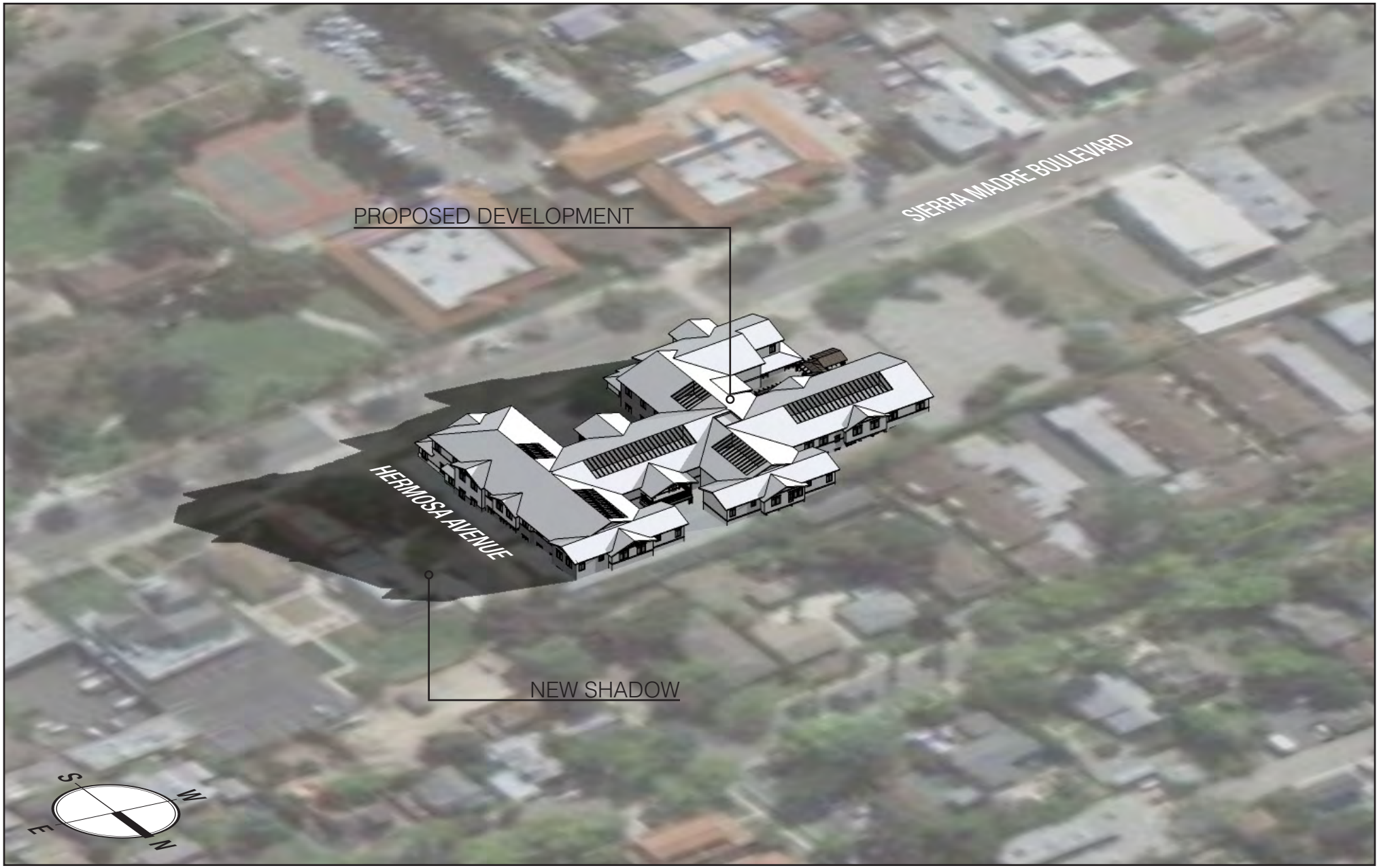
Shadow Study

The Kensington Assisted Living Facility
City of Sierra Madre, CA
September 29, 2011



Date: 6/5
Time: 7:00 PM (UTC: -07:00)

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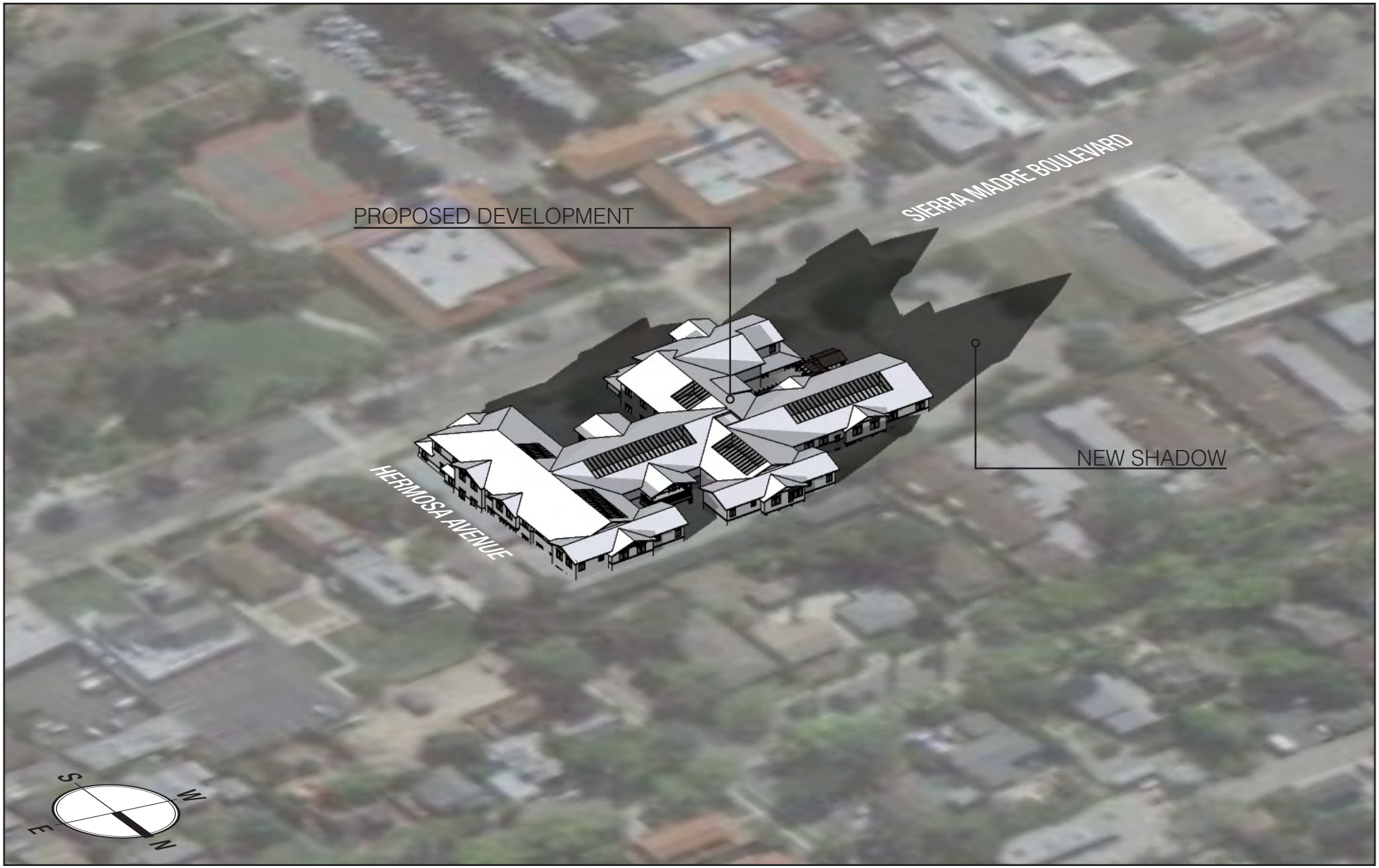
Shadow Study

The Kensington Assisted Living Facility
City of Sierra Madre, CA
September 29, 2011



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Time: 6:30 AM (UTC: -07:00)

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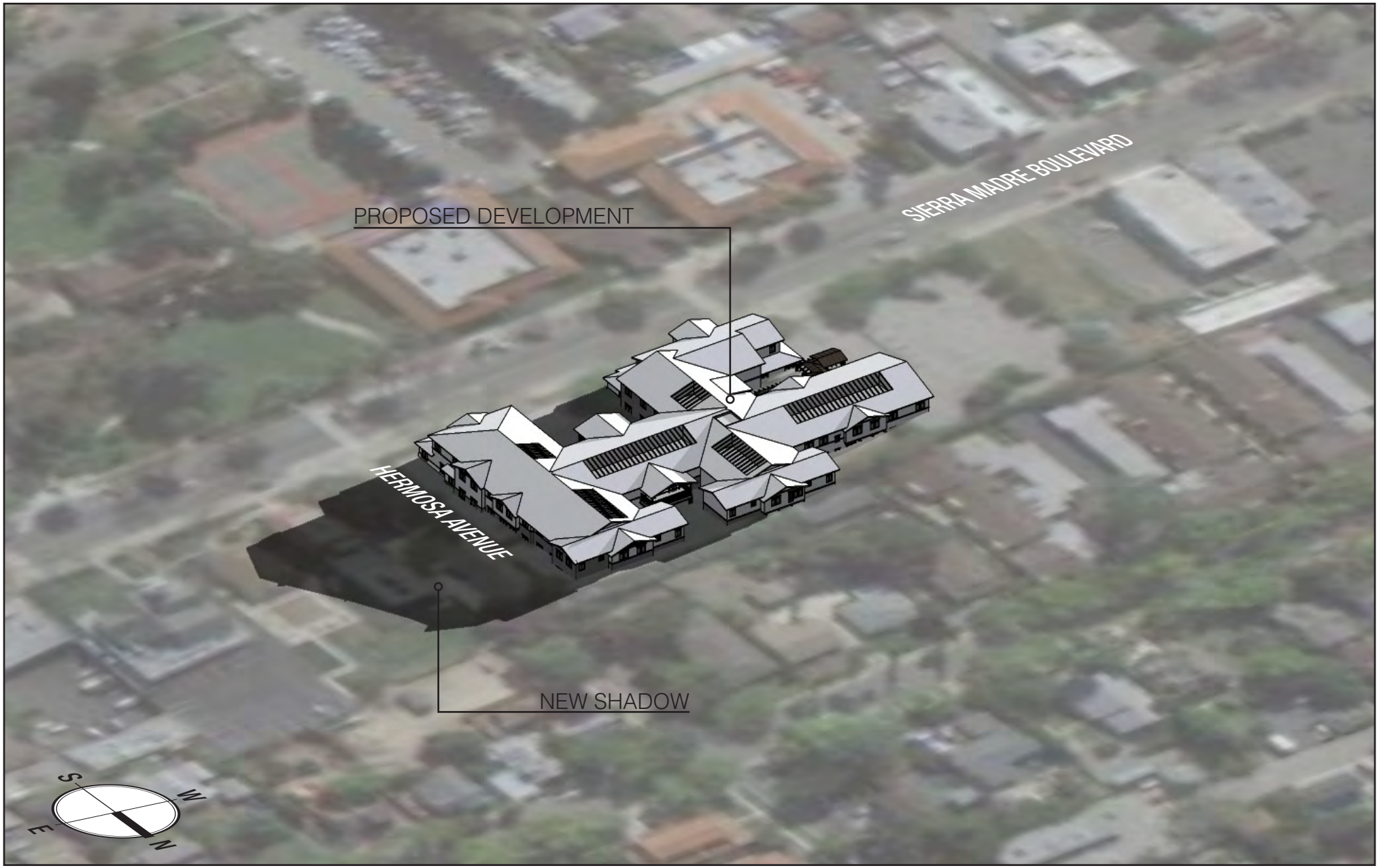
September 29, 2011



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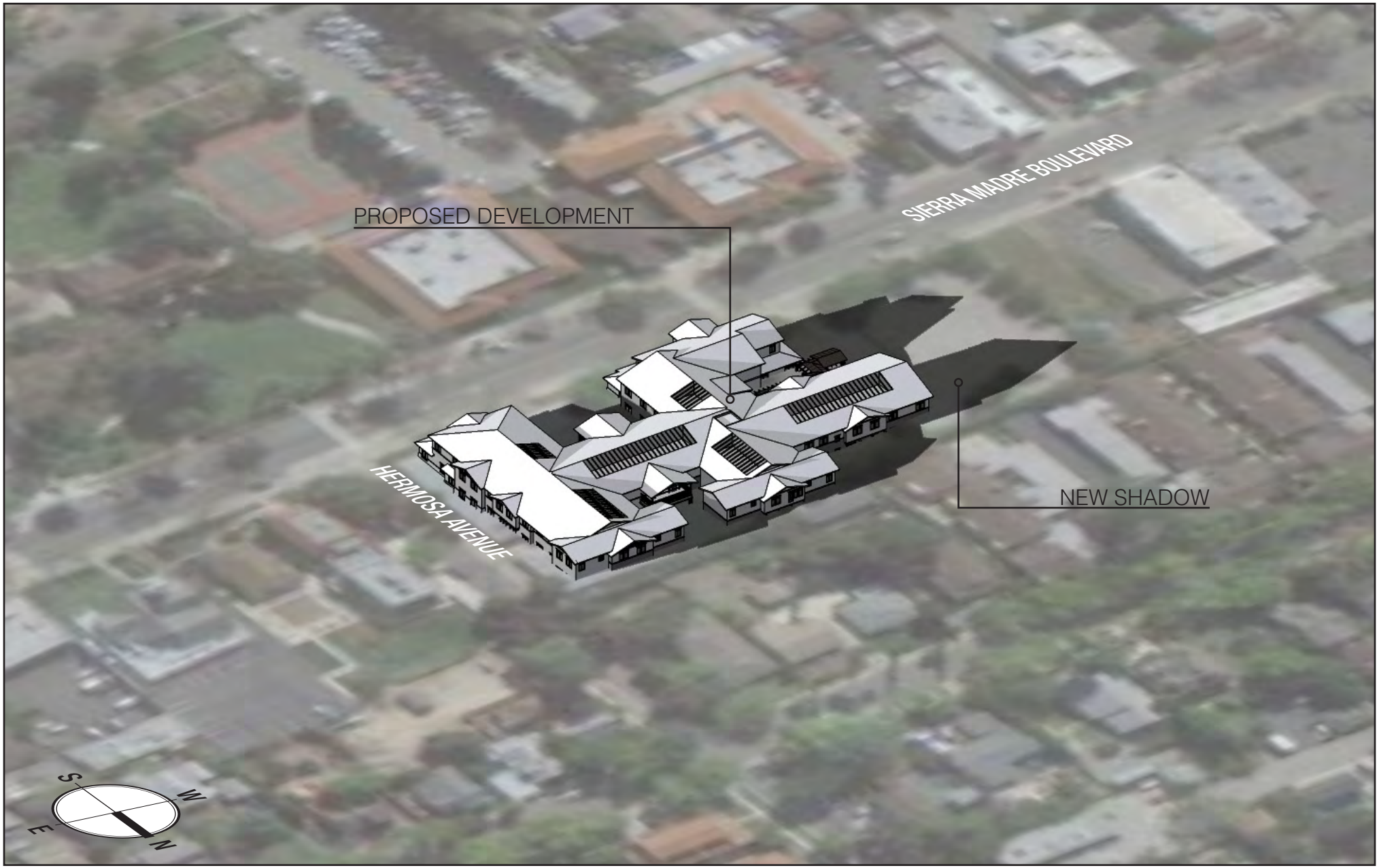

Date: 9/21
Time: 7:30 AM (UTC: -07:00)

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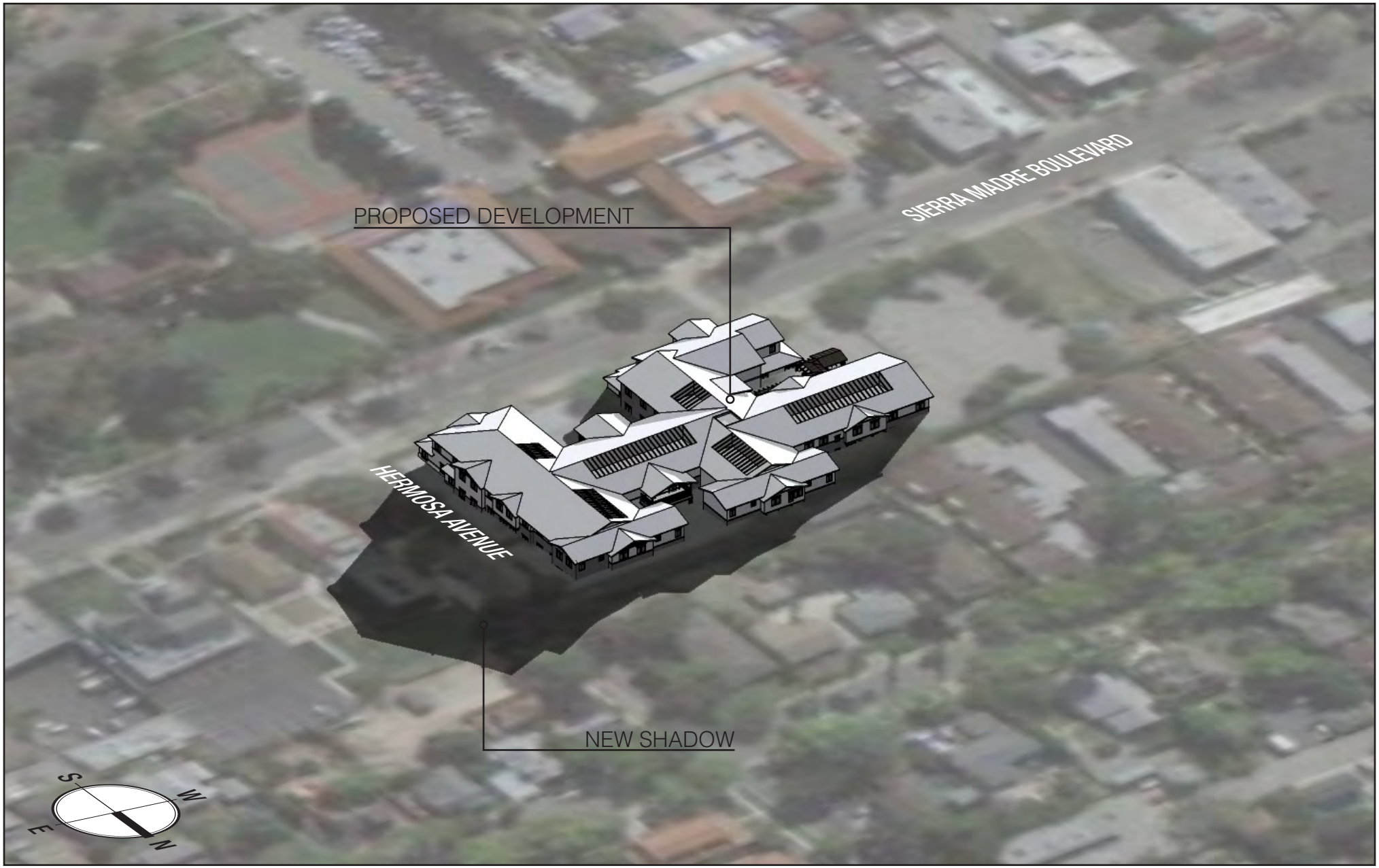
The Kensington Assisted Living Facility
City of Sierra Madre, CA
September 29, 2011



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Time: 5 PM (UTC: -07:00)

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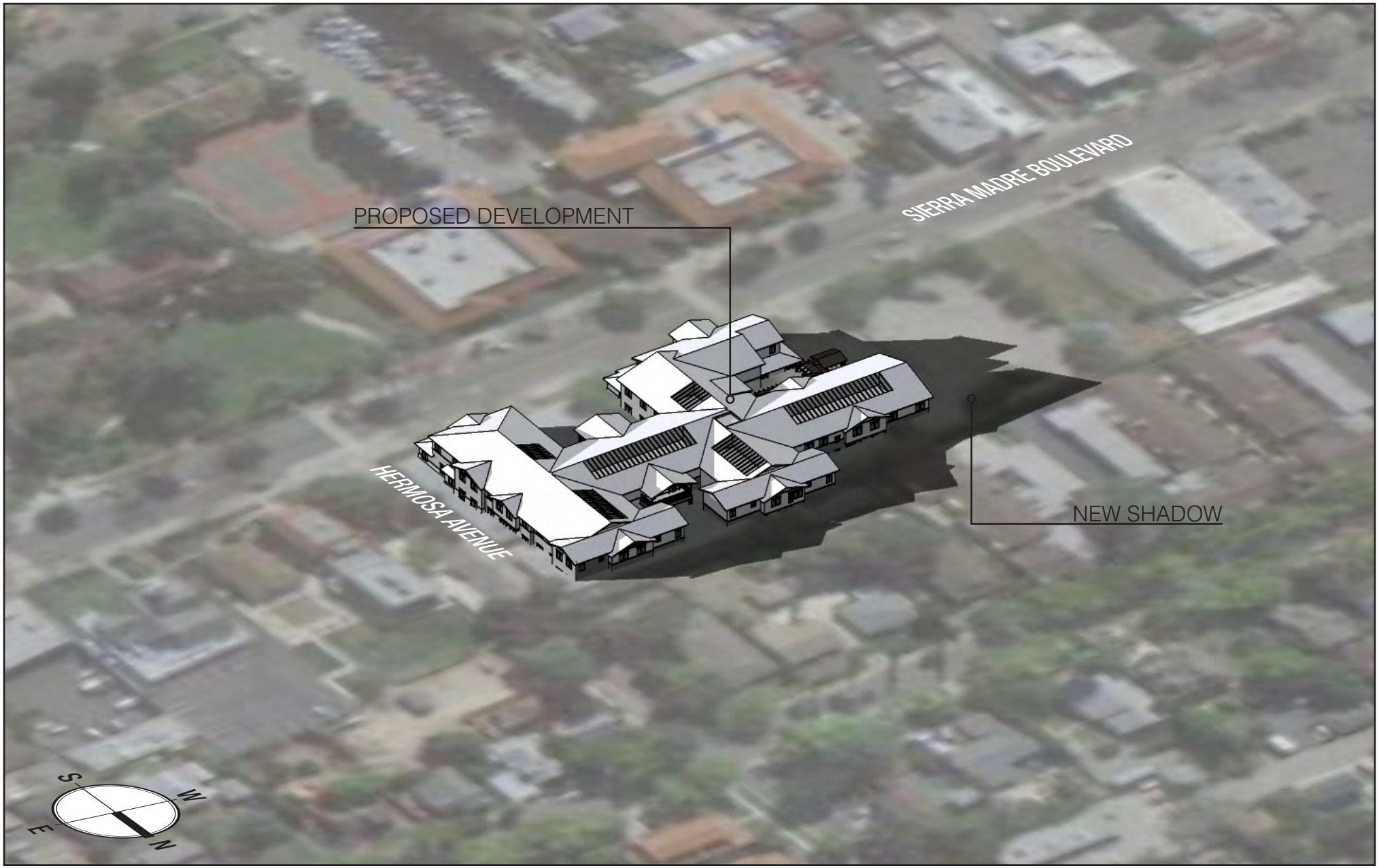
Shadow Study

The Kensington Assisted Living Facility
City of Sierra Madre, CA
September 29, 2011



Date: 12/11
Time: 8:30 AM (UTC: -07:00)

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Shadow Study

The Kensington Assisted Living Facility
City of Sierra Madre, CA
September 29, 2011

Appendix B
Air Quality Modeling Data

Prepared by:

Hogle-Ireland, Inc.
201 S. Lake, Suite 308
Pasadena, California 91101

Project Characteristics																				
Project Detail																				
ProjectName	Kensington Assisted Living Facility																			
LocationScope	AB																			
EMFAC_ID	SC																			
Wind Speed	2.2																			
Precipitation Frequency	31																			
Climate Zone	9																			
Urbanization Level	Urban																			
Operational Year	2011																			
Total Population	96																			
Total Lot Acreage	1.84																			
Utility Information																				
Utility Company	Southern California Edison																			
CO2 Intensity Factor	641.26																			
CH4 Intensity Factor	0.029																			
N2O Intensity Factor	0.011																			
Using Historical Energy Use Data?	0																			
Pollutants																				
ROG	1																			
NOX	1																			
CO	1																			
SO2	1																			
PM10	1																			
PM2_5	1																			
PM10_FUG	1																			
PM25_FUG	1																			
TOG	1																			
PB	1																			
CO2_BIO	0																			
CO2_NBIO	0																			
CO2	1																			
CH4	1																			
N2O	1																			
CO2E	1																			
Land Use	***Amount***	***LandUseSizeMetric***	***LotAcreage***	***LandUseSquareFeet***	***Population***															
Parking Lot	43	Space	0.39	17200	0															
Congregate Care (Assisted Living)	75	Suite	1.45	58000	96															
Construction Emissions																				
PhaseNumber	***Phase Name***	***Phase Type***	***Start***	***End***	***Work Week***	***Days***	***seDescription***													
1	Demolition - buildings	Demolition	2012/05/07	2012/05/25	5	15														
2	Demolition - parking lot	Demolition	2012/05/26	2012/06/01	5	5														
3	Site Preparation	Site Preparation	2012/06/02	2012/06/22	5	15														
4	Grading	Grading	2012/06/23	2012/07/06	5	10														
5	Building Construction	Building Construction	2012/07/07	2013/01/04	5	130														
6	Paving	Paving	2013/01/05	2013/01/18	5	10														
7	Architectural Coating	Architectural Coating	2013/01/19	2013/04/19	5	65														
Equipment																				
PhaseName	***OffRoadEquipmentType***	***QTY***	***UsageHours***	***HorsePower***	***LoadFactor***															
Demolition - buildings	Concrete/Industrial Saws	1	8	81	0.73															
Demolition - buildings	Rubber Tired Dozers	1	8	358	0.59															
Demolition - buildings	Tractors/Loaders/Backhoes	3	8	75	0.55															
Demolition - parking lot	Concrete/Industrial Saws	1	8	81	0.73															
Demolition - parking lot	Rubber Tired Dozers	1	8	358	0.59															
Demolition - parking lot	Tractors/Loaders/Backhoes	3	8	75	0.55															
Site Preparation	Graders	1	8	162	0.61															
Site Preparation	Rubber Tired Dozers	1	7	358	0.59															
Site Preparation	Tractors/Loaders/Backhoes	1	8	75	0.55															
Grading	Graders	1	6	162	0.61															
Grading	Rubber Tired Dozers	1	6	358	0.59															
Grading	Tractors/Loaders/Backhoes	1	7	75	0.55															
Building Construction	Cranes	1	6	208	0.43															
Building Construction	Forklifts	1	6	149	0.3															
Building Construction	Generator Sets	1	8	84	0.74															
Building Construction	Tractors/Loaders/Backhoes	1	6	75	0.55															
Building Construction	Welders	3	8	46	0.45															
Paving	Cement and Mortar Mixers	1	6	9	0.56															
Paving	Pavers	1	6	89	0.62															

Paving	Paving Equipment	1	8	82	0.53														
Paving	Rollers	1	7	84	0.56														
Paving	Tractors/Loaders/Backhoes	1	8	75	0.55														
Architectural Coating	Air Compressors	1	6	78	0.48														
Trips and VMT		***Trips***			Trip Length														
PhaseName	***Worker***	***Vendor***	***Haul***	***Worker***	***Vendor***	***Haul***	***kerVehicle***	***dorVehicle***	***ingVehicleClass***										
Demolition - buildings	13	0	153	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT										
Demolition - parking lot	13	0	19	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT										
Site Preparation	8	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT										
Grading	8	0	1188	10.8	7.3	15	LD_Mix	HDT_Mix	HHDT										
Building Construction	61	11	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT										
Paving	13	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT										
Architectural Coating	12	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT										
On-Road Dust																			
PhaseName	***WorkerPercentPave***	***VendorPercentPave***	***ulingPercentPa***	***RoadSiltLoading***	***aterialSiltConte***	***alMoisture***	***geVehicleW***	***nVehicleSpeed***											
Demolition - buildings	100	100	100	0.1	8.5	0.5	2.4	40											
Demolition - parking lot	100	100	100	0.1	8.5	0.5	2.4	40											
Site Preparation	100	100	100	0.1	8.5	0.5	2.4	40											
Grading	100	100	100	0.1	8.5	0.5	2.4	40											
Building Construction	100	100	100	0.1	8.5	0.5	2.4	40											
Paving	100	100	100	0.1	8.5	0.5	2.4	40											
Architectural Coating	100	100	100	0.1	8.5	0.5	2.4	40											
Demolition																			
Phase	***Metric***	***QTY***																	
Demolition - buildings	Building Square Footage	33695																	
Demolition - parking lot	Ton of Debris	190.4																	
Grading							***Moisture Content***												
Phase	***Import***	***Export***	***Metric***	***Phased?***	***Speed***	***Acres***	***Bulldozing***	***Loading***	***ilt Content***										
Site Preparation	0	0		0	7.1	1.84	7.9	12	6.9										
Grading	0	9500	Cubic Yards	0	7.1	1.84	7.9	12	6.9										
Architectural Coating				**Residential**			**Nonresidential**												
PhaseName	***Start***	***End***	***Interior***	***Area***	***Exterior***	***Area***	***Interior***	***Area***	***Exterior***	***Area***									
Architectural Coating	2008/07/01	3000/12/31	50	117450	100	39150	250	25800	250	8600									
Mobile Sources																			
Vehicle Trips	***Metric***	***WD_TR***	***ST_TR***	***SU_TR***	***HW_TL***	***HS_TL***	***HO_TL***	***CC_TL***	***CW_TL***	***CNW_TL***	***PR_TP***	***DV_TP***	***PB_TP***	***HW_TTP***	***HS_TTP***	***HO_TTP***	***CC_TTP***	***CW_TTP***	***CNW_TTP***
Congregate Care (Assisted Living)	Suite	2.74	2.2	2.44	10.8	7.3	7.5	0	0	0	86	11	3	40.2	19.2	40.6	0	0	0
Parking Lot	Space	0	0	0	0	0	0	7.3	9.5	7.3	0	0	0	0	0	0	0	0	0
Emissions Factors																			
Season	***EmissionType***	***LDA***	***LDT1***	***LDT2***	***MDV***	***LHD1***	***LHD2***	***MHD***	***HHD***	***OBUS***	***UBUS***	***MCY***	***SBUS***	***MH***					
A	FleetMix	0.509052	0.076509	0.229561	0.105737	0.021	0.006105	0.015093	0.024244	0.001098	0.001741	0.00612	0.000911	0.002829					
A	CH4_IDLEX	0	0	0	0	0.0015	0.0013	0.0009	0.09	0.0012	0	0	0.03	0					
A	CH4_RUNEX	0.01	0.02	0.02	0.03	0.02	0.01	0.01	0.04	0.02	0.05	0.22	0.03	0.03					
A	CH4_STREX	0.01	0.01	0.02	0.03	0.02	0.02	0.02	0.09	0.03	0.07	0.13	0.02	0.03					
A	CO_IDLEX	0	0	0	0	0.21	0.18	0.14	9.39	0.17	0	0	5.32	0					
A	CO_RUNEX	1.59	2.46	2.41	3.02	2.66	1.5	2.36	4.55	2.7	7.93	30.36	6.43	6.64					
A	CO_STREX	3.47	4.33	4.85	6.24	5.86	4	5.44	24.05	8.74	17.04	9.83	6.42	11.25					
A	CO2_IDLEX	0	0	0	0	7.9588	8.4611	12.4701	1352.001	11.2093	0	0	546.015	0					
A	CO2_RUNEX	355.5554	444.3236	460.4776	627.1002	634.5764	601.5887	1341.866	1793.321	1206.595	2088.318	157.6492	1386.092	728.9985					
A	CO2_STREX	66.5367	82.1982	85.0941	116.6437	38.149	31.5988	12.8444	16.3608	20.419	45.4479	45.8222	17.3951	34.2583					
A	NOX_IDLEX	0	0	0	0	0.01	0.04	0.18	24.1	0.12	0	0	8.68	0					
A	NOX_RUNEX	0.13	0.22	0.28	0.38	1.24	2.32	5.19	9.44	3.31	14.52	1.15	9.54	1.57					
A	NOX_STREX	0.23	0.26	0.45	0.58	1.6	1.34	0.61	2.7	1.19	2.02	0.3	0.41	1.03					
A	PM10_IDLEX	0	0	0	0	0.0002	0.0005	0.0022	0.23	0.0015	0	0	0.11	0					
A	PM10_PMBW	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.0063	0.01	0.01					
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.01	0.01	0.01	0.03	0.01	0.0092	0.004	0.01	0.01					
A	PM10_RUNEX	0.01	0.01	0.03	0.03	0.01	0.02	0.15	0.44	0.08	0.23	0.02	0.38	0.01					
A	PM10_STREX	0.0063	0.0075	0.01	0.01	0.0023	0.002	0.0011	0.0019	0.002	0.0037	0.01	0.001	0.0008					
A	PM25_IDLEX	0	0	0	0	0.0002	0.0005	0.002	0.21	0.0013	0	0	0.1	0					
A	PM25_PMBW	0.0054	0.0054	0.0054	0.0054	0.0054	0.0054	0.0054	0.01	0.0054	0.0054	0.0027	0.0054	0.0054					
A	PM25_PMTW	0.002	0.002	0.002	0.002	0.003	0.003	0.003	0.0088	0.003	0.0023	0.001	0.003	0.003					
A	PM25_RUNEX	0.01	0.01	0.02	0.02	0.01	0.01	0.14	0.41	0.08	0.21	0.02	0.35	0.01					
A	PM25_STREX	0.0058	0.007	0.01	0.01	0.0021	0.0019	0.001	0.0017	0.0019	0.0034	0.0096	0.0009	0.0007					
A	ROG_DIURN	0.09	0.09	0.1	0.1	0.0025	0.0016	0.0006	0.0009	0.0007	0.0079	0.91	0.0075	1.38					
A	ROG_HTSK	0.15	0.17	0.16	0.16	0.04	0.03	0.01	0.02	0.01	0.14	0.34	0.05	0.08					
A	ROG_IDLEX	0	0	0	0	0.03	0.03	0.02	2.13	0.02	0	0	0.73	0					
A	ROG_RESTL	0.06	0.07	0.07	0.07	0.0008	0.0006	0.0003	0.0004	0.0003	0.0039	0.48	0.0028	0.5					
A	ROG_RUNEX	0.04	0.08	0.06	0.1	0.19	0.13	0.18	0.87	0.16	1.07	2.96	0.54	0.21					

A	ROG_RUNLS	0.070917	0.115038	0.120964	0.11735	0.365684	0.241463	0.088696	0.01229	0.157336	0.034533	0.361448	0.046676	0.017671					
A	ROG_STREX	0.27	0.31	0.36	0.54	0.49	0.37	0.39	1.61	0.54	1.29	2.15	0.45	0.67					
A	SO2_IDLEX	0	0	0	0	0.0001	0.0001	0.0001	0.01	0.0001	0	0	0.0053	0					
A	SO2_RUNEX	0.0038	0.0047	0.0048	0.0065	0.0062	0.0059	0.01	0.01	0.01	0.02	0.0021	0.01	0.0072					
A	SO2_STREX	0.0008	0.0009	0.0009	0.0013	0.0005	0.0004	0.0002	0.0006	0.0003	0.0007	0.0007	0.0003	0.0005					
A	TOG_DIURN	0.09	0.09	0.1	0.1	0.0025	0.0016	0.0006	0.0009	0.0007	0.0079	0.91	0.0075	1.38					
A	TOG_HTSK	0.15	0.17	0.16	0.16	0.04	0.03	0.01	0.02	0.01	0.14	0.34	0.05	0.08					
A	TOG_IDLEX	0	0	0	0	0.03	0.03	0.02	2.43	0.02	0	0	0.81	0					
A	TOG_RESTL	0.06	0.07	0.07	0.07	0.0008	0.0006	0.0003	0.0004	0.0003	0.0039	0.48	0.0028	0.5					
A	TOG_RUNEX	0.06	0.1	0.09	0.14	0.22	0.15	0.2	0.99	0.19	1.18	3.22	0.6	0.25					
A	TOG_RUNLS	0.070917	0.115038	0.120964	0.11735	0.365684	0.241463	0.088696	0.01229	0.157336	0.034533	0.361448	0.046676	0.017671					
A	TOG_STREX	0.29	0.33	0.39	0.58	0.52	0.39	0.42	1.72	0.58	1.37	2.31	0.48	0.72					
S	FleetMix	0.509052	0.076509	0.229561	0.105737	0.021	0.006105	0.015093	0.024244	0.001098	0.001741	0.00612	0.000911	0.002829					
S	CH4_IDLEX	0	0	0	0	0.0015	0.0013	0.0009	0.09	0.0012	0	0	0.03	0					
S	CH4_RUNEX	0.01	0.02	0.02	0.03	0.02	0.01	0.01	0.04	0.02	0.05	0.21	0.03	0.03					
S	CH4_STREX	0.01	0.01	0.01	0.02	0.02	0.01	0.02	0.08	0.02	0.06	0.11	0.02	0.03					
S	CO_IDLEX	0	0	0	0	0.21	0.18	0.14	6.83	0.17	0	0	5.32	0					
S	CO_RUNEX	1.76	2.65	2.66	3.29	2.71	1.51	2.37	4.57	2.74	7.98	28.74	6.39	6.74					
S	CO_STREX	2.64	3.33	3.69	4.77	4.56	3.15	4.46	19.93	7.02	14.23	8.69	5.43	8.7					
S	CO2_IDLEX	0	0	0	0	7.9588	8.4611	12.4701	1429.058	11.2093	0	0	546.015	0					
S	CO2_RUNEX	378.6044	471.4899	489.1904	666.2835	634.5764	601.5887	1341.866	1793.321	1206.595	2088.318	157.6492	1386.092	728.9985					
S	CO2_STREX	66.5367	82.1982	85.0941	116.6437	38.149	31.5988	12.8444	16.3608	20.419	45.4479	45.8222	17.3951	34.2583					
S	NOX_IDLEX	0	0	0	0	0.01	0.04	0.18	24.95	0.12	0	0	8.68	0					
S	NOX_RUNEX	0.12	0.21	0.27	0.36	1.22	2.31	5.18	9.43	3.28	14.45	1.09	9.51	1.54					
S	NOX_STREX	0.21	0.24	0.41	0.54	1.54	1.29	0.59	2.59	1.14	1.92	0.29	0.39	0.98					
S	PM10_IDLEX	0	0	0	0	0.0002	0.0005	0.0022	0.19	0.0015	0	0	0.11	0					
S	PM10_PMBW	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.0063	0.01	0.01					
S	PM10_PMTW	0.008	0.008	0.008	0.008	0.01	0.01	0.01	0.03	0.01	0.0092	0.004	0.01	0.01					
S	PM10_RUNEX	0.01	0.01	0.03	0.03	0.01	0.02	0.15	0.44	0.08	0.23	0.02	0.38	0.01					
S	PM10_STREX	0.0063	0.0075	0.01	0.01	0.0023	0.002	0.0011	0.0019	0.002	0.0037	0.01	0.001	0.0008					
S	PM25_IDLEX	0	0	0	0	0.0002	0.0005	0.002	0.18	0.0013	0	0	0.1	0					
S	PM25_PMBW	0.0054	0.0054	0.0054	0.0054	0.0054	0.0054	0.0054	0.01	0.0054	0.0054	0.0027	0.0054	0.0054					
S	PM25_PMTW	0.002	0.002	0.002	0.002	0.003	0.003	0.003	0.0088	0.003	0.0023	0.001	0.003	0.003					
S	PM25_RUNEX	0.01	0.01	0.02	0.02	0.01	0.01	0.14	0.41	0.08	0.21	0.02	0.35	0.01					
S	PM25_STREX	0.0058	0.007	0.01	0.01	0.0021	0.0019	0.001	0.0017	0.0019	0.0034	0.0096	0.0009	0.0007					
S	ROG_DIURN	0.15	0.16	0.16	0.16	0.0038	0.0025	0.001	0.0014	0.0011	0.01	1.58	0.01	2.1					
S	ROG_HTSK	0.17	0.18	0.18	0.17	0.04	0.03	0.01	0.02	0.01	0.15	0.41	0.05	0.08					
S	ROG_IDLEX	0	0	0	0	0.03	0.03	0.02	2.01	0.02	0	0	0.73	0					
S	ROG_RESTL	0.11	0.12	0.12	0.13	0.0015	0.001	0.0005	0.0008	0.0005	0.0067	1	0.0051	0.86					
S	ROG_RUNEX	0.04	0.08	0.06	0.1	0.19	0.13	0.18	0.87	0.16	1.09	2.85	0.54	0.22					
S	ROG_RUNLS	0.06793	0.1086	0.113788	0.110635	0.357151	0.234932	0.087685	0.012341	0.15448	0.032555	0.339198	0.043095	0.017331					
S	ROG_STREX	0.23	0.26	0.3	0.45	0.42	0.32	0.33	1.38	0.47	1.15	1.86	0.39	0.55					
S	SO2_IDLEX	0	0	0	0	0.0001	0.0001	0.0001	0.01	0.0001	0	0	0.0053	0					
S	SO2_RUNEX	0.0041	0.005	0.0051	0.0069	0.0062	0.0059	0.01	0.01	0.01	0.02	0.0021	0.01	0.0072					
S	SO2_STREX	0.0007	0.0009	0.0009	0.0013	0.0005	0.0004	0.0002	0.0005	0.0003	0.0007	0.0006	0.0003	0.0005					
S	TOG_DIURN	0.15	0.16	0.16	0.16	0.0038	0.0025	0.001	0.0014	0.0011	0.01	1.58	0.01	2.1					
S	TOG_HTSK	0.17	0.18	0.18	0.17	0.04	0.03	0.01	0.02	0.01	0.15	0.41	0.05	0.08					
S	TOG_IDLEX	0	0	0	0	0.03	0.03	0.02	2.28	0.02	0	0	0.81	0					
S	TOG_RESTL	0.11	0.12	0.12	0.13	0.0015	0.001	0.0005	0.0008	0.0005	0.0067	1	0.0051	0.86					
S	TOG_RUNEX	0.06	0.11	0.09	0.14	0.22	0.15	0.2	0.99	0.19	1.2	3.11	0.61	0.25					
S	TOG_RUNLS	0.06793	0.1086	0.113788	0.110635	0.357151	0.234932	0.087685	0.012341	0.15448	0.032555	0.339198	0.043095	0.017331					
S	TOG_STREX	0.24	0.27	0.32	0.48	0.45	0.34	0.36	1.48	0.51	1.22	2	0.42	0.59					
W	FleetMix	0.509052	0.076509	0.229561	0.105737	0.021	0.006105	0.015093	0.024244	0.001098	0.001741	0.00612	0.000911	0.002829					
W	CH4_IDLEX	0	0	0	0	0.0015	0.0013	0.0009	0.1	0.0012	0	0	0.03	0					
W	CH4_RUNEX	0.01	0.02	0.02	0.03	0.02	0.01	0.01	0.04	0.02	0.05	0.22	0.03	0.03					
W	CH4_STREX	0.01	0.01	0.02	0.03	0.02	0.02	0.02	0.09	0.03	0.07	0.13	0.02	0.03					
W	CO_IDLEX	0	0	0	0	0.21	0.18	0.14	12.98	0.17	0	0	5.32	0					
W	CO_RUNEX	1.53	2.39	2.33	2.92	2.65	1.49	2.36	4.54	2.69	7.92	30.52	6.44	6.62					
W	CO_STREX	3.56	4.44	4.97	6.39	5.93	4.05	5.47	24.13	8.79	17.16	9.88	6.72	11.27					
W	CO2_IDLEX	0	0	0	0	7.9588	8.4611	12.4701	1244.134	11.2093	0	0	546.015	0					
W	CO2_RUNEX	345.5084	432.5135	447.9977	610.0696	634.5764	601.5887	1341.866	1793.321	1206.595	2088.318	157.6492	1386.092	728.9985					
W	CO2_STREX	66.5367	82.1982	85.0941	116.6437	38.149	31.5988	12.8444	16.3608	20.419	45.4479	45.8222	17.3951	34.2583					
W	NOX_IDLEX	0	0	0	0	0.01	0.04	0.18	22.91	0.12	0	0	8.68	0					
W	NOX_RUNEX	0.14	0.24	0.31	0.42	1.35	2.49	5.57	10.09	3.57	15.55	1.29	10.19	1.73					
W	NOX_STREX	0.23	0.27	0.45	0.59	1.61	1.35	0.62	2.71	1.19	2.02	0.3	0.42	1.03					
W	PM10_IDLEX	0	0	0	0	0.0002	0.0005	0.0022	0.28	0.0015	0	0	0.11	0					
W	PM10_PMBW	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.0063	0.01	0.01					
W	PM10_PMTW	0.008	0.008	0.008	0.008	0.01	0.01	0.01	0.03	0.01	0.0092	0.004	0.01	0.01					
W	PM10_RUNEX	0.01	0.01	0.03	0.03	0.01	0.02	0.15	0.44	0.08	0.23	0.02	0.38	0.01					
W	PM10_STREX	0.0063	0.0075	0.01	0.01	0.0023	0.002	0.0011	0.0019	0.002	0.0037	0.01	0.001	0.0008					
W	PM25_IDLEX	0	0	0	0	0.0002	0.0005	0.002	0.26	0.0013	0	0	0.1	0					
W	PM25_PMBW	0.0054	0.0054	0.0054	0.0054	0.0054	0.0054	0.0054	0.01	0.0054	0.0054	0.0027	0.0054	0.0054					
W	PM25_PMTW	0.002	0.002	0.002	0.002	0.003	0.003	0.003	0.0088	0.003	0.0023	0.001	0.003	0.003					
W	PM25_RUNEX	0.01	0.01	0.02	0.02	0.01	0.01	0.14	0.41	0.08	0.21	0.02	0.35	0.01					

W	PM25_STREX	0.0058	0.007	0.01	0.01	0.0021	0.0019	0.001	0.0017	0.0019	0.0034	0.0096	0.0009	0.0007					
W	ROG_DIURN	0.1	0.11	0.11	0.11	0.0033	0.0022	0.0009	0.0011	0.0009	0.01	1.18	0.01	1.89					
W	ROG_HTSK	0.18	0.2	0.19	0.18	0.05	0.04	0.01	0.02	0.02	0.18	0.46	0.06	0.1					
W	ROG_IDLEX	0	0	0	0	0.03	0.03	0.02	2.31	0.02	0	0	0.73	0					
W	ROG_RESTL	0.05	0.06	0.06	0.07	0.0008	0.0005	0.0003	0.0004	0.0003	0.0041	0.41	0.0029	0.5					
W	ROG_RUNEX	0.04	0.08	0.06	0.1	0.19	0.13	0.17	0.87	0.16	1.07	2.97	0.54	0.21					
W	ROG_RUNLS	0.080139	0.135052	0.14299	0.1381	0.399117	0.265047	0.094123	0.012908	0.167973	0.040232	0.427191	0.054916	0.018651					
W	ROG_STREX	0.28	0.31	0.37	0.55	0.49	0.37	0.39	1.62	0.55	1.29	2.17	0.47	0.67					
W	SO2_IDLEX	0	0	0	0	0.0001	0.0001	0.0001	0.01	0.0001	0	0	0.0053	0					
W	SO2_RUNEX	0.0037	0.0046	0.0046	0.0063	0.0062	0.0059	0.01	0.01	0.01	0.02	0.0021	0.01	0.0072					
W	SO2_STREX	0.0008	0.0009	0.001	0.0013	0.0005	0.0004	0.0002	0.0006	0.0003	0.0007	0.0007	0.0003	0.0005					
W	TOG_DIURN	0.1	0.11	0.11	0.11	0.0033	0.0022	0.0009	0.0011	0.0009	0.01	1.18	0.01	1.89					
W	TOG_HTSK	0.18	0.2	0.19	0.18	0.05	0.04	0.01	0.02	0.02	0.18	0.46	0.06	0.1					
W	TOG_IDLEX	0	0	0	0	0.03	0.03	0.02	2.64	0.02	0	0	0.81	0					
W	TOG_RESTL	0.05	0.06	0.06	0.07	0.0008	0.0005	0.0003	0.0004	0.0003	0.0041	0.41	0.0029	0.5					
W	TOG_RUNEX	0.06	0.1	0.09	0.13	0.22	0.15	0.2	0.99	0.19	1.18	3.24	0.6	0.25					
W	TOG_RUNLS	0.080139	0.135052	0.14299	0.1381	0.399117	0.265047	0.094123	0.012908	0.167973	0.040232	0.427191	0.054916	0.018651					
W	TOG_STREX	0.3	0.34	0.4	0.59	0.53	0.4	0.42	1.73	0.59	1.38	2.33	0.5	0.72					
Road Dust																			
Road Percent Paved	***SiltLoading***	***MaterialSiltContent***	***Moisture***	***Vehicle Weight***	***Speed***														
100	0.1	4.3	0.5	2.4	40														
Area Sources																			
Woodstoves	***Conventional***	***Catalytic***	***Noncatalytic***	***Pellet***	***Days***	***Mass***													
Congregate Care (Assisted Living)	0	0	0	0	25	999.6													
Fireplaces	***Wood***	***Gas***	***Propane***	***No Fireplace***	***Hours/Day***	***Days/Yr***	***Mass***												
Congregate Care (Assisted Living)	0	0	0	75	3	75	1019.2												
Consumer Products																			
ROG_EF	0.0000198																		
Architectural Coating	Residential				Nonresidential														
Residential Interior	Area	Exterior	Area	Interior	Area	Exterior	Area	Reapply (%)											
50	117450	100	39150	250	25800	250	8600	10											
Landscaping																			
NumberSnowDays	NumberSummerDays																		
0	365																		
Energy Use																			
Land Use	***T24E***	***NT24E***	***Lighting***	***T24NG***	***NT24NG***														
Congregate Care (Assisted Living)	278.88	2392.12	805.7	12790.79	1973.8														
Parking Lot	0	0	0	0	0														
Water and Wastewater				***Intensity Factors***															
Land Use	***Metric***	***Indoor Rate***	***Outdoor Rate***	***Supply***	***Treat***	***Distribute***	***Vaste Trea***	***Septic %***	***Aerobic***	***Anaerobic***	***Digest***	***Cogen***							
Congregate Care (Assisted Living)	Suite	3775013	446416.5	1316.53	111	1272	1911	10	84.69	2.14	3.17	0							
Parking Lot	Space	0	0	9727	111	1272	1911	10	84.69	2.14	3.17	0							
Solid Waste																			
Land Use	***Metric***	***Generation Rate***	***No Capture***	***Flare***	***Energy Recoup***														
Congregate Care (Assisted Living)	Suite	68.44	6	94	0														
Parking Lot	Space	0	6	94	0														
Land Use Change																			
Land Use	***Vegetation Type***	***Acres Begin***	***Acres End***	***CO2 per acre***															
0	0	0	0	0															
Sequestration																			
BroadSpeciesClass	***NumberOfNewTrees***	***CO2perTree***																	
0	0	0																	
Mitigation																			
Construction																			
Construction Equipment Type	***FuelType***	***Tier***	***No.***	***Total***	***DPF***	***dationCatalyst***													
Air Compressors	Diesel		0	1		0													
Cement and Mortar Mixers	Diesel		0	1		0													
Concrete/Industrial Saws	Diesel		0	2		0													
Cranes	Diesel		0	1		0													
Forklifts	Diesel		0	1		0													
Generator Sets	Diesel		0	1		0													
Graders	Diesel		0	2		0													
Pavers	Diesel		0	1		0													
Paving Equipment	Diesel		0	1		0													
Rollers	Diesel		0	1		0													

Rubber Tired Dozers	Diesel		0	4		0													
Tractors/Loaders/Backhoes	Diesel		0	10		0													
Welders	Diesel		0	3		0													
Soil Stabilizers	*PM10 Reduction*	*PM2.5 Reduction*																	
0	0	0																	
Ground Cover	*PM10 Reduction*	*PM2.5 Reduction*																	
0	0	0																	
Watering	*Frequency*	*PM10 Reduction*	*PM2.5 Reduction*																
0	0	0	0																
Unpaved Roads	*Vehicle Speed*	*Moisture Content*	*Speed*																
0	0	0	0																
Road Cleaning	*PM Reduction*																		
0	0																		
Land Use and Traffic																			
ProjectSetting																			
0																			
Increase Density	*DU/Acre*	*Job/Acre*	*Increase Diversity*																
0	0	0	0																
Improve Walkability	*Intersections*	*Improve Accessibility*	*Distance*	*Improve Transit*	*Distance*	*Low Incom*	*DU*												
0	0	0	0	0	0	0	0												
Improve Ped Network	*Selection*																		
0	0																		
Traffic Calming	*Streets*	*Intersections*	*NEV network*																
0	0	0	0																
Limit parking	*Reduction*	*Unbundle Costs*	*Cost*	*On-Street pricing*	*Increase*														
0	0	0	0	0	0														
BRT System	*Lines*	*Expand Transit*	*Increase*	*Increase Frequency*	*Level*	*Reducction*													
0	0	0	0	0	0	0													
Trip Reduction	*Employee %*	*Type*																	
0	0	0																	
Transit Subsidy	*Employee %*	*Amount*																	
0	0	0																	
Parking Cash Out	*Employee %*	*Parking Charge*	*Employee %*	*WorkplaceParkingChargeCost*															
0	0	0	0	0															
Encourage Telecommuting	*9-80*	*4-40*	*1/5*																
0	0	0	0																
Market Trip Reduction	*Employee %*	*Vanpool*	*Percent %*	*Mode Share*															
0	0	2	0	0															
Ride Sharing	*Employee %*	*School Bus*	*Family %*																
0	0	0	0																
Area																			
Lawnmower	*Electric %*	*Leafblower*	*Electric %*	*Chainsaw*	*Electric %*														
0	0	0	0	0	0														
Residential				*Nonresidential*															
Interior	*EF*	*Exterior*	*EF*	*Interior*	*EF*	*Exterior*	*EF*												
0	50	0	100	0	250	0	250												
Natural Gas Hearth	*No Hearth*	*Low VOC Cleaning*																	
0	0	0																	
Energy					**ApplianceType**	**Land Use**	**Improvement %**												
Exceed Title 24	*Improvement %*	*Efficient Lighting*	*Reduction %*		ClothWasher	0	30												
0	0	0	0		DishWasher	0	15												
Renewable Energy	*KwhGeneratedCheck*	*KwhGenerated*	*Generated %*	*Generated %*	Fan	0	50												
0	0	0	0	0	Refrigerator	0	15												
Water																			
Conservation Strategy	*Indoor Reduction*	*Outdoor reduction*																	
0	0	0																	
Reclaimed Water	*Outdoor*	*Indoor*	*Grey Water*	*Outdoor*	*Indoor*														
0	0	0	0	0	0														
Low Flow WC Faucet	*Reduction %*	*Low Flow Kitchen Faucet*	*Reduction %*																
0	32	0	18																
Low Flow Toileet	*Reduction %*	*Low Flow Shower*	*Reduction %*																
0	20	0	20																
Turf Reduction	*Area*	*Reduction %*	*Efficient Irrigat*	*Reduction %*															
0	0	0	0	0															
Efficient landscape	*MAWA*	*ETWU*																	
0	0	0																	
Solid Waste																			
Recycling	Reduction %																		
0	0																		

Kensington Assisted Living Facility
South Coast Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Congregate Care (Assisted Living)	75	Suite
Parking Lot	43	Space

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**		**Utility Company**	Southern California Edison
Climate Zone	9		2.2		
		Precipitation Freq (Days)			
			31		

1.3 User Entered Comments

Project Characteristics -

Land Use - Lot acreage, building square feet and population revised to reflect project characteristics.

Construction Phase - Actual dates may shift due to holidays or other circumstances, total days are assumed fixed.
Demolition of both structures and parking lot to total 20 days.

Off-road Equipment - Model overestimated load factors by 33%.

Off-road Equipment - Model overestimated load factors by 33%.

Off-road Equipment - Model overestimated load factors by 33%

Off-road Equipment - Load factors reduced to reflect model overestimate of 33%.

Off-road Equipment - Model overestimated load factors by 33%

Off-road Equipment - Model overestimated load factors by 33%.

Off-road Equipment - Model overestimated load factors by 33%

Demolition -

Grading - Site will be graded to reduce perceived elevation, which would required soil export.
Entire site would be affected.

Woodstoves - Project would have no fireplaces or woodstoves.

Mobile Land Use Mitigation -

Trips and VMT - Proposed as mitigtation: Limit haul length to 15 miles.

Water And Wastewater - Indoor water use estimated based on plumbing fixture counts. Outdoor water use maximum calculated with California Water budget worksheet. Electricity intensity factor to supply reduced to reflect use of groundwater rather than State Water Project water.

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2012	8.96	82.65	47.72	0.10	25.90	3.78	29.68	2.90	3.59	6.17			0.00	0.58	0.00	10,266.13
2013	13.65	25.41	21.31	0.04	0.90	1.70	2.60	0.01	1.70	1.71			0.00	0.45	0.00	3,524.25
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2012	8.96	82.65	47.72	0.10	5.40	3.78	8.85	2.90	3.59	6.17			0.00	0.58	0.00	10,266.13
2013	13.65	25.41	21.31	0.04	0.04	1.70	1.74	0.01	1.70	1.71			0.00	0.45	0.00	3,524.25
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.72	0.00	0.00	0.00		0.00	0.00		0.00	0.00				0.00	0.00	0.00
Energy	0.03	0.28	0.12	0.00		0.00	0.02		0.00	0.02				0.01	0.01	359.09
Mobile	1.05	2.48	10.55	0.02	1.93	0.11	2.04	0.03	0.10	0.12				0.07		1,822.35
Total	**2.80**	**2.76**	**10.67**	**0.02**	**1.93**	**0.11**	**2.06**	**0.03**	**0.10**	**0.14**				**0.08**	**0.01**	**2,181.44**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.72	0.00	0.00	0.00		0.00	0.00		0.00	0.00				0.00	0.00	0.00
Energy	0.03	0.28	0.12	0.00		0.00	0.02		0.00	0.02				0.01	0.01	359.09
Mobile	1.05	2.48	10.55	0.02	1.93	0.11	2.04	0.03	0.10	0.12				0.07		1,822.35
Total	**2.80**	**2.76**	**10.67**	**0.02**	**1.93**	**0.11**	**2.06**	**0.03**	**0.10**	**0.14**				**0.08**	**0.01**	**2,181.44**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Demolition - buildings - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.21	0.00	2.21	0.00	0.00	0.00						0.00
Off-Road	5.41	40.86	24.57	0.04		2.51	2.51		2.51	2.51				0.48		3,956.64
Total	**5.41**	**40.86**	**24.57**	**0.04**	**2.21**	**2.51**	**4.72**	**0.00**	**2.51**	**2.51**				**0.48**		**3,956.64**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.59	6.08	3.32	0.01	3.59	0.27	3.85	0.01	0.24	0.25				0.03		846.12
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.08	0.08	0.91	0.00	0.17	0.01	0.18	0.00	0.01	0.01				0.01		142.52
Total	**0.67**	**6.16**	**4.23**	**0.01**	**3.76**	**0.28**	**4.03**	**0.01**	**0.25**	**0.26**				**0.04**		**988.64**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.21	0.00	2.21	0.00	0.00	0.00						0.00
Off-Road	5.41	40.86	24.57	0.04		2.51	2.51		2.51	2.51				0.48		3,956.64
Total	**5.41**	**40.86**	**24.57**	**0.04**	**2.21**	**2.51**	**4.72**	**0.00**	**2.51**	**2.51**				**0.48**		**3,956.64**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.59	6.08	3.32	0.01	0.03	0.27	0.29	0.01	0.24	0.25				0.03		846.12
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.08	0.08	0.91	0.00	0.01	0.01	0.01	0.00	0.01	0.01				0.01		142.52
Total	**0.67**	**6.16**	**4.23**	**0.01**	**0.04**	**0.28**	**0.30**	**0.01**	**0.25**	**0.26**				**0.04**		**988.64**

3.3 Demolition - parking lot - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.81	0.00	0.81	0.00	0.00	0.00						0.00
Off-Road	5.41	40.86	24.57	0.04		2.51	2.51		2.51	2.51				0.48		3,956.64
Total	**5.41**	**40.86**	**24.57**	**0.04**	**0.81**	**2.51**	**3.32**	**0.00**	**2.51**	**2.51**				**0.48**		**3,956.64**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.22	2.26	1.24	0.00	0.45	0.10	0.55	0.00	0.09	0.09				0.01		315.22
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.08	0.08	0.91	0.00	0.17	0.01	0.18	0.00	0.01	0.01				0.01		142.52
Total	**0.30**	**2.34**	**2.15**	**0.00**	**0.62**	**0.11**	**0.73**	**0.00**	**0.10**	**0.10**				**0.02**		**457.74**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.81	0.00	0.81	0.00	0.00	0.00						0.00
Off-Road	5.41	40.86	24.57	0.04		2.51	2.51		2.51	2.51				0.48		3,956.64
Total	**5.41**	**40.86**	**24.57**	**0.04**	**0.81**	**2.51**	**3.32**	**0.00**	**2.51**	**2.51**				**0.48**		**3,956.64**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.22	2.26	1.24	0.00	0.01	0.10	0.11	0.00	0.09	0.09				0.01		315.22
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.08	0.08	0.91	0.00	0.01	0.01	0.01	0.00	0.01	0.01				0.01		142.52
Total	**0.30**	**2.34**	**2.15**	**0.00**	**0.02**	**0.11**	**0.12**	**0.00**	**0.10**	**0.10**				**0.02**		**457.74**

3.4 Site Preparation - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.40	0.00	5.40	2.90	0.00	2.90						0.00
Off-Road	4.18	33.58	19.35	0.03		1.74	1.74		1.74	1.74				0.37		3,261.25
Total	**4.18**	**33.58**	**19.35**	**0.03**	**5.40**	**1.74**	**7.14**	**2.90**	**1.74**	**4.64**				**0.37**		**3,261.25**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.05	0.05	0.56	0.00	0.10	0.00	0.11	0.00	0.00	0.00				0.01		87.71
Total	**0.05**	**0.05**	**0.56**	**0.00**	**0.10**	**0.00**	**0.11**	**0.00**	**0.00**	**0.00**				**0.01**		**87.71**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.40	0.00	5.40	2.90	0.00	2.90						0.00
Off-Road	4.18	33.58	19.35	0.03		1.74	1.74		1.74	1.74				0.37		3,261.25
Total	**4.18**	**33.58**	**19.35**	**0.03**	**5.40**	**1.74**	**7.14**	**2.90**	**1.74**	**4.64**				**0.37**		**3,261.25**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.05	0.05	0.56	0.00	0.00	0.00	0.01	0.00	0.00	0.00				0.01		87.71
Total	**0.05**	**0.05**	**0.56**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**				**0.01**		**87.71**

3.5 Grading - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.82	0.00	4.82	2.50	0.00	2.50						0.00
Off-Road	3.46	27.83	16.01	0.03		1.44	1.44		1.44	1.44				0.31		2,696.48
Total	**3.46**	**27.83**	**16.01**	**0.03**	**4.82**	**1.44**	**6.26**	**2.50**	**1.44**	**3.94**				**0.31**		**2,696.48**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.45	54.77	31.15	0.07	20.98	2.34	23.32	0.08	2.15	2.23				0.27		7,481.95
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.05	0.05	0.56	0.00	0.10	0.00	0.11	0.00	0.00	0.00				0.01		87.71
Total	**5.50**	**54.82**	**31.71**	**0.07**	**21.08**	**2.34**	**23.43**	**0.08**	**2.15**	**2.23**				**0.28**		**7,569.66**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.82	0.00	4.82	2.50	0.00	2.50						0.00
Off-Road	3.46	27.83	16.01	0.03		1.44	1.44		1.44	1.44				0.31		2,696.48
Total	**3.46**	**27.83**	**16.01**	**0.03**	**4.82**	**1.44**	**6.26**	**2.50**	**1.44**	**3.94**				**0.31**		**2,696.48**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.45	54.77	31.15	0.07	0.25	2.34	2.59	0.08	2.15	2.23				0.27		7,481.95
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.05	0.05	0.56	0.00	0.00	0.00	0.01	0.00	0.00	0.00				0.01		87.71
Total	**5.50**	**54.82**	**31.71**	**0.07**	**0.25**	**2.34**	**2.60**	**0.08**	**2.15**	**2.23**				**0.28**		**7,569.66**

3.6 Building Construction - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.95	24.82	16.68	0.03		1.77	1.77		1.77	1.77				0.45		2,570.92
Total	**4.95**	**24.82**	**16.68**	**0.03**		**1.77**	**1.77**		**1.77**	**1.77**				**0.45**		**2,570.92**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Vendor	0.18	1.97	1.22	0.00	0.10	0.07	0.17	0.00	0.06	0.07				0.01		298.23
Worker	0.37	0.37	4.28	0.01	0.80	0.03	0.82	0.01	0.02	0.03				0.04		668.75
Total	**0.55**	**2.34**	**5.50**	**0.01**	**0.90**	**0.10**	**0.99**	**0.01**	**0.08**	**0.10**				**0.05**		**966.98**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.95	24.82	16.68	0.03		1.77	1.77		1.77	1.77				0.45		2,570.92
Total	**4.95**	**24.82**	**16.68**	**0.03**		**1.77**	**1.77**		**1.77**	**1.77**				**0.45**		**2,570.92**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Vendor	0.18	1.97	1.22	0.00	0.01	0.07	0.08	0.00	0.06	0.07				0.01		298.23
Worker	0.37	0.37	4.28	0.01	0.03	0.03	0.06	0.01	0.02	0.03				0.04		668.75
Total	**0.55**	**2.34**	**5.50**	**0.01**	**0.04**	**0.10**	**0.14**	**0.01**	**0.08**	**0.10**				**0.05**		**966.98**

3.6 Building Construction - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.54	23.27	16.29	0.03		1.61	1.61		1.61	1.61				0.41		2,570.13
Total	**4.54**	**23.27**	**16.29**	**0.03**		**1.61**	**1.61**		**1.61**	**1.61**				**0.41**		**2,570.13**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Vendor	0.16	1.80	1.09	0.00	0.10	0.06	0.16	0.00	0.06	0.06				0.01		299.01
Worker	0.34	0.34	3.93	0.01	0.80	0.03	0.82	0.01	0.02	0.04				0.04		655.11
Total	**0.50**	**2.14**	**5.02**	**0.01**	**0.90**	**0.09**	**0.98**	**0.01**	**0.08**	**0.10**				**0.05**		**954.12**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.54	23.27	16.29	0.03		1.61	1.61		1.61	1.61				0.41		2,570.13
Total	**4.54**	**23.27**	**16.29**	**0.03**		**1.61**	**1.61**		**1.61**	**1.61**				**0.41**		**2,570.13**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Vendor	0.16	1.80	1.09	0.00	0.01	0.06	0.07	0.00	0.06	0.06				0.01		299.01
Worker	0.34	0.34	3.93	0.01	0.03	0.03	0.06	0.01	0.02	0.04				0.04		655.11
Total	**0.50**	**2.14**	**5.02**	**0.01**	**0.04**	**0.09**	**0.13**	**0.01**	**0.08**	**0.10**				**0.05**		**954.12**

3.7 Paving - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.99	18.54	12.08	0.02		1.58	1.58		1.58	1.58				0.27		1,718.34
Paving	0.10					0.00	0.00		0.00	0.00						0.00
Total	**3.09**	**18.54**	**12.08**	**0.02**		**1.58**	**1.58**		**1.58**	**1.58**				**0.27**		**1,718.34**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.07	0.07	0.84	0.00	0.17	0.01	0.18	0.00	0.01	0.01				0.01		139.61
Total	**0.07**	**0.07**	**0.84**	**0.00**	**0.17**	**0.01**	**0.18**	**0.00**	**0.01**	**0.01**				**0.01**		**139.61**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.99	18.54	12.08	0.02		1.58	1.58		1.58	1.58				0.27		1,718.34
Paving	0.10					0.00	0.00		0.00	0.00						0.00
Total	**3.09**	**18.54**	**12.08**	**0.02**		**1.58**	**1.58**		**1.58**	**1.58**				**0.27**		**1,718.34**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.07	0.07	0.84	0.00	0.01	0.01	0.01	0.00	0.01	0.01				0.01		139.61
Total	**0.07**	**0.07**	**0.84**	**0.00**	**0.01**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**				**0.01**		**139.61**

3.8 Architectural Coating - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.10					0.00	0.00		0.00	0.00						0.00
Off-Road	0.49	2.96	1.94	0.00		0.27	0.27		0.27	0.27				0.04		282.10
Total	**13.59**	**2.96**	**1.94**	**0.00**		**0.27**	**0.27**		**0.27**	**0.27**				**0.04**		**282.10**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.07	0.07	0.77	0.00	0.16	0.01	0.16	0.00	0.00	0.01				0.01		128.87
Total	**0.07**	**0.07**	**0.77**	**0.00**	**0.16**	**0.01**	**0.16**	**0.00**	**0.00**	**0.01**				**0.01**		**128.87**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.10					0.00	0.00		0.00	0.00						0.00
Off-Road	0.49	2.96	1.94	0.00		0.27	0.27		0.27	0.27				0.04		282.10
Total	**13.59**	**2.96**	**1.94**	**0.00**		**0.27**	**0.27**		**0.27**	**0.27**				**0.04**		**282.10**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.07	0.07	0.77	0.00	0.01	0.01	0.01	0.00	0.00	0.01				0.01		128.87
Total	**0.07**	**0.07**	**0.77**	**0.00**	**0.01**	**0.01**	**0.01**	**0.00**	**0.00**	**0.01**				**0.01**		**128.87**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.05	2.48	10.55	0.02	1.93	0.11	2.04	0.03	0.10	0.12				0.07		1,822.35
Unmitigated	1.05	2.48	10.55	0.02	1.93	0.11	2.04	0.03	0.10	0.12				0.07		1,822.35
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Congregate Care (Assisted Living)	205.50	165.00	183.00	558,084	558,084
Parking Lot	0.00	0.00	0.00		
Total	205.50	165.00	183.00	558,084	558,084

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Congregate Care (Assisted Living)	10.80	7.30	7.50	40.20	19.20	40.60
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.03	0.28	0.12	0.00		0.00	0.02		0.00	0.02				0.01	0.01	359.09
NaturalGas Unmitigated	0.03	0.28	0.12	0.00		0.00	0.02		0.00	0.02				0.01	0.01	359.09
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Congregate Care (Assisted Living)	3033.82	0.03	0.28	0.12	0.00		0.00	0.02		0.00	0.02				0.01	0.01	359.09
Parking Lot	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00				0.00	0.00	0.00
Total		**0.03**	**0.28**	**0.12**	**0.00**		**0.00**	**0.02**		**0.00**	**0.02**				**0.01**	**0.01**	**359.09**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Congregate Care (Assisted Living)	3.03382	0.03	0.28	0.12	0.00		0.00	0.02		0.00	0.02				0.01	0.01	359.09
Parking Lot	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00				0.00	0.00	0.00
Total		**0.03**	**0.28**	**0.12**	**0.00**		**0.00**	**0.02**		**0.00**	**0.02**				**0.01**	**0.01**	**359.09**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.72	0.00	0.00	0.00		0.00	0.00		0.00	0.00				0.00	0.00	0.00
Unmitigated	1.72	0.00	0.00	0.00		0.00	0.00		0.00	0.00				0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.23					0.00	0.00		0.00	0.00						0.00
Consumer Products	1.49					0.00	0.00		0.00	0.00						0.00
Hearth	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00				0.00	0.00	0.00
Landscaping						0.00	0.00		0.00	0.00						0.00
Total	**1.72**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**				**0.00**	**0.00**	**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.23					0.00	0.00		0.00	0.00						0.00
Consumer Products	1.49					0.00	0.00		0.00	0.00						0.00
Hearth	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00				0.00	0.00	0.00
Landscaping						0.00	0.00		0.00	0.00						0.00
Total	**1.72**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**				**0.00**	**0.00**	**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Kensington Assisted Living Facility

South Coast Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Congregate Care (Assisted Living)	75	Suite
Parking Lot	43	Space

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**		**Utility Company**	Southern California Edison
Climate Zone	9		2.2		
		Precipitation Freq (Days)			
			31		

1.3 User Entered Comments

Project Characteristics -

Land Use - Lot acreage, building square feet and population revised to reflect project characteristics.

Construction Phase - Actual dates may shift due to holidays or other circumstances, total days are assumed fixed.
Demolition of both structures and parking lot to total 20 days.
Off-road Equipment - Model overestimated load factors by 33%.

Off-road Equipment - Model overestimated load factors by 33%.

Off-road Equipment - Model overestimated load factors by 33%

Off-road Equipment - Load factors reduced to reflect model overestimate of 33%.

Off-road Equipment - Model overestimated load factors by 33%

Off-road Equipment - Model overestimated load factors by 33%.

Off-road Equipment - Model overestimated load factors by 33%

Demolition -

Grading - Site will be graded to reduce perceived elevation, which would required soil export.
Entire site would be affected.

Woodstoves - Project would have no fireplaces or woodstoves.

Mobile Land Use Mitigation -

Trips and VMT - Proposed as mitigtation: Limit haul length to 15 miles.

Water And Wastewater - Indoor water use estimated based on plumbing fixture counts. Outdoor water use maximum calculated with California Water budget worksheet. Electricity intensity factor to supply reduced to reflect use of groundwater rather than State Water Project water.

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2012	9.12	85.53	50.29	0.10	25.90	3.81	29.71	2.90	3.62	6.20			0.00	0.59	0.00	10,212.80
2013	13.66	25.54	21.20	0.04	0.90	1.70	2.60	0.01	1.70	1.71			0.00	0.45	0.00	3,467.25
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2012	9.12	85.53	50.29	0.10	5.40	3.81	8.88	2.90	3.62	6.20			0.00	0.59	0.00	10,212.80
2013	13.66	25.54	21.20	0.04	0.04	1.70	1.74	0.01	1.70	1.71			0.00	0.45	0.00	3,467.25
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.72	0.00	0.00	0.00		0.00	0.00		0.00	0.00				0.00	0.00	0.00
Energy	0.03	0.28	0.12	0.00		0.00	0.02		0.00	0.02				0.01	0.01	359.09
Mobile	1.11	2.68	10.30	0.02	1.93	0.11	2.04	0.03	0.10	0.12				0.07		1,695.94
Total	**2.86**	**2.96**	**10.42**	**0.02**	**1.93**	**0.11**	**2.06**	**0.03**	**0.10**	**0.14**				**0.08**	**0.01**	**2,055.03**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.72	0.00	0.00	0.00		0.00	0.00		0.00	0.00				0.00	0.00	0.00
Energy	0.03	0.28	0.12	0.00		0.00	0.02		0.00	0.02				0.01	0.01	359.09
Mobile	1.11	2.68	10.30	0.02	1.93	0.11	2.04	0.03	0.10	0.12				0.07		1,695.94
Total	**2.86**	**2.96**	**10.42**	**0.02**	**1.93**	**0.11**	**2.06**	**0.03**	**0.10**	**0.14**				**0.08**	**0.01**	**2,055.03**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Demolition - buildings - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.21	0.00	2.21	0.00	0.00	0.00						0.00
Off-Road	5.41	40.86	24.57	0.04		2.51	2.51		2.51	2.51				0.48		3,956.64
Total	**5.41**	**40.86**	**24.57**	**0.04**	**2.21**	**2.51**	**4.72**	**0.00**	**2.51**	**2.51**				**0.48**		**3,956.64**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.61	6.42	3.54	0.01	3.59	0.27	3.86	0.01	0.25	0.26				0.03		842.17
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.08	0.09	0.86	0.00	0.17	0.01	0.18	0.00	0.01	0.01				0.01		130.63
Total	**0.69**	**6.51**	**4.40**	**0.01**	**3.76**	**0.28**	**4.04**	**0.01**	**0.26**	**0.27**				**0.04**		**972.80**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.21	0.00	2.21	0.00	0.00	0.00						0.00
Off-Road	5.41	40.86	24.57	0.04		2.51	2.51		2.51	2.51				0.48		3,956.64
Total	**5.41**	**40.86**	**24.57**	**0.04**	**2.21**	**2.51**	**4.72**	**0.00**	**2.51**	**2.51**				**0.48**		**3,956.64**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.61	6.42	3.54	0.01	0.03	0.27	0.30	0.01	0.25	0.26				0.03		842.17
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.08	0.09	0.86	0.00	0.01	0.01	0.01	0.00	0.01	0.01				0.01		130.63
Total	**0.69**	**6.51**	**4.40**	**0.01**	**0.04**	**0.28**	**0.31**	**0.01**	**0.26**	**0.27**				**0.04**		**972.80**

3.3 Demolition - parking lot - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.81	0.00	0.81	0.00	0.00	0.00						0.00
Off-Road	5.41	40.86	24.57	0.04		2.51	2.51		2.51	2.51				0.48		3,956.64
Total	**5.41**	**40.86**	**24.57**	**0.04**	**0.81**	**2.51**	**3.32**	**0.00**	**2.51**	**2.51**				**0.48**		**3,956.64**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.23	2.39	1.32	0.00	0.45	0.10	0.55	0.00	0.09	0.10				0.01		313.75
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.08	0.09	0.86	0.00	0.17	0.01	0.18	0.00	0.01	0.01				0.01		130.63
Total	**0.31**	**2.48**	**2.18**	**0.00**	**0.62**	**0.11**	**0.73**	**0.00**	**0.10**	**0.11**				**0.02**		**444.38**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.81	0.00	0.81	0.00	0.00	0.00						0.00
Off-Road	5.41	40.86	24.57	0.04		2.51	2.51		2.51	2.51				0.48		3,956.64
Total	**5.41**	**40.86**	**24.57**	**0.04**	**0.81**	**2.51**	**3.32**	**0.00**	**2.51**	**2.51**				**0.48**		**3,956.64**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.23	2.39	1.32	0.00	0.01	0.10	0.11	0.00	0.09	0.10				0.01		313.75
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.08	0.09	0.86	0.00	0.01	0.01	0.01	0.00	0.01	0.01				0.01		130.63
Total	**0.31**	**2.48**	**2.18**	**0.00**	**0.02**	**0.11**	**0.12**	**0.00**	**0.10**	**0.11**				**0.02**		**444.38**

3.4 Site Preparation - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.40	0.00	5.40	2.90	0.00	2.90						0.00
Off-Road	4.18	33.58	19.35	0.03		1.74	1.74		1.74	1.74				0.37		3,261.25
Total	**4.18**	**33.58**	**19.35**	**0.03**	**5.40**	**1.74**	**7.14**	**2.90**	**1.74**	**4.64**				**0.37**		**3,261.25**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.05	0.06	0.53	0.00	0.10	0.00	0.11	0.00	0.00	0.00				0.01		80.39
Total	**0.05**	**0.06**	**0.53**	**0.00**	**0.10**	**0.00**	**0.11**	**0.00**	**0.00**	**0.00**				**0.01**		**80.39**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.40	0.00	5.40	2.90	0.00	2.90						0.00
Off-Road	4.18	33.58	19.35	0.03		1.74	1.74		1.74	1.74				0.37		3,261.25
Total	**4.18**	**33.58**	**19.35**	**0.03**	**5.40**	**1.74**	**7.14**	**2.90**	**1.74**	**4.64**				**0.37**		**3,261.25**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.05	0.06	0.53	0.00	0.00	0.00	0.01	0.00	0.00	0.00				0.01		80.39
Total	**0.05**	**0.06**	**0.53**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**				**0.01**		**80.39**

3.5 Grading - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.82	0.00	4.82	2.50	0.00	2.50						0.00
Off-Road	3.46	27.83	16.01	0.03		1.44	1.44		1.44	1.44				0.31		2,696.48
Total	**3.46**	**27.83**	**16.01**	**0.03**	**4.82**	**1.44**	**6.26**	**2.50**	**1.44**	**3.94**				**0.31**		**2,696.48**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.61	57.64	33.76	0.07	20.98	2.37	23.35	0.08	2.18	2.26				0.27		7,435.94
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.05	0.06	0.53	0.00	0.10	0.00	0.11	0.00	0.00	0.00				0.01		80.39
Total	**5.66**	**57.70**	**34.29**	**0.07**	**21.08**	**2.37**	**23.46**	**0.08**	**2.18**	**2.26**				**0.28**		**7,516.33**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.82	0.00	4.82	2.50	0.00	2.50						0.00
Off-Road	3.46	27.83	16.01	0.03		1.44	1.44		1.44	1.44				0.31		2,696.48
Total	**3.46**	**27.83**	**16.01**	**0.03**	**4.82**	**1.44**	**6.26**	**2.50**	**1.44**	**3.94**				**0.31**		**2,696.48**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.61	57.64	33.76	0.07	0.25	2.37	2.61	0.08	2.18	2.26				0.27		7,435.94
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.05	0.06	0.53	0.00	0.00	0.00	0.01	0.00	0.00	0.00				0.01		80.39
Total	**5.66**	**57.70**	**34.29**	**0.07**	**0.25**	**2.37**	**2.62**	**0.08**	**2.18**	**2.26**				**0.28**		**7,516.33**

3.6 Building Construction - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.95	24.82	16.68	0.03		1.77	1.77		1.77	1.77				0.45		2,570.92
Total	**4.95**	**24.82**	**16.68**	**0.03**		**1.77**	**1.77**		**1.77**	**1.77**				**0.45**		**2,570.92**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Vendor	0.19	2.07	1.35	0.00	0.10	0.07	0.17	0.00	0.07	0.07				0.01		296.10
Worker	0.39	0.43	4.02	0.01	0.80	0.03	0.82	0.01	0.02	0.03				0.04		612.94
Total	**0.58**	**2.50**	**5.37**	**0.01**	**0.90**	**0.10**	**0.99**	**0.01**	**0.09**	**0.10**				**0.05**		**909.04**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.95	24.82	16.68	0.03		1.77	1.77		1.77	1.77				0.45		2,570.92
Total	**4.95**	**24.82**	**16.68**	**0.03**		**1.77**	**1.77**		**1.77**	**1.77**				**0.45**		**2,570.92**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Vendor	0.19	2.07	1.35	0.00	0.01	0.07	0.08	0.00	0.07	0.07				0.01		296.10
Worker	0.39	0.43	4.02	0.01	0.03	0.03	0.06	0.01	0.02	0.03				0.04		612.94
Total	**0.58**	**2.50**	**5.37**	**0.01**	**0.04**	**0.10**	**0.14**	**0.01**	**0.09**	**0.10**				**0.05**		**909.04**

3.6 Building Construction - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.54	23.27	16.29	0.03		1.61	1.61		1.61	1.61				0.41		2,570.13
Total	**4.54**	**23.27**	**16.29**	**0.03**		**1.61**	**1.61**		**1.61**	**1.61**				**0.41**		**2,570.13**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Vendor	0.17	1.88	1.23	0.00	0.10	0.06	0.17	0.00	0.06	0.06				0.01		296.81
Worker	0.36	0.39	3.68	0.01	0.80	0.03	0.82	0.01	0.02	0.04				0.04		600.31
Total	**0.53**	**2.27**	**4.91**	**0.01**	**0.90**	**0.09**	**0.99**	**0.01**	**0.08**	**0.10**				**0.05**		**897.12**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.54	23.27	16.29	0.03		1.61	1.61		1.61	1.61				0.41		2,570.13
Total	**4.54**	**23.27**	**16.29**	**0.03**		**1.61**	**1.61**		**1.61**	**1.61**				**0.41**		**2,570.13**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Vendor	0.17	1.88	1.23	0.00	0.01	0.06	0.07	0.00	0.06	0.06				0.01		296.81
Worker	0.36	0.39	3.68	0.01	0.03	0.03	0.06	0.01	0.02	0.04				0.04		600.31
Total	**0.53**	**2.27**	**4.91**	**0.01**	**0.04**	**0.09**	**0.13**	**0.01**	**0.08**	**0.10**				**0.05**		**897.12**

3.7 Paving - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.99	18.54	12.08	0.02		1.58	1.58		1.58	1.58				0.27		1,718.34
Paving	0.10					0.00	0.00		0.00	0.00						0.00
Total	**3.09**	**18.54**	**12.08**	**0.02**		**1.58**	**1.58**		**1.58**	**1.58**				**0.27**		**1,718.34**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.08	0.08	0.78	0.00	0.17	0.01	0.18	0.00	0.01	0.01				0.01		127.94
Total	**0.08**	**0.08**	**0.78**	**0.00**	**0.17**	**0.01**	**0.18**	**0.00**	**0.01**	**0.01**				**0.01**		**127.94**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.99	18.54	12.08	0.02		1.58	1.58		1.58	1.58				0.27		1,718.34
Paving	0.10					0.00	0.00		0.00	0.00						0.00
Total	**3.09**	**18.54**	**12.08**	**0.02**		**1.58**	**1.58**		**1.58**	**1.58**				**0.27**		**1,718.34**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.08	0.08	0.78	0.00	0.01	0.01	0.01	0.00	0.01	0.01				0.01		127.94
Total	**0.08**	**0.08**	**0.78**	**0.00**	**0.01**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**				**0.01**		**127.94**

3.8 Architectural Coating - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.10					0.00	0.00		0.00	0.00						0.00
Off-Road	0.49	2.96	1.94	0.00		0.27	0.27		0.27	0.27				0.04		282.10
Total	**13.59**	**2.96**	**1.94**	**0.00**		**0.27**	**0.27**		**0.27**	**0.27**				**0.04**		**282.10**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.07	0.08	0.72	0.00	0.16	0.01	0.16	0.00	0.00	0.01				0.01		118.09
Total	**0.07**	**0.08**	**0.72**	**0.00**	**0.16**	**0.01**	**0.16**	**0.00**	**0.00**	**0.01**				**0.01**		**118.09**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.10					0.00	0.00		0.00	0.00						0.00
Off-Road	0.49	2.96	1.94	0.00		0.27	0.27		0.27	0.27				0.04		282.10
Total	**13.59**	**2.96**	**1.94**	**0.00**		**0.27**	**0.27**		**0.27**	**0.27**				**0.04**		**282.10**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.07	0.08	0.72	0.00	0.01	0.01	0.01	0.00	0.00	0.01				0.01		118.09
Total	**0.07**	**0.08**	**0.72**	**0.00**	**0.01**	**0.01**	**0.01**	**0.00**	**0.00**	**0.01**				**0.01**		**118.09**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.11	2.68	10.30	0.02	1.93	0.11	2.04	0.03	0.10	0.12				0.07		1,695.94
Unmitigated	1.11	2.68	10.30	0.02	1.93	0.11	2.04	0.03	0.10	0.12				0.07		1,695.94
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Congregate Care (Assisted Living)	205.50	165.00	183.00	558,084	558,084
Parking Lot	0.00	0.00	0.00		
Total	205.50	165.00	183.00	558,084	558,084

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Congregate Care (Assisted Living)	10.80	7.30	7.50	40.20	19.20	40.60
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.03	0.28	0.12	0.00		0.00	0.02		0.00	0.02				0.01	0.01	359.09
NaturalGas Unmitigated	0.03	0.28	0.12	0.00		0.00	0.02		0.00	0.02				0.01	0.01	359.09
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Congregate Care (Assisted Living)	3033.82	0.03	0.28	0.12	0.00		0.00	0.02		0.00	0.02				0.01	0.01	359.09
Parking Lot	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00				0.00	0.00	0.00
Total		**0.03**	**0.28**	**0.12**	**0.00**		**0.00**	**0.02**		**0.00**	**0.02**				**0.01**	**0.01**	**359.09**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Congregate Care (Assisted Living)	3.03382	0.03	0.28	0.12	0.00		0.00	0.02		0.00	0.02				0.01	0.01	359.09
Parking Lot	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00				0.00	0.00	0.00
Total		**0.03**	**0.28**	**0.12**	**0.00**		**0.00**	**0.02**		**0.00**	**0.02**				**0.01**	**0.01**	**359.09**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.72	0.00	0.00	0.00		0.00	0.00		0.00	0.00				0.00	0.00	0.00
Unmitigated	1.72	0.00	0.00	0.00		0.00	0.00		0.00	0.00				0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.23					0.00	0.00		0.00	0.00						0.00
Consumer Products	1.49					0.00	0.00		0.00	0.00						0.00
Hearth	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00				0.00	0.00	0.00
Landscaping						0.00	0.00		0.00	0.00						0.00
Total	**1.72**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**				**0.00**	**0.00**	**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.23					0.00	0.00		0.00	0.00						0.00
Consumer Products	1.49					0.00	0.00		0.00	0.00						0.00
Hearth	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00				0.00	0.00	0.00
Landscaping						0.00	0.00		0.00	0.00						0.00
Total	**1.72**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**				**0.00**	**0.00**	**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Kensington Assisted Living Facility
South Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Parking Lot	43	Space
Congregate Care (Assisted Living)	75	Suite

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**		**Utility Company**	Southern California Edison
Climate Zone	9		2.2		
		Precipitation Freq (Days)			
			31		

1.3 User Entered Comments

Project Characteristics -

Land Use - Lot acreage, building square feet and population revised to reflect project characteristics.

Construction Phase - Actual dates may shift due to holidays or other circumstances, total days are assumed fixed.
Demolition of both structures and parking lot to total 20 days.

Off-road Equipment - Model overestimated load factors by 33%.

Off-road Equipment - Model overestimated load factors by 33%.

Off-road Equipment - Model overestimated load factors by 33%

Off-road Equipment - Load factors reduced to reflect model overestimate of 33%.

Off-road Equipment - Model overestimated load factors by 33%

Off-road Equipment - Model overestimated load factors by 33%.

Off-road Equipment - Model overestimated load factors by 33%

Trips and VMT - Proposed as mitigtation: Limit haul length to 15 miles.

Demolition -

Grading - Site will be graded to reduce perceived elevation, which would required soil export.
Entire site would be affected.
Woodstoves - Project would have no fireplaces or woodstoves.

Water And Wastewater - Indoor water use estimated based on plumbing fixture counts. Outdoor water use maximum calculated with California Water budget worksheet. Electricity intensity factor to supply reduced to reflect use of groundwater rather than State Water Project water.

Mobile Land Use Mitigation -

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2012	0.48	2.84	2.07	0.00	0.26	0.18	0.43	0.04	0.18	0.21			311.85	0.04	0.00	312.65
2013	0.47	0.24	0.19	0.00	0.01	0.02	0.03	0.00	0.02	0.02			26.53	0.00	0.00	26.60
Total	**0.95**	**3.08**	**2.26**	**0.00**	**0.27**	**0.20**	**0.46**	**0.04**	**0.20**	**0.23**			**338.38**	**0.04**	**0.00**	**339.25**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2012	0.48	2.84	2.07	0.00	0.09	0.18	0.26	0.04	0.18	0.21			311.85	0.04	0.00	312.65
2013	0.47	0.24	0.19	0.00	0.00	0.02	0.02	0.00	0.02	0.02			26.53	0.00	0.00	26.60
Total	**0.95**	**3.08**	**2.26**	**0.00**	**0.09**	**0.20**	**0.28**	**0.04**	**0.20**	**0.23**			**338.38**	**0.04**	**0.00**	**339.25**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.36	0.01	1.20	0.00		0.00	0.01		0.00	0.01			1.87	0.00	0.00	1.91
Energy	0.01	0.05	0.02	0.00		0.00	0.00		0.00	0.00			134.94	0.00	0.00	135.77
Mobile	0.18	0.44	1.82	0.00	0.30	0.02	0.32	0.00	0.02	0.02			273.58	0.01	0.00	273.82
Waste						0.00	0.00		0.00	0.00			13.89	0.82	0.00	31.13
Water						0.00	0.00		0.00	0.00			5.46	0.12	0.00	8.80
Total	**0.55**	**0.50**	**3.04**	**0.00**	**0.30**	**0.02**	**0.33**	**0.00**	**0.02**	**0.03**			**429.74**	**0.95**	**0.00**	**451.43**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.36	0.01	1.20	0.00		0.00	0.01		0.00	0.01			1.87	0.00	0.00	1.91
Energy	0.01	0.05	0.02	0.00		0.00	0.00		0.00	0.00			134.94	0.00	0.00	135.77
Mobile	0.18	0.44	1.82	0.00	0.30	0.02	0.32	0.00	0.02	0.02			273.58	0.01	0.00	273.82
Waste						0.00	0.00		0.00	0.00			13.89	0.82	0.00	31.13
Water						0.00	0.00		0.00	0.00			5.46	0.12	0.00	8.80
Total	**0.55**	**0.50**	**3.04**	**0.00**	**0.30**	**0.02**	**0.33**	**0.00**	**0.02**	**0.03**			**429.74**	**0.95**	**0.00**	**451.43**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Demolition - buildings - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.02	0.00	0.02	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Off-Road	0.04	0.31	0.18	0.00		0.02	0.02		0.02	0.02			26.84	0.00	0.00	26.91
Total	**0.04**	**0.31**	**0.18**	**0.00**	**0.02**	**0.02**	**0.04**	**0.00**	**0.02**	**0.02**			**26.84**	**0.00**	**0.00**	**26.91**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.05	0.03	0.00	0.02	0.00	0.03	0.00	0.00	0.00			5.74	0.00	0.00	5.75
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.91	0.00	0.00	0.91
Total	**0.00**	**0.05**	**0.04**	**0.00**	**0.02**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**			**6.65**	**0.00**	**0.00**	**6.66**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.02	0.00	0.02	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Off-Road	0.04	0.31	0.18	0.00		0.02	0.02		0.02	0.02			26.84	0.00	0.00	26.91
Total	**0.04**	**0.31**	**0.18**	**0.00**	**0.02**	**0.02**	**0.04**	**0.00**	**0.02**	**0.02**			**26.84**	**0.00**	**0.00**	**26.91**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.05	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00			5.74	0.00	0.00	5.75
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.91	0.00	0.00	0.91
Total	**0.00**	**0.05**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**			**6.65**	**0.00**	**0.00**	**6.66**

3.3 Demolition - parking lot - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Off-Road	0.01	0.10	0.06	0.00		0.01	0.01		0.01	0.01			8.95	0.00	0.00	8.97
Total	**0.01**	**0.10**	**0.06**	**0.00**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**			**8.95**	**0.00**	**0.00**	**8.97**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.71	0.00	0.00	0.71
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.30	0.00	0.00	0.30
Total	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**			**1.01**	**0.00**	**0.00**	**1.01**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Off-Road	0.01	0.10	0.06	0.00		0.01	0.01		0.01	0.01			8.95	0.00	0.00	8.97
Total	**0.01**	**0.10**	**0.06**	**0.00**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**			**8.95**	**0.00**	**0.00**	**8.97**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.71	0.00	0.00	0.71
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.30	0.00	0.00	0.30
Total	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**			**1.01**	**0.00**	**0.00**	**1.01**

3.4 Site Preparation - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.04	0.00	0.04	0.02	0.00	0.02			0.00	0.00	0.00	0.00
Off-Road	0.03	0.25	0.15	0.00		0.01	0.01		0.01	0.01			22.13	0.00	0.00	22.18
Total	**0.03**	**0.25**	**0.15**	**0.00**	**0.04**	**0.01**	**0.05**	**0.02**	**0.01**	**0.03**			**22.13**	**0.00**	**0.00**	**22.18**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.56	0.00	0.00	0.56
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**			**0.56**	**0.00**	**0.00**	**0.56**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.04	0.00	0.04	0.02	0.00	0.02			0.00	0.00	0.00	0.00
Off-Road	0.03	0.25	0.15	0.00		0.01	0.01		0.01	0.01			22.13	0.00	0.00	22.18
Total	**0.03**	**0.25**	**0.15**	**0.00**	**0.04**	**0.01**	**0.05**	**0.02**	**0.01**	**0.03**			**22.13**	**0.00**	**0.00**	**22.18**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.56	0.00	0.00	0.56
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**			**0.56**	**0.00**	**0.00**	**0.56**

3.5 Grading - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.02	0.00	0.02	0.01	0.00	0.01			0.00	0.00	0.00	0.00
Off-Road	0.02	0.14	0.08	0.00		0.01	0.01		0.01	0.01			12.20	0.00	0.00	12.23
Total	**0.02**	**0.14**	**0.08**	**0.00**	**0.02**	**0.01**	**0.03**	**0.01**	**0.01**	**0.02**			**12.20**	**0.00**	**0.00**	**12.23**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.03	0.27	0.16	0.00	0.09	0.01	0.11	0.00	0.01	0.01			33.82	0.00	0.00	33.85
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.37	0.00	0.00	0.37
Total	**0.03**	**0.27**	**0.16**	**0.00**	**0.09**	**0.01**	**0.11**	**0.00**	**0.01**	**0.01**			**34.19**	**0.00**	**0.00**	**34.22**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.02	0.00	0.02	0.01	0.00	0.01			0.00	0.00	0.00	0.00
Off-Road	0.02	0.14	0.08	0.00		0.01	0.01		0.01	0.01			12.20	0.00	0.00	12.23
Total	**0.02**	**0.14**	**0.08**	**0.00**	**0.02**	**0.01**	**0.03**	**0.01**	**0.01**	**0.02**			**12.20**	**0.00**	**0.00**	**12.23**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.03	0.27	0.16	0.00	0.00	0.01	0.01	0.00	0.01	0.01			33.82	0.00	0.00	33.85
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.37	0.00	0.00	0.37
Total	**0.03**	**0.27**	**0.16**	**0.00**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**			**34.19**	**0.00**	**0.00**	**34.22**

3.6 Building Construction - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.31	1.56	1.05	0.00		0.11	0.11		0.11	0.11			146.36	0.03	0.00	146.89
Total	**0.31**	**1.56**	**1.05**	**0.00**		**0.11**	**0.11**		**0.11**	**0.11**			**146.36**	**0.03**	**0.00**	**146.89**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Vendor	0.01	0.12	0.08	0.00	0.01	0.00	0.01	0.00	0.00	0.00			16.98	0.00	0.00	16.99
Worker	0.02	0.02	0.26	0.00	0.05	0.00	0.05	0.00	0.00	0.00			35.95	0.00	0.00	36.00
Total	**0.03**	**0.14**	**0.34**	**0.00**	**0.06**	**0.00**	**0.06**	**0.00**	**0.00**	**0.00**			**52.93**	**0.00**	**0.00**	**52.99**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.31	1.56	1.05	0.00		0.11	0.11		0.11	0.11			146.36	0.03	0.00	146.89
Total	**0.31**	**1.56**	**1.05**	**0.00**		**0.11**	**0.11**		**0.11**	**0.11**			**146.36**	**0.03**	**0.00**	**146.89**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Vendor	0.01	0.12	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00			16.98	0.00	0.00	16.99
Worker	0.02	0.02	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00			35.95	0.00	0.00	36.00
Total	**0.03**	**0.14**	**0.34**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**			**52.93**	**0.00**	**0.00**	**52.99**

3.6 Building Construction - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.01	0.05	0.03	0.00		0.00	0.00		0.00	0.00			4.65	0.00	0.00	4.66
Total	**0.01**	**0.05**	**0.03**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**			**4.65**	**0.00**	**0.00**	**4.66**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.54	0.00	0.00	0.54
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00			1.12	0.00	0.00	1.12
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**			**1.66**	**0.00**	**0.00**	**1.66**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.01	0.05	0.03	0.00		0.00	0.00		0.00	0.00			4.65	0.00	0.00	4.66
Total	**0.01**	**0.05**	**0.03**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**			**4.65**	**0.00**	**0.00**	**4.66**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.54	0.00	0.00	0.54
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00			1.12	0.00	0.00	1.12
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**			**1.66**	**0.00**	**0.00**	**1.66**

3.7 Paving - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.01	0.09	0.06	0.00		0.01	0.01		0.01	0.01			7.77	0.00	0.00	7.79
Paving	0.00					0.00	0.00		0.00	0.00			0.00	0.00	0.00	0.00
Total	**0.01**	**0.09**	**0.06**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**			**7.77**	**0.00**	**0.00**	**7.79**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.60	0.00	0.00	0.60
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**			**0.60**	**0.00**	**0.00**	**0.60**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.01	0.09	0.06	0.00		0.01	0.01		0.01	0.01			7.77	0.00	0.00	7.79
Paving	0.00					0.00	0.00		0.00	0.00			0.00	0.00	0.00	0.00
Total	**0.01**	**0.09**	**0.06**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**			**7.77**	**0.00**	**0.00**	**7.79**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.60	0.00	0.00	0.60
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**			**0.60**	**0.00**	**0.00**	**0.60**

3.8 Architectural Coating - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.43					0.00	0.00		0.00	0.00			0.00	0.00	0.00	0.00
Off-Road	0.02	0.10	0.06	0.00		0.01	0.01		0.01	0.01			8.29	0.00	0.00	8.32
Total	**0.45**	**0.10**	**0.06**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**			**8.29**	**0.00**	**0.00**	**8.32**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00			3.57	0.00	0.00	3.58
Total	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**			**3.57**	**0.00**	**0.00**	**3.58**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.43					0.00	0.00		0.00	0.00			0.00	0.00	0.00	0.00
Off-Road	0.02	0.10	0.06	0.00		0.01	0.01		0.01	0.01			8.29	0.00	0.00	8.32
Total	**0.45**	**0.10**	**0.06**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**			**8.29**	**0.00**	**0.00**	**8.32**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00			3.57	0.00	0.00	3.58
Total	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**			**3.57**	**0.00**	**0.00**	**3.58**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.18	0.44	1.82	0.00	0.30	0.02	0.32	0.00	0.02	0.02			273.58	0.01	0.00	273.82
Unmitigated	0.18	0.44	1.82	0.00	0.30	0.02	0.32	0.00	0.02	0.02			273.58	0.01	0.00	273.82
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Congregate Care (Assisted Living)	205.50	165.00	183.00	558,084	558,084
Parking Lot	0.00	0.00	0.00		
Total	205.50	165.00	183.00	558,084	558,084

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Congregate Care (Assisted Living)	10.80	7.30	7.50	40.20	19.20	40.60
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.00	0.00		0.00	0.00			75.85	0.00	0.00	76.32
Electricity Unmitigated						0.00	0.00		0.00	0.00			75.85	0.00	0.00	76.32
NaturalGas Mitigated	0.01	0.05	0.02	0.00		0.00	0.00		0.00	0.00			59.09	0.00	0.00	59.45
NaturalGas Unmitigated	0.01	0.05	0.02	0.00		0.00	0.00		0.00	0.00			59.09	0.00	0.00	59.45
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Congregate Care (Assisted Living)	1.10734e+006	0.01	0.05	0.02	0.00		0.00	0.00		0.00	0.00			59.09	0.00	0.00	59.45
Parking Lot	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00			0.00	0.00	0.00	0.00
Total		**0.01**	**0.05**	**0.02**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**			**59.09**	**0.00**	**0.00**	**59.45**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Congregate Care (Assisted Living)	1.10734e+006	0.01	0.05	0.02	0.00		0.00	0.00		0.00	0.00			59.09	0.00	0.00	59.45
Parking Lot	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00			0.00	0.00	0.00	0.00
Total		**0.01**	**0.05**	**0.02**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**			**59.09**	**0.00**	**0.00**	**59.45**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Congregate Care (Assisted Living)	260753					75.85	0.00	0.00	76.32
Parking Lot	0					0.00	0.00	0.00	0.00
Total						**75.85**	**0.00**	**0.00**	**76.32**

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Congregate Care (Assisted Living)	260753					75.85	0.00	0.00	76.32
Parking Lot	0					0.00	0.00	0.00	0.00
Total						**75.85**	**0.00**	**0.00**	**76.32**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.36	0.01	1.20	0.00		0.00	0.01		0.00	0.01			1.87	0.00	0.00	1.91
Unmitigated	0.36	0.01	1.20	0.00		0.00	0.01		0.00	0.01			1.87	0.00	0.00	1.91
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.04					0.00	0.00		0.00	0.00			0.00	0.00	0.00	0.00
Consumer Products	0.27					0.00	0.00		0.00	0.00			0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00			0.00	0.00	0.00	0.00
Landscaping	0.04	0.01	1.20	0.00		0.00	0.01		0.00	0.01			1.87	0.00	0.00	1.91
Total	**0.35**	**0.01**	**1.20**	**0.00**		**0.00**	**0.01**		**0.00**	**0.01**			**1.87**	**0.00**	**0.00**	**1.91**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.04					0.00	0.00		0.00	0.00			0.00	0.00	0.00	0.00
Consumer Products	0.27					0.00	0.00		0.00	0.00			0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00			0.00	0.00	0.00	0.00
Landscaping	0.04	0.01	1.20	0.00		0.00	0.01		0.00	0.01			1.87	0.00	0.00	1.91
Total	**0.35**	**0.01**	**1.20**	**0.00**		**0.00**	**0.01**		**0.00**	**0.01**			**1.87**	**0.00**	**0.00**	**1.91**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					5.46	0.12	0.00	8.80
Unmitigated					5.46	0.12	0.00	8.80
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Congregate Care (Assisted Living)	3.77501 / 0.446416					5.46	0.12	0.00	8.80
Parking Lot	0 / 0					0.00	0.00	0.00	0.00
Total						**5.46**	**0.12**	**0.00**	**8.80**

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Congregate Care (Assisted Living)	3.77501 / 0.446416					5.46	0.12	0.00	8.80
Parking Lot	0 / 0					0.00	0.00	0.00	0.00
Total						**5.46**	**0.12**	**0.00**	**8.80**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					13.89	0.82	0.00	31.13
Unmitigated					13.89	0.82	0.00	31.13
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Congregate Care (Assisted Living)	68.44					13.89	0.82	0.00	31.13
Parking Lot	0					0.00	0.00	0.00	0.00
Total						**13.89**	**0.82**	**0.00**	**31.13**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Congregate Care (Assisted Living)	68.44					13.89	0.82	0.00	31.13
Parking Lot	0					0.00	0.00	0.00	0.00
Total						**13.89**	**0.82**	**0.00**	**31.13**

9.0 Vegetation

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Appendix C
Traffic Impact Analysis

Prepared by:

Linscott, Law & Greenspan, Engineers
236 N. Chester Ave., Suite 200
Pasadena, California 91106

LINSCOTT LAW & GREENSPAN engineers

TRAFFIC IMPACT ANALYSIS

FOUNTAIN SQUARE ASSISTED LIVING PROJECT

City of Sierra Madre, California
November 28, 2011

Prepared for:

Hogle-Ireland, Inc.
201 South Lake Avenue, Suite 308
Pasadena, California 91101

LLG Ref. 1-11-3932-1

Prepared by:

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FOUNTAIN SQUARE ASSISTED LIVING PROJECT

City of Sierra Madre, California
November 28, 2011

1.0 INTRODUCTION

This traffic analysis has been conducted to identify and evaluate the potential traffic impacts of the Fountain Square Assisted Living project proposed to be located in the City of Sierra Madre, California. The project site location and general vicinity are shown in ***Figure 1–1***.

The traffic analysis follows the City of Sierra Madre traffic study guidelines and is consistent with traffic impact assessment guidelines set forth in the *2010 Congestion Management Program*[1]. This traffic analysis evaluates potential project-related traffic impacts at two key intersections and one street segment in the vicinity of the project site. The study intersections were determined in consultation with City of Sierra Madre staff. The Intersection Capacity Utilization method was used to determine volume-to-capacity ratios and corresponding Levels of Service for the signalized study intersection while the analysis method from the *Highway Capacity Manual*[2] (HCM2000) was utilized to determine intersection delay values and corresponding Levels of Service analysis for the unsignalized study intersection. In addition, a review was conducted of Los Angeles County Metropolitan Transportation Authority intersection and freeway monitoring stations to determine if a Congestion Management Program transportation impact assessment analysis is required for the proposed project.

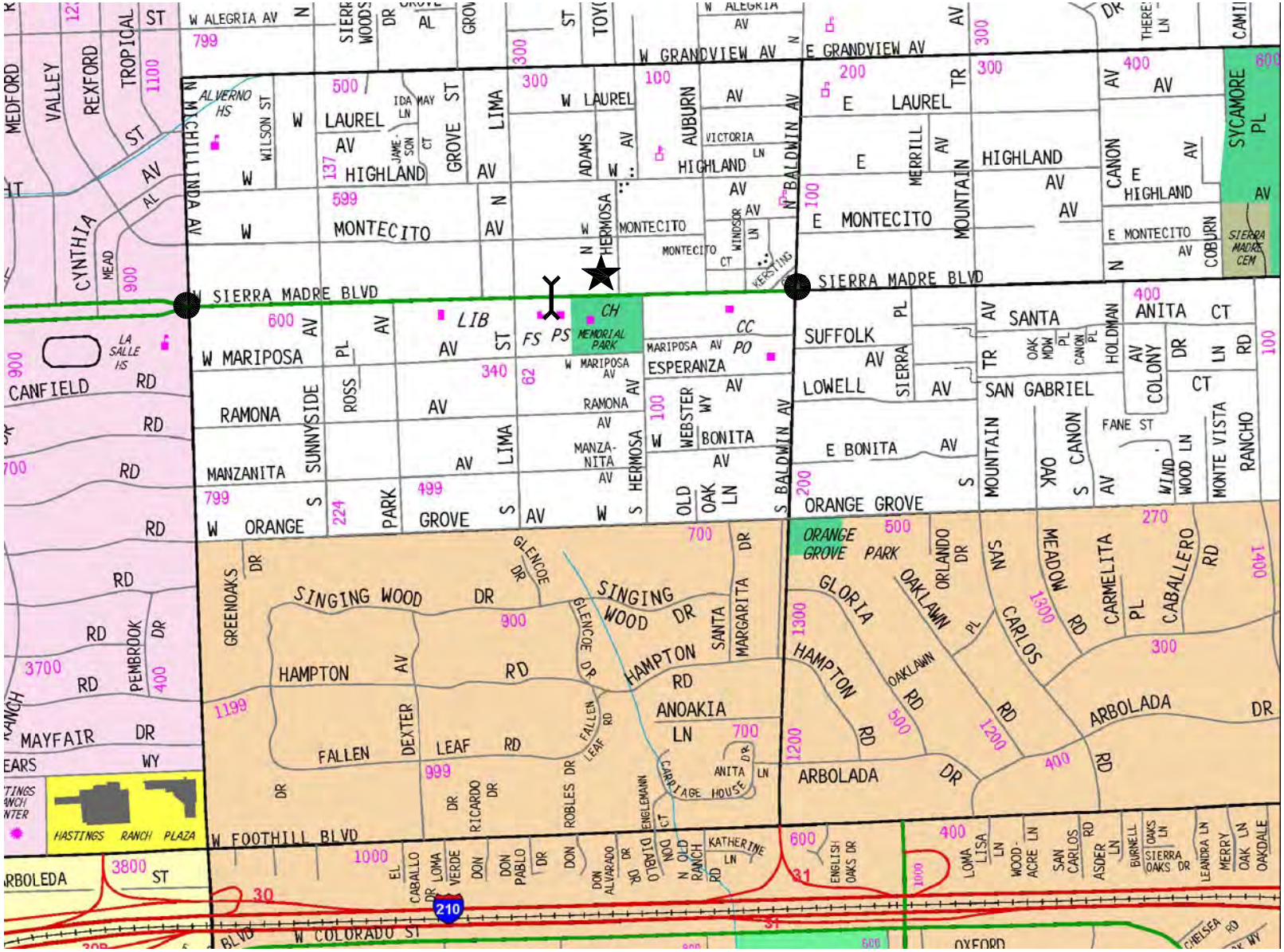
This study (i) presents existing traffic volumes, (ii) forecasts existing-plus-project traffic volumes, (iii) forecasts future traffic volumes with and without the proposed project, (iv) determines project-related impacts, and (v) recommends mitigation measures, if necessary.

1.1 Study Area

Based on direction from City of Sierra Madre staff, a total of two study intersections and one street segment have been identified for evaluation. These study locations provide local access to the study area and define the extent of the boundaries for this traffic impact investigation. Further discussion of the existing street system and study area is provided in Section 4.0 herein.

The general location of the project in relation to the study locations and surrounding street system is presented in *Figure 1–1*. The traffic analysis study area is generally comprised of those locations which have the greatest potential to experience significant traffic impacts due to the proposed project as defined by the Lead Agency. In the traffic engineering practice, the study area generally includes those intersections that are:

[1] *2010 Congestion Management Program*, Los Angeles County Metropolitan Transportation Authority, October 2010.
[2] *Highway Capacity Manual*, Transportation Research Board, National Research Council, Washington D.C., 2000.



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MAP SOURCE: RAND MCNALLY & COMPANY

PROJECT SITE

STUDY INTERSECTION

STREET SEGMENT

FIGURE 1-1
VICINITY MAP

LINSCOTT, LAW & GREENSPAN, engineers

FOUNTAIN SQUARE ASSISTED LIVING PROJECT

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a. Immediately adjacent or in close proximity to the project site;

b. In the vicinity of the project site that are documented to have current or projected future adverse operational issues; and

c. In the vicinity of the project site that are forecast to experience a relatively greater percentage of project-related vehicular turning movements.

The locations selected for analysis were based on the above criteria, proposed project peak-hour vehicle trip generation, the anticipated distribution of project vehicular trips, and existing intersection/corridor operations.

2.0 PROJECT DESCRIPTION

2.1 Site Location

The 1.84-acre project site is located at 245 West Sierra Madre Boulevard within the downtown core of the City of Sierra Madre. The proposed site is generally bounded by residential uses to the north, Sierra Madre Boulevard to the south, Hermosa Avenue to the east, and a vacant commercial property to the west.

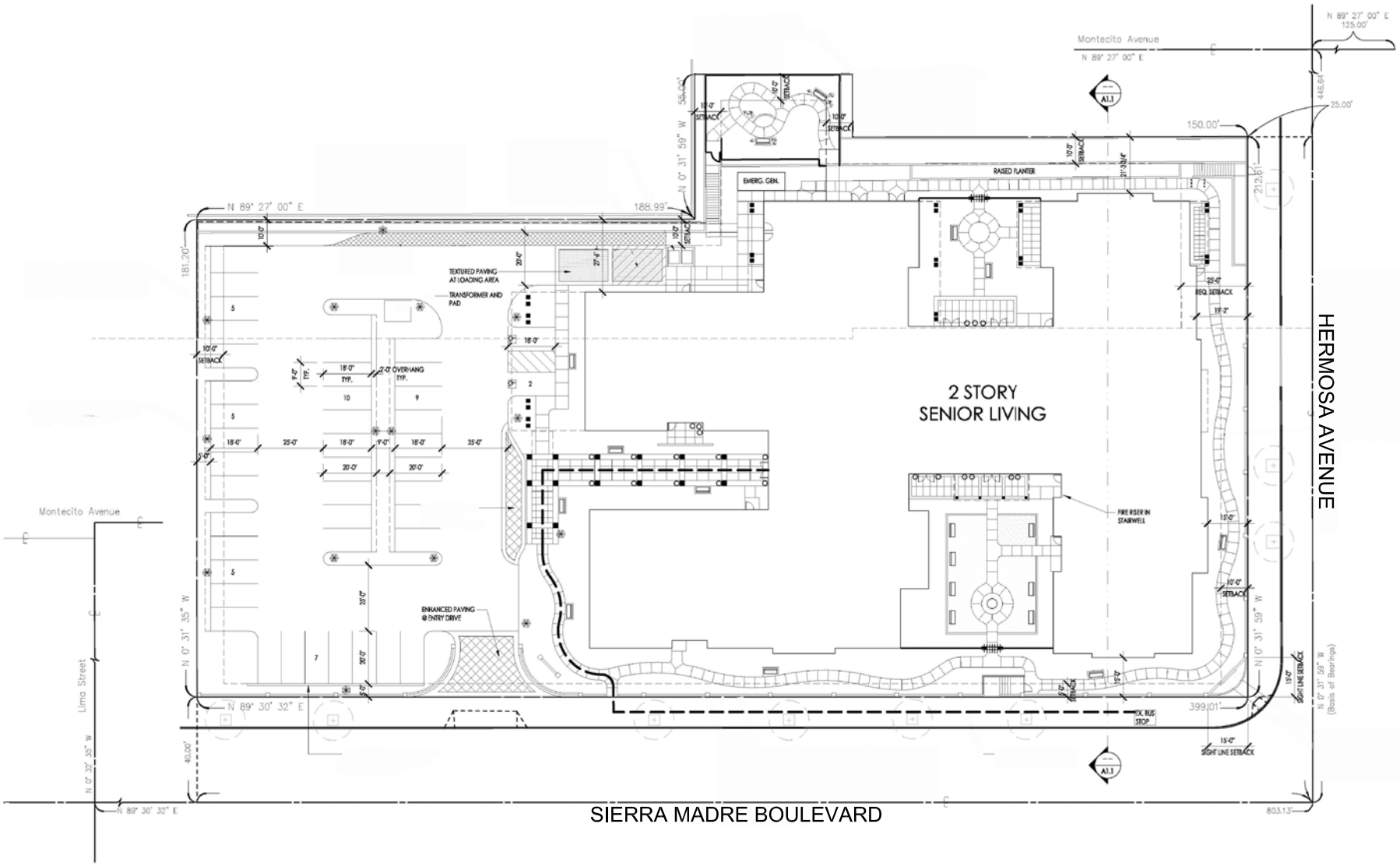
2.2 Existing Project Site

The existing project site consists of two separate parcels. The larger parcel located at the northwest corner of the Hermosa Avenue/Sierra Madre Boulevard intersection is currently occupied by a vacant 32,545 square-foot one-story skilled nursing building with surface parking which has been closed for the past five years. A total of 55 parking spaces are currently provided in the existing parking lot. The second, smaller parcel is currently occupied by a vacant 1,150 square-foot residence. Vehicular access to the existing site is currently provided via two driveways: one driveway on Sierra Madre Boulevard and one driveway on Hermosa Avenue.

2.3 Proposed Project Description

The proposed project consists of the development of a 58,000 square-foot senior (assisted living) facility with 75 suites and up to 96 residents. The two-story, "H" shaped building is planned to provide care for seniors, including those with Alzheimer's disease and other memory impairments. A total of 43 parking spaces is planned to be provided on-site. The project is planned to be built and occupied by year 2013. The site plan for the Fountain Square Assisted Living project is illustrated in ***Figure 2–1***.

Vehicular access to the project site is planned to be provided via one driveway on Sierra Madre Boulevard, located in the same general location as the existing driveway. Further discussion of the proposed project site access and circulation scheme is provided in Section 3.0.



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SOURCE: HILL PARTNERSHIP, INC.

FIGURE 2-1
SITE PLAN

LINSCOTT, LAW & GREENSPAN, engineers

FOUNTAIN SQUARE ASSISTED LIVING PROJECT

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3.0 SITE ACCESS AND CIRCULATION

The proposed site access scheme for the project is displayed in *Figure 2–1*. Descriptions of the existing and proposed site access and circulation schemes are provided in the following subsections.

3.1 Existing Site Access

Vehicular access to the existing parcels is currently provided via a total of two driveways: one driveway on Sierra Madre Boulevard and one driveway on Hermosa Avenue. Brief descriptions of the existing site driveways are provided below:

- *Existing Sierra Madre Boulevard Driveway:*

  The existing site driveway on Sierra Madre Boulevard is located along the southerly property frontage and provides access to the existing 1,150-square foot residence as well as the 32,545 square foot skilled nursing building and associated parking area. The Sierra Madre Boulevard driveway accommodates full access (i.e., right-turn and left-turn ingress and egress turning movements).

- *Existing Hermosa Avenue Driveway:*

  The existing site driveway on Hermosa Avenue is located along the easterly property frontage and provides loading/delivery access to the existing skilled nursing building. The Hermosa Avenue driveway accommodates full access (i.e., right-turn and left-turn ingress and egress turning movements).

3.2 Proposed Project Site Access

Access to the proposed project site will be provided via one driveway on Sierra Madre Boulevard. Description of the planned project site access point is provided in the following paragraph.

- *Sierra Madre Boulevard Driveway:*

  This project driveway will be located along the north side of Sierra Madre Boulevard, approximately in the same general location as the existing driveway. This project driveway will provide access to the proposed assisted living facility and associated surface parking area. This driveway will accommodate full access (i.e., right-turn and left-turn ingress and egress turning movements). The project site driveway would be constructed to City of Sierra Madre design standards.

4.0 EXISTING STREET SYSTEM

4.1 Regional Highway System

Regional vehicular access to the project site is provided by the Foothill Freeway (I-210) which is located approximately one mile south of the project site. A brief description of the I-210 Freeway is provided in the following paragraph.

Foothill Freeway (I-210) is a major east-west oriented freeway connecting the Golden State Freeway (I-5) in the San Fernando area to the Orange Freeway (SR 57) near San Dimas. The I-210 Freeway generally contains four mainline freeway lanes and one high occupancy vehicle lane in each direction near the study area. Full freeway connections (i.e., eastbound and westbound ramp connections) are provided at Michillinda Avenue and Baldwin Avenue within the project study area.

4.2 Local Street System

Immediate vehicular access to the project site is provided via Sierra Madre Boulevard. The following two study intersections were selected for analysis by City of Sierra Madre staff in order to determine potential impacts related to the proposed project:

1. Michillinda Avenue/Sierra Madre Boulevard
2. Baldwin Avenue/Sierra Madre Boulevard (Unsignalized)

The existing lane configurations and regulatory controls at the two study intersections are displayed in ***Figure 4–1***.

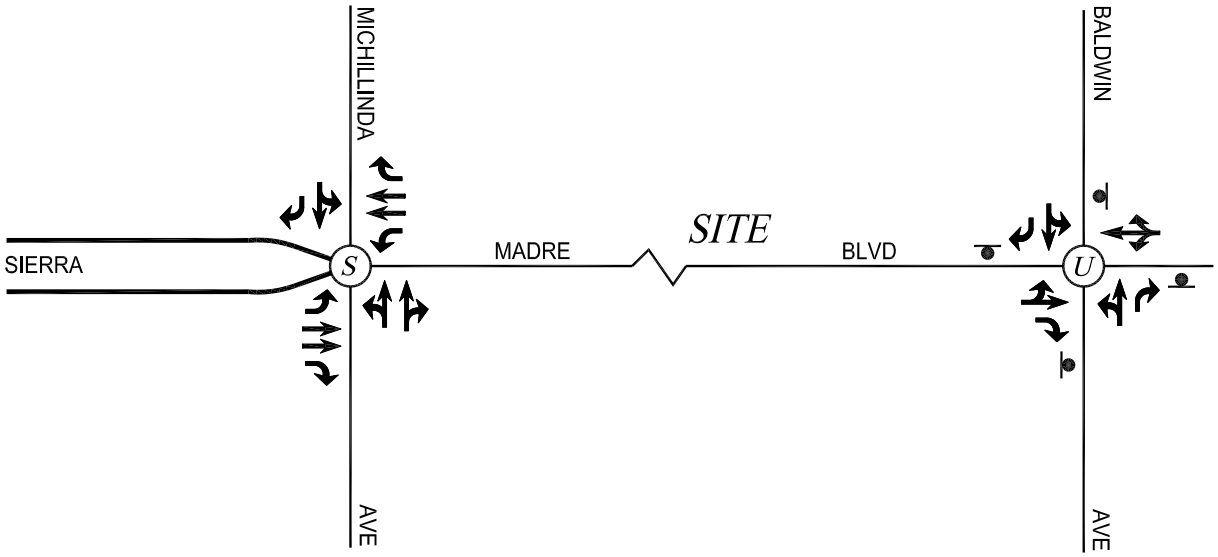
4.3 Roadway Descriptions

A brief description of the important roadways in the project site vicinity is provided in the following paragraphs.

Michillinda Avenue is a north-south oriented roadway that is located west of the project site. Michillinda Avenue is classified as a Major Street in the City of Sierra Madre General Plan. Two through travel lanes are generally provided in each direction on Michillinda Avenue. Michillinda Avenue is posted for a speed limit of 35 miles per hour in the project vicinity.

Baldwin Avenue is a north-south oriented roadway that is located east of the project site. Baldwin Avenue north of Orange Grove Avenue is classified as a Collector Street in the City of Sierra Madre General Plan. Baldwin Avenue south of Orange Grove Avenue is classified as a secondary arterial in the Arcadia General Plan Circulation and Infrastructure Element. One through travel lane is generally provided in each direction on Baldwin Avenue. Baldwin Avenue is posted for a speed limit of 25 miles per hour in the project vicinity.

Sierra Madre Boulevard is an east-west oriented roadway that borders the site to the south. Sierra Madre Boulevard east of Michillinda Avenue is classified as a Collector Street in the City of Sierra Madre General Plan. Sierra Madre Boulevard west of Michillinda Avenue is classified



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S SIGNALIZED INTERSECTION

U UNSIGNALIZED INTERSECTION

STOP SIGN

FIGURE 4-1
EXISTING LANE CONFIGURATIONS

LINSCOTT, LAW & GREENSPAN, engineers

FOUNTAIN SQUARE ASSISTED LIVING PROJECT

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as a Principal Arterial in the City of Pasadena's General Plan Mobility Element (November 2004). Sierra Madre Boulevard is also designated as a multimodal corridor in the City of Pasadena's General Plan Mobility Element. One through travel lane is provided in each direction on Sierra Madre Boulevard in the project vicinity. On-street parallel parking is generally provided on the north side of Sierra Madre Boulevard in the project vicinity. On the south side of Sierra Madre Boulevard, on-street angled parking is provided between the City Hall and Baldwin Avenue. Sierra Madre Boulevard is posted for a speed limit of 30 miles per hour in the project vicinity.

4.4 Existing Public Bus Transit Service

Public bus transit service in the project vicinity is currently provided by the Metropolitan Transportation Authority (Metro), the City of Pasadena Area Rapid Transit System (ARTS) and the City of Sierra Madre. A summary of the existing transit routes, including the transit route, destinations and number of buses during the AM and PM peak hours is presented in ***Table 4–1***. The existing public transit routes in the project vicinity are illustrated in ***Figure 4–2***.

Table 4-1
EXISTING TRANSIT ROUTES [1]

ROUTE	DESTINATIONS	ROADWAY(S) NEAR SITE	NO. OF BUSES DURING PEAK HOUR		
			DIR	AM	PM
Metro 268	Altadena to El Monte (via Pasadena, Sierra Madre, Arcadia)	Baldwin Avenue, Sierra Madre Boulevard, Michillinda Avenue	NB SB	2 2	2 2
Metro 487/489	Los Angeles to El Monte (via San Gabriel, Sierra Madre)	Baldwin Avenue, Sierra Madre Boulevard, Michillinda Avenue	EB WB	2 3	3 2
ARTS 60	Sierra Madre Gold Line Station to Pasadena City College	Sierra Madre Boulevard, Michillinda Avenue	EB WB	0 2	0 2
Gateway Coach	Round-A-Bout, via Recreation Center to the Gold Line Station, Sierra Madre Boulevard & Michillinda to Sierra Vista Park	Sierra Madre Boulevard, Michillinda Avenue, Baldwin Avenue	EB WB	1 1	1 1
			Total	13	13

[1] Sources: Los Angeles County Metropolitan Transportation Authority (Metro), Pasadena Area Rapid Transit System (ARTS), and City of Sierra Madre websites, 2011.

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MAP SOURCES: METROPOLITAN TRANSPORTATION AUTHORITY (METRO), PASADENA AREA RAPID TRANSIT SYSTEM (ARTS), AND CITY OF SIERRA MADRE WEBSITES, 2011.

PROJECT SITE

FIGURE 4-2
EXISTING PUBLIC TRANSIT ROUTES

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5.0 TRAFFIC COUNTS

5.1 Manual Intersection Traffic Counts

Manual counts of vehicular turning movements were conducted in September 2011 when local schools were in session at each of the two study intersections during the weekday morning (AM) and afternoon (PM) commuter periods to determine the peak-hour traffic volumes. The manual counts were conducted at the study intersections from 7:00 to 9:00 AM to determine the weekday AM peak commuter hour, and from 4:00 to 6:00 PM to determine the weekday PM peak commuter hour.

It should be noted that at the time the traffic count data was collected, the Sierra Madre Boulevard Water Main Project was on-going which resulted in some traffic movement diversions east of Baldwin Avenue. As a result, historical traffic count data were reviewed and utilized for the Baldwin Avenue/Sierra Madre Boulevard intersection since they were higher than the recent counts. It should be noted that the traffic count data conducted for the Michillinda Avenue/Sierra Madre Boulevard intersection did not appear to be affected by the City's Water Main Project.

The existing weekday AM and PM peak-hour traffic volumes at the two study intersections are summarized in ***Table 5-1*** and illustrated in ***Figure 5-1*** for the AM and PM peak hours, respectively. Summary data worksheets of the manual traffic counts of the study intersections are contained in ***Appendix A***.

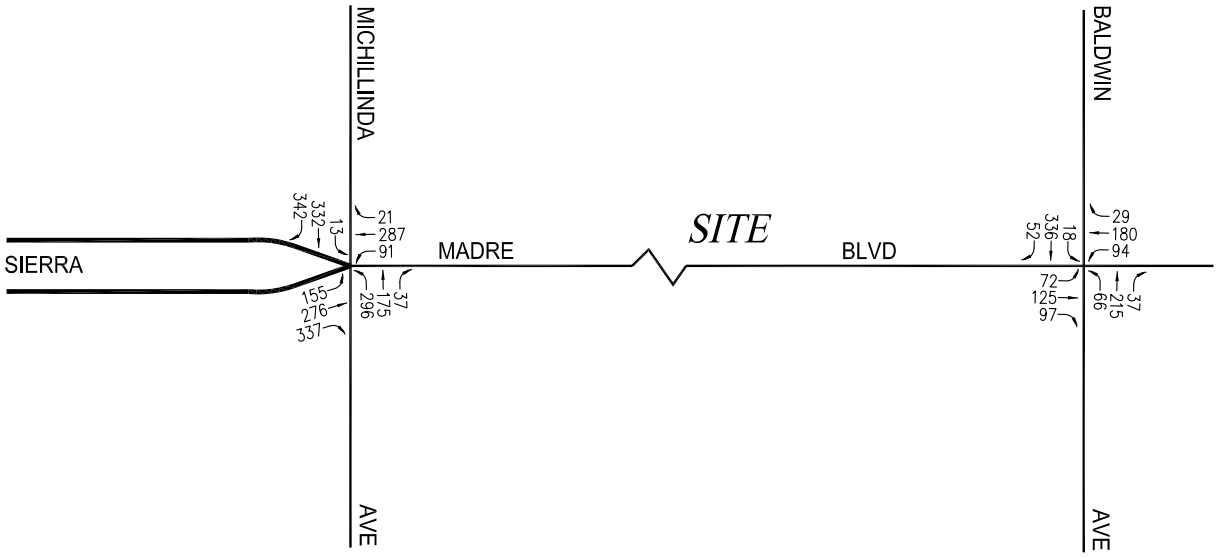
5.2 Automatic 24-Hour Machine Traffic Counts

Automatic 24-hour machine traffic counts of the study street segment were conducted in September 2011 during a weekday condition. The existing 24-hour average daily traffic (ADT) volume at the study street segment is also presented in *Figure 5-1*. A copy of the 24-hour machine traffic counts for the study street segment location is contained in *Appendix A*.

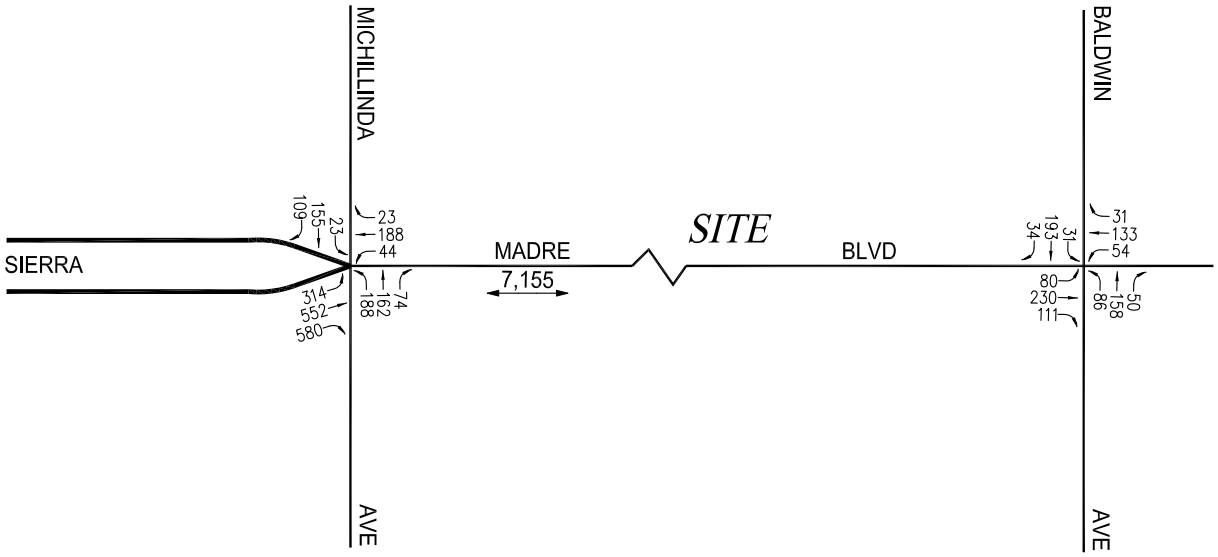
Table 5-1
EXISTING TRAFFIC VOLUMES

NO.	INTERSECTION	DATE	DIR	AM PEAK HOUR		PM PEAK HOUR	
				BEGAN	VOLUME	BEGAN	VOLUME
1	Michillinda Avenue/ Sierra Madre Boulevard [1]	09/15/2011	NB SB EB WB	7:15	508 687 768 399	5:00	424 287 1,446 255
2	Baldwin Avenue/ Sierra Madre Boulevard [2]	01/17/2006	NB SB EB WB	7:30	318 406 294 303	4:15	294 258 421 218

[1] Counts conducted by City Traffic Counters.
[2] Counts conducted by Southland Car Counters. These counts were utilized since they were higher than the recently conducted September 2011 counts for this location (due to the City's on-going Water Main Project at the time).



WEEKDAY AM PEAK HOUR



WEEKDAY PM PEAK HOUR

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X,XXX - DAILY TRAFFIC VOLUMES

FIGURE 5-1
EXISTING TRAFFIC VOLUMES

LINSCOTT, LAW & GREENSPAN, engineers

FOUNTAIN SQUARE ASSISTED LIVING PROJECT

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6.0 TRAFFIC FORECASTING METHODOLOGY

In order to estimate the traffic impact characteristics of the proposed project, a multi-step process has been utilized. The first step is trip generation, which estimates the total arriving and departing traffic volumes on a peak-hour and daily basis. For projects, the traffic generation potential is typically forecast by applying the appropriate vehicle trip generation equations or rates to the project development tabulation.

The second step of the forecasting process is trip distribution, which identifies the origins and destinations of inbound and outbound project traffic volumes. These origins and destinations are typically based on demographics and existing/anticipated travel patterns in the study area.

The third step is traffic assignment, which involves the allocation of project traffic to study area streets and intersections. Traffic assignment is typically based on minimization of travel time, which may or may not involve the shortest route, depending on prevailing operating conditions and travel speeds. Traffic distribution patterns are indicated by general percentage orientation, while traffic assignment allocates specific volume forecasts to individual roadway links and intersections throughout the study area.

With the forecasting process complete and project traffic assignments developed, the impact of the proposed project is isolated by comparing operational (i.e., Level of Service (LOS)) conditions at selected key intersections using existing and expected future traffic volumes with and without forecast project traffic. The need for site-specific and/or cumulative local area traffic improvements can then be evaluated and the significance of the project's impacts identified.

6.1 Project Trip Generation Summary

Traffic volumes expected to be generated by the proposed project during the weekday AM and PM peak hours, as well as on a daily basis, were estimated using rates published in the Institute of Transportation Engineers' (ITE) *Trip Generation* manual[3]. Traffic volumes expected to be generated by the proposed project were based upon rates per number of occupied beds. ITE Land Use Code 254 (Assisted Living) trip generation average rates were used to forecast the traffic volumes expected to be generated by the proposed project.

As discussed in a previous section, the existing project site was previously occupied by a skilled nursing facility and a single-family residence. However, as these uses have been closed/vacated for the past few years, no existing use trip generation credit was applied to this analysis.

The traffic generation forecast for the proposed project is summarized in ***Table 6-1***. The trip generation forecast for the proposed project was submitted for review and approval by City of Sierra Madre staff. As presented in *Table 6-1*, the proposed project is expected to generate a net increase of 16 vehicle trips (12 inbound trips and 4 outbound trips) during the AM peak hour. During the PM peak hour, the proposed project is expected to generate a net increase of 28

[3] Institute of Transportation Engineers *Trip Generation* manual, 8th Edition, 2008.

Table 6-1
PROJECT TRIP GENERATION [1]

LAND USE	SIZE	DAILY TRIP ENDS [2] VOLUMES	AM PEAK HOUR VOLUMES [2]			PM PEAK HOUR VOLUMES [2]		
			IN	OUT	TOTAL	IN	OUT	TOTAL
Assisted Living [3]	96 Occ. Beds	264	12	4	16	15	13	28
TOTAL		**264**	**12**	**4**	**16**	**15**	**13**	**28**

[1] Source: ITE "Trip Generation", 8th Edition, 2008.
[2] Trips are one-way traffic movements, entering or leaving.
[3] ITE Land Use Code 254 (Assisted Living) trip generation average rates.
- Daily Trip Rate: 2.74 trips/Occupied Bed; 50% inbound/50% outbound
- AM Peak Hour Trip Rate: 0.17 trips/Occupied Bed; 73% inbound/27% outbound
- PM Peak Hour Trip Rate: 0.29 trips/Occupied Bed; 52% inbound/48% outbound

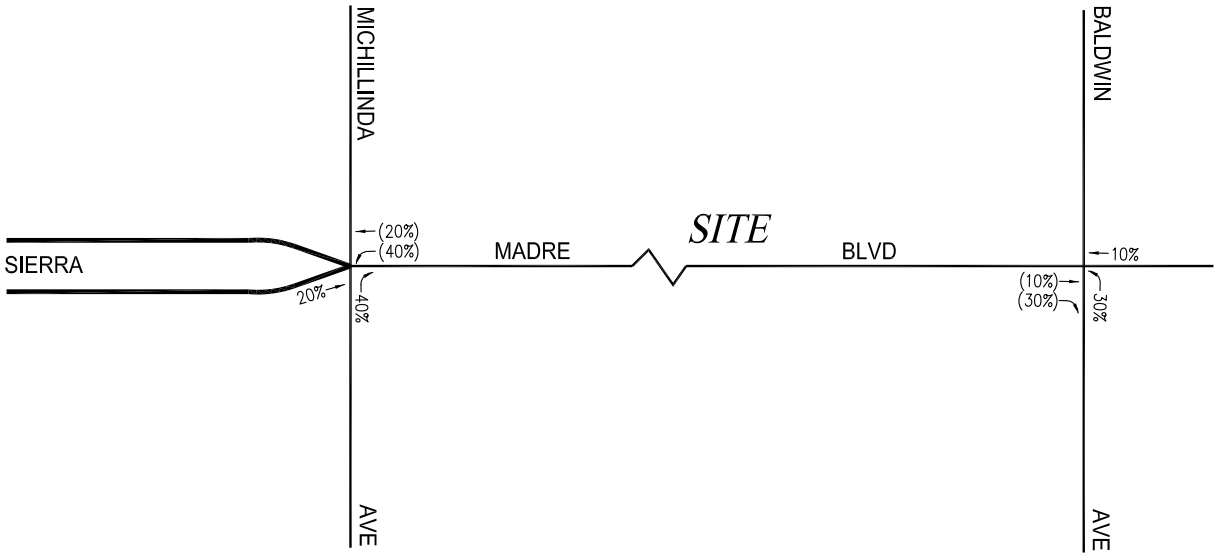
vehicle trips (15 inbound trips and 13 outbound trips). Over a 24-hour period, the proposed project is forecast to generate a net increase of 264 daily trip ends during a typical weekday (132 inbound trips and 132 outbound trips).

6.2 Project Trip Distribution

Project traffic volumes both entering and exiting the site have been distributed and assigned to the adjacent street system based on the following considerations:

- The site's proximity to major traffic corridors (i.e., Michillinda Avenue, Baldwin Avenue, Sierra Madre Boulevard),
- Expected localized traffic flow patterns based on adjacent roadway channelization and presence of traffic signals,
- Existing intersection traffic volumes,
- Ingress/egress availability at the project site, and
- The location of existing and proposed parking areas.

The project traffic volume distribution percentages at the study intersections are illustrated in ***Figure 6-1***. The forecast project traffic volumes at the study intersections for the weekday AM and PM peak hours are displayed in ***Figure 6–2***. The traffic volume assignments presented in *Figure 6–2* reflect the traffic distribution characteristics shown in *Figure 6–1* and the project traffic generation forecast presented in *Table 6–1*.



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XX = INBOUND PERCENTAGE
(XX) = OUTBOUND PERCENTAGE

FIGURE 6-1
PROJECT TRIP DISTRIBUTION

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FOUNTAIN SQUARE ASSISTED LIVING PROJECT

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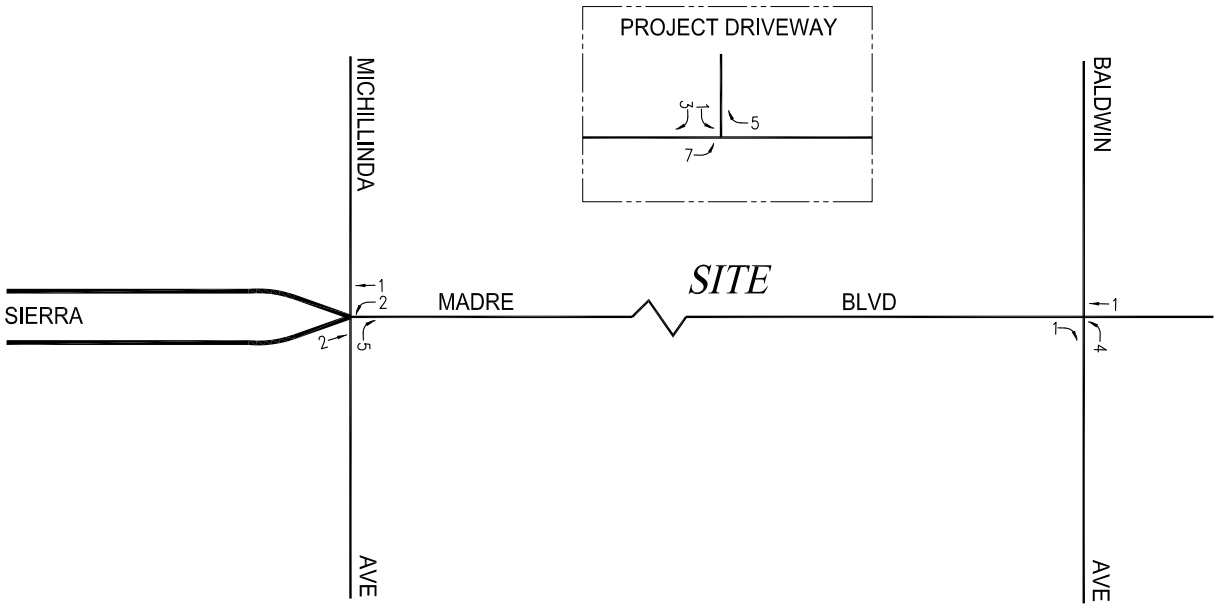
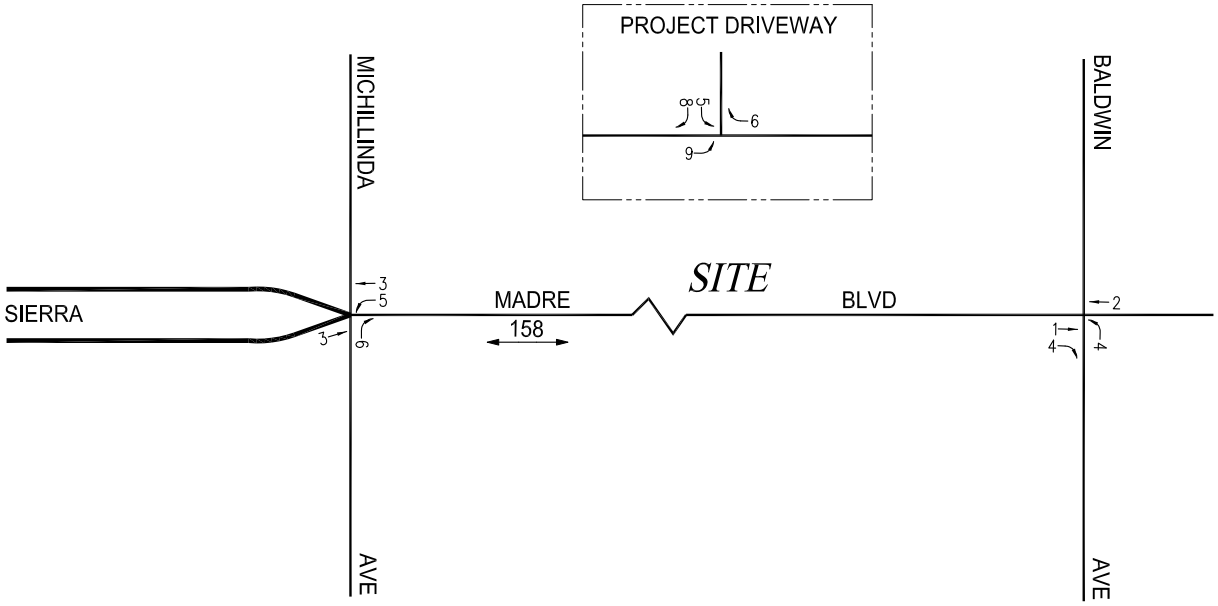


WEEKDAY AM PEAK HOUR



WEEKDAY PM PEAK HOUR

X,XXX - DAILY TRAFFIC VOLUMES

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FIGURE 6-2
PROJECT TRAFFIC VOLUMES

LINSCOTT, LAW & GREENSPAN, engineers

FOUNTAIN SQUARE ASSISTED LIVING PROJECT

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7.0 FUTURE PRE-PROJECT DEVELOPMENT

The forecast of future pre-project conditions was prepared in accordance with procedures outlined in Section 15130 of the California Environmental Quality Act (CEQA) Guidelines. Specifically, the CEQA Guidelines provides two options for developing the future traffic volume forecast:

> "(A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the [lead] agency, or
>
> (B) A summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. Such plans may include: a general plan, regional transportation plan, or plans for the reduction of greenhouse gas emissions. A summary of projections may also be contained in an adopted or certified prior environmental document for such a plan. Such projections may be supplemented with additional information such as a regional modeling program. Any such document shall be referenced and made available to the public at a location specified by the lead agency."

This traffic analysis provides an estimate of future pre-project traffic volumes by incorporating the "B" option outlined in the CEQA Guidelines for purposes of developing the forecast.

7.1 Related Projects

Based on the relatively near-term buildout of the proposed project (i.e., buildout in year 2013), traffic volumes associated with specific, identified related projects was not included in this analysis and application of the ambient traffic growth factor described below more than accounts for regional, non-local growth in the vicinity.

7.2 Ambient Traffic Growth

Horizon year background traffic growth estimates have been calculated using an ambient traffic growth factor. The ambient traffic growth factor is intended to include unknown related projects in the study area as well as account for typical growth in traffic volumes due to the development of projects outside the study area. Ambient traffic growth in the Pasadena/Sierra Madre area, which is presented in the *2010 Congestion Management Program*, indicates existing traffic volumes would increase at an annual rate of approximately 0.82 percent (0.82%) per year between years 2010 and 2015. An annual growth rate of one percent (1.0%) to the year 2013 was used for analysis purposes. Therefore, application of this ambient growth factor is appropriate and allows for a conservative forecast of future traffic volumes in the project study area.

8.0 TRAFFIC IMPACT ANALYSIS

8.1 Intersection Analysis Methodology

The AM and PM peak hour operating conditions for the two study intersections were evaluated using the Intersection Capacity Utilization (ICU) methodology for signalized intersections and the methodology outlined in Chapter 17 of the *Highway Capacity Manual 2000* (HCM2000) for unsignalized intersections.

The ICU method of analysis determines Volume-to-Capacity (*v/c*) ratios on a critical lane basis. The overall intersection *v/c* ratio is subsequently assigned a Level of Service (LOS) value to describe intersection operations. Level of Service varies from LOS A (free flow) to LOS F (jammed condition). A description of the ICU method and corresponding Level of Service is provided in ***Appendix B***.

The HCM2000 unsignalized methodology for stop-controlled intersections was utilized for the analysis of the unsignalized intersections. This methodology estimates the average control delay for each of the subject movements and determines the level of service for each constrained movement. Average control delay for any particular movement is a function of the capacity of the approach and the degree of saturation. The overall average control delay is measured in seconds per vehicle, and the level of service is then calculated for the entire intersection for a four-way stop controlled intersection. A description of the HCM method and corresponding Level of Service is also provided in *Appendix B.*

8.2 Impact Criteria and Thresholds

The relative impact of the added project traffic volumes to be generated by the proposed project during the AM and PM peak hours was evaluated based on analysis of existing and future operating conditions at the study intersections, without and with the proposed project. The previously discussed capacity analysis procedures were utilized to evaluate the future *v/c* relationships and service level characteristics at each study intersection.

8.2.1 *City of Sierra Madre Impact Criteria and Thresholds*

Consistent with other traffic studies previously prepared for the City of Sierra Madre, the significance of the potential impacts of project generated traffic at the study intersections were identified using criteria set forth in the *2010 Congestion Management Program*. A significant transportation impact is determined based on a change in the calculated *v/c* ratio of two percent (0.02) or more due to project-related traffic for an intersection operating at LOS F or worse (*v/c* > 1.00). As such, a project would not have a significant impact if the analyzed location is operating at LOS E or better after the addition of project traffic. In addition, it is noted that although the City of Sierra Madre does not have official thresholds of significance, it is the City's policy to maintain the same LOS under the without project and the with project analysis conditions.

The City of Sierra Madre requires mitigation of project traffic impacts whenever traffic generated by the proposed development causes an increase of the analyzed intersection *v/c* ratio by an amount equal to or greater than the value shown above. For unsignalized intersections, the City of Sierra Madre utilizes the HCM method to determine the Level of Service and the ICU method to determine the increase in *v/c* ratio.

It should be noted that the Michillinda Avenue/Sierra Madre Boulevard intersection is jointly shared with the City of Pasadena. Thus, this intersection was evaluated for potential traffic impacts using both the City of Sierra Madre criteria as well as the more stringent criteria of the City of Pasadena as described in the next section.

8.2.2 *City of Pasadena Intersection Impact Criteria and Thresholds*

The significance of the potential impacts of project generated traffic at the Michillinda Avenue/Sierra Madre Boulevard intersection was identified using criteria set forth in the City of Pasadena's *Transportation Impact Review Current Practice and Guidelines*[4]. According to the City's Sliding Scale Method for calculating the level of impact due to traffic generated by the proposed project, a significant transportation impact is determined based on the criteria presented in ***Table 8-1***.

Table 8-1
CITY OF PASADENA
INTERSECTION IMPACT THRESHOLD CRITERIA

Final *v/c*	**Level of Service**	**Project Related Increase in *v/c***
0.000 - 0.600	A	equal to or greater than 0.06
> 0.600 - 0.700	B	equal to or greater than 0.05
> 0.700 - 0.800	C	equal to or greater than 0.04
> 0.800 - 0.900	D	equal to or greater than 0.03
> 0.900 - 1.000	E	equal to or greater than 0.02
> 1.000	F	equal to or greater than 0.01

The City of Pasadena's criteria requires mitigation of project traffic impacts whenever traffic generated by a development causes an increase of an intersection's *v/c* ratio by an amount equal to or greater than the values shown above. The ICU calculations use a lane capacity of 1,600 vehicles per hour (vph) for left-turn, through, and right-turn lanes, and a dual turn lane capacity of 2,880 vph. A clearance interval of 0.10 is also included in the ICU calculations.

[4] *Transportation Impact Review Current Practice and Guidelines*, Transportation Planning & Development Division, City of Pasadena Department of Transportation, August 24 2005.

8.3 Traffic Impact Analysis Scenarios

Traffic impacts at the study intersections were analyzed for the following conditions:

(a) Existing conditions.

(b) Existing Plus Project Conditions.

(c) Existing Plus Project and Mitigation Conditions, if necessary.

(d) Year 2013 Pre-Project Conditions (existing plus ambient growth traffic).

(e) Year 2013 Plus Project Conditions.

(f) Year 2013 Plus Project and Mitigation Conditions, if necessary.

The traffic volumes for each new condition were added to the volumes in the prior condition to determine the change in capacity utilization at the study intersections for existing and future conditions. Summaries of the *v/c* ratios and LOS values for the study intersections during the weekday AM and PM peak hours are shown in ***Table 8–2***. The ICU and HCM data worksheets for the analyzed intersections are contained in *Appendix B.*

8.4 Existing Conditions

As indicated in column [1] of *Table 8–2*, the two study intersections are presently operating at LOS C during the weekday AM and PM peak hours. As previously mentioned, the existing traffic volumes at the study intersections during the weekday AM and PM peak hours are displayed in *Figure 5-1*.

8.5 Existing Plus Project Conditions

In order to determine the operating conditions of the street system under existing plus project conditions, traffic to be generated by the proposed project was added to the year 2011 existing traffic conditions. As shown in column [2] of *Table 8-2*, application of the respective cities' significance criteria to the year 2011 existing plus project scenario indicates that neither of the study intersections would be significantly impacted by the proposed project. Therefore, no traffic mitigation measures are required or recommended for this scenario. The two study intersections are expected to continue to operate at LOS C during the weekday AM and PM peak hours. The existing plus project traffic volumes (existing traffic volumes plus proposed project traffic volumes) at the study intersections during the weekday AM and PM peak hours are shown in ***Figure 8–1***.

8.6 Future Pre-Project Conditions

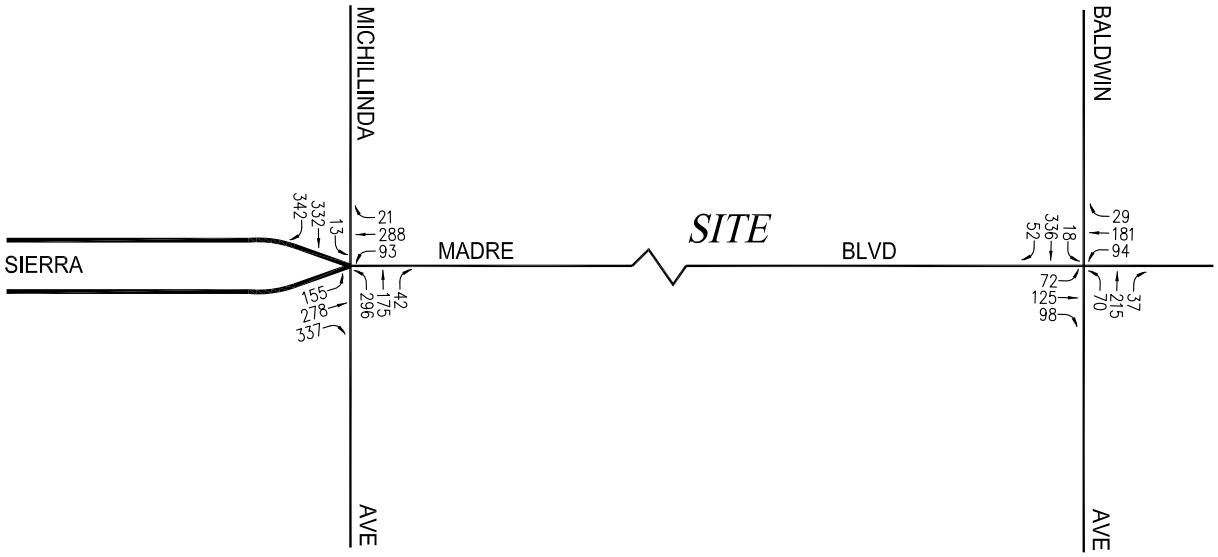
The future year 2013 pre-project conditions were forecast based on the growth in traffic due to the combined effects of continuing development, intensification of existing developments and other factors (i.e., ambient growth). The *v/c* ratios at the two study intersections are incrementally increased with growth in ambient traffic. As presented in column [3] of *Table 8–*

Table 8-2
SUMMARY OF VOLUME TO CAPACITY RATIOS
AND LEVELS OF SERVICE
AM AND PM PEAK HOURS

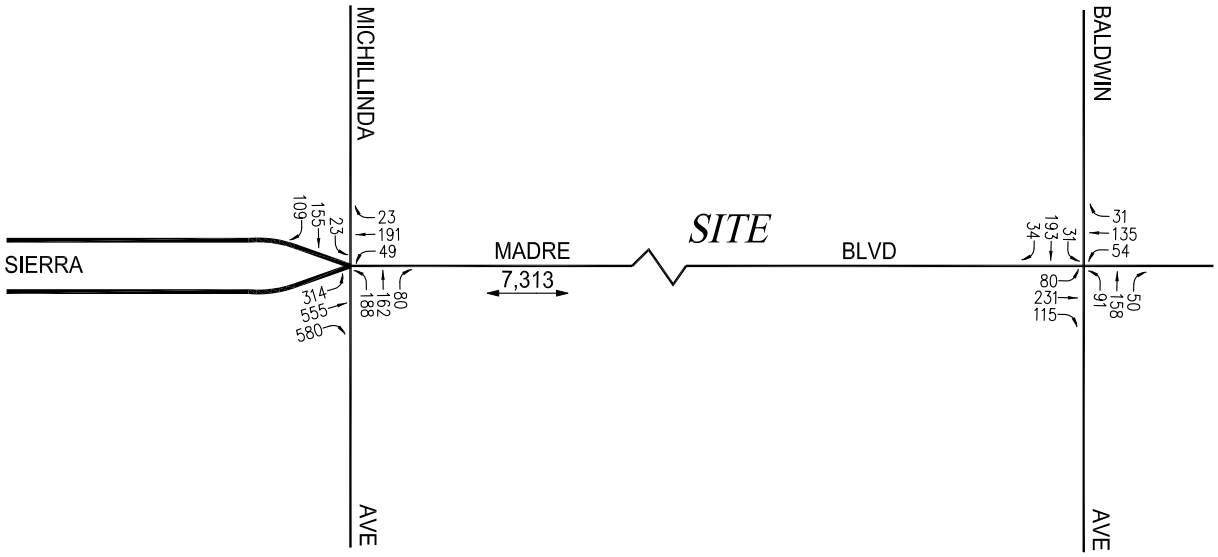
NO.	INTERSECTION	PEAK HOUR	[1] YEAR 2011 EXISTING V/C or Delay	[1] LOS [c]	[2] YEAR 2011 EXISTING WITH PROJECT V/C or Delay	[2] LOS [c]	[2] CHANGE V/C [(2)-(1)]	[2] SIGNIF. IMPACT [d], [e]	[3] YEAR 2013 FUTURE PRE-PROJECT V/C or Delay	[3] LOS [c]	[4] YEAR 2013 FUTURE WITH PROPOSED PROJECT V/C or Delay	[4] LOS [c]	[4] CHANGE V/C [(4)-(3)]	[4] SIGNIF. IMPACT [d], [e]
1	Michillinda Avenue/	AM	0.768	C	0.769	C	0.001	NO	0.781	C	0.783	C	0.002	NO
	Sierra Madre Boulevard [a]	PM	0.734	C	0.739	C	0.005	NO	0.746	C	0.751	C	0.005	NO
2	Baldwin Avenue/	AM	21.49	C	21.92	C	---	NO	23.04	C	23.37	C	---	NO
	Sierra Madre Boulevard [b]	PM	15.85	C	16.08	C	---	NO	16.47	C	16.71	C	---	NO
		AM	0.597	---	0.600	---	0.003	---	0.607	---	0.610	---	0.003	---
		PM	0.521	---	0.525	---	0.004	---	0.530	---	0.533	---	0.003	---

[a] Shared intersection with the City of Pasadena. Intersection evaluated for potential traffic impacts using the more stringent criteria of the City of Pasadena.
[b] Unsignalized intersection.
[c] Level of Service (LOS) is based on the reported ICU value for signalized intersections and on the delay for unsignalized intersections.
[d] The City of Sierra Madre does not have an official policy for significance thresholds. Consistent with other traffic studies previously prepared for the City of Sierra Madre, the Congestion Management Program (CMP) significance criteria are utilized. According to CMP, a transportation impact at an intersection shall be deemed significant if the proposed project increases traffic demand on the intersection by 2% of capacity (V/C $\geq$ 0.02), causing or worsening LOS F (V/C >1.00).
[e] According to City of Pasadena's Transportation Impact Review Current Practice & Guidelines, City of Pasadena Department of Transportation, Transportation Planning and Development Division, August 24, 2005, a transportation impact on an intersection shall be deemed significant in accordance with the following table:

Final v/c	LOS	Project Related Increase in v/c
>=0.000 - 0.600	A	equal to or greater than 0.06
>=0.600 - 0.700	B	equal to or greater than 0.05
>=0.700 - 0.800	C	equal to or greater than 0.04
>=0.800 - 0.900	D	equal to or greater than 0.03
>=0.900 - 1.000	E	equal to or greater than 0.02
> 1.000	F	equal to or greater than 0.01



WEEKDAY AM PEAK HOUR



WEEKDAY PM PEAK HOUR

N

NOT TO SCALE

X,XXX - DAILY TRAFFIC VOLUMES

FIGURE 8-1

EXISTING PLUS PROJECT TRAFFIC VOLUMES

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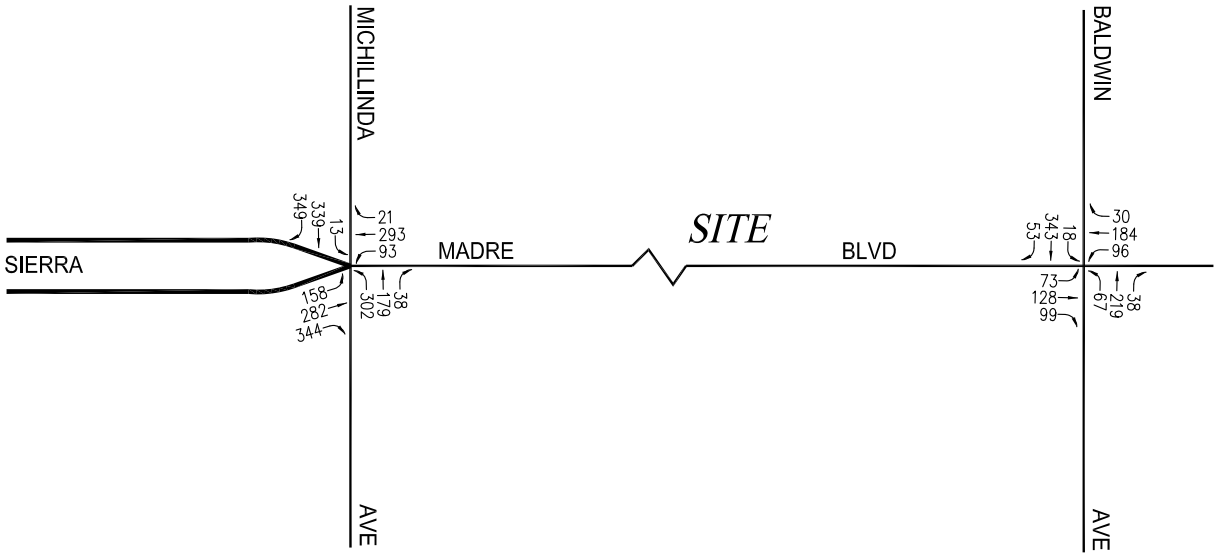
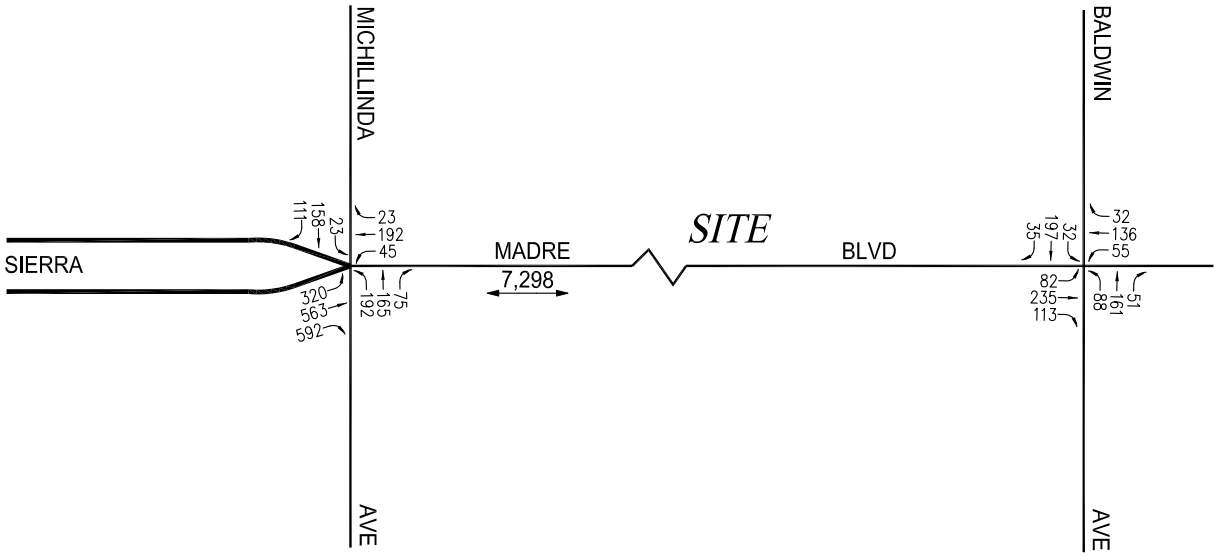
2, the two study intersections are expected to continue to operate at LOS C during the weekday AM and PM peak hours with the addition of ambient traffic growth (future pre-project conditions). The future pre-project (existing and ambient growth) traffic volumes at the study intersections during the weekday AM and PM peak hours are presented in ***Figure 8–2***.

8.7 Future Plus Project Conditions

In order to determine the operating conditions of the street system under the year 2013 future plus project conditions, traffic expected to be generated by the proposed project was added to the year 2013 future pre-project conditions. As shown in column [4] of *Table 8–2*, application of the respective cities' significance criteria to the year 2013 with proposed project scenario indicates that neither of the study intersections would be significantly impacted by the proposed project. Therefore, no traffic mitigation measures are required or recommended for this scenario. The two study intersections are expected to continue to operate at LOS C during the weekday AM and PM peak hours. The future plus project (existing, ambient growth, and project) traffic volumes at the study intersections during the weekday AM and PM peak hours are illustrated in ***Figure 8–3***.



WEEKDAY AM PEAK HOUR



WEEKDAY PM PEAK HOUR

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NOT TO SCALE

X,XXX - DAILY TRAFFIC VOLUMES

FIGURE 8-2
FUTURE PRE-PROJECT TRAFFIC VOLUMES

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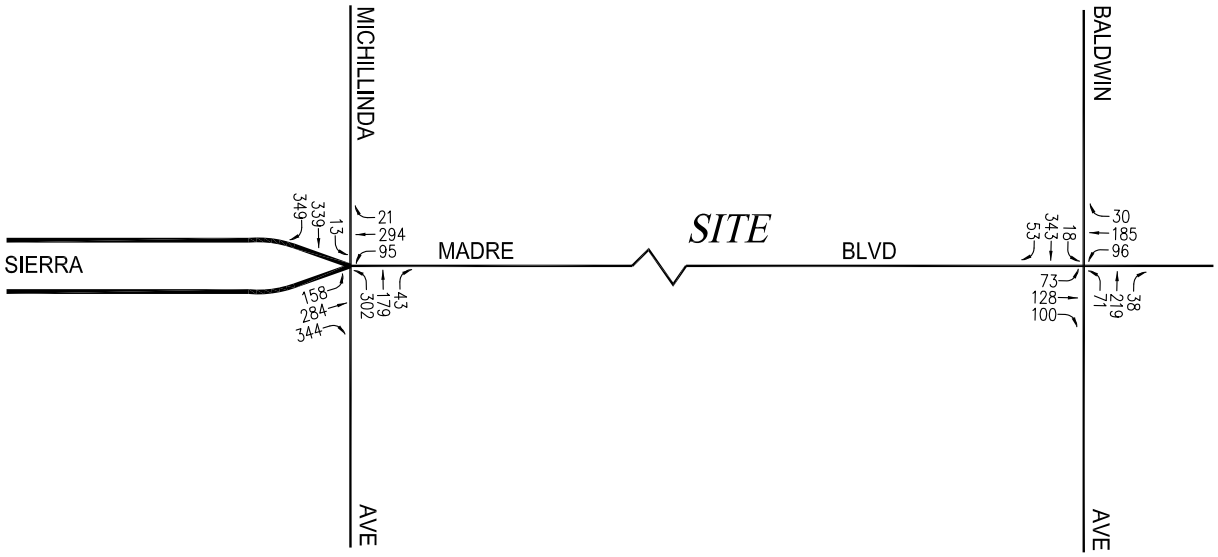
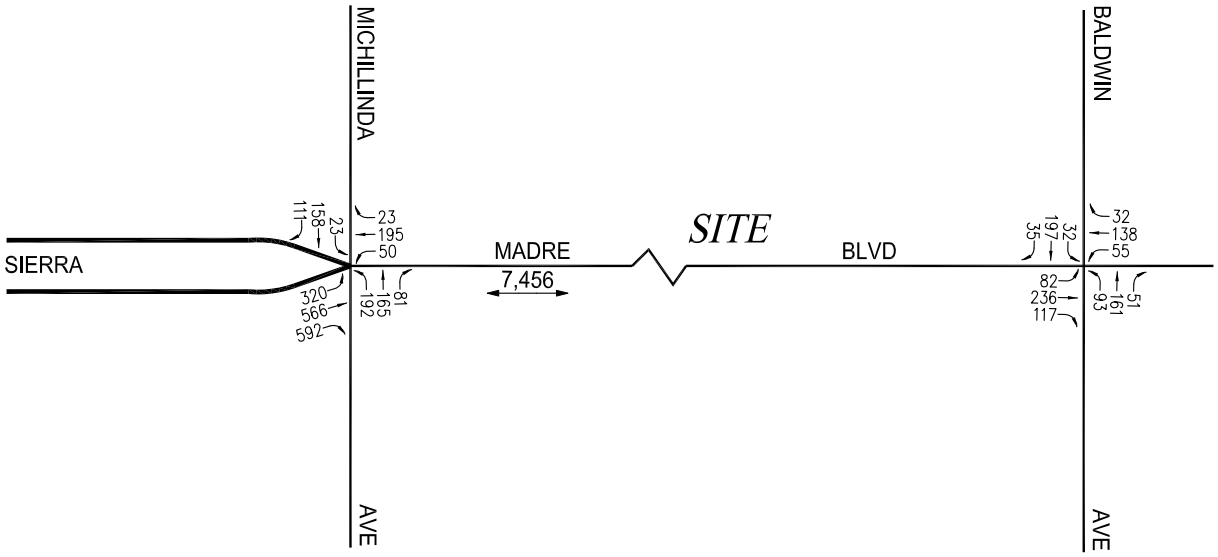


WEEKDAY AM PEAK HOUR



WEEKDAY PM PEAK HOUR

N

NOT TO SCALE

X,XXX - DAILY TRAFFIC VOLUMES

FIGURE 8-3

FUTURE PLUS PROJECT TRAFFIC VOLUMES

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9.0 STREET SEGMENT ANALYSIS

The following study street segment location was identified for analysis by City of Sierra Madre staff for inclusion in the street segment analysis:

1. Sierra Madre Boulevard between Michillinda Avenue and Baldwin Avenue

The significance of the potential impacts of project generated traffic at the street segment was identified based on the *City of Sierra Madre General Plan Traffic and Parking Section*[5]. A roadway capacity of 15,000 vehicles per day for Sierra Madre Boulevard was utilized for this analysis.

The forecast traffic conditions at the analyzed street segment for existing, existing with project, future pre-project and future with project scenarios are summarized in ***Table 9-1***. As presented in *Table 9-1*, the existing 24-hour traffic count data was utilized to evaluate existing conditions on the roadway. As shown in Column [3] of *Table 9-1*, a 1.0 percent (1.0 %) annual ambient growth rate through the year 2013 was conservatively added to the existing ADT volume in order to estimate the future pre-project traffic volume.

As presented in Columns [2] and [4] of *Table 9-1*, the proposed project daily trips will incrementally add traffic volumes on the analyzed street segment. As mentioned previously, the City of Sierra Madre does not have an official policy for significance thresholds. As such, the significance of the potential impact of project generated traffic at the street segment was identified using criteria set forth in the *2010 Congestion Management Program*. A significant transportation impact is determined based on a change in the calculated *v/c* ratio of two percent (0.02) or more due to project-related traffic for a street segment operating at LOS F or worse (*v/c* > 1.00). Application of this threshold criteria for street segment analysis indicates that the proposed project is not anticipated to significantly impact the analyzed street segment. Thus, no mitigation measures are required or recommended.

[5] *City of Sierra Madre General Plan Traffic and Parking Section*, City of Sierra Madre, adopted June 11, 1996.

Table 9-1
STREET SEGMENT ANALYSIS

NO.	STREET SEGMENT	CAPACITY	[1] 2011 EXISTING [a] VOLUME	[b] V/C	[c] PROJECT TRIP ENDS	[2] EXISTING W/ PROJECT [d] VOLUME	[b] V/C	[e] V/C INCREASE WITH PROJECT	[f] SIGNIFICANT PROJECT IMPACT	[3] 2013 FUTURE PRE-PROJECT [g] VOLUME	[b] V/C	[c] PROJECT TRIP ENDS	[4] FUTURE W/ PROJECT [h] VOLUME	[b] V/C	[i] V/C INCREASE WITH PROJECT	[f] SIGNIFICANT PROJECT IMPACT
1	Sierra Madre Boulevard between Michillinda Avenue and Baldwin Avenue	15,000	7,155	0.48	158	7,313	0.49	0.011	NO	7,298	0.49	158	7,456	0.50	0.011	NO

[a] Existing ADT volumes based on traffic counts conducted by City Traffic Counters in September 2011.
[b] Volume-to-Capacity ratio (V/C) calculated based on a capacity of 15,000 vehicles per day per the City of Sierra Madre General Plan, adopted June 11, 1996.
[c] Based on the project trip generation and trip distribution for the project.
[d] Derived by combining the existing traffic volumes and the proposed project volumes.
[e] Derived by subtracting the V/C ratio of the existing with project conditions with the existing conditions.
[f] Per the "2010 Congestion Management Program," a significant impact occurs when the proposed project increases traffic demand on the street system by 2% of capacity (V/C > 0.02), causing LOS F (V/C > 1.00).
[g] The CMP annual average growth rate of 1.0% per year was assumed to derive the year 2013 traffic volumes to provide a conservative analysis of roadway operations.
[h] Derived by combining the future pre-project traffic volumes and the proposed project volumes.
[i] Derived by subtracting the V/C ratio of the future with project conditions with the future pre-project conditions.

10.0 CONGESTION MANAGEMENT PROGRAM TRAFFIC IMPACT ASSESSMENT

The Congestion Management Program (CMP) is a state-mandated program that was enacted by the State Legislature with the passage of Proposition 111 in 1990. The program is intended to address the impact of local growth on the regional transportation system.

As required by the 2010 Congestion Management Program, a Traffic Impact Assessment (TIA) has been prepared to determine the potential impacts on designated monitoring locations on the CMP highway system. The analysis has been prepared in accordance with procedures outlined in the *2010 Congestion Management Program*, Los Angeles County Metropolitan Transportation Authority, October 2010.

According to Section D.9.1 (Appendix D, page D-6) of the 2010 CMP manual, the criteria for determining a significant transportation impact is listed below:

> "A significant transportation impact occurs when the proposed project increases traffic demand on a CMP facility by 2% of capacity (V/C $\geq$ 0.02), causing or worsening LOS F (V/C > 1.00); if the facility is already at LOS F, a significant impact occurs when the proposed project increases traffic demand on a CMP facility by 2% of capacity (V/C $\geq$ 0.02)."

The CMP impact criteria apply for analysis of both intersection and freeway monitoring locations.

10.1 Intersections

The following CMP intersection monitoring location in the project vicinity has been identified:

- CMP Station — Intersection

  No. 121 — Rosemead Boulevard/Foothill Boulevard

The CMP TIA guidelines require that intersection monitoring locations must be examined if the proposed project will add 50 or more trips during either the AM or PM weekday peak hours. The proposed project will not add 50 or more trips, during the AM or PM peak hours at any CMP monitoring intersections, which is the threshold for preparing a traffic impact assessment, as stated in the CMP manual. Therefore, no further review of potential impacts to intersection monitoring locations that are part of the CMP highway system is required.

10.2 Freeways

The following CMP freeway monitoring locations in the project vicinity have been identified:

- CMP Station — Segment

  No. 1061 — I-210 Freeway at Rosemead Boulevard

The CMP TIA guidelines require that freeway monitoring locations must be examined if the proposed project will add 150 or more trips (in either direction) during either the AM or PM weekday peak hours. The proposed project will not add 150 or more trips (in either direction), during either the AM or PM weekday peak hours to any CMP freeway monitoring locations, which is the threshold for preparing a traffic impact assessment, as stated in the CMP manual. Therefore, no further review of potential impacts to freeway monitoring locations that are part of the CMP highway system is required.

10.3 Transit Impact Review

As required by the *2010 Congestion Management Program*, a review has been made of the CMP transit service. As previously discussed, existing transit service is provided in the vicinity of the proposed project.

The project trip generation, as shown in *Table 6–1*, was adjusted by values set forth in the CMP to estimate transit trip generation (i.e., person trips equal 1.4 times vehicle trips, and transit trips equal 3.5 percent of the total person trips). Pursuant to the CMP guidelines, the proposed project is forecast to generate demand for 1 transit trip during the weekday AM peak hour, 2 transit trips during the weekday PM peak hour, and 13 daily transit trips during the weekday. The calculations are as follows:

- Weekday AM Peak Hour = $16 \times 1.4 \times 0.035 = 1$ Transit Trip
- Weekday PM Peak Hour = $28 \times 1.4 \times 0.035 = 2$ Transit Trips
- Weekday Daily Trips= $264 \times 1.4 \times 0.035 = 13$ Transit Trips

As shown in *Table 4-1*, four bus routes are provided adjacent to or in close proximity to the project site. As outlined in *Table 4-1* under the "Headways" column, these four transit lines provide service for a total of 13 buses serving the project area during the weekday AM and PM peak hour. Therefore, based on the above calculated transit trips, this would correspond to an average of less than one new transit rider per bus due to the proposed project. The existing transit service in the project area will adequately accommodate the project generated transit trips. Thus, given the low number of generated transit trips per bus, no impacts on existing or future transit services in the project area would occur as a result of the proposed project.

11.0 PROJECT PARKING

A review was conducted of the City of Sierra Madre Municipal Code for parking requirements applicable to the proposed project. The Sierra Madre Municipal Code does not define parking requirements specifically for the assisted living land use. In order to determine whether the proposed parking supply is adequate to meet the anticipated peak parking demand following the development of the proposed assisted living facility, an evaluation was conducted utilizing applicable parking ratios provided in the ITE *Parking Generation*[6] and other parking demand surveys conducted for assisted living facilities. This section provides a review of the off-street parking requirements pursuant to the City of Sierra Madre Municipal Code, a description of the proposed project parking supply, a review of the observed parking demand at other assisted living facilities, and a conclusion regarding the adequacy of the proposed parking supply to accommodate the peak parking demand.

11.1 City of Sierra Madre Code Parking Requirement

Parking code requirements are determined based on parking rates published in Chapter 17.68 of the City of Sierra Madre Municipal Code. However, the current City of Sierra Madre Municipal Code does not provide parking code requirements specifically for the assisted living land use. The closest land use to the proposed facility is the Rest Homes, Convalescent Homes, or Sanitarium category, which requires one parking space for every three patient beds plus one parking space for every two employees. Direct application of these ratios yields a Code requirement of 45 parking spaces as summarized below:

- 96 beds / 1.0 parking space per 3 beds = 32 parking spaces
- 25 employees / 1.0 parking space per 2 employees = 13 parking spaces

Since parking requirements are not specifically defined for the proposed project land use, it is appropriate to evaluate the project's parking demand based on review of observed parking demand at other assisted living facilities.

11.2 Project Parking Demand Based on ITE

The average peak period parking demand for assisted living facilities is often estimated using ratios published in the ITE *Parking Generation* document. When utilizing the ITE document, the parking demand for the proposed project can be calculated based upon ratios per dwelling unit. More specifically, ITE Land Use Code 254 (Assisted Living) average peak period parking demand ratios can be utilized to forecast the peak parking demand expected for the proposed project. Based on the *Parking Generation* document, the average peak period parking demand ratio for an assisted living facility is 0.41 spaces per dwelling unit. This parking demand ratio is based on parking surveys conducted at assisted living facilities throughout the country and represents the average peak parking demand associated with analysis of 33 study sites. Application of this parking demand ratio to the proposed project would yield an average peak

[6] Institute of Transportation Engineers *Parking Generation* manual, 4th Edition, 2010

parking demand of 31 spaces (75 Suites x 0.41 spaces = 31 parking spaces). Relevant pages from the ITE *Parking Generation* document are included in ***Appendix C***.

In addition to the average peak parking demand ratio, the *Parking Generation* document also provides the 85th percentile peak period parking demand ratio. The 85th percentile is defined as the point at which 85 percent of the peak parking demand values fall at or below this threshold. Use of the 85th percentile peak period parking demand ratio will result in a conservative analysis of potential parking demand. Based on the *Parking Generation* document, the 85th percentile peak period parking demand ratio for an assisted living facility is 0.54 spaces per dwelling unit. Application of this parking demand ratio to the proposed project would yield an 85th percentile peak parking demand of 41 spaces (75 Suites x 0.54 spaces = 41 parking spaces).

11.3 Project Parking Demand Based on Other Studies

In addition to the review of the ITE *Parking Generation* document, a review of other parking demand surveys/studies for assisted living facilities was also conducted. As outlined in the *Palo Alto Commons Parking Analysis*[7], prepared by Fehr & Peers, three assisted living facilities in the bay area (Petaluma, San Mateo, and Sunnyvale) were surveyed for parking demand. Based on the survey results, it was determined that the average weekday peak parking demand was 0.43 spaces per occupied bed (with a range between 0.34 and 0.50 parking spaces per room). Application of this average peak parking demand ratio to the proposed project would yield an average peak parking demand of 41 spaces (96 Beds x 0.43 spaces = 41 parking spaces). A copy of the *Palo Alto Commons Parking Analysis* is included in *Appendix C*.

In addition, according to the City of Kirkland (Washington) Department of Public Works Memorandum regarding the Merrill Gardens Parking Modification Review[8], a parking demand rate of 0.52 spaces per dwelling unit was determined based on survey data from 66 Merrill Gardens assisted living facilities. Application of this average peak parking demand ratio to the proposed project would yield an average peak parking demand of 39 spaces (75 Suites x 0.52 spaces = 39 parking spaces). A copy of the *Merrill Gardens Parking Modification Review* is included in *Appendix C*.

11.4 Project Parking Supply

Based on review of the above parking demand at other assisted living facilities, a total of 43 parking spaces are planned to be provided on-site as part of the proposed project. All of the project parking spaces will be provided within the proposed surface parking area. Based on the proposed project description, the following parking supply ratios for the project have been determined:

[7] Palo Alto Commons Parking Analysis, Fehr & Peers, October 6, 2010.
[8] Merrill Gardens at 201 Kirkland Avenue Parking Modification Review, City of Kirkland (Washington) Department of Public Works, July 20, 2006.

- 0.57 Parking Spaces per Suite (i.e., 43 spaces / 75 suites = 0.57 spaces per suite), or
- 0.45 Parking Spaces per Bed (i.e., 43 spaces / 96 beds = 0.45 spaces per bed)

It should be noted that as part of the project parking supply of 43 spaces, a minimum of two handicap accessible spaces will be provided. This complies with the Americans with Disabilities Act requirement of a minimum of two handicap spaces for parking facilities with 26 to 50 spaces, with one in every eight handicap spaces being van accessible.

Based on a comparison of the proposed parking supply of 43 spaces and the forecast 85th percentile peak parking demand of 41 spaces (as discussed in Section 11.2 per ITE) as well as the forecast peak parking demand range of 39 to 41 spaces (as discussed in Section 11.3 per other studies of assisted living facilities), it is concluded that the proposed parking supply is sufficient to meet the projected peak parking demand. This would result in a parking surplus of two to four spaces during the peak parking conditions. It should be noted that during other time periods of the day, a greater parking surplus (i.e., more than two to four spaces) is expected for the proposed project.

12.0 CONCLUSIONS

In order to evaluate the potential impacts due to the proposed Fountain Square Assisted Living project, two intersections and one street segment were analyzed to determine changes in operations following occupancy and utilization of the project. The proposed project is expected to generate 16 new vehicle trips (12 inbound trips and four outbound trips) during the AM peak hour. During the PM peak hour, the proposed project is expected to generate 28 new vehicle trips (15 inbound trips and 13 outbound trips). Over a 24-hour period, the proposed project is forecast to generate 264 daily trip ends during a typical weekday (132 inbound trips and 132 outbound trips).

It is concluded that the proposed Fountain Square Assisted Living project will not create significant traffic-related impacts at any of the study intersections or street segment. Incremental but less than significant impacts are noted at the study intersections and street segment. Therefore, no traffic mitigation measures are required or recommended.

A review was conducted of the off-street parking requirements pursuant to the City of Sierra Madre Municipal Code and the observed parking demand at other assisted living facilities. Based on a comparison of the proposed parking supply of 43 spaces and the forecast peak parking demand range of 39 to 41 spaces, it is concluded that the proposed parking supply is sufficient to meet the projected peak parking demand.

APPENDIX A

TRAFFIC COUNT DATA

City Traffic Counters, LLC.
626-256-4171

File Name : SMadreMich
Site Code : 00000000
Start Date : 9/15/2011
Page No : 1

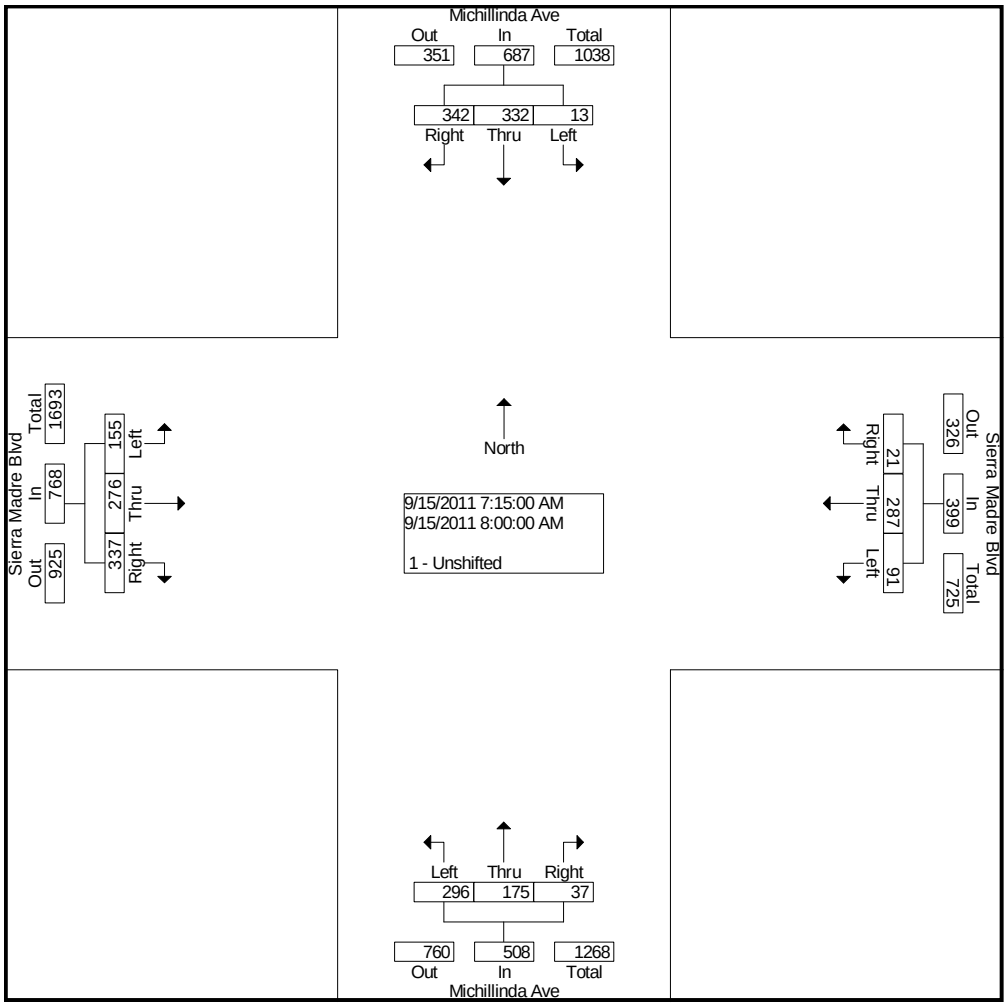
Groups Printed- 1 - Unshifted

	Michillinda Ave Southbound			Sierra Madre Blvd Westbound			Michillinda Ave Northbound			Sierra Madre Blvd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	2	68	31	14	25	4	44	24	5	14	21	20	272
07:15 AM	4	70	62	19	41	1	70	32	8	25	51	53	436
07:30 AM	2	89	83	20	81	8	78	51	8	60	79	118	677
07:45 AM	2	105	131	34	85	4	70	59	11	47	105	126	779
Total	10	332	307	87	232	17	262	166	32	146	256	317	2164
08:00 AM	5	68	66	18	80	8	78	33	10	23	41	40	470
08:15 AM	7	61	64	19	47	7	70	37	14	28	31	33	418
08:30 AM	2	51	51	13	49	4	49	41	9	32	41	34	376
08:45 AM	8	73	45	8	36	3	57	24	19	26	42	44	385
Total	22	253	226	58	212	22	254	135	52	109	155	151	1649
04:00 PM	6	44	32	12	59	3	37	42	13	65	73	97	483
04:15 PM	9	44	29	17	50	10	37	48	16	50	87	128	525
04:30 PM	7	45	33	21	31	6	36	54	14	52	108	126	533
04:45 PM	10	31	26	12	47	9	32	43	10	73	117	132	542
Total	32	164	120	62	187	28	142	187	53	240	385	483	2083
05:00 PM	10	34	26	7	51	8	49	41	23	52	103	122	526
05:15 PM	4	39	27	16	45	4	50	36	22	88	145	181	657
05:30 PM	7	42	20	9	49	3	45	34	13	88	133	154	597
05:45 PM	2	40	36	12	43	8	44	51	16	86	171	123	632
Total	23	155	109	44	188	23	188	162	74	314	552	580	2412
Grand Total	87	904	762	251	819	90	846	650	211	809	1348	1531	8308
Apprch %	5.0	51.6	43.5	21.6	70.6	7.8	49.6	38.1	12.4	21.9	36.6	41.5	
Total %	1.0	10.9	9.2	3.0	9.9	1.1	10.2	7.8	2.5	9.7	16.2	18.4	

City Traffic Counters, LLC.
626-256-4171

File Name : SMadreMich
Site Code : 00000000
Start Date : 9/15/2011
Page No : 2

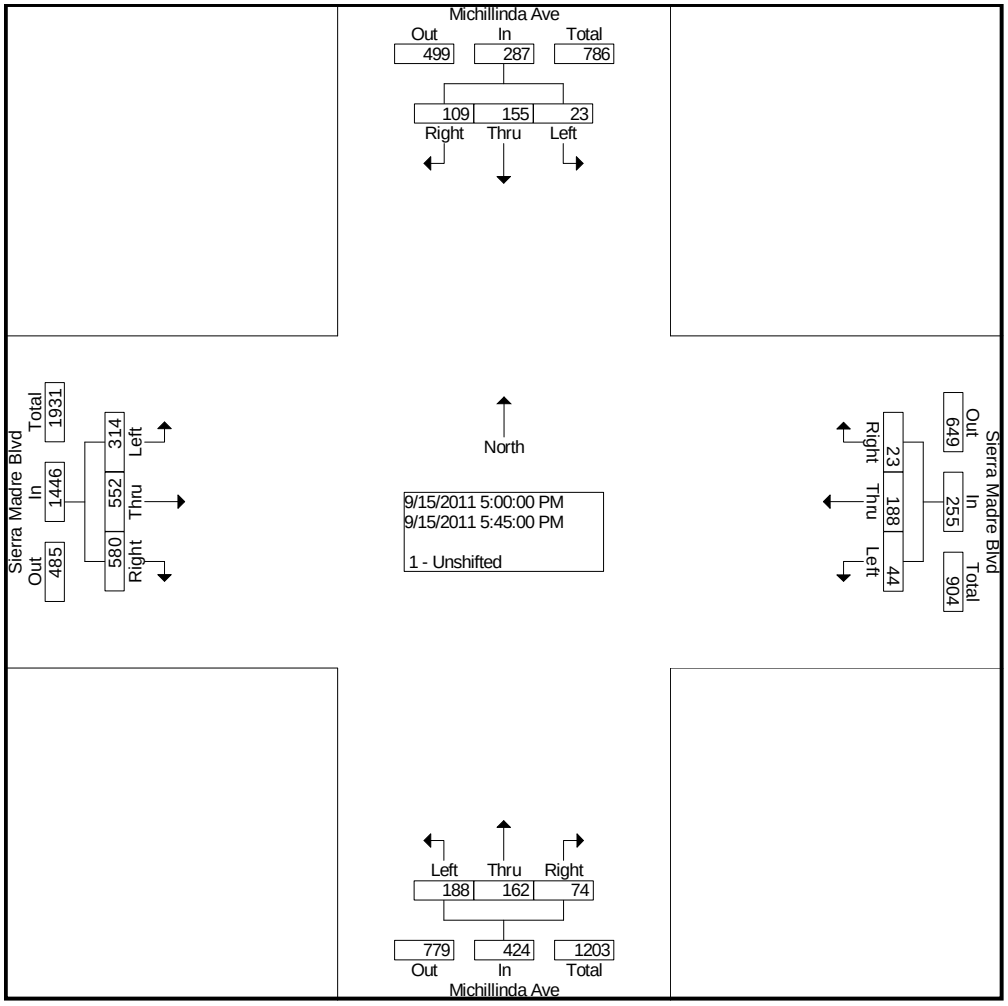
	Michillinda Ave Southbound				Sierra Madre Blvd Westbound				Michillinda Ave Northbound				Sierra Madre Blvd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Intersection	07:15 AM																
Volume	13	332	342	687	91	287	21	399	296	175	37	508	155	276	337	768	2362
Percent	1.9	48.3	49.8		22.8	71.9	5.3		58.3	34.4	7.3		20.2	35.9	43.9		
07:45 Volume	2	105	131	238	34	85	4	123	70	59	11	140	47	105	126	278	779
Peak Factor																	0.758
High Int.	07:45 AM				07:45 AM				07:45 AM				07:45 AM				
Volume	2	105	131	238	34	85	4	123	70	59	11	140	47	105	126	278	
Peak Factor				0.722				0.811				0.907				0.691	



City Traffic Counters, LLC.
626-256-4171

File Name : SMadreMich
Site Code : 00000000
Start Date : 9/15/2011
Page No : 3

	Michillinda Ave Southbound				Sierra Madre Blvd Westbound				Michillinda Ave Northbound				Sierra Madre Blvd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Intersection	05:00 PM																
Volume	23	155	109	287	44	188	23	255	188	162	74	424	314	552	580	1446	2412
Percent	8.0	54.0	38.0		17.3	73.7	9.0		44.3	38.2	17.5		21.7	38.2	40.1		
05:15 Volume	4	39	27	70	16	45	4	65	50	36	22	108	88	145	181	414	657
Peak Factor																	0.918
High Int.	05:45 PM				05:00 PM				05:00 PM				05:15 PM				
Volume	2	40	36	78	7	51	8	66	49	41	23	113	88	145	181	414	
Peak Factor				0.920				0.966				0.938				0.873	



Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Baldwin Ave DATE: 01/17/2006 LOCATION: City of sierra madre

E-W STREET: Sierra Madre Blvd DAY: TUESDAY PROJECT# 06-2019-007

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 1	SL 0	ST 1	SR 1	EL 0	ET 1	ER 1	WL 0	WT 1	WR 0	TOTAL
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	7	30	10	2	64	3	10	29	14	15	19	5	208
7:15 AM	6	28	10	2	71	9	6	25	20	21	33	6	237
7:30 AM	19	53	10	4	80	13	13	37	24	34	55	8	350
7:45 AM	14	63	9	5	89	19	20	31	18	21	53	6	348
8:00 AM	13	51	9	3	82	12	26	32	21	23	36	8	316
8:15 AM	20	48	9	6	85	8	13	25	34	16	36	7	307
8:30 AM	18	29	7	8	56	11	21	32	19	27	49	15	292
8:45 AM	24	43	11	10	55	8	16	17	19	22	48	10	283
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL 121	NT 345	NR 75	SL 40	ST 582	SR 83	EL 125	ET 228	ER 169	WL 179	WT 329	WR 65	TOTAL 2341

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	66	215	37	18	336	52	72	125	97	94	180	29	1321
PEAK HR. FACTOR:		0.924			0.898			0.930			0.781		0.944

CONTROL: 4-way stop

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Baldwin Ave DATE: 01/17/2006 LOCATION: City of sierra madre

E-W STREET: Sierra Madre Blvd DAY: TUESDAY PROJECT# 06-2019-007

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	1	0	1	1	0	1	1	0	1	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	20	42	20	6	50	12	16	46	27	10	28	7	284
4:15 PM	21	34	8	4	51	9	18	51	23	10	33	10	272
4:30 PM	18	37	11	10	45	9	24	48	27	16	44	6	295
4:45 PM	23	44	13	9	57	9	22	58	32	12	24	9	312
5:00 PM	24	43	18	8	40	7	16	73	29	16	32	6	312
5:15 PM	19	31	12	5	37	8	12	78	21	17	19	5	264
5:30 PM	19	39	13	6	34	9	22	68	26	10	28	6	280
5:45 PM	27	29	12	8	53	8	22	57	23	10	30	7	286
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 171	NT 299	NR 107	SL 56	ST 367	SR 71	EL 152	ET 479	ER 208	WL 101	WT 238	WR 56	TOTAL 2305

PM Peak Hr Begins at: 415 PM

PEAK VOLUMES =	86	158	50	31	193	34	80	230	111	54	133	31	1191
PEAK HR. FACTOR:		0.865			0.860			0.892			0.826		0.954

CONTROL: 4-way stop

City Traffic Counters, LLC.
626.256.4171

Site Code: 000000000146
Station ID:
Sierra Madre Blvd
Bt Michillinda & Baldwin
Latitude: 0' 0.000 Undefined

Start Time	15-Sep-11 Thu	West		Hour Totals		East		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		3	65			2	65				
12:15		3	57			2	81				
12:30		1	52			1	78				
12:45		2	84	9	258	4	75	9	299	18	557
01:00		0	82			0	69				
01:15		1	43			3	61				
01:30		0	46			1	45				
01:45		1	38	2	209	0	65	4	240	6	449
02:00		1	46			0	45				
02:15		0	55			3	48				
02:30		0	44			1	78				
02:45		0	61	1	206	1	91	5	262	6	468
03:00		0	67			0	75				
03:15		0	86			2	94				
03:30		1	66			1	95				
03:45		0	70	1	289	1	87	4	351	5	640
04:00		2	52			1	82				
04:15		1	47			0	97				
04:30		0	47			0	92				
04:45		0	60	3	206	1	93	2	364	5	570
05:00		3	60			11	86				
05:15		5	78			5	94				
05:30		4	63			2	110				
05:45		4	65	16	266	7	101	25	391	41	657
06:00		9	56			8	106				
06:15		13	46			11	95				
06:30		20	39			14	88				
06:45		17	40	59	181	26	70	59	359	118	540
07:00		21	37			21	59				
07:15		51	42			45	43				
07:30		85	35			83	40				
07:45		90	39	247	153	103	31	252	173	499	326
08:00		88	33			65	40				
08:15		65	24			49	35				
08:30		83	35			53	27				
08:45		67	26	303	118	54	24	221	126	524	244
09:00		60	12			64	18				
09:15		63	17			56	24				
09:30		49	8			53	15				
09:45		55	19	227	56	60	18	233	75	460	131
10:00		44	10			39	6				
10:15		46	7			34	10				
10:30		36	8			35	10				
10:45		36	4	162	29	41	8	149	34	311	63
11:00		49	8			67	8				
11:15		30	6			56	10				
11:30		51	5			73	2				
11:45		65	2	195	21	76	9	272	29	467	50
Total		1225	1992			1235	2703			2460	4695
Percent		38.1%	61.9%			31.4%	68.6%			34.4%	65.6%
Grand Total		1225	1992			1235	2703			2460	4695
Percent		38.1%	61.9%			31.4%	68.6%			34.4%	65.6%
ADT		ADT 7,155		AADT 7,155							

APPENDIX B

ICU AND HCM LEVELS OF SERVICE EXPLANATION
ICU AND HCM DATA WORKSHEETS
AM & PM PEAK HOURS

INTERSECTION CAPACITY UTILIZATION (ICU) DESCRIPTION

Level of Service is a term used to describe prevailing conditions and their effect on traffic. Broadly interpreted, the Levels of Service concept denotes any one of a number of differing combinations of operating conditions which may occur as a roadway is accommodating various traffic volumes. Level of Service is a qualitative measure of the effect of such factors as travel speed, travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience.

Six Levels of Service, A through F, have been defined in the 1965 *Highway Capacity Manual*, published by the Transportation Research Board. Level of Service A describes a condition of free flow, with low traffic volumes and relatively high speeds, while Level of Service F describes forced traffic flow at low speeds with jammed conditions and queues which cannot clear during the green phases.

The Intersection Capacity Utilization (ICU) method of intersection capacity analysis has been used in our studies. It directly relates traffic demand and available capacity for key intersection movements, regardless of present signal timing, The capacity per hour of green time for each approach is calculated based on the methods of the *Highway Capacity Manual*. The proportion of total signal time needed by each key movement is determined and compared to the total time available (100 percent of the hour). The result of summing the requirements of the conflicting key movements plus an allowance for clearance times is expressed as a decimal fraction. Conflicting key traffic movements are those opposing movements whose combined green time requirements are greatest.

The resulting ICU represents the proportion of the total hour required to accommodate intersection demand volumes if the key conflicting traffic movements are operating at capacity. Other movements may be operating near capacity, or may be operating at significantly better levels. The ICU may be translated to a Level of Service as tabulated below.

The Levels of Service (abbreviated from the *Highway Capacity Manual*) are listed here with their corresponding ICU and Load Factor equivalents. Load Factor is that proportion of the signal cycles during the peak hour which are fully loaded; i.e. when all of the vehicles waiting at the beginning of green are not able to clear on that green phase.

Intersection Capacity Utilization Characteristics

Level of Service	Load Factor	Equivalent ICU
A	0.0	0.00 - 0.60
B	0.0 - 0.1	0.61 - 0.70
C	0.1 - 0.3	0.71 - 0.80
D	0.3 - 0.7	0.81 - 0.90
E	0.7 - 1.0	0.91 - 1.00
F	Not Applicable	Not Applicable

SERVICE LEVEL A
There are no loaded cycles and few are even close to loaded at this service level. No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication.

SERVICE LEVEL B
This level represents stable operation where an occasional approach phase is fully utilized and a substantial number are approaching full use. Many drivers begin to feel restricted within platoons of vehicles.

SERVICE LEVEL C
At this level stable operation continues. Loading is still intermittent but more frequent than at Level B. Occasionally drivers may have to wait through more than one red signal indication and backups may develop behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so.

SERVICE LEVEL D
This level encompasses a zone of increasing restriction approaching instability at the intersection. Delays to approaching vehicles may be substantial during short peaks within the peak hour, but enough cycles with lower demand occur to permit periodic clearance of queues, thus preventing excessive backups. Drivers frequently have to wait through more than one red signal. This level is the lower limit of acceptable operation to most drivers.

SERVICE LEVEL E
This represents near capacity and capacity operation. At capacity (ICU = 1.0) it represents the most vehicles that the particular intersection can accommodate. However, full utilization of every signal cycle is seldom attained no matter how great the demand. At this level all drivers wait through more than one red signal, and frequently through several.

SERVICE LEVEL F
Jammed conditions. Traffic backed up from a downstream location on one of the street restricts or prevents movement of traffic through the intersection under consideration.

LEVEL OF SERVICE FOR UNSIGNALIZED INTERSECTIONS

In the *Highway Capacity Manual (HCM)*, published by the Transportation Research Board, 2000, level of service for unsignalized intersections is defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, geometrics, traffic, and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions, in the absence of incidents, control, traffic, or geometric delay. Only the portion of total delay attributed to the traffic control measures, either traffic signals or stop signs, is quantified. This delay is called *control delay*. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

Level of Service criteria for unsignalized intersections are stated in terms of the average control delay per vehicle. The level of service is determined by the computed or measured control delay and is defined for each minor movement. Average control delay for any particular minor movement is a function of the service time for the approach and the degree of utilization. (Level of service is not defined for the intersection as a whole for two-way stop controlled intersections.)

Level of Service Criteria for TWSC/AWSC Intersections

Level of Service	Average Control Delay (Sec/Veh)
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

Level of Service (LOS) values are used to describe intersection operations with service levels varying from LOS A (free flow) to LOS F (jammed condition). The following descriptions summarize *HCM* criteria for each level of service:

LOS A describes operations with very low control delay, up to 10 seconds per vehicle.

LOS B describes operations with control delay greater than 10 and up to 15 seconds per vehicle.

LOS C describes operations with control delay greater than 15 and up to 25 seconds per vehicle.

LOS D describes operations with control delay greater than 25 and up to 35 seconds per vehicle.

LOS E describes operations with control delay greater than 35 and up to 50 seconds per vehicle.

LOS F describes operations with control delay in excess of 50 seconds per vehicle. For two-way stop controlled intersections, LOS F exists when there are insufficient gaps of suitable size to allow side-street demand to safely cross through a major-street traffic stream. This level of service is generally evident from extremely long control delays experienced by side-street traffic and by queuing on the minor-street approaches.

LINSCOTT, LAW & GREENSPAN, ENGINEERS
236 N. Chester Avenue, Suite 200, Pasadena CA 91106
(626) 796.2322 Fax (626) 792-0941

INTERSECTION CAPACITY UTILIZATION

Michillinda Avenue @ Sierra Madre Boulevard

N-S St: Michillinda Avenue
E-W St: Sierra Madre Boulevard
Project: Fountain Square Assisted Living Project/1-113932-1
File: ICU1

Peak hr: AM
Annual Growth: 1.00%

Date: 10/12/2011
Date of Count: 2011
Projection Year: 2013

	2011 EXIST. TRAFFIC			2011 EXISTING PLUS PROJECT				2011 EXIST. W/PROJECT + MITIGATION				2013 FUTURE WITHOUT PROJECT				2013 FUTURE WITH PROJECT				2013 FUTURE W/PROJECT + MITIGATION			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	296	1600	0.185	0	296	1600	0.185	0	296	1600	0.185	6	302	1600	0.189	0	302	1600	0.189	0	302	1600	0.189
Nb Thru	175	1600	0.133	0	175	1600	0.136	0	175	1600	0.136	4	179	1600	0.135	0	179	1600	0.138	0	179	1600	0.138
Nb Right	37	0	-	5	42	0	-	0	42	0	-	1	38	0	-	5	43	0	-	0	43	0	-
Sb Left	13	0	0.008	0	13	0	0.008	0	13	0	0.008	0	13	0	0.008	0	13	0	0.008	0	13	0	0.008
Sb Thru	332	1600	0.216 *	0	332	1600	0.216 *	0	332	1600	0.216 *	7	339	1600	0.220 *	0	339	1600	0.220 *	0	339	1600	0.220 *
Sb Right	342	1600	0.214	0	342	1600	0.214	0	342	1600	0.214	7	349	1600	0.218	0	349	1600	0.218	0	349	1600	0.218
Eb Left	155	1600	0.097	0	155	1600	0.097	0	155	1600	0.097	3	158	1600	0.099	0	158	1600	0.099	0	158	1600	0.099
Eb Thru	276	3200	0.086	2	278	3200	0.087	0	278	3200	0.087	6	282	3200	0.088	2	284	3200	0.089	0	284	3200	0.089
Eb Right	337	1600	0.211 *	0	337	1600	0.211 *	0	337	1600	0.211 *	7	344	1600	0.215 *	0	344	1600	0.215 *	0	344	1600	0.215 *
Wb Left	91	1600	0.057 *	2	93	1600	0.058 *	0	93	1600	0.058 *	2	93	1600	0.058 *	2	95	1600	0.059 *	0	95	1600	0.059 *
Wb Thru	287	3200	0.090	1	288	3200	0.090	0	288	3200	0.090	6	293	3200	0.091	1	294	3200	0.092	0	294	3200	0.092
Wb Right	21	1600	0.013	0	21	1600	0.013	0	21	1600	0.013	0	21	1600	0.013	0	21	1600	0.013	0	21	1600	0.013
Yellow Allowance: (NB/SB Split Phase)			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.768				0.769				0.769				0.781				0.783				0.783
LOS			C				C				C				C				C				C

** Key conflicting movement as a part of ICU*
1 Counts conducted by.City Traffic Counters
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Michillinda Avenue @ Sierra Madre Boulevard

N-S St: Michillinda Avenue
E-W St: Sierra Madre Boulevard
Project: Fountain Square Assisted Living Project/1-113932-1
File: ICU1

Peak hr: PM
Annual Growth: 1.00%

Date: 10/12/2011
Date of Count: 2011
Projection Year: 2013

	2011 EXIST. TRAFFIC			2011 EXISTING PLUS PROJECT				2011 EXIST. W/PROJECT + MITIGATION				2013 FUTURE WITHOUT PROJECT				2013 FUTURE WITH PROJECT				2013 FUTURE W/PROJECT + MITIGATION			
	1		2	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	188	0	0.059	0	188	0	0.059	0	188	0	0.059	4	192	0	0.060	0	192	0	0.060	0	192	0	0.060
Nb Thru	162	3200	0.133	0	162	3200	0.134	0	162	3200	0.134	3	165	3200	0.135	0	165	3200	0.137	0	165	3200	0.137
Nb Right	74	0	-	6	80	0	-	0	80	0	-	1	75	0	-	6	81	0	-	0	81	0	-
Sb Left	23	0	0.014	0	23	0	0.014	0	23	0	0.014	0	23	0	0.015	0	23	0	0.015	0	23	0	0.015
Sb Thru	155	1600	0.111 *	0	155	1600	0.111 *	0	155	1600	0.111 *	3	158	1600	0.113 *	0	158	1600	0.113 *	0	158	1600	0.113 *
Sb Right	109	1600	0.068	0	109	1600	0.068	0	109	1600	0.068	2	111	1600	0.069	0	111	1600	0.069	0	111	1600	0.069
Eb Left	314	1600	0.196	0	314	1600	0.196	0	314	1600	0.196	6	320	1600	0.200	0	320	1600	0.200	0	320	1600	0.200
Eb Thru	552	3200	0.173	3	555	3200	0.173	0	555	3200	0.173	11	563	3200	0.176	3	566	3200	0.177	0	566	3200	0.177
Eb Right	580	1600	0.363 *	0	580	1600	0.363 *	0	580	1600	0.363 *	12	592	1600	0.370 *	0	592	1600	0.370 *	0	592	1600	0.370 *
Wb Left	44	1600	0.028 *	5	49	1600	0.031 *	0	49	1600	0.031 *	1	45	1600	0.028 *	5	50	1600	0.031 *	0	50	1600	0.031 *
Wb Thru	188	3200	0.059	3	191	3200	0.060	0	191	3200	0.060	4	192	3200	0.060	3	195	3200	0.061	0	195	3200	0.061
Wb Right	23	1600	0.014	0	23	1600	0.014	0	23	1600	0.014	0	23	1600	0.015	0	23	1600	0.015	0	23	1600	0.015
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
(NB/SB Split Phase)																							
ICU			0.734				0.739				0.739				0.746				0.751				0.751
LOS			C				C				C				C				C				C

** Key conflicting movement as a part of ICU*
1 Counts conducted by.City Traffic Counters
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Baldwin Avenue @ Sierra Madre Boulevard
Peak hr: AM
Annual Growth: 1.00%

N-S St: Baldwin Avenue
E-W St: Sierra Madre Boulevard
Project: Fountain Square Assisted Living Project / 1-113932-1
File: ICU2

Date: 10/12/2011
Date of Count: 2011
Projection Year: 2013

	2011 EXIST. TRAFFIC			2011 EXISTING PLUS PROJECT				2011 EXIST. W/PROJECT + MITIGATION				2013 FUTURE WITHOUT PROJECT				2013 FUTURE WITH PROJECT				2013 FUTURE W/PROJECT + MITIGATION			
	1	2	V/C	Added	Total		V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	66	0	0.041 *	4	70	0	0.044 *	0	70	0	0.044 *	1	67	0	0.042 *	4	71	0	0.045 *	0	71	0	0.045 *
Nb Thru	215	1600	0.176	0	215	1600	0.178	0	215	1600	0.178	4	219	1600	0.179	0	219	1600	0.182	0	219	1600	0.182
Nb Right	37	1600	0.023	0	37	1600	0.023	0	37	1600	0.023	1	38	1600	0.024	0	38	1600	0.024	0	38	1600	0.024
Sb Left	18	0	0.011	0	18	0	0.011	0	18	0	0.011	0	18	0	0.011	0	18	0	0.011	0	18	0	0.011
Sb Thru	336	1600	0.221 *	0	336	1600	0.221 *	0	336	1600	0.221 *	7	343	1600	0.226 *	0	343	1600	0.226 *	0	343	1600	0.226 *
Sb Right	52	1600	0.033	0	52	1600	0.033	0	52	1600	0.033	1	53	1600	0.033	0	53	1600	0.033	0	53	1600	0.033
Eb Left	72	0	0.045 *	0	72	0	0.045 *	0	72	0	0.045 *	1	73	0	0.046 *	0	73	0	0.046 *	0	73	0	0.046 *
Eb Thru	125	1600	0.123	0	125	1600	0.123	0	125	1600	0.123	3	128	1600	0.126	0	128	1600	0.126	0	128	1600	0.126
Eb Right	97	1600	0.061	1	98	1600	0.061	0	98	1600	0.061	2	99	1600	0.062	1	100	1600	0.062	0	100	1600	0.062
Wb Left	94	0	0.059	0	94	0	0.059	0	94	0	0.059	2	96	0	0.060	0	96	0	0.060	0	96	0	0.060
Wb Thru	180	1600	0.189 *	1	181	1600	0.190 *	0	181	1600	0.190 *	4	184	1600	0.193 *	1	185	1600	0.194 *	0	185	1600	0.194 *
Wb Right	29	0	-	0	29	0	-	0	29	0	-	1	30	0	-	0	30	0	-	0	30	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.597				0.600				0.600				0.607				0.610				0.610
LOS			A				A				A				B				B				B

** Key conflicting movement as a part of ICU*
1 Counts conducted by.Southland Car Counters
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Baldwin Avenue @ Sierra Madre Boulevard

N-S St: Baldwin Avenue
E-W St: Sierra Madre Boulevard
Project: Fountain Square Assisted Living Project / 1-113932-1
File: ICU2

Peak hr: PM
Annual Growth: 1.00%

Date: 10/12/2011
Date of Count: 2011
Projection Year: 2013

	2011 EXIST. TRAFFIC			2011 EXISTING PLUS PROJECT				2011 EXIST. W/PROJECT + MITIGATION				2013 FUTURE WITHOUT PROJECT				2013 FUTURE WITH PROJECT				2013 FUTURE W/PROJECT + MITIGATION			
	1		2	Added	Total		V/C	Added	Total		V/C	Added	Total		V/C	Added	Total		V/C	Added	Total		V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	86	0	0.054 *	5	91	0	0.057 *	0	91	0	0.057 *	2	88	0	0.055 *	5	93	0	0.058 *	0	93	0	0.058 *
Nb Thru	158	1600	0.153	0	158	1600	0.156	0	158	1600	0.156	3	161	1600	0.156	0	161	1600	0.159	0	161	1600	0.159
Nb Right	50	1600	0.031	0	50	1600	0.031	0	50	1600	0.031	1	51	1600	0.032	0	51	1600	0.032	0	51	1600	0.032
Sb Left	31	0	0.019	0	31	0	0.019	0	31	0	0.019	1	32	0	0.020	0	32	0	0.020	0	32	0	0.020
Sb Thru	193	1600	0.140 *	0	193	1600	0.140 *	0	193	1600	0.140 *	4	197	1600	0.143 *	0	197	1600	0.143 *	0	197	1600	0.143 *
Sb Right	34	1600	0.021	0	34	1600	0.021	0	34	1600	0.021	1	35	1600	0.022	0	35	1600	0.022	0	35	1600	0.022
Eb Left	80	0	0.050	0	80	0	0.050	0	80	0	0.050	2	82	0	0.051	0	82	0	0.051	0	82	0	0.051
Eb Thru	230	1600	0.194 *	1	231	1600	0.194 *	0	231	1600	0.194 *	5	235	1600	0.198 *	1	236	1600	0.198 *	0	236	1600	0.198 *
Eb Right	111	1600	0.069	4	115	1600	0.072	0	115	1600	0.072	2	113	1600	0.071	4	117	1600	0.073	0	117	1600	0.073
Wb Left	54	0	0.034 *	0	54	0	0.034 *	0	54	0	0.034 *	1	55	0	0.034 *	0	55	0	0.034 *	0	55	0	0.034 *
Wb Thru	133	1600	0.136	2	135	1600	0.138	0	135	1600	0.138	3	136	1600	0.139	2	138	1600	0.140	0	138	1600	0.140
Wb Right	31	0	-	0	31	0	-	0	31	0	-	1	32	0	-	0	32	0	-	0	32	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.521				0.525				0.525				0.530				0.533				0.533
LOS			A				A				A				A				A				A

** Key conflicting movement as a part of ICU*
1 Counts conducted by.Southland Car Counters
2 Capacity expressed in veh/hour of green

ALL-WAY STOP CONTROL ANALYSIS

General Information		Site Information	
Analyst	*FSB*	Intersection	*#2: Baldwin Av/Sierra Madre Bl*
Agency/Co.	*LLG Engineers*	Jurisdiction	*Sierra Madre*
Date Performed	*10/3/2011*	Analysis Year	*Existing*
Analysis Time Period	*AM Peak Hour*		

Project ID *Fountain Square Assisted Living Project/1-11-3932-1*

East/West Street: *Sierra Madre Boulevard* | North/South Street: *Baldwin Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*72*	*125*	*97*	*94*	*180*	*29*
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*66*	*215*	*0*	*18*	*336*	*52*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*R*	*LTR*		*LT*	*R*	*LT*	*R*
PHF	*1.00*	*1.00*	*1.00*		*1.00*	*1.00*	*1.00*	*1.00*
Flow Rate (veh/h)	*197*	*97*	*303*		*281*	*0*	*354*	52
% Heavy Vehicles	*0*	*0*	*0*		*0*	*0*	*0*	*0*
No. Lanes	*2*		*1*		*2*		*2*	
Geometry Group	*5*		*4b*		*5*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.4*	*0.0*	*0.3*		*0.2*	*0.0*	*0.1*	*0.0*
Prop. Right-Turns	*0.0*	*1.0*	*0.1*		*0.0*	*0.0*	*0.0*	*1.0*
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*		*0.0*	*0.0*	*0.0*	*0.0*
hLT-adj	*0.5*	*0.5*	*0.2*	*0.2*	*0.5*	*0.5*	*0.5*	*0.5*
hRT-adj	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.7*	*-0.7*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.2*	*-0.7*	*0.0*		*0.1*	*0.0*	*0.0*	*-0.7*

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*		*3.20*	*3.20*	*3.20*	*3.20*
x, initial	*0.18*	*0.09*	*0.27*		*0.25*	*0.00*	*0.31*	*0.05*
hd, final value (s)	*7.94*	*7.05*	*7.55*		*7.76*	*7.64*	*7.42*	*6.68*
x, final value	*0.43*	*0.19*	*0.64*		*0.61*	*0.00*	*0.73*	*0.10*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*5.6*	*4.7*	*5.2*		*5.5*	*5.3*	*5.1*	*4.4*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*419*	*347*	*453*		*439*	*0*	*470*	*302*
Delay (s/veh)	*16.62*	*11.39*	*22.49*		*21.65*	*10.34*	*27.67*	*10.09*
LOS	*C*	*B*	*C*		*C*	*B*	*D*	*B*
Approach: Delay (s/veh)	*14.89*		*22.49*		*21.65*		*25.42*	
LOS	*B*		*C*		*C*		*D*	
Intersection Delay (s/veh)	*21.49*							
Intersection LOS	*C*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information		Site Information	
Analyst	*FSB*	Intersection	*#2: Baldwin Av/Sierra Madre Bl*
Agency/Co.	*LLG Engineers*	Jurisdiction	*Sierra Madre*
Date Performed	*10/3/2011*	Analysis Year	*Existing*
Analysis Time Period	*PM Peak Hour*		

Project ID *Fountain Square Assisted Living Project/1-11-3932-1*

East/West Street: *Sierra Madre Boulevard* | North/South Street: *Baldwin Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*80*	*230*	*111*	*54*	*133*	*31*
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*86*	*158*	*50*	*31*	*193*	*34*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*R*	*LTR*		*LT*	*R*	*LT*	*R*
PHF	*1.00*	*1.00*	*1.00*		*1.00*	*1.00*	*1.00*	*1.00*
Flow Rate (veh/h)	*310*	*111*	*218*		*244*	*50*	*224*	*34*
% Heavy Vehicles	*0*	*0*	*0*		*0*	*0*	*0*	*0*
No. Lanes	*2*		*1*		*2*		*2*	
Geometry Group	*5*		*4b*		*5*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.3*	*0.0*	*0.2*		*0.4*	*0.0*	*0.1*	*0.0*
Prop. Right-Turns	*0.0*	*1.0*	*0.1*		*0.0*	*1.0*	*0.0*	*1.0*
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*		*0.0*	*0.0*	*0.0*	*0.0*
hLT-adj	*0.5*	*0.5*	*0.2*	*0.2*	*0.5*	*0.5*	*0.5*	*0.5*
hRT-adj	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.7*	*-0.7*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*	*-0.7*	*-0.0*		*0.2*	*-0.7*	*0.1*	*-0.7*

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*		*3.20*	*3.20*	*3.20*	*3.20*
x, initial	*0.28*	*0.10*	*0.19*		*0.22*	*0.04*	*0.20*	*0.03*
hd, final value (s)	*6.94*	*6.10*	*7.06*		*7.30*	*6.40*	*7.26*	*6.48*
x, final value	*0.60*	*0.19*	*0.43*		*0.49*	*0.09*	*0.45*	*0.06*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*4.6*	*3.8*	*4.8*		*5.0*	*4.1*	*5.0*	*4.2*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*500*	*361*	*468*		*467*	*300*	*465*	*284*
Delay (s/veh)	*19.39*	*10.21*	*14.93*		*16.92*	*9.73*	*15.82*	*9.60*
LOS	*C*	*B*	*B*		*C*	*A*	*C*	*A*
Approach: Delay (s/veh)	*16.97*		*14.93*		*15.70*		*15.00*	
LOS	*C*		*B*		*C*		*B*	
Intersection Delay (s/veh)	*15.85*							
Intersection LOS	*C*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information		Site Information	
Analyst	*FSB*	Intersection	*#2: Baldwin Av/Sierra Madre Bl*
Agency/Co.	*LLG Engineers*	Jurisdiction	*Sierra Madre*
Date Performed	*10/3/2011*	Analysis Year	*Existing Plus Project*
Analysis Time Period	*AM Peak Hour*		

Project ID *Fountain Square Assisted Living Project/1-11-3932-1*

East/West Street: *Sierra Madre Boulevard* | North/South Street: *Baldwin Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*72*	*125*	*98*	*94*	*181*	*29*
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*70*	*215*	*37*	*18*	*336*	*52*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*R*	*LTR*		*LT*	*R*	*LT*	*R*
PHF	*1.00*	*1.00*	*1.00*		*1.00*	*1.00*	*1.00*	*1.00*
Flow Rate (veh/h)	*197*	*98*	*304*		*285*	*37*	*354*	52
% Heavy Vehicles	*0*	*0*	*0*		*0*	*0*	*0*	*0*
No. Lanes	*2*		*1*		*2*		*2*	
Geometry Group	*5*		*4b*		*5*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.4*	*0.0*	*0.3*		*0.2*	*0.0*	*0.1*	*0.0*
Prop. Right-Turns	*0.0*	*1.0*	*0.1*		*0.0*	*1.0*	*0.0*	*1.0*
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*		*0.0*	*0.0*	*0.0*	*0.0*
hLT-adj	*0.5*	*0.5*	*0.2*	*0.2*	*0.5*	*0.5*	*0.5*	*0.5*
hRT-adj	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.7*	*-0.7*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.2*	*-0.7*	*0.0*		*0.1*	*-0.7*	*0.0*	*-0.7*

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*		*3.20*	*3.20*	*3.20*	*3.20*
x, initial	*0.18*	*0.09*	*0.27*		*0.25*	*0.03*	*0.31*	*0.05*
hd, final value (s)	*8.07*	*7.17*	*7.66*		*7.82*	*6.98*	*7.54*	*6.80*
x, final value	*0.44*	*0.20*	*0.65*		*0.62*	*0.07*	*0.74*	*0.10*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*5.8*	*4.9*	*5.4*		*5.5*	*4.7*	*5.2*	*4.5*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*413*	*348*	*447*		*438*	*287*	*463*	*302*
Delay (s/veh)	*17.01*	*11.61*	*23.30*		*22.41*	*10.21*	*28.86*	*10.23*
LOS	*C*	*B*	*C*		*C*	*B*	*D*	*B*
Approach: Delay (s/veh)	*15.21*		*23.30*		*21.00*		*26.48*	
LOS	*C*		*C*		*C*		*D*	
Intersection Delay (s/veh)	*21.92*							
Intersection LOS	*C*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information		Site Information	
Analyst	*FSB*	Intersection	*#2: Baldwin Av/Sierra Madre Bl*
Agency/Co.	*LLG Engineers*	Jurisdiction	*Sierra Madre*
Date Performed	*10/3/2011*	Analysis Year	*Existing Plus Project*
Analysis Time Period	*PM Peak Hour*		

Project ID *Fountain Square Assisted Living Project/1-11-3932-1*

East/West Street: *Sierra Madre Boulevard* | North/South Street: *Baldwin Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*80*	*231*	*115*	*54*	*135*	*31*
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*91*	*158*	*50*	*31*	*193*	*34*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*R*	*LTR*		*LT*	*R*	*LT*	*R*
PHF	*1.00*	*1.00*	*1.00*		*1.00*	*1.00*	*1.00*	*1.00*
Flow Rate (veh/h)	*311*	*115*	*220*		*249*	*50*	*224*	*34*
% Heavy Vehicles	*0*	*0*	*0*		*0*	*0*	*0*	*0*
No. Lanes	*2*		*1*		*2*		*2*	
Geometry Group	*5*		*4b*		*5*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.3*	*0.0*	*0.2*		*0.4*	*0.0*	*0.1*	*0.0*
Prop. Right-Turns	*0.0*	*1.0*	*0.1*		*0.0*	*1.0*	*0.0*	*1.0*
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*		*0.0*	*0.0*	*0.0*	*0.0*
hLT-adj	*0.5*	*0.5*	*0.2*	*0.2*	*0.5*	*0.5*	*0.5*	*0.5*
hRT-adj	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.7*	*-0.7*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*	*-0.7*	*-0.0*		*0.2*	*-0.7*	*0.1*	*-0.7*

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*		*3.20*	*3.20*	*3.20*	*3.20*
x, initial	*0.28*	*0.10*	*0.20*		*0.22*	*0.04*	*0.20*	*0.03*
hd, final value (s)	*6.97*	*6.14*	*7.10*		*7.33*	*6.43*	*7.31*	*6.52*
x, final value	*0.60*	*0.20*	*0.43*		*0.51*	*0.09*	*0.45*	*0.06*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*4.7*	*3.8*	*4.8*		*5.0*	*4.1*	*5.0*	*4.2*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*497*	*365*	*470*		*465*	*300*	*462*	*284*
Delay (s/veh)	*19.67*	*10.33*	*15.13*		*17.34*	*9.76*	*15.96*	*9.65*
LOS	*C*	*B*	*C*		*C*	*A*	*C*	*A*
Approach: Delay (s/veh)	*17.15*		*15.13*		*16.08*		*15.13*	
LOS	*C*		*C*		*C*		*C*	
Intersection Delay (s/veh)	*16.08*							
Intersection LOS	*C*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information		Site Information	
Analyst	*FSB*	Intersection	*#2: Baldwin Av/Sierra Madre Bl*
Agency/Co.	*LLG Engineers*	Jurisdiction	*Sierra Madre*
Date Performed	*10/3/2011*	Analysis Year	*Future Pre-Project*
Analysis Time Period	*AM Peak Hour*		

Project ID *Fountain Square Assisted Living Project/1-11-3932-1*

East/West Street: *Sierra Madre Boulevard* | North/South Street: *Baldwin Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*73*	*128*	*99*	*96*	*184*	*30*
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*67*	*219*	*38*	*18*	*343*	*53*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*R*	*LTR*		*LT*	*R*	*LT*	*R*
PHF	*1.00*	*1.00*	*1.00*		*1.00*	*1.00*	*1.00*	*1.00*
Flow Rate (veh/h)	*201*	*99*	*310*		*286*	*38*	*361*	53
% Heavy Vehicles	*0*	*0*	*0*		*0*	*0*	*0*	*0*
No. Lanes	*2*		*1*		*2*		*2*	
Geometry Group	*5*		*4b*		*5*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.4*	*0.0*	*0.3*		*0.2*	*0.0*	*0.0*	*0.0*
Prop. Right-Turns	*0.0*	*1.0*	*0.1*		*0.0*	*1.0*	*0.0*	*1.0*
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*		*0.0*	*0.0*	*0.0*	*0.0*
hLT-adj	*0.5*	*0.5*	*0.2*	*0.2*	*0.5*	*0.5*	*0.5*	*0.5*
hRT-adj	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.7*	*-0.7*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.2*	*-0.7*	*0.0*		*0.1*	*-0.7*	*0.0*	*-0.7*

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*		*3.20*	*3.20*	*3.20*	*3.20*
x, initial	*0.18*	*0.09*	*0.28*		*0.25*	*0.03*	*0.32*	*0.05*
hd, final value (s)	*8.17*	*7.27*	*7.74*		*7.92*	*7.08*	*7.62*	*6.88*
x, final value	*0.46*	*0.20*	*0.67*		*0.63*	*0.07*	*0.76*	*0.10*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*5.9*	*5.0*	*5.4*		*5.6*	*4.8*	*5.3*	*4.6*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*409*	*349*	*443*		*433*	*288*	*459*	*303*
Delay (s/veh)	*17.54*	*11.78*	*24.56*		*23.12*	*10.35*	*31.03*	*10.35*
LOS	*C*	*B*	*C*		*C*	*B*	*D*	*B*
Approach: Delay (s/veh)	*15.64*		*24.56*		*21.62*		*28.38*	
LOS	*C*		*C*		*C*		*D*	
Intersection Delay (s/veh)	*23.04*							
Intersection LOS	*C*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information		Site Information	
Analyst	*FSB*	Intersection	*#2: Baldwin Av/Sierra Madre Bl*
Agency/Co.	*LLG Engineers*	Jurisdiction	*Sierra Madre*
Date Performed	*10/3/2011*	Analysis Year	*Future Pre-Project*
Analysis Time Period	*PM Peak Hour*		

Project ID *Fountain Square Assisted Living Project/1-11-3932-1*

East/West Street: *Sierra Madre Boulevard* | North/South Street: *Baldwin Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*82*	*235*	*113*	*55*	*136*	*32*
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*88*	*161*	*51*	*32*	*197*	*35*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*R*	*LTR*		*LT*	*R*	*LT*	*R*
PHF	*1.00*	*1.00*	*1.00*		*1.00*	*1.00*	*1.00*	*1.00*
Flow Rate (veh/h)	*317*	*113*	*223*		*249*	*51*	*229*	35
% Heavy Vehicles	*0*	*0*	*0*		*0*	*0*	*0*	*0*
No. Lanes	*2*		*1*		*2*		*2*	
Geometry Group	*5*		*4b*		*5*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.3*	*0.0*	*0.2*		*0.4*	*0.0*	*0.1*	*0.0*
Prop. Right-Turns	*0.0*	*1.0*	*0.1*		*0.0*	*1.0*	*0.0*	*1.0*
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*		*0.0*	*0.0*	*0.0*	*0.0*
hLT-adj	*0.5*	*0.5*	*0.2*	*0.2*	*0.5*	*0.5*	*0.5*	*0.5*
hRT-adj	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.7*	*-0.7*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*	*-0.7*	*-0.0*		*0.2*	*-0.7*	*0.1*	*-0.7*

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*		*3.20*	*3.20*	*3.20*	*3.20*
x, initial	*0.28*	*0.10*	*0.20*		*0.22*	*0.05*	*0.20*	*0.03*
hd, final value (s)	*7.02*	*6.18*	*7.15*		*7.39*	*6.49*	*7.36*	*6.57*
x, final value	*0.62*	*0.19*	*0.44*		*0.51*	*0.09*	*0.47*	*0.06*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*4.7*	*3.9*	*4.8*		*5.1*	*4.2*	*5.1*	*4.3*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*495*	*363*	*471*		*462*	*301*	*460*	*285*
Delay (s/veh)	*20.42*	*10.37*	*15.41*		*17.55*	*9.85*	*16.37*	*9.72*
LOS	*C*	*B*	*C*		*C*	*A*	*C*	*A*
Approach: Delay (s/veh)	*17.78*		*15.41*		*16.25*		*15.49*	
LOS	*C*		*C*		*C*		*C*	
Intersection Delay (s/veh)	*16.47*							
Intersection LOS	*C*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information		Site Information	
Analyst	*FSB*	Intersection	*#2: Baldwin Av/Sierra Madre Bl*
Agency/Co.	*LLG Engineers*	Jurisdiction	*Sierra Madre*
Date Performed	*10/3/2011*	Analysis Year	*Future Plus Project*
Analysis Time Period	*AM Peak Hour*		

Project ID *Fountain Square Assisted Living Project/1-11-3932-1*

East/West Street: *Sierra Madre Boulevard* | North/South Street: *Baldwin Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*73*	*128*	*100*	*96*	*185*	*30*
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*71*	*219*	*38*	*18*	*343*	*53*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*R*	*LTR*		*LT*	*R*	*LT*	*R*
PHF	*1.00*	*1.00*	*1.00*		*1.00*	*1.00*	*1.00*	*1.00*
Flow Rate (veh/h)	*201*	*100*	*311*		*290*	*38*	*361*	53
% Heavy Vehicles	*0*	*0*	*0*		*0*	*0*	*0*	*0*
No. Lanes	*2*		*1*		*2*		*2*	
Geometry Group	*5*		*4b*		*5*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.4*	*0.0*	*0.3*		*0.2*	*0.0*	*0.0*	*0.0*
Prop. Right-Turns	*0.0*	*1.0*	*0.1*		*0.0*	*1.0*	*0.0*	*1.0*
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*		*0.0*	*0.0*	*0.0*	*0.0*
hLT-adj	*0.5*	*0.5*	*0.2*	*0.2*	*0.5*	*0.5*	*0.5*	*0.5*
hRT-adj	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.7*	*-0.7*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.2*	*-0.7*	*0.0*		*0.1*	*-0.7*	*0.0*	*-0.7*

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*		*3.20*	*3.20*	*3.20*	*3.20*
x, initial	*0.18*	*0.09*	*0.28*		*0.26*	*0.03*	*0.32*	*0.05*
hd, final value (s)	*8.20*	*7.30*	*7.77*		*7.95*	*7.10*	*7.65*	*6.91*
x, final value	*0.46*	*0.20*	*0.67*		*0.64*	*0.07*	*0.77*	*0.10*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*5.9*	*5.0*	*5.5*		*5.6*	*4.8*	*5.4*	*4.6*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*407*	*350*	*442*		*432*	*288*	*457*	*303*
Delay (s/veh)	*17.65*	*11.85*	*24.90*		*23.72*	*10.38*	*31.40*	*10.39*
LOS	*C*	*B*	*C*		*C*	*B*	*D*	*B*
Approach: Delay (s/veh)	*15.72*		*24.90*		*22.18*		*28.71*	
LOS	*C*		*C*		*C*		*D*	
Intersection Delay (s/veh)	*23.37*							
Intersection LOS	*C*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information		Site Information	
Analyst	*FSB*	Intersection	*#2: Baldwin Av/Sierra Madre Bl*
Agency/Co.	*LLG Engineers*	Jurisdiction	*Sierra Madre*
Date Performed	*10/3/2011*	Analysis Year	*Future Plus Project*
Analysis Time Period	*PM Peak Hour*		

Project ID *Fountain Square Assisted Living Project/1-11-3932-1*

East/West Street: *Sierra Madre Boulevard* | North/South Street: *Baldwin Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*82*	*236*	*117*	*55*	*138*	*32*
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*93*	*161*	*51*	*32*	*197*	*35*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*R*	*LTR*		*LT*	*R*	*LT*	*R*
PHF	*1.00*	*1.00*	*1.00*		*1.00*	*1.00*	*1.00*	*1.00*
Flow Rate (veh/h)	*318*	*117*	*225*		*254*	*51*	*229*	35
% Heavy Vehicles	*0*	*0*	*0*		*0*	*0*	*0*	*0*
No. Lanes	*2*		*1*		*2*		*2*	
Geometry Group	*5*		*4b*		*5*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.3*	*0.0*	*0.2*		*0.4*	*0.0*	*0.1*	*0.0*
Prop. Right-Turns	*0.0*	*1.0*	*0.1*		*0.0*	*1.0*	*0.0*	*1.0*
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*		*0.0*	*0.0*	*0.0*	*0.0*
hLT-adj	*0.5*	*0.5*	*0.2*	*0.2*	*0.5*	*0.5*	*0.5*	*0.5*
hRT-adj	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.7*	*-0.7*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*	*-0.7*	*-0.0*		*0.2*	*-0.7*	*0.1*	*-0.7*

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*		*3.20*	*3.20*	*3.20*	*3.20*
x, initial	*0.28*	*0.10*	*0.20*		*0.23*	*0.05*	*0.20*	*0.03*
hd, final value (s)	*7.06*	*6.22*	*7.19*		*7.43*	*6.53*	*7.40*	*6.62*
x, final value	*0.62*	*0.20*	*0.45*		*0.52*	*0.09*	*0.47*	*0.06*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*4.8*	*3.9*	*4.9*		*5.1*	*4.2*	*5.1*	*4.3*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*492*	*367*	*469*		*460*	*301*	*457*	*285*
Delay (s/veh)	*20.73*	*10.49*	*15.62*		*18.01*	*9.89*	*16.52*	*9.77*
LOS	*C*	*B*	*C*		*C*	*A*	*C*	*A*
Approach: Delay (s/veh)	*17.97*		*15.62*		*16.65*		*15.63*	
LOS	*C*		*C*		*C*		*C*	
Intersection Delay (s/veh)	*16.71*							
Intersection LOS	*C*							

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APPENDIX C

PARKING DATA

Parking Generation, 4th Edition

An Informational Report of the
Institute of Transportation Engineers

The Institute of Transportation Engineers (ITE) is an international educational and scientific association of transportation professionals who are responsible for meeting mobility and safety needs. ITE facilitates the application of technology and scientific principles to research, planning, functional design, implementation, operation, policy development and management for any mode of ground transportation. Through its products and services, ITE promotes professional development of its members, supports and encourages education, stimulates research, develops public awareness programs and serves as a conduit for the exchange of professional information.

Founded in 1930, ITE is a community of transportation professionals including, but not limited to transportation engineers, transportation planners, consultants, educators and researchers. Through meetings, seminars, publications and a network of 17,000 members, working in more than 90 countries, ITE is your source for expertise, knowledge and ideas.

Parking Generation **is an informational report of the Institute of Transportation Engineers. The information has been obtained from the research and experiences of transportation engineering and planning professionals. ITE informational reports are prepared for informational purposes only and do not include Institute recommendations on which is the best course of action or the preferred application of the data.**

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Printed in the United States of America

Land Use: 254
Assisted Living

Future parking surveys should include the building area, number of dwelling units, occupied dwelling units, bedrooms, beds and employees.

Study Sites/Years

Park Ridge, IL (1988); Arlington County, VA (1989); Petaluma, CA (1998); San Rafael, CA (1998); Fanwood, NJ (2001); Mountainside, NJ (2001); Westfield, NJ (2001); East Northport, NY (2002); Glen Cove, NY (2002); Huntington, NY (2002); Plainview, NY (2002); Westbury, NY (2002); Encinitas, CA (2007); San Diego, CA (2007); Santa Barbara, CA (2007); Cherry Hill, NJ (2008); Mt. Laurel, NJ (2008); Woodbury, NJ (2008); Memphis, TN (2008); Germantown, TN (2008); Haverford Township, PA (2009); Lower Merion Township, PA (2009); Middletown Township, PA (2009); Newtown Township, PA (2009); West Whiteland Township, PA (2009)

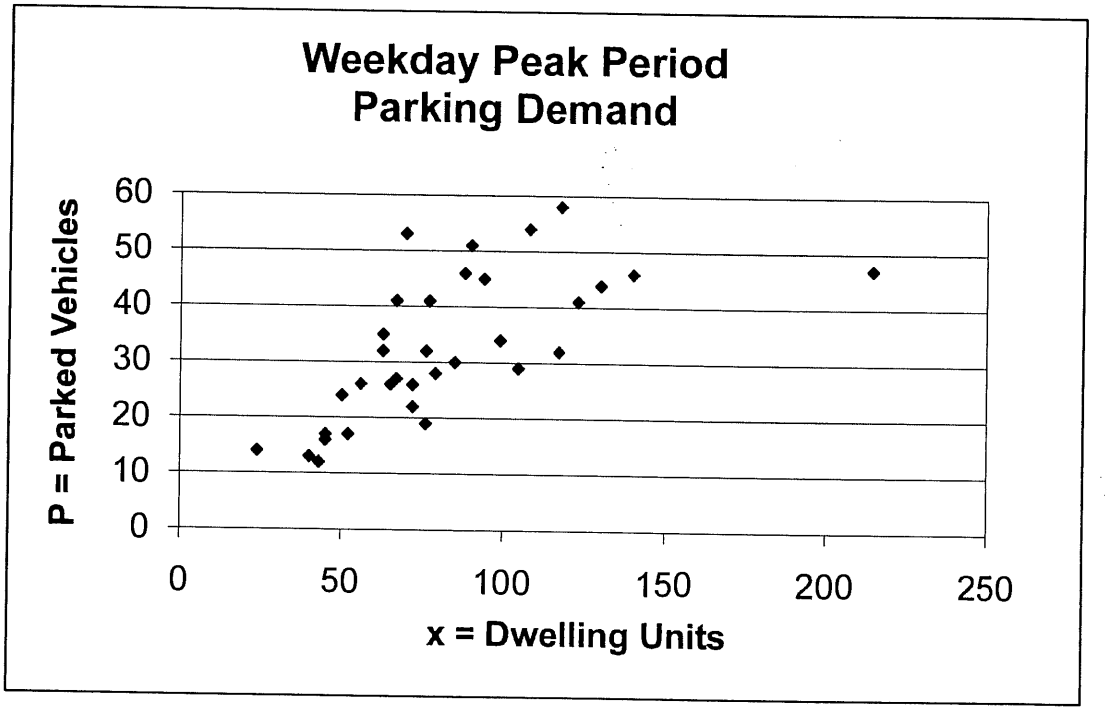
4th Edition Source Numbers

1015, 1100, 1122, 1139, 1151

Land Use: 254
Assisted Living

Average Peak Period Parking Demand vs. Dwelling Units
On a: Weekday

Statistic	Peak Period Demand
Peak Period	9:00 a.m.–3:00 p.m.
Number of Study Sites	33
Average Size of Study Sites	82 dwelling units
Average Peak Period Parking Demand	0.41 vehicles per dwelling unit
Standard Deviation	0.12
Coefficient of Variation	29%
95% Confidence Interval	0.37–0.46 vehicles per dwelling unit
Range	0.22–0.76 vehicles per dwelling unit
85th Percentile	0.54 vehicles per dwelling unit
33rd Percentile	0.34 vehicles per dwelling unit



◆ Actual Data Points

FEHR & PEERS
TRANSPORTATION CONSULTANTS

MEMORANDUM

Date: October 6, 2010

To: Stephen Reller, Palo Alto Commons
Sue Jordan, Palo Alto Commons
Sandy Sloan, Jorgenson, Siegel, McClure & Flegel, LLP

From: Robert Eckols, P.E.
Monica Altmaier

Subject: ***Palo Alto Commons Parking Analysis***

SJ10-1191

This memorandum summarizes a parking analysis prepared for the proposed expansion of the Palo Alto Commons senior housing complex. The proposed expansion will add 44 additional units (rooms) that will support up to 69 additional residents (beds). The parking analysis considered the operations at the existing facility. The existing facility which has 117 units that supports up to 140 residents (beds). At the time of the analysis there were 135 residents. The analysis provides information on the employee, resident and visitor parking.

Existing Parking Supply

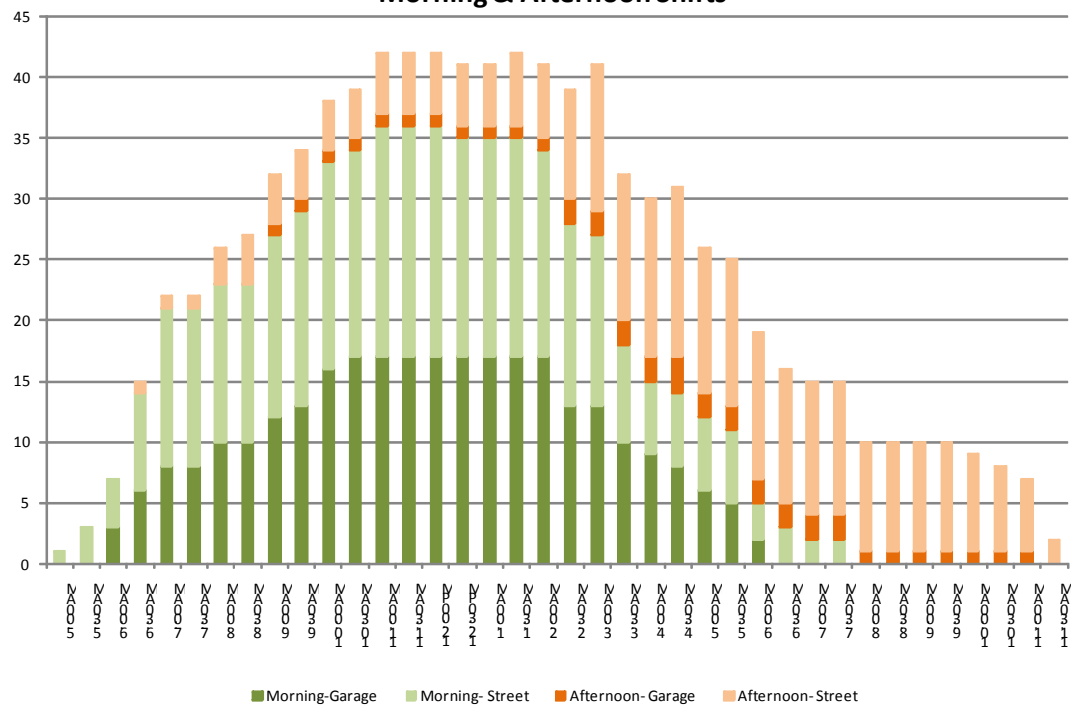
The existing parking supply at the Palo Alto Commons (PAC) includes 48 parking spaces in the underground parking structure and seven (7) surface parking spaces in front of the building for a total of 55 spaces. Two of the parking spaces area designated as handicapped spaces, one in the underground structure and one in the surface lot. The shuttle operated by PAC parks in the surface lot when it is not in use. Delivery trucks park adjacent to the building when making deliveries.

Existing Parking Demand

Fehr & Peers worked with the PAC management to conduct a survey of employees to determine how PAC employees travel to work and the parking demand generated by the PAC staff. Surveys were conducted of the morning and afternoon shifts. All of the employees on site filled out a survey form regarding their mode of travel to work and the hours of their shifts. These surveys were provided to Fehr & Peers and a composite parking demand profile was developed to determine the peak parking demand at the existing facility.

Figure 1 shows the employee parking demand based on the morning and afternoon shifts. Data was not collected for the night shift since there are substantially fewer employees on the site in the evening once food services are completed. Based on the surveys, during the mid-day the peak employee parking demand was 42 spaces. Eighteen (18) employee vehicles were parked on-site in the underground parking structure and the remaining vehicles were parked on public streets adjacent to the site.

Figure 1:
Palo Alto Commons Employee Parking Demand
Morning & Afternoon Shifts



In addition to the employee parking, there are currently six resident vehicles parked on-site. Three of these vehicles are operated by the residents themselves and three are basically stored at the facility and are used by family members when they visit from out of state.

Visitor parking was more difficult to quantify; however, on a typical weekday around fifteen (15) visitors may be on-site at any given time. These visitors include family members, guest, hospice workers, and private aides. Some of the family members are allowed to park in the available secured underground parking.

On a peak delivery day there may be up to five (5) deliveries to the facility related to garbage pickup, recycling, food services, linens/uniforms or other supplies. The majority of the deliveries occur before 7:00 AM. Garbage pick-up occurs six days a week and recycle pick-up occurs on three days. All deliveries are made in the surface parking lot adjacent to the building. These deliveries would continue and be shared by the new facility.

Based on the above information the peak parking demand for the facility would be as follows:

• Employees	42
• Residents	6
• Visitors	15
• Total	63

The current demand at the existing facility exceeds the available supply by eight (8) vehicles; and the current parking management approach does not effectively use the existing parking spaces located underground. Modification of the parking management approach would reduce the number of Palo Alto Commons vehicles parked on the adjacent streets.

The parking ratio for the existing facility would be 0.54 spaces / unit including employees, residents and visitors. Based on this ratio, the parking demand for the proposed expansion would be 24 spaces. The current proposal is to provide 41 spaces at the new facility; therefore, the proposed expansion provides parking at a higher ratio than the current demand generated at the existing facility.

Chapter 18.83 of the Palo Alto ***Municipal Code*** does not have specific parking requirements for assisted living facilities. Of the available land use categories in Chapter 18.83, a convalescent facility is the closest use to the project description. Based on the convalescent facility use, the project would require 22 parking spaces. Table 1 summarizes the parking supply requirements for convalescent facilities. Car ownership of residents in assisted living facilities is generally low (or not allowed); therefore, a facility's parking demand is primarily driven by employee and visitor parking.

TABLE 1
PARKING RATES AND DEMAND ESTIMATES

Source	44-Unit / 55–Occupied Beds Assisted Living Facility	
	Rate[1]	Spaces
Palo Alto Commons Survey	0.54 spaces / unit	24
City of Palo Alto (Convalescent Facility)[2]	1 space per 2.5 beds	22
ITE Parking Generation[3]	0.36 per bed	20
Sunrise Assisted Living Facilities[4]	0.43 per bed	24

Notes:

1 Rate per bed or unit as indicated.

2 ***Palo Alto Municipal Code***, Chapter 18.83.

3 ***ITE Parking Generation,*** 3rd Edition (2004).

4 ***Based on surveys conducted by Fehr & Peers in 2003 at three Sunrise Assisted Living Facilities in the Bay Area.*** Fehr & Peers, February 2010.

Fehr & Peers considered two other sources of parking data for assisted living facilities, which are summarized in Table 1. Parking demand rates from the Institute of Transportation Engineers (ITE) ***Parking Generation*** (3rd Edition, 2004) and parking demand studies for Sunrise Assisted

Living Facilities[1] in the Bay Area were used to determine the typical parking demand for assisted living facilities. The estimated parking demand for the proposed project is 20 spaces using ITE's 85th percentile parking demand rate and 24 spaces based on the data collected for the Sunrise facilities.

While using the existing parking ratio for the expansion of an existing facility is considered standard practice, it was noted that the residents of the new facility will likely be more mobile than the existing residents. Therefore an alternative approach was used to estimate the parking demand of the facility. This approach was based on the following assumptions:

- 40 percent of the units would have a vehicle (residents will be younger/more active)
- Fifteen new employees would be added with a maximum shift of nine (9) employees
- New employees would drive to PAC at the same rate as existing employees (75% drive)
- The ratio of visitors to the number of units would be the same as the current demand, which may be high for assisted living units where residents are more active

Table 2 summarizes the existing and future parking demand based on the above assumptions. There would be 18 parking spaces dedicated to the residents. The commute mode survey results indicated that between 75 to 80 percent of the morning/afternoon shifts drive vehicles to the site; therefore, the nine new employees would generate a demand for 7 parking spaces. There would typically be five visitors on the site. Based on this approach, the demand for parking would be 30 spaces and the proposal is to provide 41 spaces in the expansion.

TABLE 2
PARKING DEMAND & SUPPLY COMPARISON

	Resident	Employee	Visitor	Total Demand	Available Supply	Surplus or Shortfall
Existing Facility	6	42	15	63	55	(8)
Proposed Facility	18	7	5	30	41	10
Overall	24	49	20	93	96	2

Conclusion

Based on the available information, the new expansion would provide a surplus of parking for the number of units added. Therefore, with the proposed expansion and improved management of the existing underground spaces, the parking demand at Palo Alto Commons would be slightly less than the available on-site supply. Implementation of a parking management program would reduce the number of vehicles that currently park on the adjacent streets.

[1] In April 2003 Fehr & Peers conducted parking demand surveys a three Sunrise Assisted Living Facilities in the Bay Area (Petaluma, San Mateo, and Sunnyvale). All three facilities offer 24-hour a day assisted living services in a group setting with regularly scheduled activities, meals, and medical service. The actual parking demand for each site, collected during the weekday and weekend site visits, was compared to the activity of each site reflected in the sign-in logs, if available from the traffic data collection period, and to the automatic driveway count data collected on the same day as the parking survey. Based on the survey results weekday peak average parking demand for the Sunrise facilities is 0.43 parking spaces per occupied bed, with a range between 0.50 and 0.34 parking spaces per room.

ATTACHMENT 1

EMPLOYEE COMMUTER MODE CHOICE

The Palo Alto Commons employee survey captured information on each employee's mode of travel to work. Surveys were conduct for both the morning and afternoon shifts to capture the mode choice and parking demand. A third survey was conducted to capture the overall employee workforce. This third survey captured workers from all three shifts. The table below summarizes the results of the employee mode choice surveys. Based on these results approximately 73% of the employees drive-alone to work during the day shifts when the survey was conducted. The overall survey of employees showed that 67% of the workers drove alone. Approximately 22% of the workers use transit, 13% carpool or are dropped off, and 1% use bicycles.

Table 2

Employee Commute Mode Choice

	Total	Auto Drive Alone	Caltrain Or Bus	Bike	Drop Off	Carpool
Morning Shift	47	35	8	1	3	0
		74%	17%	2%	6%	0%
Afternoon Shift	35	28	4	0	2	1
		80%	11%	0%	6%	3%
Combined Day Shifts	73	53	12	1	5	1
		73%	16%	1%	7%	1%
All Employees	96	64	21	1	8	5
		67%	22%	1%	8%	5%

CITY OF KIRKLAND
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DEPARTMENT OF PUBLIC WORKS
MEMORANDUM

To: Janice Soloff, Planner

From: Thang Nguyen, Transportation Engineer

Date: July 20, 2006

Subject: Merrill Gardens at 201 Kirkland Avenue, Parking Modification Review

This memo summarizes staff review of the applicant's request for a parking modification.

The proposed project consist of a new mixed-use assisted living/retail development. There would be 122 assisted living units and approximately 6,841 gross square foot ground floor retail. Based on Kirkland Parking requirements, the assisted living use is required to provide one stall per unit and the commercial use is required to provide 1 stall per 350 square feet. The applicant is requesting a modification to provide 0.5 stalls per unit for the assisted living use and will meet the City's minimum parking requirement for the commercial use.

Parking Demand Data

Based on data of 66 other Merrill Garden's assisted living facilities, the sub-urban facility has a parking demand of 0.52 and the urban has a demand of 0.42. The difference between the suburban and urban rates is probably because of the availability of transit and services that are nearby.

Based on ITE (Institute of Transportation Engineers) data, assisted living has a peak parking demand rate of 0.36, 0.30 and 0.34 per dwelling unit for weekday, Saturday and Sunday, respectively. The average parking demand rate is 0.33, 0.24 and 0.28 per dwelling unit for weekday, Saturday and Sunday, respectively.

Parking studies at local facilities in the Seattle area suggests a parking rate range between 0.21 to 0.44 stall per unit and a peak staff rate of 0.19 staff per unit.

With a conservative approach, a minimum rate of 0.52 parking stall per unit would adequately serve the proposed development which equates to 63 spaces for the proposed project (122 unit x 0.52 stall per unit). This rate assumes the inclusion of resident, employee, and visitor parking.

Employees parking

From the data of existing Merrill Gardens sites, the employee rate for the peak period between the hours of 9AM and 6PM is 0.27 employees per assisted living unit. Parking studies at local facilities in the Seattle area completed by the traffic consultant results in a peak staff rate of 0.19 staff per unit.

For the proposed project, the estimated number of employees during the peak period is approximately 33 employees (0.27 staff per unit x 122 units); thus, requiring 33 parking spaces.

Residential vehicle ownership

According to the ASHA (American Seniors Housing Association) study, vehicle ownership at assisted living facility is 0.05 vehicles per unit. For 122 units, a minimum of 6 parking stalls are needed for the residents.

Based on staff review of the parking modification and supporting data, staff believes that a parking demand rate of 0.52 stall per unit would be adequate to serve the proposed project. Furthermore, a rate of 0.27 stalls per unit should be allocated to employee parking. A rate of 0.15 stall per unit should be allocated for visitor parking and the rest for residences. For the proposed project the allocation of parking should be as summarized in Table 1.

Table 1. Parking Minimum Requirement for The Assisted Living Use

Users	Number of Units	Parking Rates (stalls per unit)	Number of Stalls
Employees	122	0.27	33
Visitors	122	0.15	18
Residents	122	0.10	12
Total Minimum Parking			**63**

Commercial Retail Parking

The development shall provide a parking supply for the retail use as required by the City of Kirkland Parking Codes.

Appendix D
Noise Impact Analysis

Prepared by:

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Environmental Noise Study for the Proposed Kensington Assisted Living Community in Sierra Madre, CA

Project File 11.032.00
November 30, 2011

Prepared for:

Hogle-Ireland, Inc.
2860 Michelle Drive, Suite 100
Irvine, CA 92606

Prepared by:

David L. Wieland, Principal Consultant

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1 Introduction/Project Description

Fountain Square Development West is proposing to build an assisted living facility that will provide care for seniors, including those with Alzheimer's disease and other memory impairments. The facility, to be licensed as a Residential Care Facility for the Elderly (RCFE) by the California Department of Social Services, will accommodate up to 96 residents.

The project site consists of two contiguous parcels (APN 5768-019-041 and -043) totaling approximately 1.84 acres located at 235 W. Sierra Madre Boulevard in the City of Sierra Madre. (Refer to Figure 1-1 for the location of the project.) More specifically, this parcel is bounded by Sierra Madre Boulevard to the south, Hermosa Avenue to the east, residential uses to the north and a vacant commercially zoned lot to the west. It is situated north of the Sierra Madre City Hall and approximately one mile north of the Foothill (I-210) Freeway.

The project site is surrounded by a mix of commercial, residential, civic/institutional, park and church uses. The City Hall, Police Headquarters and Memorial Park are located across Sierra Madre Boulevard from the project site. Established commercial and church uses are present toward the west and east along Sierra Madre Boulevard. Residential uses, including four single-family homes and a 20-unit condominium building, are located north of the project site.

Referring to Figure 1-2, the facility design involves a two-story, "H" shaped building envelope totaling approximately 58,000 gross square feet and offering up to 75 suites, administrative offices, resident common areas for dining, living and socializing. Other spaces will be provided for fitness, physical therapy, wellness activities, along with staff offices, commercial kitchen and commercial laundry. Common use gardens, patios and sitting areas will also be incorporated throughout the facility grounds. The H-shaped building footprint will occupy the easterly portion of the project site, with its perimeter ringed by a garden path, landscaping and seating areas. Two open-air courtyards will be provided within the recessed areas along the north and south faces of the building.

Building setbacks from residential properties along the northerly (rear) property line range between 21 and 50 feet. The parking area maintains a minimum landscape setback of 10 feet from residential properties located along the north property line.

Loading areas and trash enclosures will be located behind the northwest corner of the building and accessed directly from the northeast corner of the parking/driveway area. These facilities are set back between 5 to 10 feet from the rear property line.

This technical noise study identifies and assesses the potential noise and vibration impacts associated with the construction and operation of The Kensington Assisted Living Facility in the City of Sierra Madre.

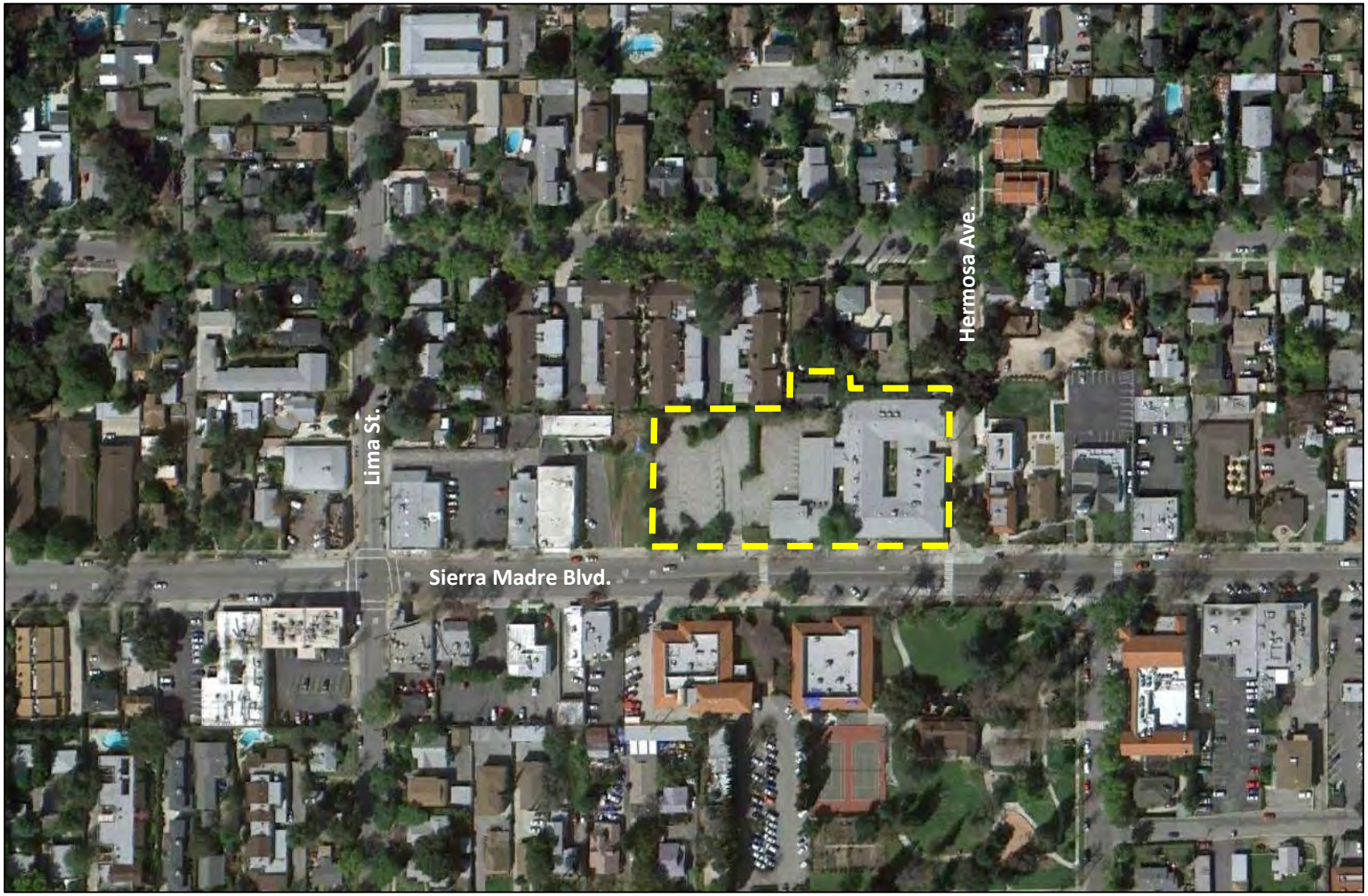

Figure 1-1. Location of the Project Site

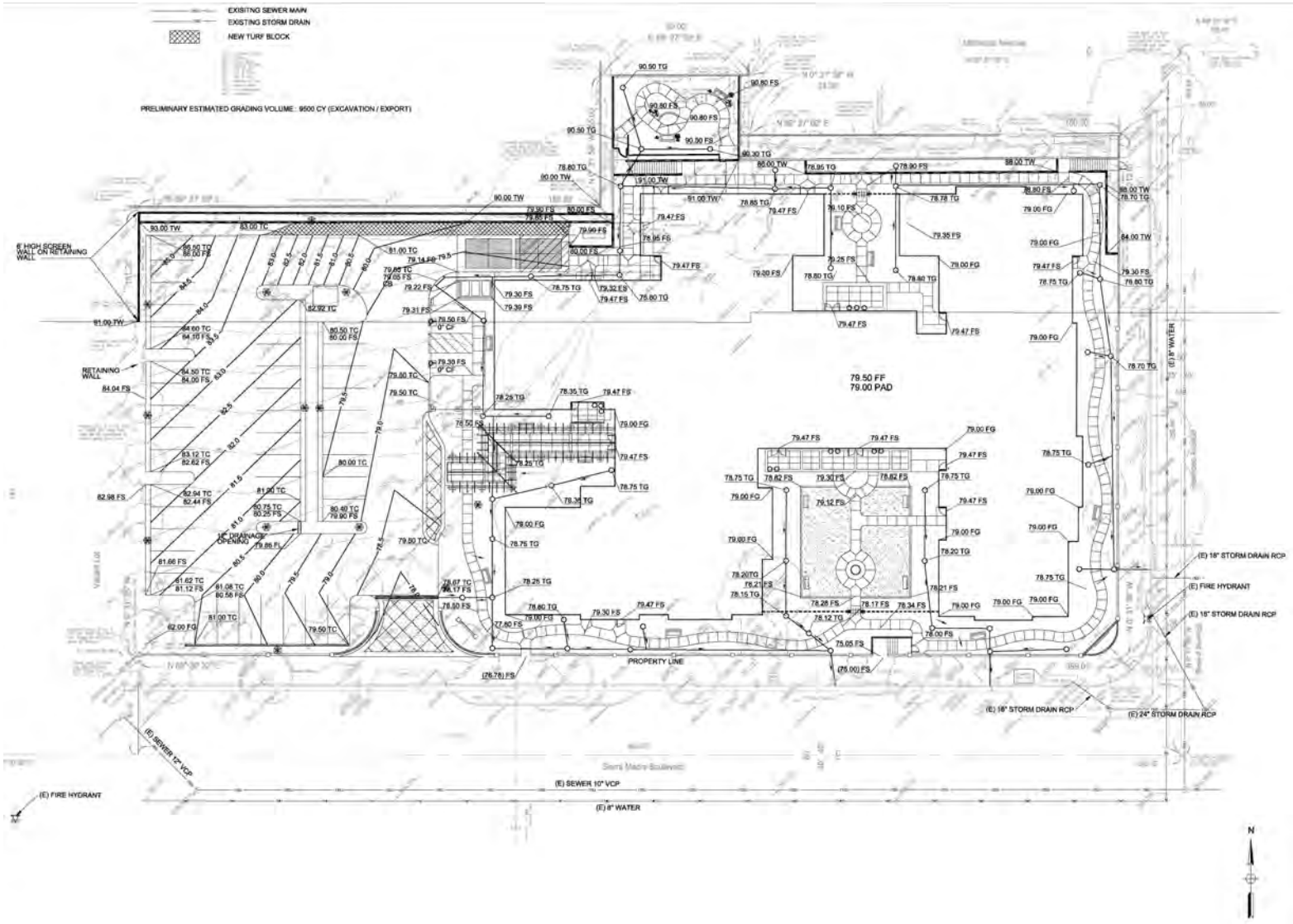

Figure 1-2. Proposed Land Use Plan

2 Fundamentals of Sound

Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to the human ear. The medium of main concern for environmental noise is air. Noise is most simply defined as unwanted sound.

In its most basic form, a sound can be described by its *frequency* and its *amplitude*. As a sound wave propagates past a point in the air it causes the air to alternate from a state of compression to a state of rarefaction. The number of times per second that the wave passes from a state of maximum compression through a period of rarefaction and back to a state of maximum compression is the frequency. The amplitude describes the maximum pressure disturbance caused by the wave; that is, the difference between the "resting" pressure in the air when no sound is present and the pressure during the state of maximum compression or rarefaction caused by the sound wave.

Frequency is expressed in cycles per second, or Hertz (Hz). One Hertz equals one cycle per second. High frequencies are sometimes more conveniently expressed in units of kilohertz (kHz) or thousands of Hertz. The extreme range of frequencies that can be heard by the healthiest human ear spans from 16 to 20 Hz on the low end to about 20,000 Hz on the high end. Frequencies are heard as the pitch or tone of sound. High frequencies produce high-pitched sounds; low frequencies produce low-pitched sounds. Very-low-frequency airborne sound of sufficient amplitude may be felt before it can be heard, and can be confused with groundborne vibration.

For any given frequency, an increase in amplitude correlates to an increase in loudness and a decrease in amplitude correlates to a decrease in loudness. The measurement and description of amplitude is discussed further in Section 3.

3 Noise Descriptors

The following sections briefly describe the noise descriptors that will be used throughout this study:

3.1 Decibels

The magnitude of a sound is typically described in terms of sound pressure level (SPL) which refers to the root-mean-square (rms) pressure of a sound wave and can be measured in units called microPascals (µPa). However, expressing sound pressure levels in terms of µPa would be very cumbersome since it would require a very wide range of numbers (approximately 20 to 20,000,000 µPa over the entire range of human hearing). For this reason, sound pressure levels are stated in terms of decibels, abbreviated dB. The decibel is a logarithmic unit that describes the ratio of the actual sound pressure to a reference pressure (20 µPa is the standard reference pressure level for acoustical measurements in air). Specifically, a sound pressure level, in decibels, is calculated as follows:

$$SPL = 20\log_{10}\left(\frac{X}{20\mu Pa}\right)$$

where *X* is the actual sound pressure and 20 µPa is the reference pressure.

Since decibels are logarithmic units, sound pressure levels cannot be added or subtracted by ordinary arithmetic means. For example, if one automobile produces a sound pressure level of 70 dB when it passes an observer, two cars passing simultaneously would not produce 140 dB. In fact, they would combine to produce 73 dB.

3.2 A-Weighting

While sound pressure level defines the amplitude of a sound, this alone is not a reliable indicator of loudness. Human perception of loudness depends on the characteristics of the human ear. In particular, the frequency or pitch of a sound has a substantial effect on how humans will respond. Human hearing is limited not only to the range of audible frequencies, but also in the way it perceives sound pressure levels within that range. In general, the healthy human ear is most sensitive to sounds between 1,000 Hz and 5,000 Hz, and perceives both higher and lower frequency sounds of the same magnitude as being less loud. In order to better relate noise to the frequency response of the human ear, a frequency-dependent rating scale, known as the A-Scale, is used to adjust (or "weight") the sound level measured by a sound level meter. The resulting sound pressure level is expressed in A-weighted decibels or dBA. When people make relative judgments of the loudness or annoyance of most ordinary everyday sounds, their judgments correlate well with the A-scale sound levels of those sounds. A range of noise levels associated with common indoor and outdoor activities is shown in Figure 3-1.

3.3 Equivalent Sound Level (L_{eq})

Many noise sources produce levels that fluctuate over time; examples include mechanical equipment that cycles on and off, or construction work which can vary sporadically. The equivalent sound level (L_{eq}) describes the average acoustical energy content of noise for an identified period of time, commonly 1 hour. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy over the duration of the exposure. For many noise sources, the L_{eq} will vary depending on the time of day – a prime example is traffic noise which rises and falls depending on the amount of traffic on a given street or freeway.

3.4 Community Noise Equivalent Level (CNEL)

It is recognized that a given level of noise may be more or less tolerable depending on the duration of the exposure experienced by an individual, as well as the time of day during which the noise occurs. The community noise equivalent level (CNEL) is a measure of the cumulative 24-hour noise exposure that considers not only the variation of the A-weighted noise level but also the duration and the time of day of the disturbance. The CNEL is derived from the twenty-four A-weighted 1-hour L_{eq}s that occur in a day, with "penalties" applied to the L_{eq}s occurring during the evening hours

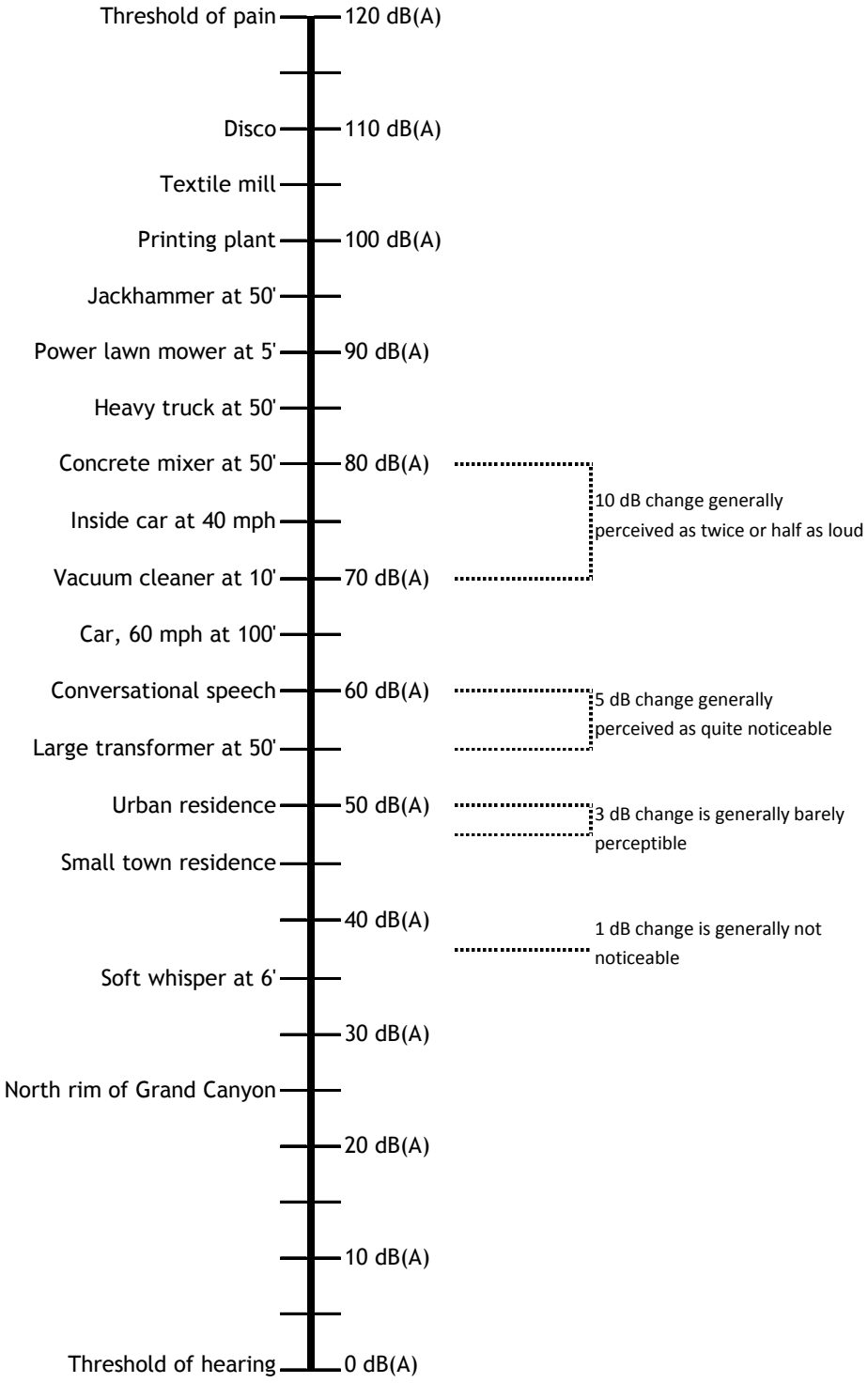

Figure 3-1. Common Noise Sources and A-Weighted Noise Levels

(7 p.m. to 10 p.m.) and nighttime hours (10 p.m. to 7 a.m.) to account for increased noise sensitivity during these hours. Specifically, the CNEL is calculated by adding 5 dBA to each of the evening L_{eq}s, adding 10 dBA to each of the nighttime L_{eq}s, and then taking the average value for all 24 hours. It is noted that various state and local agencies have adopted CNEL as the measure of community noise, including the State Department of Aeronautics and the California Commission on Housing and Community Development. Figure 3-2 indicates the typical outdoor CNEL at various locations for typical noise sources.

3.5 Maximum Sound Level (L_{max})

The maximum sound level refers to the maximum rms level that occurs during a noise measurement. More specifically, L_{max} is the rms sound level that corresponds to the noisiest 1-second interval during the measurement.

Figure 3-2. Common CNEL Noise Exposure Levels at Various Locations

4 Noise Criteria

The following sections discuss the various noise criteria that have been considered for this study.

4.1 State of California Noise Insulation Standards

The California noise insulation standards were officially adopted by the California Commission of Housing and Community Development in 1974. In November, 1988, the Building Standards Commission approved revisions to these standards (Title 24, Part 2, California Code of Regulations). The ruling states that "Interior noise levels attributable to exterior sources shall not exceed 45 dB in any habitable room. The noise metric shall be either Ldn or CNEL, consistent with the noise element of the local general plan." Additionally, the commission specifies that multi-family residential buildings or structures to be located within exterior CNEL (or Ldn) contours of 60 dB or greater of an existing or adopted freeway, expressway, parkway, major street, thoroughfare, rail line, rapid transit line, or industrial noise source shall require an acoustical analysis showing that the building has been designed to limit intruding noise to an interior CNEL (or Ldn) of 45 dB. In addition, the State standards set minimum ratings for the sound and impact transmission of party wall and floor/ceiling separations.

4.2 City of Sierra Madre Municipal Code

The City's Municipal Code identifies the following noise standards which apply to the project:

1. No person shall produce, suffer or allow to be produced by any machine or device, or any combination of same, on commercial or industrial property, a noise level more than 8 dBA above the local ambient at any point outside of the property plane. (Section 9.32.040)
2. Any noise source which does not produce a noise level exceeding 80 dBA at a distance of 25 feet under its most noisy condition of use shall be exempt from the provisions of Section 9.32.040 between the hours of 7:00 a.m. and 9:00 p.m. daily except Sundays and holidays, when the exemption herein shall apply between 10:00 a.m. and 6:00 p.m. (Section 9.32.060A)
3. Notwithstanding any other provision of Chapter 9.32, 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 if the noise level at any point outside the property plane shall not exceed 85 dBA. (Section 9.32.060C)

4.3 City of Sierra Madre General Plan

The Noise Element of the General Plan for the City of Sierra Madre provides the following policies that apply to the project:

1. Formulate measures to mitigate noise impacts from mobile and stationary noise sources through compatible land use planning and the discretionary review of development projects.

2. Identify and control the noise levels associated with transportation and general circulation patterns in the City to insure the residential quality of the community.
3. Require that construction activities be limited to reasonable weekday and weekend/holiday hours which reduce noise impacts on adjacent residences.
4. Require that construction activities incorporate feasible and practical techniques which minimize the noise impacts on adjacent uses.

5 Fundamentals of Groundborne Vibration

Groundborne vibration is an oscillatory motion which can be described in terms of displacement, velocity, or acceleration. Each of these measures can be further described in terms of frequency and amplitude. Displacement is the easiest descriptor to understand; it is simply the distance that a vibrating point moves from its static position (i.e., its resting position when the vibration is not present). The velocity describes the instantaneous speed of the movement and acceleration is the instantaneous rate of change of the speed.

Although displacement is fundamentally easier to understand than velocity or acceleration, it is rarely used for describing groundborne vibration, for the following reasons: 1) human response to groundborne vibration correlates more accurately with velocity or acceleration; 2) the effect on buildings and sensitive equipment is more accurately described using velocity or acceleration; and, 3) most transducers used in the measurement of groundborne vibration actually measure either velocity or acceleration. For this study velocity is the fundamental measure used to evaluate the effects of groundborne vibration; the precise vibration descriptors used are described in Section 7.

6 Vibration Descriptors

6.1 Peak Particle Velocity (PPV)

Vibration consists of rapidly fluctuating motions with an average motion of zero. The peak particle velocity (PPV) is defined as the maximum instantaneous positive or negative peak amplitude of the vibration velocity. The accepted unit for measuring PPV in the USA is inches per second (in/s); therefore, this is the unit that is used throughout this report. PPV is only applicable to this project in the assessment of potential building damage due to groundborne vibration from construction activities or light rail operations on the adjacent Exposition Line. (PPV is related to the stresses that are experienced by buildings subjected to groundborne vibration.)

6.2 Vibration Velocity Level (L_V)

Although PPV is appropriate for evaluating the potential for building damage, it is not suitable for evaluating human response to groundborne vibration. It takes some time for the human body to respond to vibration signals. In a sense, the human body responds to an “average” vibration amplitude. However, the actual average level is not a useful measure of vibration because the net

average of a vibration signal is zero. Instead, vibration velocity level (L_V) is used for evaluating human response. L_V describes the root mean square (rms) velocity amplitude of the vibration. This rms value may be thought of as a "smoothed" or "magnitude-averaged" amplitude. The rms of a vibration signal is typically calculated over a 1 second period. The maximum L_V describes the maximum rms velocity amplitude that occurs during a vibration measurement.

L_V can be measured in inches per second (in/s). However, expressing these levels in terms of in/s would be very cumbersome since it would require a very wide range of numbers. For this reason, L_V is stated in terms of decibels. Although it is not a universally accepted notation, the abbreviation "VdB" is used throughout this report to denote vibration velocity level decibels in order to reduce the potential for confusion with sound level decibels. The VdB is a logarithmic unit that describes the ratio of the actual rms velocity amplitude to a reference velocity amplitude. The accepted reference velocity amplitude is 1×10^{-6} in/s in the USA; therefore, this is the reference amplitude that is used throughout this report (it is noted that the accepted reference level varies globally and much confusion can arise if the reference is not clearly stated). Specifically, a vibration velocity level (L_V), in decibels (VdB), is calculated as follows:

$$L_V = 20\log_{10}\left(\frac{V}{1\times10^{-6}\,in./s}\right),$$

where *V* is the actual rms velocity amplitude and 1×10^{-6} in/s is the reference velocity amplitude.

Since decibels are logarithmic units, vibration velocity levels cannot be added or subtracted by ordinary arithmetic means.

7 Vibration Criteria

Groundborne vibration can potentially produce two types of impact: 1) annoyance or interference with vibration-sensitive activities, and 2) vibration-induced building damage. The City of Sierra Madre does not have standards to address vibration impacts. Therefore, the criteria discussed in the following sections have been used in this study.

7.1 Annoyance or Interference with Vibration-Sensitive Activities

Criteria developed by the Federal Transit Administration **[1]** indicate that when groundborne vibration exceeds 72 VdB, it is usually perceived as annoying to occupants of residential buildings. For schools, churches, other institutions, and quiet offices, a groundborne vibration level of more than 75 VdB is usually perceived as annoying.

7.2 Vibration-Induced Building Damage

General vibration damage criteria developed by the Federal Transit Administration **[1]** are summarized as follows:

Table 8-1. FTA Construction Vibration Damage Criteria

Building Category	PPV (in/s)
Reinforced concrete, steel or timber (no plaster)	0.5
Engineered concrete and masonry (no plaster)	0.3
Non-engineered timber and masonry buildings	0.2
Buildings extremely susceptible to vibration damage	0.12

Caltrans **[2]** uses the following criteria to evaluate the severity of problems associated with vibration:

Table 8-2. Caltrans Vibration Damage Criteria

Building Category	PPV (in/s)	
	Continuous Sources	Transient Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.08	0.12
Fragile buildings	0.1	0.2
Historic and some old buildings	0.25	0.5
Older residential structures	0.3	0.5
New residential structures	0.5	1.0
Modern industrial/commercial buildings	0.5	2.0

8 Thresholds of Significance

Based on the noise criteria discussed above, and the CEQA guidelines, a significant impact will be assessed if the project will result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the Sierra Madre General Plan and Section 9.32 of the Sierra Madre Municipal Code, or applicable standards of other agencies. This impact will occur if:
  1. The interior CNEL exceeds 45 dB within the proposed facility; or
  2. Mechanical equipment at the proposed facility exceeds 80 dBA at a distance of 25 feet from the source between the hours of 7:00 a.m. and 9:00 p.m. on Monday through Saturday, or between the hours of 10:00 a.m. and 6:00 p.m. on Sundays and holidays; or
  3. Mechanical equipment and activities at the proposed facility produce a noise level more than 8 dBA above the local ambient at any point beyond the property line.
- Exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels. This impact will occur if:
  1. Any project construction activity causes the vibration velocity level (L_v) to exceed 72 VdB at any residential building or 75 VdB at any office or institutional building; or,
  2. The PPV at any off-site building due to project construction exceeds 0.20 in/s.

- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. This impact will occur if:

  1. Project traffic increases the CNEL at any off-site noise-sensitive receptor[1] by a perceptible amount of 3 dB or more; or

  2. Mechanical equipment and activities at the proposed facility produce a noise level more than 8 dBA above the local ambient at any point beyond the property line.

- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. This impact will occur if the construction noise level at any point beyond the property line exceeds 85 dBA.

- Exposure of persons residing or working on the project site to excessive noise levels as a result of activities at an airport. Since there are no airports in the vicinity of the project, this threshold will not be considered further in this study.

9 Existing Noise Environment

The following sections discuss the noise measurements and analyses that were conducted to identify the existing noise levels in the study area.

9.1 Noise Measurements

Measurements were obtained at four locations in order to document the existing noise environment throughout the study area. (Refer to Figure 9-1.) The results of the noise measurements, provided in Appendix I, are summarized in Table 9-1.

Table 9-1. Summary of Noise Measurements

Location #	Location Description	Measurement Date	Measurement Period	Measured Average Noise Level (L_{eq}), dBA
1	On project site near northern property line.	Sept. 14, 2011	10:10 am - 10:30 am	51.0
2	In parking lot of commercial property west of project site.	Sept. 14, 2011	10:35 am - 10:55 am	53.2
3	In park at offset of City Hall from Sierra Madre Blvd.	Sept. 14, 2011	11:00 am - 11:25 am	59.5
4	At nearest home on Hermosa to project site.	Sept. 14, 2011	11:30 am - 12:00 pm	50.8

The instrumentation used to obtain the noise measurements consisted of an integrating sound level meter (Model 820) and an acoustical calibrator (Model CAL200) manufactured by Larson Davis Laboratories. The accuracy of the calibrator is maintained through a program established by the manufacturer, and is traceable to the National Bureau of Standards. All instrumentation meets the requirements of the American National Standards Institute (ANSI) S1.4-1971.

[1] For the purposes of this study, an off-site noise-sensitive receptor is considered to be a single- or multi-family residence, school, convalescent or acute care hospital, park or recreational area, or church.

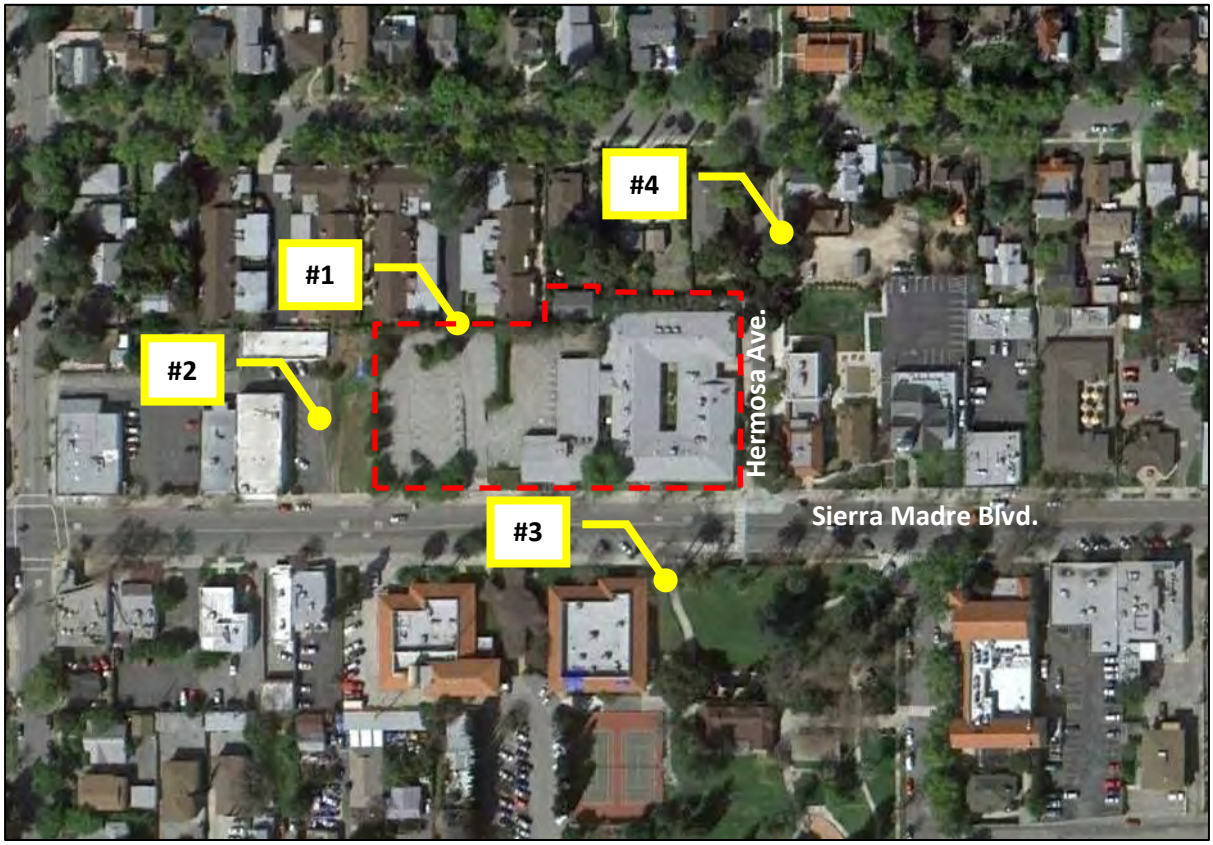

Figure 9-1. Noise Measurement Locations

9.2 Traffic Noise Exposures

The analysis of traffic noise was conducted using the lookup tables developed by the Federal Highway Administration for their Traffic Noise Model (TNM) **[3, 4]**. The model was used to estimate existing traffic noise levels adjacent to Sierra Madre Boulevard based on traffic volumes, speeds, truck mix, site conditions, and distance from the roadway to the receptor. The results of the modeling effort, provided in Appendix II, are summarized in Table 9-2. Referring to the table, the results are presented in terms of an unmitigated CNEL at the distance of the nearest noise-sensitive receptor from the centerline of the street.

Table 9-2. Existing Traffic Noise Levels

Street Segment	Unmitigated CNEL @ Nearest Receptor	Distance to CNEL Contour From Street Centerline, feet		
		60 dB	65 dB	70 dB
Sierra Madre Boulevard Michillinda Ave to Baldwin Ave	59.6 dB	45'	N/A	N/A

10 Future Noise Environment at Off-Site Locations within the Study Area

For ease of presentation, the discussion of future conditions in the study area with the project has been divided into two sections: construction/demolition and operation. Each is discussed in greater detail in the following sections.

10.1 Demolition and Construction at the Project Site

The proposed development requires demolition of the existing institutional and residential buildings (totaling approximately 33,695 square feet combined) and removal of existing trees to clear the site. Mature oleanders along the northern edge of the project that currently screen residential properties may be retained to function as a construction screen, and possibly preserved and incorporated into the future landscaping program.

The project site elevation will be graded to lower the building pad by approximately 3.5 feet. This will require the export of approximately 9,500 cubic yards of earth from the project site. Retaining walls will be incorporated to accommodate the site cuts. The existing wall along Sierra Madre Boulevard and Hermosa Avenue will be rebuilt to retain the resulting grade and designed to fit the new building style and complement the landscape program. The existing retaining wall along the north property line will be remain in place and a new lower-tier stepped wall will be incorporated to accommodate the new cut elevation along this edge. The west wall will be modified to accommodate the resulting grade.

The adjacent street grades will not be modified and any disturbance to curbs, sidewalks, and asphalt surfacing that may have been damaged during construction will be repaired to pre-construction condition.

Construction of the proposed project is anticipated to start during spring 2012 and be completed by mid-summer 2013, lasting approximately 16 - 18 months. Demolition of the existing structures is anticipated to start in March 2012 and may require up to 8 weeks for completion. Other site preparatory work and grading is anticipated to start in May 2012 and would run concurrently with demolition efforts, lasting approximately 8 weeks. Construction is anticipated to start in July 2012 and require approximately 10 months for completion. Site finishing work is anticipated during late spring 2013 with a target occupancy/opening date in July 2013.

Construction activities will be conducted in compliance with City requirements and in a manner that minimizes disruption to the surrounding community. A construction management plan, including details for project staging, haul routes, and erosion control plans will be prepared and provided to the City for approval prior to initiation of any site preparation or construction activity. Construction activity will be limited to between the hours of 7:00 a.m. and 5:00 p.m. Monday through Saturday.

In addition, the project developer intends to minimize disruption to adjacent properties and on the local roadways by managing the storage of construction materials and vehicle staging within the project site. Further, the general contractor will be required to have a designated community liaison

on-site to assist with any community concerns and ensure that construction activity is managed in accordance with the approved Construction Management Plan.

Construction noise levels in the vicinity of the project will fluctuate depending on the particular type, number and duration of use of various pieces of construction equipment. The exposure of persons to the periodic increase in noise levels will be short-term. Table 10-1 shows typical noise levels associated with the various types of construction-related machinery that will be used at the project site.

Table 10-1. Construction Noise Levels

Equipment Type or Activity	Typical Maximum Noise Level at 50 ft. in dBA
Backhoe	77.6
Dozer	81.7
Dump Truck	76.5
Excavator	80.7
Grader	85.0
Loader	79.1
Man-Lift	74.7
Paver	77.2
Pickup Truck	75.0
Pneumatic Tools	85.2
Roller	80.0
Tamper (compactor)	83.2
Water Truck	76.5
Source: Roadway Construction Noise Model 1.0. Federal Highway Administration. February 2, 2006.	

Five phases of construction have been identified by the project applicant. These, together with the number and type of equipment to be used during each construction phase, are provided in Table 10-2. The table also provides an analysis of the estimated overall construction noise levels during each phase.

Table 10-2. Estimated Combined Noise Level During Each Construction Phase

Construction Phase & Equipment	Typical Maximum Noise Level at 50 ft	Usage Factor[1]	Avg. Equipment Noise Level @ 50' with Usage Factor
Demolition			
2 excavators	80.7 dBA	0.4	79.7 dBA
1 backhoe	77.6 dBA	0.4	73.6 dBA
1 loader	79.1 dBA	0.4	75.1 dBA
1 dozer	81.7 dBA	0.4	77.7 dBA
4 dump trucks	76.5 dBA	0.4	78.5 dBA
1 water truck	76.5 dBA	0.4	72.5 dBA
3 pickup trucks	75.0 dBA	0.4	75.8 dBA
Combined			*85.2 dBA*
Site Preparation			
1 excavator	80.7 dBA	0.4	76.7 dBA
1 backhoe	77.6 dBA	0.4	73.6 dBA
4 dump trucks	76.5 dBA	0.4	78.5 dBA
1 loader	79.1 dBA	0.4	75.1 dBA
1 water truck	76.5 dBA	0.4	72.5 dBA
3 pickup trucks	75.0 dBA	0.4	75.8 dBA
Combined			*83.6 dBA*
Grading			
1 backhoe	77.6 dBA	0.4	73.6 dBA
1 grader	85.0 dBA	0.4	81.0 dBA
2 dump trucks	76.5 dBA	0.4	75.5 dBA
1 water truck	76.5 dBA	0.4	72.5 dBA
3 pickup trucks	75.0 dBA	0.4	75.8 dBA
1 loader	79.1 dBA	0.4	75.1 dBA
Combined			*84.4 dBA*
Building Construction			
4 man-lifts	74.7 dBA	0.2	67.7 dBA
Pneumatic Tools	85.2 dBA	0.5	82.2 dBA
Combined			*82.4 dBA*
Paving			
1 paver	77.2 dBA	0.5	74.2 dBA
2 rollers	80.0 dBA	0.2	76.0 dBA
2 compactors	83.2 dBA	0.2	79.2 dBA
3 dump trucks	76.5 dBA	0.4	72.5 dBA
Combined			*82.2 dBA*

Source: Roadway Construction Noise Model 1.0. Federal Highway Administration. February 2, 2006.

Notes:

1. Percentage of time equipment is operating at noisiest mode in most used phase on site.

Based on the estimated combined construction noise levels identified in Table 10-2, an analysis was conducted to estimate the noise levels that will be experienced at the nearest off-site noise-sensitive receptors. It has been assumed in this study that the types and numbers of construction equipment identified in Table 10-2 represent the activity that will occur simultaneously on site during each phase of construction. To simplify the analysis of average noise levels, it has been

further assumed that all of the construction activity is located around the center of the site. This analysis is provided in Table 10-3.

Table 10-3. Analysis of Estimated Average Construction Noise Levels

Noise-Sensitive Location	Construction Phase	Estimated Avg. Level @ 50', dBA	Attenuation Due to Distance, dBA[1]	Estimated Construction Noise at Sensitive Location, dBA
Existing residential to the north	Demolition Site Prep Grading Bldg. Const. Paving	85.2 83.6 84.4 82.4 82.2	-5.6 (95')	79.6 78.0 78.8 76.8 76.6
Existing church to the east	Demolition Site Prep Grading Bldg. Const. Paving	85.2 83.6 84.4 82.4 82.2	-14.3 (260')	70.9 69.3 70.1 68.1 67.9
Existing City Hall to the south	Demolition Site Prep Grading Bldg. Const. Paving	85.2 83.6 84.4 82.4 82.2	-10.9 (175')	74.3 72.7 73.5 71.5 71.3
Existing commercial to the west	Demolition Site Prep Grading Bldg. Const. Paving	85.2 83.6 84.4 82.4 82.2	-11.8 (195')	73.4 71.8 72.6 70.6 70.4

Notes:

1. Attenuation is based on a reduction of 6 dB for every doubling of distance from the source. Distance is calculated from the center of an average parcel.

Referring to the analysis of Table 10-3, the average noise levels produced by all phases of construction are expected to be less than the threshold of 85 dBA. Therefore, the impact of the average construction noise level is expected to be less than significant.

Referring to Table 10-1, the noisiest piece of construction equipment to be used at the project site is expected to produce a maximum noise level of about 85 dBA at a distance of 50 feet. Since the construction equipment will operate closer than 50 feet from the property line, it may be concluded that the maximum construction noise level will exceed the threshold of 85 dBA; this is a significant impact.

The primary vibratory source during the construction of the project will be large bulldozers. Based on published data **[1]**, typical bulldozer activities generate a peak particle velocity (PPV) of 0.089 in/s and a vibration level (L_V) of 87 VdB at a distance of 25 feet. Using these values, an analysis was conducted to estimate the groundborne vibration levels that will be experienced at the nearest adjacent buildings during construction of the project. The results of this analysis are summarized in Table 10-4.

Table 10-4. Estimated Construction Vibration Levels

Location	Distance	Estimated PPV	Estimated L_V
Nearest residential building	20'	0.124 in/s	90 VdB
Nearest church building	50'	0.031 in/s	78 VdB
Nearest City Hall building	100'	0.011 in/s	69 VdB
Nearest commercial building	60'	0.024 in/s	76 VdB

Referring to Table 10-4, the PPV is not expected to exceed the threshold of 0.200 in/s at any of the nearest buildings to the project site during construction. Therefore, the impact is not significant.

As indicated in Table 10-4, the L_V threshold of 72 VdB is expected to be exceeded at the residential properties north of the project site, and the L_V threshold of 75 VdB is expected to be exceeded at the nearest church building to the east and at the nearest commercial building to the west. Therefore, the impact is potentially significant at these locations. No significant impact is expected at the City Hall buildings to the south.

10.2 Project Operation

The proposed project will introduce a number of new noise sources into the study area. For ease of presentation, they have been divided into five categories: (1) Additional traffic on the local streets; (2) Typical on-site equipment and activities; (3) Truck deliveries; (4) Trash pickups; and (5) Emergency generator maintenance and operation. Each of these is discussed in the following sections.

The operation of the project is not expected to generate groundborne vibration levels that will be perceptible beyond the property lines. Therefore, this impact is not significant.

10.2.1 Additional Traffic

Using data provided by Linscott, Law & Greenspan **[5]**, analyses were conducted to identify the future traffic noise exposures that will occur along Sierra Madre Boulevard with and without the project. The analyses were conducted using the Federal Highway Administration's Traffic Noise Model (TNM) lookup tables. The results of the analyses, provided in Appendix II, are summarized as follows:

Table 10-5. Future Traffic Noise Levels

Case	Average Daily Traffic		CNEL @ Nearest Sensitive Receptor		Change in CNEL Due to Project
	Without Project	With Project	Without Project	With Project	
Existing	7,155	7,313	59.6 dB	59.7 dB	0.1 dB
Future	7,298	7,456	59.6 dB	59.7 dB	0.1 dB

As indicated in Section 8 of this report, a significant traffic noise impact will occur if project traffic results in an increase in CNEL of 3 dB or more at a noise-sensitive receptor. Referring to Table 10-5, this will not be the case; therefore, the impact of the project is not significant.

10.2.2 Typical Daily On-Site Operations

There are several noise sources that will be associated with the typical day-to-day operation of the project. These include rooftop mechanical equipment, parking lot activities, people talking in the courtyard and outdoor area on the north side of the project site, and employees emptying trash into the outdoor trash containers. Several assumptions have been made regarding the operation of the project in order to analyze project noise levels. These assumptions are as follows:

- Rooftop mechanical equipment will be set in roof wells, with the back of the mansard or parapet wall designed to screen the equipment visually. Because no rooftop plans are available, it has been assumed that all of the rooftop equipment is distributed evenly over the surface of the roof.
- 15 vehicles enter and 13 vehicles leave the parking lot during the busiest hour of the day.
- 6 people will be in the courtyard and 6 people will be in the outdoor area on the north side of the project site during the busiest period of the day.

The following sources, levels and durations were used in the analysis of noise generated by typical operations at the project site:

Table 10-6. Noise Source Data Used in the Analysis of Typical Daily Operations

Noise Source	Sound Power Level	Duration or Number	Data Source
Parking lot activities	63.1 dBA per movement	Continuous	SoundPLAN 6.5 database
People talking	65.0 dBA per person	12	SoundPLAN 6.5 database
Rooftop heat pumps	70.6 dBA	75	Carrier (Model 38QRR)
Rooftop condensing units	85.3 dBA	7-10	Carrier (Model 48HC)

Based on the assumptions presented above, and using the data presented in Table 10-6, an analysis was conducted using a 3-dimensional computer noise model developed with SoundPLAN software (version 6.5). SoundPLAN takes a number of significant variables into account, including the distance from sources to the receptors, the heights of sources and receptors, ground conditions, barrier effects provided by walls or buildings, and reflections of noise off hard surfaces.

The results of the analysis are presented as a noise contour map in Figure 10-1. Table 10-7 summarizes the estimated worst-case noise levels at off-site properties due to typical on-site operations and assesses their impacts relative to the thresholds of significance.

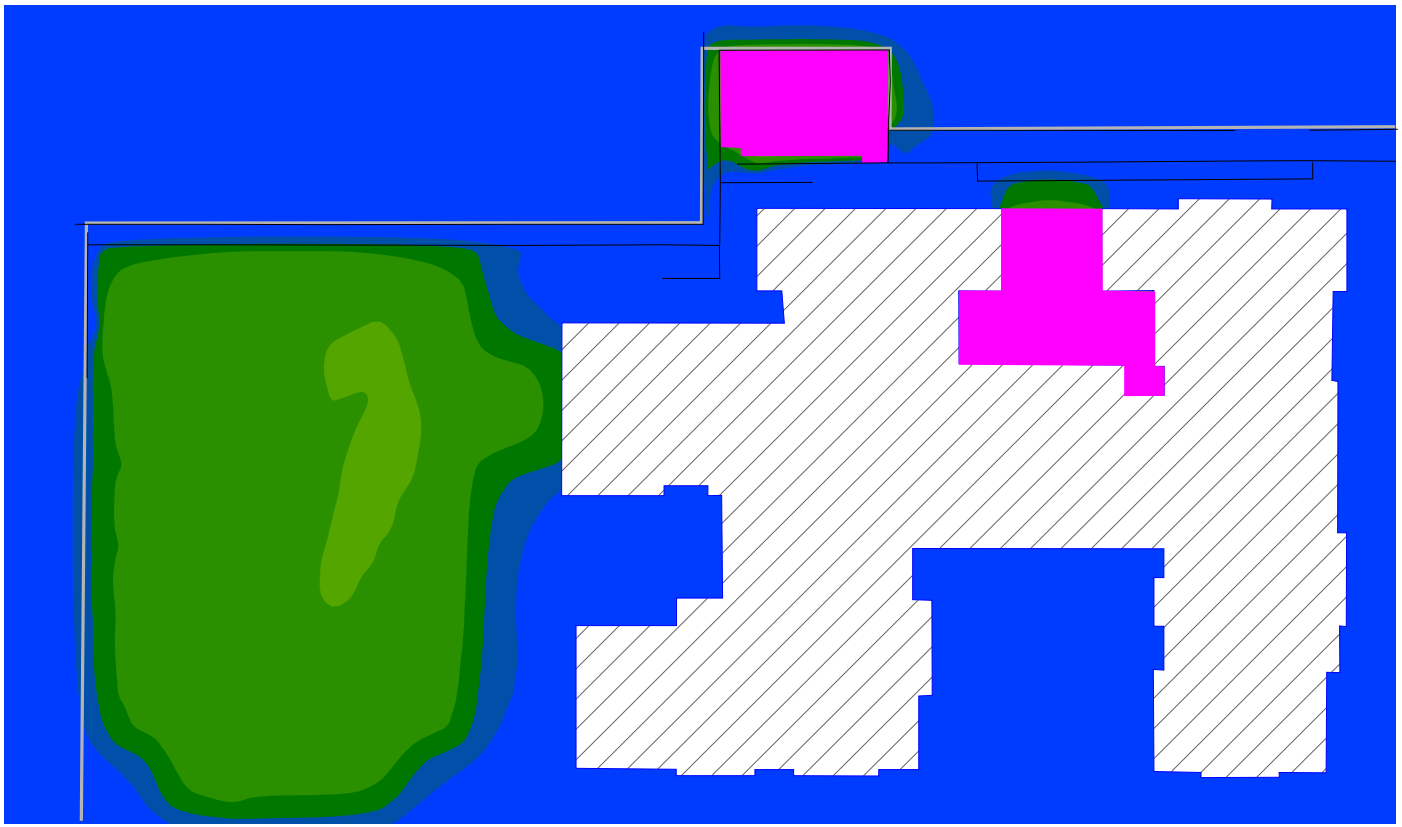

Figure 10-1. Estimated Project Noise Levels Due to Typical Daily Operations

Average Noise Level, dBA

> 69
67 - 69
65 - 67
63 - 65
61 - 63
59 - 61
57 - 59
55 - 57
53 - 55
51 - 53
49 - 51
47 - 49
<= 47

Signs and symbols

- Building
- Property Line
- Area Noise Source
- Wall

N

0 20 40 60 80 feet

Date: November 16, 2011

WIELAND ACOUSTICS
noise & vibration consultants

Table 10-7. Summary of Estimated Noise Levels at Off-Site Receptors Due to Typical Daily Operations

Receptor Location	Estimated Project Noise Level	Measured Ambient Noise Level	Project - Ambient Noise Level	Preliminary Assessment of Impact
Existing residential to the north Adj. to NW portion of site Adj. to outside courtyard area Adj. to NE portion of site	 43-45 dBA 47-56 dBA 32-53 dBA	51.0 dBA	 <0 dBA <0-5 dBA <0-2 dBA	 Not significant Not significant Not significant
Existing church to the east	<36 dBA	50.8 dBA	<0 dBA	Not significant
Existing City Hall to the south	<48 dBA	59.5 dBA	<0 dBA	Not significant
Existing commercial to the west	48 dBA	53.2 dBA	<0 dBA	Not significant

The use of the trash containers on a daily basis will also generate noise that may be experienced in the nearby community. These noise sources include the creaking and banging of the gates to the container room, container lids dropped onto the trash containers, and trash (particularly bottles and cans) dropped into the containers. While it is unlikely that, due to their short duration and sporadic nature, the noise levels generated by these sources will exceed the thresholds of significance (i.e., an increase of 8 dBA in the ambient noise level), they can be annoying, particularly if they occur during the late evening and early morning hours. Therefore, their impact is considered potentially significant at some residential properties immediately north of the project site and adjacent to the property line.

10.2.3 Truck Deliveries

Deliveries of supplies to the project will occur on a semi-regular basis to a loading area located on the north side of the building. Several assumptions have been made regarding the deliveries in order to analyze their noise levels. These assumptions are as follows:

- Truck deliveries will occur only during the hours of 7:00 a.m. to 9:00 p.m. and only on weekdays.
- There will not be more than one delivery truck onsite at any given time.
- Truck deliveries will follow the typical schedule identified in Table 10-6. It is expected that the number of deliveries will decrease after the first two to three months as staff is better able to forecast the ongoing supplies needed in inventory. However, as a worst case analysis, this study will consider the delivery schedule shown in the table.

Table 10-8. Typical Truck Delivery Schedule

Product Delivered	Number per Week	Size of Truck
Food	2	44' (single-axle trailer)
Bakery	2	16' - 24' van or box truck
Produce	2	16' - 24' van or box truck
Medical supplies	1	16' - 24' van or box truck
Maintenance supplies	1	16' - 24' van or box truck
Dairy	2	16' - 24' van or box truck
TOTAL	**10**	

The following sources, levels and durations were used in the analysis of noise generated by truck deliveries at the project site:

Table 10-9. Noise Source Data Used in the Analysis of Truck Deliveries

Noise Source	Sound Power Level	Duration or Number	Data Source
Driving thru parking lot	Calc. by model	Calc. by model, 2 events	FHWA Traffic Noise Model
Air brakes	110 dBA per event	1 sec. per event, 3 events	SoundPLAN 6.5 database
Backing into loading area	Calc. by model	Calc. by model	FHWA Traffic Noise Model
Backup alarm	61 dBA/meter/hour	Calc. by model	SoundPLAN 6.5 database
Truck door	99 dBA per event	1 sec. per event, 2 events	SoundPLAN 6.5 database
Unloading truck	92 dBA	20 min.	SoundPLAN 6.5 database
Truck start	100 dBA	2 sec.	SoundPLAN 6.5 database
Truck idling	94 dBA	2 min.	SoundPLAN 6.5 database

The SoundPLAN model discussed in Section 10.2.2 was modified to include truck deliveries and the noise source data identified in Table 10-9. That is, the noise levels generated by truck deliveries were added to the noise levels generated by typical day-to-day operations at the project site. The results of the analysis are presented as a noise contour map in Figure 10-2. Table 10-10 summarizes the estimated worst-case noise levels at off-site properties due to typical on-site operations and truck deliveries, and assesses their impacts relative to the thresholds of significance.

Table 10-10. Summary of Estimated Noise Levels at Off-Site Receptors Due to Typical Daily Operations Plus Truck Deliveries

Receptor Location	Estimated Project Noise Level	Measured Ambient Noise Level	Project - Ambient Noise Level	Preliminary Assessment of Impact
Existing residential to the north Adj. to NW portion of site Adj. to outside courtyard area Adj. to NE portion of site	 53-65 dBA 53-65 dBA 34-53 dBA	51.0 dBA	 2-14 dBA 2-14 dBA <0-2 dBA	 Significant Significant Not significant
Existing church to the east	<37 dBA	50.8 dBA	<0 dBA	Not significant
Existing City Hall to the south	<66 dBA	59.5 dBA	6.5 dBA	Not significant
Existing commercial to the west	55 dBA	53.2 dBA	1.8 dBA	Not significant

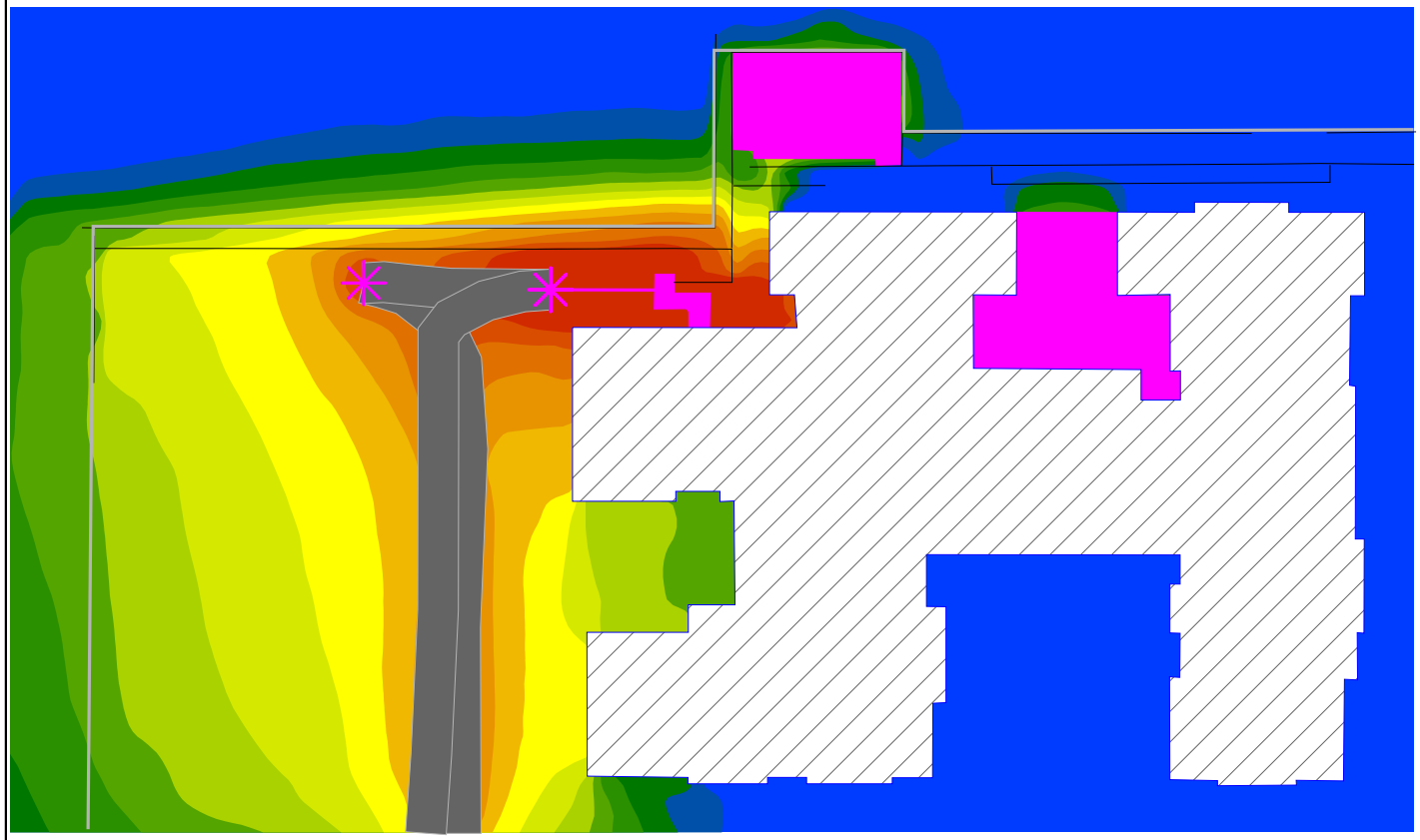

Figure 10-2. Estimated Project Noise Levels Due to Typical Daily Operations Plus Truck Deliveries

Average Noise Level, dBA

> 69
67 - 69
65 - 67
63 - 65
61 - 63
59 - 61
57 - 59
55 - 57
53 - 55
51 - 53
49 - 51
47 - 49
<= 47

Signs and symbols

- Delivery Truck Route
- Building
- Property Line
- Area Noise Source
- Point Noise Source
- Line source
- Wall

N

0 20 40 60 80 feet

Date: November 16, 2011

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10.2.4 Trash Pickups

Another onsite activity that will occur at the project site is trash pickups. Trash pickups will occur approximately three times per week between 8:00 a.m. and 5:00 p.m., and will not occur on weekends. The trash room will be in the building with doors opening to the outside. It is anticipated that the collection service will pull the containers out of the trash room with a "scout vehicle" (small truck or tractor), take them out to Sierra Madre Boulevard where they will be emptied into a waiting trash truck, and then returned to the trash room by the scout vehicle.

The following sources, levels and durations were used in the analysis of noise generated by trash pickups at the project site:

Table 10-11. Noise Source Data Used in the Analysis of Trash Pickups

Noise Source	Sound Power Level	Duration or Number	Data Source
Driving thru parking lot	Calc. by model	Calc. by model, 8 events	FHWA Traffic Noise Model
Backing up	Calc. by model	Calc. by model, 4 events	FHWA Traffic Noise Model
Backup alarm	61 dBA/meter/hour	Calc. by model, 4 events	SoundPLAN 6.5 database
Truck door close	87 dBA	1 sec./event, 8 events	Measurement
Trash container door	87 dBA	1 sec./event, 8 events	Estimated
Loading/unloading bin	90 dBA	1 min./event, 6 events	SoundPLAN 6.5 database
Truck idling	76 dBA	2.5 min./event, 4 events	SoundPLAN 6.5 database

The SoundPLAN model discussed in Section 10.2.2 was modified to include trash pickups and the noise source data identified in Table 10-11. That is, the noise levels generated by trash pickups were added to the noise levels generated by typical day-to-day operations at the project site. Because truck deliveries and trash pickups will occur in the same area, it has been assumed in this study that they cannot occur simultaneously. The results of the analysis are presented as a noise contour map in Figure 10-3. Table 10-12 summarizes the estimated worst-case noise levels at off-site properties due to typical on-site operations and trash pickups, and assesses their impacts relative to the thresholds of significance.

Table 10-12. Summary of Estimated Noise Levels at Off-Site Receptors Due to Typical Daily Operations Plus Trash Pickups

Receptor Location	Estimated Project Noise Level	Measured Ambient Noise Level	Project - Ambient Noise Level	Preliminary Assessment of Impact
Existing residential to the north				
Adj. to NW portion of site	47-58 dBA	51.0 dBA	<0-7 dBA	Not significant
Adj. to outside courtyard area	50-56 dBA		<0-5 dBA	Not significant
Adj. to NE portion of site	33-53 dBA		<0-2 dBA	Not significant
Existing church to the east	<36 dBA	50.8 dBA	<0 dBA	Not significant
Existing City Hall to the south	<57 dBA	59.5 dBA	<0 dBA	Not significant
Existing commercial to the west	51 dBA	53.2 dBA	<0 dBA	Not significant

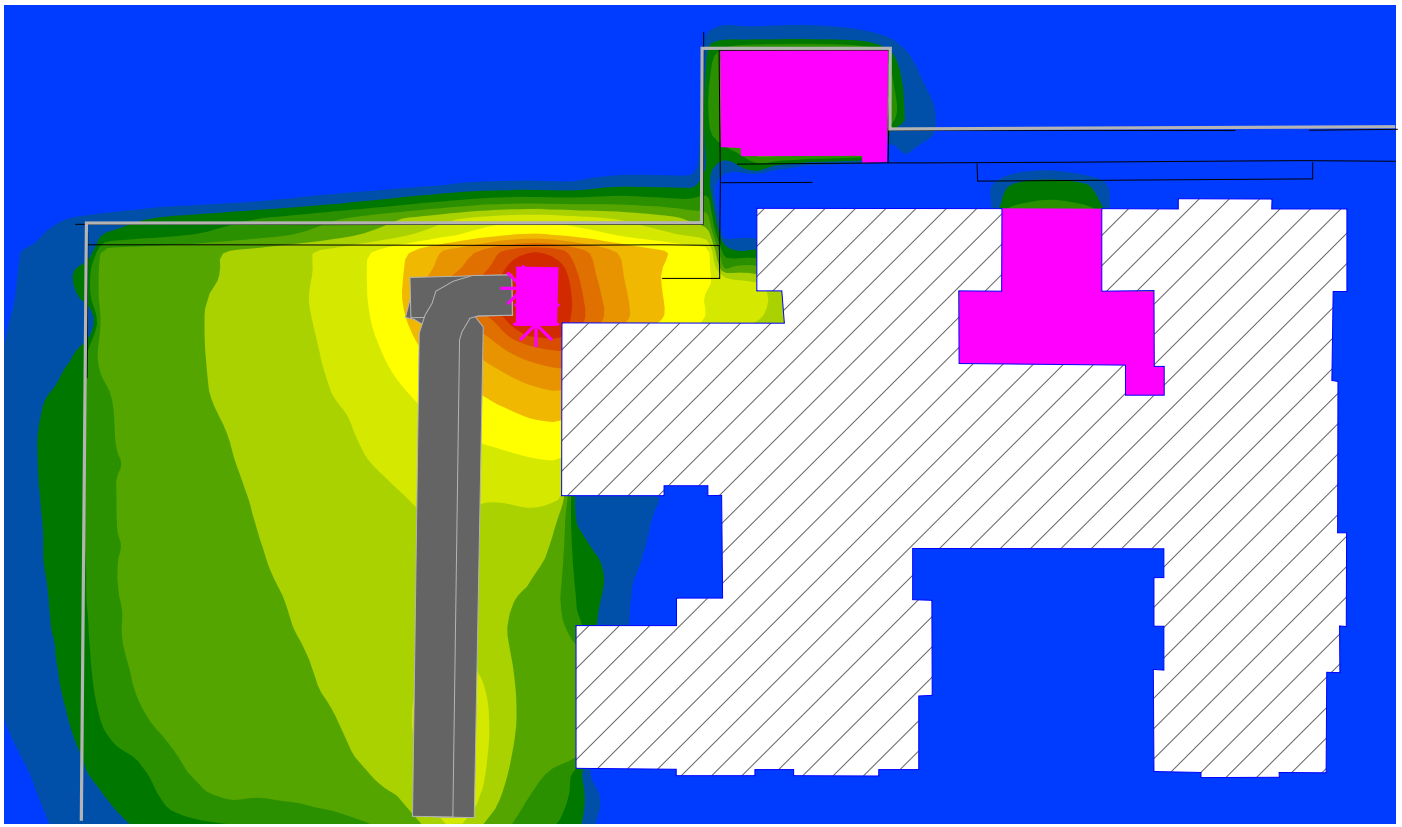

Figure 10-3. Estimated Project Noise Levels Due to Typical Daily Operations Plus Trash Pickups

Average Noise Level, dBA

> 69
67 - 69
65 - 67
63 - 65
61 - 63
59 - 61
57 - 59
55 - 57
53 - 55
51 - 53
49 - 51
47 - 49
<= 47

Signs and symbols

- Trash Pickup Route
- Building
- Property Line
- Area Noise Source
- Line source
- Point source
- Wall

N

0 20 40 60 80 feet

Date: November 16, 2011

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10.2.5 Emergency Generator Maintenance and Operation

Another piece of equipment that will be used at the project site is a Kohler Model 100REOZJE or 100REOZJF emergency generator. Based on information provided by Kohler, this unit produces a sound pressure level of 68 dBA at a distance of 23 feet, which is approximately equivalent to a sound power level of 95.8 dBA. It is assumed that the emergency generator is only required to comply with the City's noise standards during monthly maintenance testing; that is, compliance is not required when the generator is operating under emergency conditions.

The SoundPLAN model discussed in Section 10.2 was modified to include the emergency generator during its monthly maintenance testing. That is, the noise levels produced by the emergency generator were added to the noise levels generated by typical day-to-day operations at the project site. Based on information obtained by the project applicant, this testing will last for approximately one hour. It was assumed in the analysis that generator testing will occur only during daytime hours (i.e., between 7:00 a.m. and 7:00 p.m.) and only on weekdays. It was further assumed that testing would occur only during times when a delivery truck was not on site. Given that there are anticipated to be only 10 delivery trucks per week (refer to Table 10-8), it is considered reasonable to assume that generator testing can be scheduled around truck deliveries.

The results of the analysis are presented as a noise contour map in Figure 10-4. Table 10-13 summarizes the estimated worst-case noise levels at off-site properties due to typical on-site operations and the emergency generator, and assesses their impacts relative to the thresholds of significance.

Table 10-13. Summary of Estimated Noise Levels at Off-Site Receptors Due to Typical Daily Operations Plus Emergency Generator

Receptor Location	Estimated Project Noise Level	Measured Ambient Noise Level	Project - Ambient Noise Level	Preliminary Assessment of Impact
Existing residential to the north Adj. to NW portion of site Adj. to outside courtyard area Adj. to NE portion of site	 52-70 dBA 50-71 dBA 35-54 dBA	51.0 dBA	 1-19 dBA <0-20 dBA <0-3 dBA	 Significant Significant Not significant
Existing church to the east	<36 dBA	50.8 dBA	<0 dBA	Not significant
Existing City Hall to the south	<48 dBA	59.5 dBA	<0 dBA	Not significant
Existing commercial to the west	56 dBA	53.2 dBA	2.8 dBA	Not significant

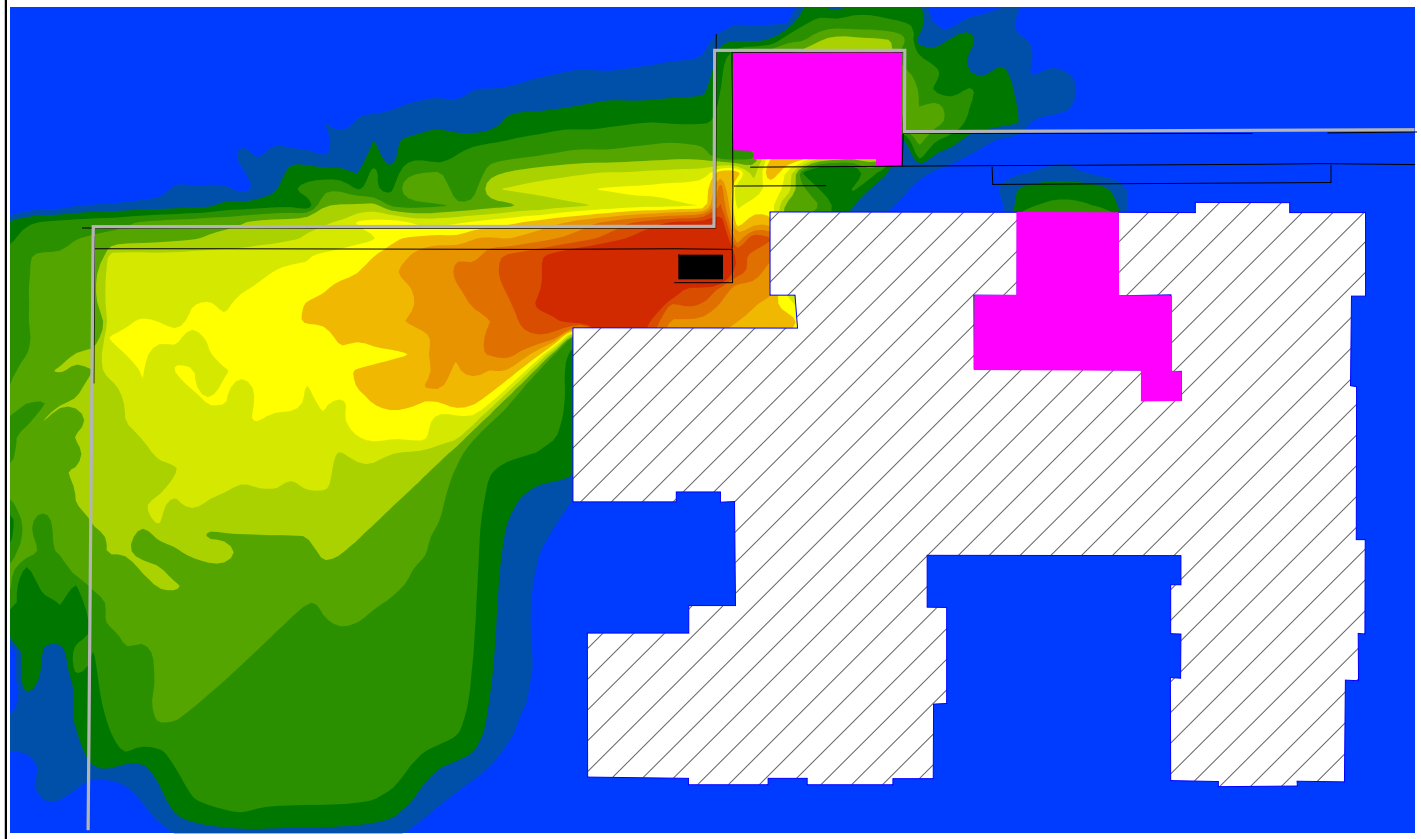

Figure 10-4. Estimated Project Noise Levels Due to Typical Daily Operations Plus Emergency Generator

Average Noise Level, dBA

> 69
67 - 69
65 - 67
63 - 65
61 - 63
59 - 61
57 - 59
55 - 57
53 - 55
51 - 53
49 - 51
47 - 49
<= 47

Signs and symbols

- Building
- Property Line
- Area Noise Source
- Wall

N

0 20 40 60 80 feet

Date: November 16, 2011

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11 Future Noise Environment at the Project Site

The dominant source of noise affecting the project site will be traffic on Sierra Madre Boulevard. Using data provided by Linscott, Law & Greenspan **[5]**, an analysis was conducted to identify the future traffic noise exposures that will occur at the project site. The results of our analysis are provided in Appendix II and are summarized in Table 11-1.

Table 11-1. Future Traffic Noise Levels at the Project Site

Street Segment	Unmitigated CNEL @ Nearest Facade	Distance to CNEL Contour From Street Centerline, feet		
		60 dB	65 dB	70 dB
Sierra Madre Boulevard Michillinda Ave to Baldwin Ave	59.3 dB	47'	N/A	N/A

Assuming standard residential construction provides at least 20 dB of noise reduction with windows and doors closed, it is estimated that the interior CNEL will 39.3 dB at the nearest proposed units to Sierra Madre Boulevard. This is less than the 45 dB threshold of significance; therefore, the impact is not significant.

12 Summary of Impacts

Using the criteria established in this study, the following may be concluded regarding the impact of the proposed project:

- The project will result in the exposure of persons to noise levels in excess of the significance criteria as a result of truck deliveries and generator maintenance. This significant impact will occur at some residential properties immediately north of and adjacent to the project site. (Refer to Mitigation Measure 1 in Section 13.)
- Project construction will generate excessive groundborne vibration or groundborne noise levels. This significant impact will occur at the some residential buildings immediately north of and adjacent to the project site, at the nearest church building to the east, and at the nearest commercial building to the west. (Refer to Section 14.)
- The project will produce a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project as a result of truck deliveries and generator maintenance. This significant impact will occur at some residential properties immediately north of and adjacent to the project site. (Refer to Mitigation Measure 1 in Section 13.)
- Construction of the project will produce a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. This significant impact will occur at every property line during project construction. (Refer to Mitigation Measure 5 in Section 13, and Section 14.)

13 Noise Mitigation Measures

To mitigate the significant operational noise impacts and to reduce the noise levels experienced at the nearby properties, the following measures shall be implemented:

1. A noise barrier shall be constructed along a portion of the northern property line as shown in Figure 13-1. The barrier shall be constructed of a material with a minimum surface density of 4 lbs/ft^2. Such materials include concrete block, stucco-on-wood, wood, tempered glass, Plexiglas, acrylic, or any combination of these materials. (It is noted that the minimum thickness required to achieve the required surface density of 4 lbs/ft^2 will vary depending on the specific material selected.) The barrier shall be a continuous structure without gaps (including gaps for drainage) or gates.
2. To minimize annoyance associated with truck deliveries and trash pickups, the project applicant shall, to the extent practical, effectuate the following noise abatement measures:
    a. Truck deliveries shall be limited to between the hours of 7:00 a.m. and 9:00 p.m., Monday through Friday. No deliveries shall be permitted on weekends.
    b. Trash pickups shall be limited to between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday. No pickups shall be permitted on weekends.
    c. There shall not be more than one delivery truck onsite at any given time.
    d. Truck deliveries shall not be scheduled during those times when trash is being picked up at the project site.
    e. Asphalt or rough concrete shall be used in the delivery area rather than raised pavers.
    f. Speed bumps shall not be used in areas through which the trucks or trash vehicles will travel.
3. To minimize annoyance associated with the use of the trash containers and with trash pickups, the project applicant shall, to the extent practical, effectuate the following noise abatement measures:
    a. The gates to the trash room shall be designed and constructed so that they do not sag and do not drag across the pavement as they are opened and closed.
    b. The project applicant shall put into place administrative controls that will instruct employees on the noise sensitivity of the residential properties to the north, and train them in ways that will reduce noise associated with the use of the trash containers. At a minimum: (1) Trash shall not be dumped into the container bins between the hours of 10:00 p.m. and 8:00 a.m.; (2) The trash room gates shall not be slammed closed or permitted to strike the building when opened; (3) The maintenance crew shall be instructed to keep the gate hinges well lubricated at all times to prevent squeaking; (4) The lids to the trash containers shall not be allowed to drop when they are closed; (5) The maintenance crew shall be required to place and maintain in good condition neoprene rubber strips around the perimeter of the trash containers so that there is no metal-on-metal contact when the container lids are closed; (6) Trash consisting of bottles, cans or particularly heavy items shall be placed or lowered into the trash container, not dropped.

4. The emergency standby generator shall not be tested while a delivery truck is on site or while trash is being picked up.
5. To minimize construction noise levels at the nearby properties, the contractor shall, to the extent practical, effectuate the following noise abatement measures:
    a. All construction and demolition equipment shall be fitted with properly sized mufflers.
    b. Noisy construction equipment items shall be located as far as practicable from the adjacent residential properties.
    c. In order to minimize the time during which any single noise-sensitive receptor is exposed to construction noise, construction shall be completed as rapidly as possible.
    d. The quietest construction equipment owned by the contractor shall be used. The use of electric powered equipment is typically quieter than diesel, and hydraulic powered equipment is quieter than pneumatic power. If compressors powered by diesel or gasoline engines are to be used, they shall be contained or have baffles to help abate noise levels.
    e. All construction equipment shall be properly maintained. Poor maintenance of equipment typically causes excessive noise levels.
    f. Noisy equipment shall be operated only when necessary, and shall be switched off when not in use.
    g. Storage areas shall be located away from the residences. Where this is not possible, the storage of waste materials, earth, and other supplies shall be positioned in a manner that will function as a noise barrier to the closest sensitive receivers.
    h. Public notice shall be given prior to construction identifying the location and dates of construction, the name and phone number of the contractor's contact person in case of complaints. The public notice shall encourage the residents to call the contractor's contact person rather than the police in case of complaint. Residents shall also be kept informed of any changes to the schedule. The contractor's designated contact person shall be on site throughout project construction with a mobile phone. If a complaint is received, the contractor's contact person shall take whatever reasonable steps are necessary to resolve the complaint. If possible, a member of the contractor's team shall also travel to the complainant's location to understand the nature of the disturbance.

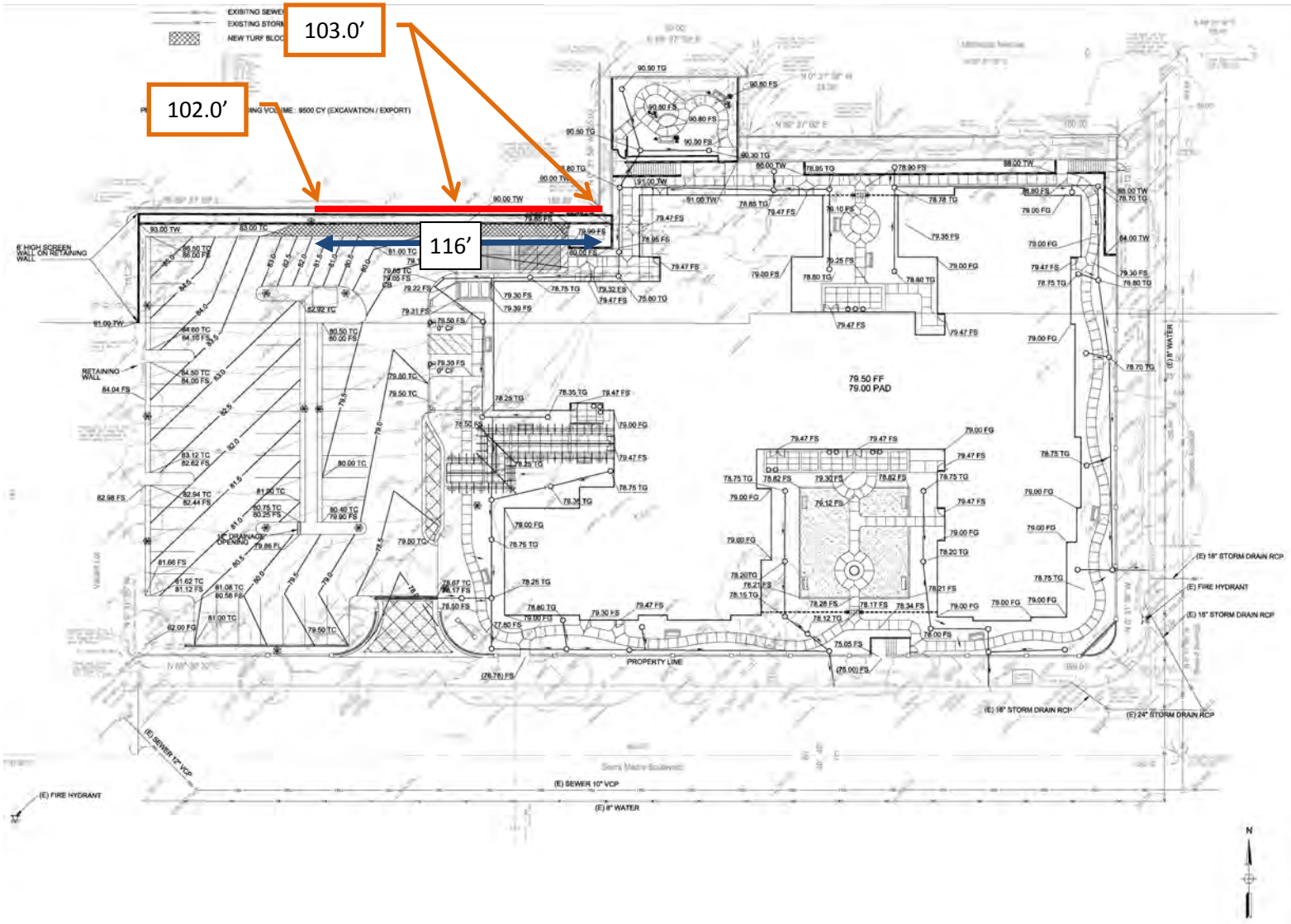

Figure 13-1. Location and Top-of-Barrier Elevations for the Recommended Noise Barrier Along the Northerly Property Line

14 Future Noise Environment at Off-Site Locations with Mitigation

The noise model discussed in Section 10.2 was revised to include the noise mitigation measures described in Section 13. Tables 14-1 and 14-2 summarize the results of the analyses for operational noise levels with truck deliveries and with emergency generator maintenance, respectively. Figures 14-1 and 14-2 present the results graphically.

Table 14-1. Summary of Estimated Noise Levels at Off-Site Receptors Due to Typical Daily Operations Plus Truck Deliveries, with Mitigation

Receptor Location	Estimated Project Noise Level	Measured Ambient Noise Level	Project - Ambient Noise Level	Preliminary Assessment of Impact
Existing residential to the north Adj. to NW portion of site Adj. to outside courtyard area Adj. to NE portion of site	 50-58 dBA 43-52 dBA 34-55 dBA	51.0 dBA	 <0-7 dBA <0-1 dBA <0-4 dBA	 Not significant Not significant Not significant
Existing church to the east	<36 dBA	50.8 dBA	<0 dBA	Not significant
Existing City Hall to the south	<66 dBA	59.5 dBA	6.5 dBA	Not significant
Existing commercial to the west	55 dBA	53.2 dBA	1.8 dBA	Not significant

Table 14-2. Summary of Estimated Noise Levels at Off-Site Receptors Due to Typical Daily Operations Plus Emergency Generator, with Mitigation

Receptor Location	Estimated Project Noise Level	Measured Ambient Noise Level	Project - Ambient Noise Level	Preliminary Assessment of Impact
Existing residential to the north Adj. to NW portion of site Adj. to outside courtyard area Adj. to NE portion of site	 46-54 dBA 43-55 dBA 35-54 dBA	51.0 dBA	 <0-3 dBA <0-4 dBA <0-3 dBA	 Not significant Not significant Not significant
Existing church to the east	<36 dBA	50.8 dBA	<0 dBA	Not significant
Existing City Hall to the south	<48 dBA	59.5 dBA	<0 dBA	Not significant
Existing commercial to the west	56 dBA	53.2 dBA	2.8 dBA	Not significant

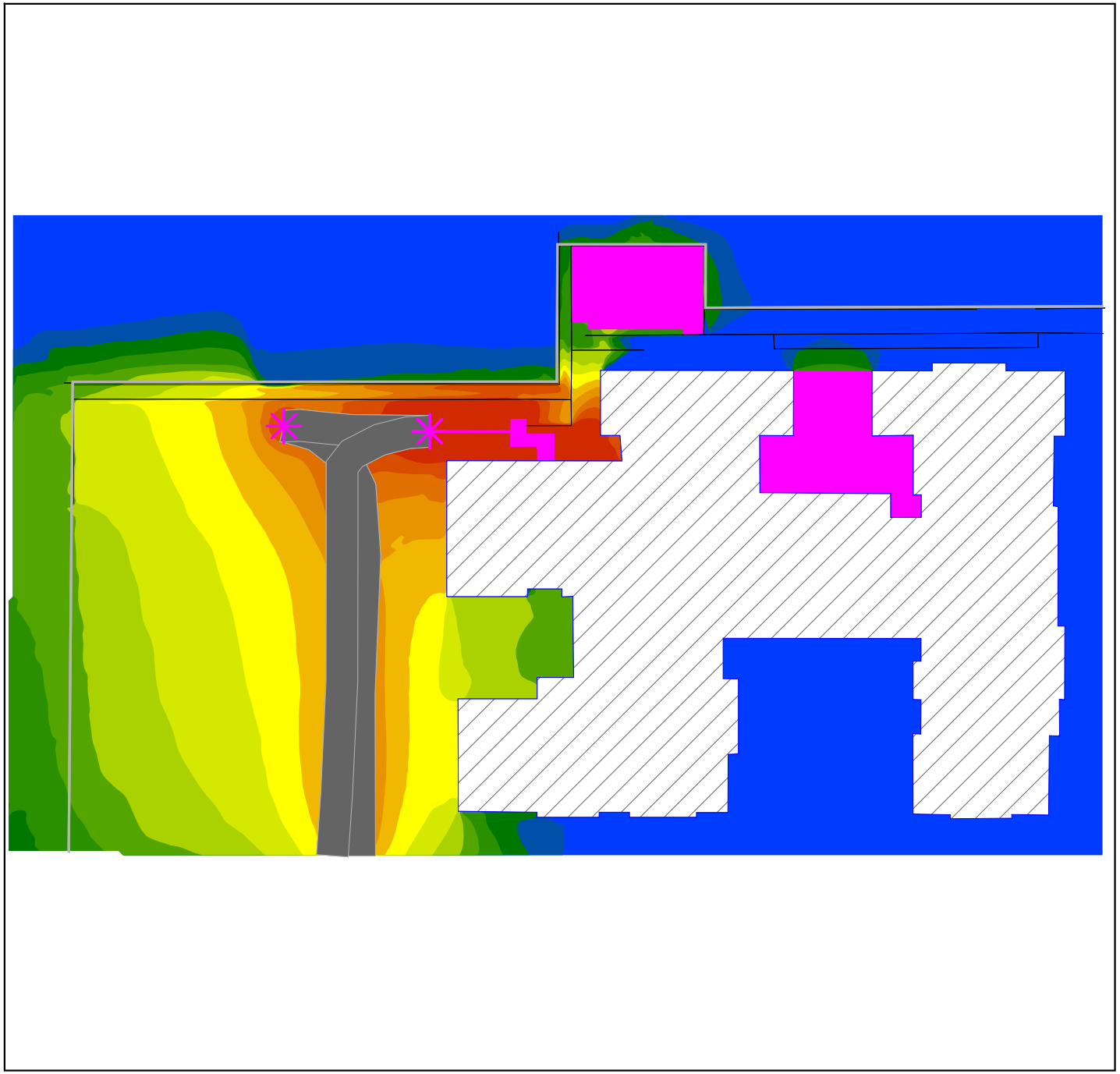

Figure 14-1. Estimated Project Noise Levels Due to Typical Daily Operations Plus Truck Deliveries with Mitigation

Average Noise Level, dBA

> 69
67 - 69
65 - 67
63 - 65
61 - 63
59 - 61
57 - 59
55 - 57
53 - 55
51 - 53
49 - 51
47 - 49
<= 47

Signs and symbols

- Delivery Truck Route
- Building
- Property Line
- Area Noise Source
- Point Noise Source
- Line source
- Wall

N

0 20 40 60 80 feet

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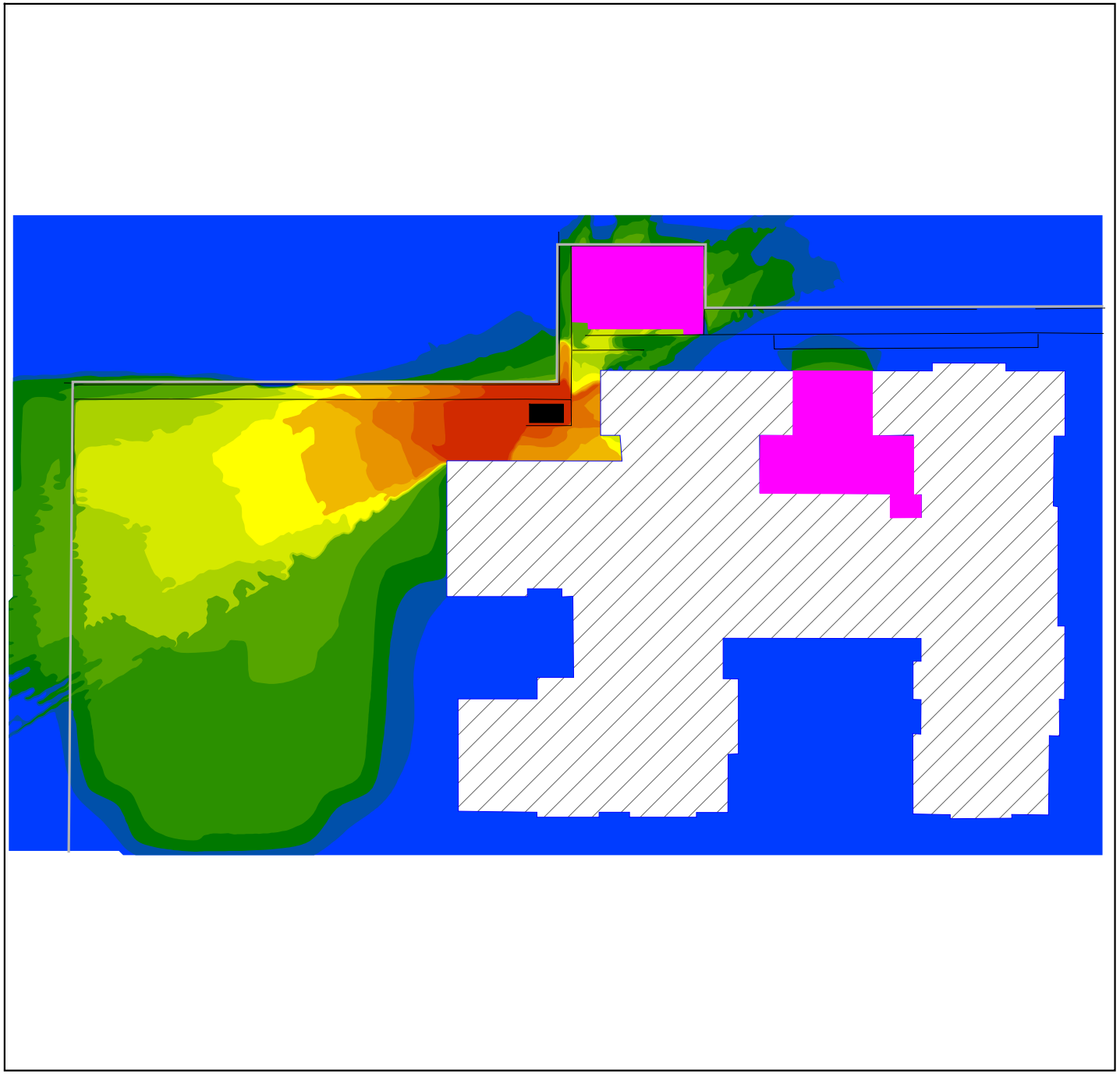

Figure 14-2. Estimated Project Noise Levels Due to Typical Daily Operations Plus Emergency Generator, with Mitigation

Average Noise Level, dBA

> 69
67 - 69
65 - 67
63 - 65
61 - 63
59 - 61
57 - 59
55 - 57
53 - 55
51 - 53
49 - 51
47 - 49
<= 47

Signs and symbols

- Building
- Property Line
- Area Noise Source
- Wall

N

0 20 40 60 80 feet

Date: November 17, 2011

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15 Unmitigated Impacts

Due to the maximum noise levels generated by construction equipment, the proximity of the construction equipment to the nearby properties, and the topography in the area, it is not practical to comply with the City of Sierra Madre's noise ordinance standards. It is also not practical to eliminate the temporary increase in ambient noise levels produced by construction activities. However, it is noted that all construction noise levels will be short-term.

If heavy construction equipment (e.g., a bulldozer) operates within about 75 feet of a residence, or within about 50 feet of a church or commercial building, it is possible that groundborne vibration may be perceptible to occupants of the buildings. Groundborne vibration cannot be practicably mitigated. However, it is noted that all construction vibration will be short-term.

16 References

1. *Transit Noise and Vibration Impact Assessment*. U.S. Department of Transportation/Federal Transit Administration (FTA-VA-90-1003-06). May 2006.
2. *Transportation- and Construction-Induced Vibration Guidance Manual.* Jones & Stokes (J&S 02-039). Contract No. 43A0049 for California Department of Transportation, Noise, Vibration, and Hazardous Waste Management Office, Sacramento, CA. June 2004.
3. *FHWA Traffic Noise Model, Version 2.5 Look-Up Table, User's Guide*. U.S. Department of Transportation, Federal Highway Administration. Final Report, December 2004.
4. *Traffic Noise Model (FHWA TNM) LookUp Program, Software Version 2.1 (Data Generated by TNM Version 2.5)*. U.S. Department of Transportation, Federal Highway Administration. February 22, 2007.
5. *Traffic Impact Analysis, Fountain Square Assisted Living Project, City of Sierra Madre, California*. Linscott, Law & Greenspan Engineers. October 12, 2011.
6. *Noise Element of the General Plan for the City of Sierra Madre*.
7. *City of Sierra Madre Municipal Code*.
8. *Preliminary Grading and Drainage Plan*. JMC^2 Civil Engineering & Surveying. August 18, 2011.
9. Project Description, Fountain Square Development West, "The Kensington", An Assisted Living Community in Sierra Madre. City of Sierra Madre. August 16, 2011.

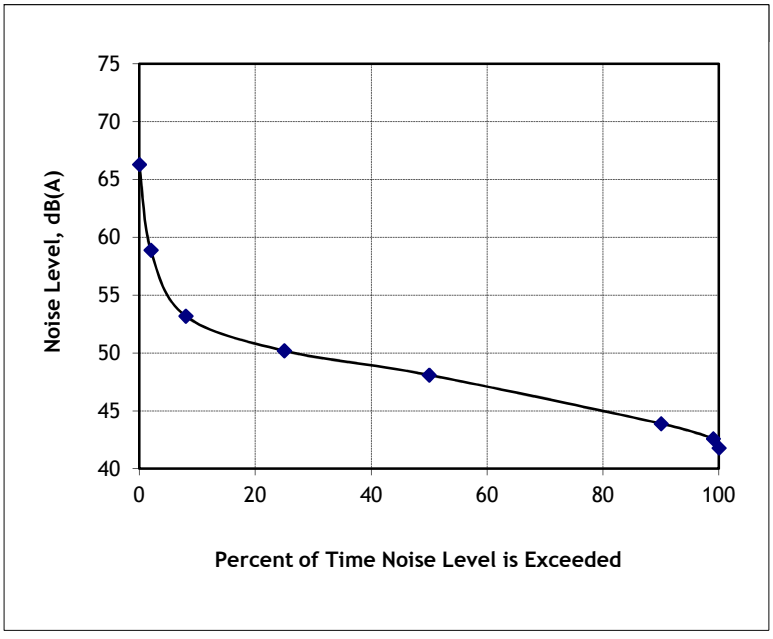
APPENDIX I

Noise Measurements

Table I-1. Noise Survey

Project:	Kensington Assisted Living Facility
Position:	#1; on project site near northern property line
Date:	September 14, 2011
Time:	Noted
Noise Source:	Ambient traffic
Distance:	60 yards from Sierra Madre Blvd.
SLM Height:	5'
LD 820 S/N:	0996
LD CAL200 Calibrator S/N:	2916
Operator:	David Limberg

	Measurement Period		
	10:10 AM to 10:30 AM	to	to
n*	**Ln**	**Ln**	**Ln**
2	58.9		
8	53.2		
25	50.2		
50	48.1		
90	43.9		
99	42.6		
Leq	51.0		
Lmax	66.3		
Lmin	41.8		

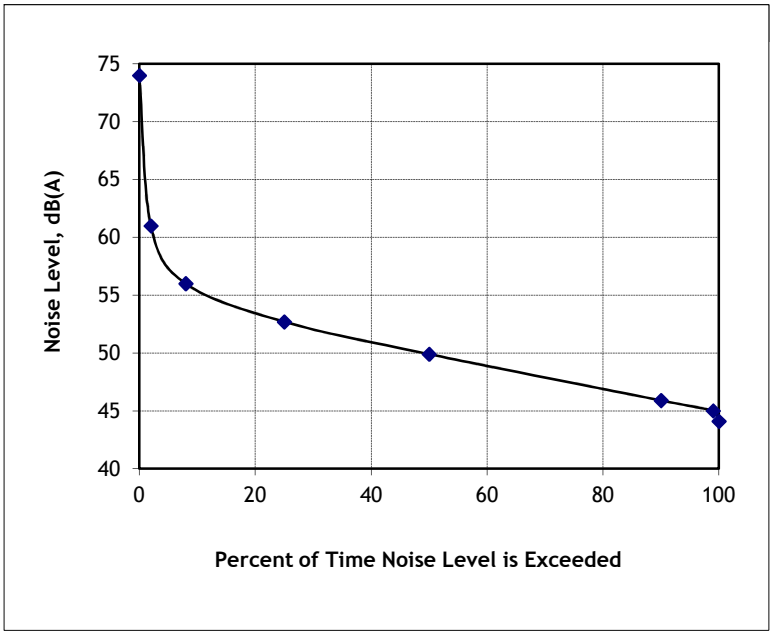


* Leq is the average sound level during the measurement period.
Ln is the sound level exceeded n% of the time during the measurement period.
Lmax and Lmin are the maximum and minimum sound levels during the measurement period.

Table I-2. Noise Survey

Project:	Kensington Assisted Living Facility
Position:	#2; in parking lot of commercial property west of project site
Date:	September 14, 2011
Time:	Noted
Noise Source:	Ambient traffic
Distance:	25 yards from Sierra Madre Blvd.
SLM Height:	5'
LD 820 S/N:	0996
LD CAL200 Calibrator S/N:	2916
Operator:	David Limberg

	Measurement Period		
	10:35 AM to 10:55 AM	to	to
n*	**Ln**	**Ln**	**Ln**
2	61.0		
8	56.0		
25	52.7		
50	49.9		
90	45.9		
99	45.0		
Leq	53.2		
Lmax	74.0		
Lmin	44.1		

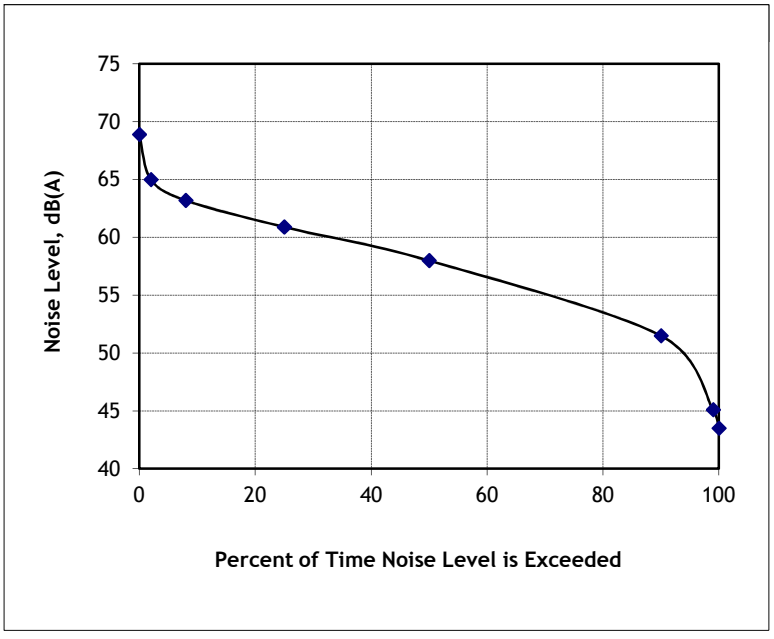


* Leq is the average sound level during the measurement period.
Ln is the sound level exceeded n% of the time during the measurement period.
Lmax and Lmin are the maximum and minimum sound levels during the measurement period.

Table I-3. Noise Survey

Project:	Kensington Assisted Living Facility
Position:	#3; in park at offset of City Hall from Sierra Madre Blvd.
Date:	September 14, 2011
Time:	Noted
Noise Source:	Ambient traffic
Distance:	10 yards from Sierra Madre Blvd.
SLM Height:	5'
LD 820 S/N:	0996
LD CAL200 Calibrator S/N:	2916
Operator:	David Limberg

	Measurement Period		
	11:00 AM to 11:25 AM	to	to
n*	**Ln**	**Ln**	**Ln**
2	65.0		
8	63.2		
25	60.9		
50	58.0		
90	51.5		
99	45.1		
Leq	59.5		
Lmax	68.9		
Lmin	43.5		

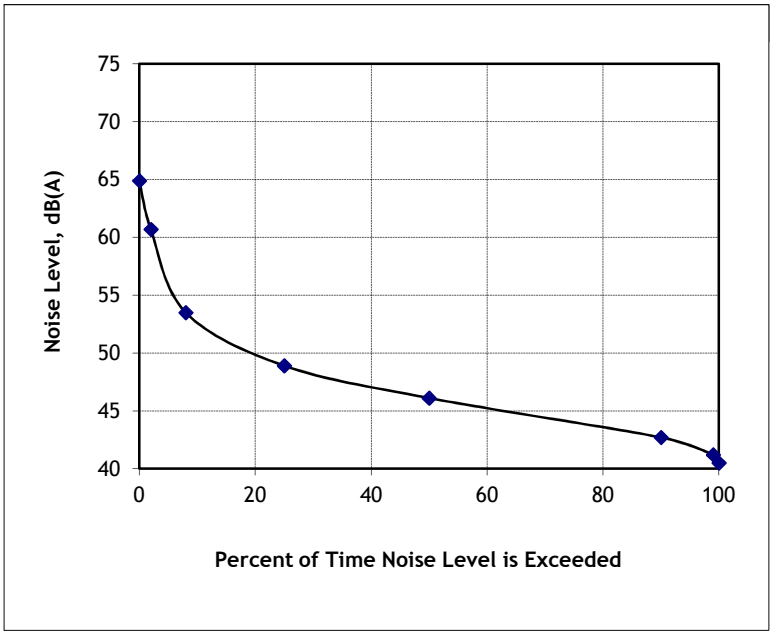


* Leq is the average sound level during the measurement period.
Ln is the sound level exceeded n% of the time during the measurement period.
Lmax and Lmin are the maximum and minimum sound levels during the measurement period.

Table I-4. Noise Survey

Project:	Kensington Assisted Living Facility
Position:	#4; at nearest home on Hermosa to project site.
Date:	September 14, 2011
Time:	Noted
Noise Source:	Ambient traffic
Distance:	9 feet from Hermosa, 33 yards from Montecito, 100 yards from Sierra Madre Blvd.
SLM Height:	5'
LD 820 S/N:	0996
LD CAL200 Calibrator S/N:	2916
Operator:	David Limberg

	Measurement Period		
	11:30 AM to 12:00 PM	to	to
n*	**Ln**	**Ln**	**Ln**
2	60.7		
8	53.5		
25	48.9		
50	46.1		
90	42.7		
99	41.2		
Leq	50.8		
Lmax	64.9		
Lmin	40.5		



* Leq is the average sound level during the measurement period.
Ln is the sound level exceeded n% of the time during the measurement period.
Lmax and Lmin are the maximum and minimum sound levels during the measurement period.

APPENDIX II

Traffic Noise Analysis

Table II-1. Distance to Existing CNEL Contour Lines, Kensington Assisted Living Facility

Arterial / Reach	Speed Limit, mph	% Trucks		Traffic Dist.*	Avg. Daily Traffic	Hard (H) or Soft (S) Site?	Barrier Details** (leave blank if none)		Dist., Sens. Rec. to C/L	CNEL at Sens. Rec.	Distance to CNEL Contours From Roadway Centerline, feet				
		Med.	Hvy.		Existing		Height (2-10m)	Distance (10/30m)			60dB	65dB	70dB	75dB	80dB
SIERRA MADRE BOULEVARD															
Michillinda Ave to Baldwin Ave	25	1.84%	0.74%	1	7,155	H			50'	59.6	45	--	--	--	--

Table II-2. Distance to Existing + Project CNEL Contour Lines, Kensington Assisted Living Facility

Arterial / Reach	Speed Limit, mph	% Trucks		Traffic Dist.*	Avg. Daily Traffic	Hard (H) or Soft (S) Site?	Barrier Details** (leave blank if none)		Dist., Sens. Rec. to C/L	CNEL at Sens. Rec.	Distance to CNEL Contours From Roadway Centerline, feet				
		Med.	Hvy.		Ex+Proj		Height (2-10m)	Distance (10/30m)			60dB	65dB	70dB	75dB	80dB
SIERRA MADRE BOULEVARD															
Michillinda Ave to Baldwin Ave	25	1.84%	0.74%	1	7,313	H			50'	59.7	46	--	--	--	--

Table II-3. Distance to Future CNEL Contour Lines, Kensington Assisted Living Facility

Arterial / Reach	Speed Limit, mph	% Trucks		Traffic Dist.*	Avg. Daily Traffic Future	Hard (H) or Soft (S) Site?	Barrier Details** (leave blank if none)		Dist., Sens. Rec. to C/L	CNEL at Sens. Rec.	Distance to CNEL Contours From Roadway Centerline, feet				
		Med.	Hvy.				Height (2-10m)	Distance (10/30m)			60dB	65dB	70dB	75dB	80dB
SIERRA MADRE BOULEVARD															
Michillinda Ave to Baldwin Ave	25	1.84%	0.74%	1	7,298	H			50'	59.6	46	--	--	--	--

Table II-4. Distance to Future + Project CNEL Contour Lines, Kensington Assisted Living Facility

Arterial / Reach	Speed Limit, mph	% Trucks		Traffic Dist.*	Avg. Daily Traffic	Hard (H) or Soft (S) Site?	Barrier Details** (leave blank if none)		Dist., Sens. Rec. to C/L	CNEL at Sens. Rec.	Distance to CNEL Contours From Roadway Centerline, feet				
		Med.	Hvy.		Fut+Proj		Height (2-10m)	Distance (10/30m)			60dB	65dB	70dB	75dB	80dB
SIERRA MADRE BOULEVARD															
Michillinda Ave to Baldwin Ave	25	1.84%	0.74%	1	7,456	H			50'	59.7	47	--	--	--	--

Table II-5. Future + Project CNEL at Nearest Proposed Building Façade of Kensington Assisted Living Facility

Arterial / Reach	Speed Limit, mph	% Trucks		Traffic Dist.*	Avg. Daily Traffic	Hard (H) or Soft (S) Site?	Barrier Details** (leave blank if none)		Dist., Sens. Rec. to C/L	CNEL at Sens. Rec.	Distance to CNEL Contours From Roadway Centerline, feet				
		Med.	Hvy.		Fut+Proj		Height (2-10m)	Distance (10/30m)			60dB	65dB	70dB	75dB	80dB
SIERRA MADRE BOULEVARD															
Michillinda Ave to Baldwin Ave	25	1.84%	0.74%	1	7,456	H			55'	59.3	47	--	--	--	--