The Galleria Mixed-Use Project

Initial Study-Mitigated Negative Declaration

prepared by
City of Garden Grove
11222 Acacia Parkway
Garden Grove, California 92840

prepared with the assistance of
Rincon Consultants, Inc.
250 East 1st Street, Suite 301
Los Angeles, California 90012

February 2018

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Initial Study

1. Project Title

The Galleria Mixed-Use Project

2. Lead Agency Name and Address

City of Garden Grove
Planning Services Division
11222 Acacia Parkway
Garden Grove, California 92840

3. Contact Person and Phone Number

Erin Webb, Senior Planner
(714) 741-5313

4. Project Location

The 5.09-acre project site is located at 10080 Garden Grove Boulevard in the City of Garden Grove (City), California. The site is bordered by Garden Grove Boulevard to the north, Ramada Plaza Hotel to the west, a multi-tenant commercial center to the east, and Brookhurst Avenue farther east. The Boys & Girls Club of Garden Grove, single family residences, and Kiwanis Land Park are located south of the project site. The parking lot for the Boys & Girls Club is included in the project site. Figure 1 shows the location of the site within the region.

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Fig 1 Regional Location

Figure 2 shows the project site in its local context. The site is partially developed with the steel framework of a previously approved mixed-use development project (refer to Section 8, below, for the background and history of the project site). Figure 3a-3f provide photos that show the existing conditions of the site and surrounding area.

Figure 1 Regional Location

Imagery provided by ESRI and its licensors © 2017.

Project Location

N

Fig 1 Regional Location

Figure 2 Project Location

Imagery provided by Google and its licensors © 2018.

Fig 2 Project Location

Figure 3a View of Project Site Looking South across Garden Grove Boulevard

Figure 3b View of Southern Boundary of Project Site Looking North along Larson Avenue

Figure 3c View of Commercial Development Looking East from Project Site along Garden Grove Boulevard

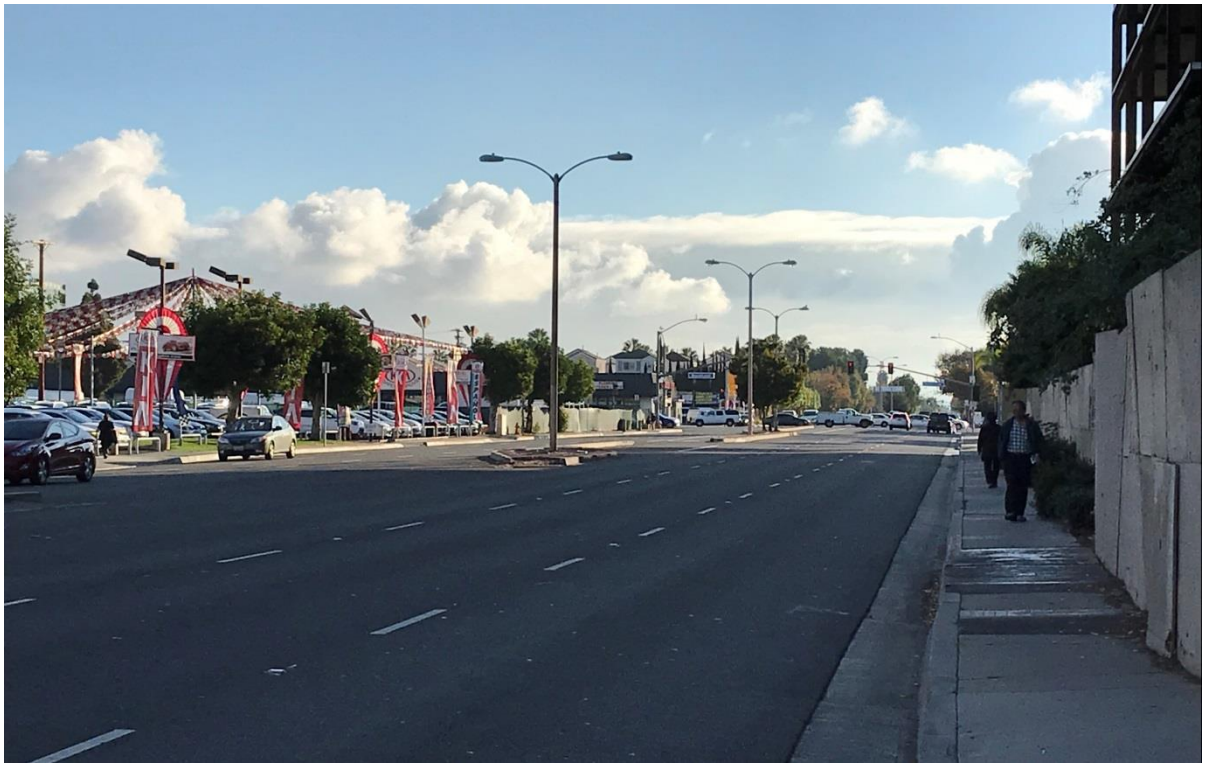


Figure 3d View of Project Site and Commercial Development Looking West from Brookhurst Street

Figure 3e View of Single Family Residences Looking East along Larson Avenue

Figure 3f View of Multi-family Residences Looking North along Brookhurst Way

5. Project Sponsor's Name and Address

AMG & Associates, LLC
16633 Ventura Boulevard, Suite 1014
Encino, California 91436

6. General Plan Designation

Residential/Commercial Mixed Use 1
Focus Area F – Brookhurst Triangle Area

7. Zoning

Garden Grove Boulevard Mixed Use 1 (GGMU-1)

8. Project Description and Background

The Galleria Mixed-Use project (proposed project) would be constructed on the site of a previously approved and partially constructed commercial and residential mixed-use development at the same location (10080 Garden Grove Boulevard).

Background and History

The project site was originally reviewed as part of the Garden Grove Galleria project (hereafter referred to as "previously approved project"), mixed-use building that was previously approved by the City in 2005. The building was proposed to be eight stories in height on the north, east, and west sides, and five stories on the south side. The 2005 Garden Grove Galleria Mitigated Negative Declaration (hereafter referred to as "2005 MND") was adopted by the City and is provided as Appendix A. As proposed in 2005, the first four levels of the building consisted of two, double-height floors at the front totaling 123,662 square feet (sf) of commercial tenant space, and four floors of parking within a structure at the rear. The entirety of the fifth floor consisted of parking while the sixth, seventh, and eighth floors above consisted of 66 condominium units (22 units per floor). Currently, the project site is partially developed with the steel framework that was constructed for the previously approved project.

Proposed Project

The currently proposed project would make use of the existing on-site steel frame to construct an eight-story mixed-use development consisting of 12,938 sf of commercial space on the first two floors of the building, and 400 senior housing units (totaling 343,345 sf of residential space) distributed across all eight floors. Unlike the previously approved project, all four sides of the currently proposed building would be eight stories. The eight-story building would be located on the northern portion of the site and a three-level parking structure would be located on the southern portion of the site (see Figure 4). The project site would include the parking lot associated with the Boys and Girls Club south of the site. The proposed project would include 25,503 sf of common open space that would include a recreation courtyard on the first floor, common rooms on the third and fourth floors, and recreation decks on the third and sixth floors. The proposed project would also include landscaped trees along the southern border of the project site to provide a buffer

between the parking structure and the residences and the Boys and Girls Club facility to the south. Figures 4 through 7 show the site plan, landscape plan, elevations, and a rendering for the proposed project.

Site Access and Parking

The proposed project would include 243 parking stalls for the residential and commercial uses in a 141,295 square-foot, three-level parking structure at the rear of the project site. Resident access to the proposed project would be provided via one egress/ingress driveway at the northeastern corner of the project site along Garden Grove Boulevard that would continue along the eastern boundary of the site. There would also be a service driveway along the western boundary of the site.

Grading and Construction

Currently, the project site is partially developed with the steel framework pertaining to the previously approved project. Therefore, construction of the proposed project would require completion of the steel frame and the remaining stages of construction, including the flooring, roofing, electrical, plumbing, and painting. Construction would not include intensive site preparation, grading, or excavation activities. However, some grading and excavation could be needed to add structural support to the building foundation and perform maintenance on the existing steel frame for possible damage from weathering. These activities were assumed in the project analysis.

Required City Approvals

The proposed project requires amending the General Plan land use designation for the property from Residential/Commercial Mixed Use 1 to Community Residential (which currently allows densities of 48.1 to 60 dwelling units per acre). The following would also be required:

- Zone Change from Garden Grove Boulevard Mixed Use 1 (GGMU-1) to Planned Unit Development
- Site Plan Approval
- Zone Change of the Boys and Girls Club parking lot from Open Space (OS) to Community Residential
- Approval for a 35 percent density bonus

Comparison of Previously Approved Project to Proposed Project

For the purposes of this Initial Study, the current site conditions are used as the baseline for identification of the potentially significant effects of the proposed project under CEQA. However, the analysis herein also includes a comparison of the proposed project's impacts to those of the previously approved project in order to facilitate an understanding of how the currently proposed and previously approved projects compare. This comparison is provided for informational purposes only. Table 1 summarizes the differences between the proposed project and the previously approved project.

Table 1 Comparison of Proposed Project to Previously Approved Project

Project Components	Previously Approved Project	Proposed Project	Change
Residential Units	66	400	+334
Commercial (sf)	123,662	12,938	-110,724
Building Stories	8 on three sides, 5 on south side	8 on all sides	None
Parking Structure Stories	4	3	-1
Parking (stalls)	740	310	-430

Note: sf = square feet

9. Surrounding Land Uses and Setting

The project site is located along Garden Grove Boulevard and is surrounded by a mix of uses, including residences, institutional, and retail and commercial space. These include the Boys and Girls Club facility located immediately south of the southern boundary of the project site, and the Brookhurst Triangle Apartments project north of the project site across Garden Grove Boulevard California State Route (SR-22) is located approximately 0.5 mile south of the site. Figure 3 shows the surrounding uses. This area is also identified as Focus Area F – Brookhurst Triangle Area in Exhibit LU-1 of the Garden Grove General Plan Land Use Element.

10. Other Public Agencies Whose Approval is Required

The City of Garden Grove is the lead agency. The approval of other public agencies is not required.

11. Subsequent Initial Study and MND

The proposed project was originally proposed and considered in 2005 (previously approved project). Pursuant to the California Environmental Quality Act, Public Resources Code Sections 21000 et seq. and California Code of Regulations, Title 14, Sections 15000 et seq. ("CEQA"), the City adopted a Mitigated Negative Declaration ("MND") and approved the project in 2005. A Notice of Determination was filed and posted on May 20, 2005. In 2017, modifications were proposed to the 2005 project ("proposed project"). Pursuant to Public Resources Code Section 21166 and California Code of Regulations, Title 14, Section 15162, the City prepared a subsequent initial study to analyze the proposed project's environmental effects. The subsequent initial study concluded that all of the proposed project's environmental impacts could be reduced to a less than significant level of less than significance. On this basis, the subsequent initial study concluded that a subsequent MND was appropriate.

Figure 4 Site Plan

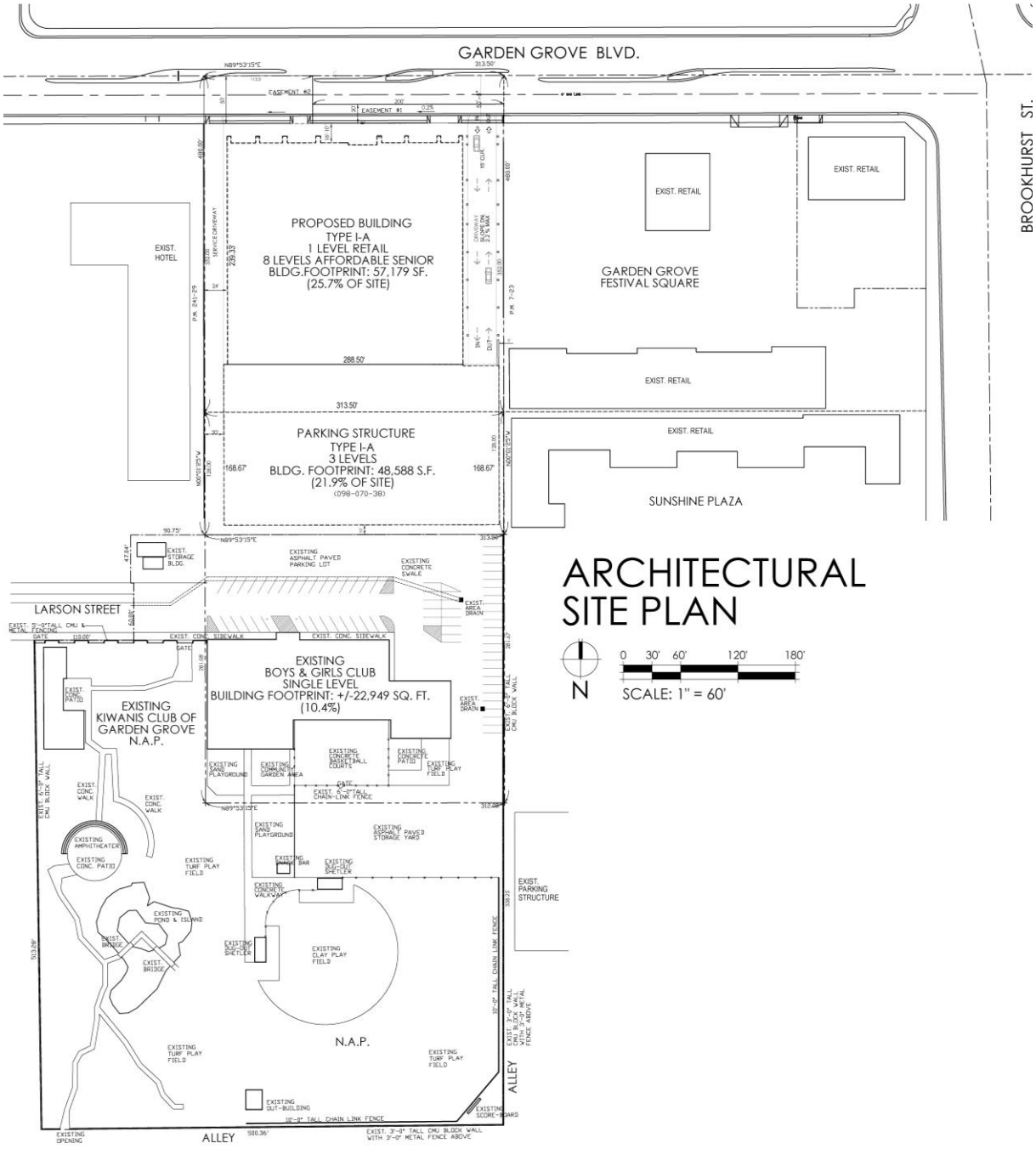
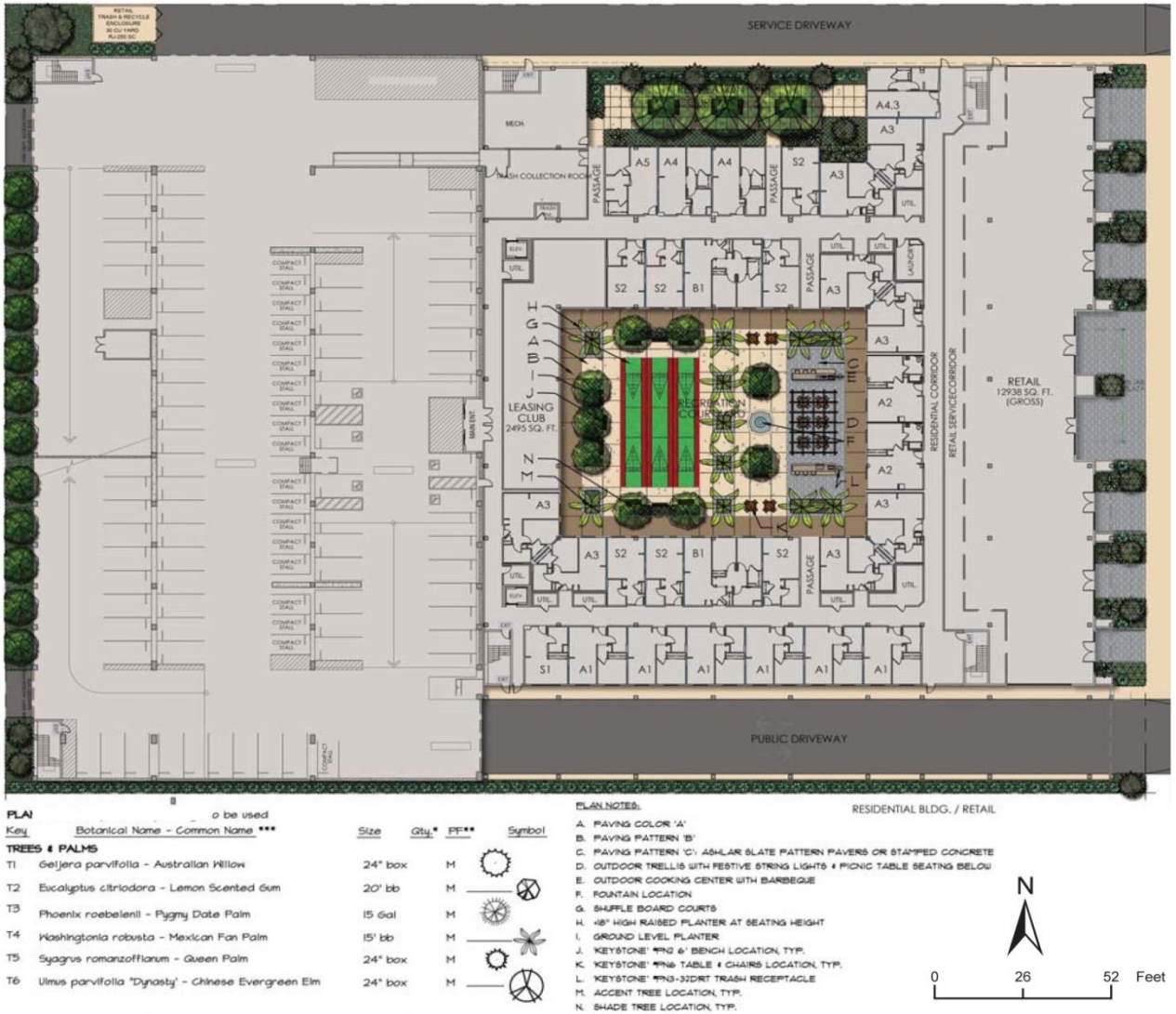


Figure 5 Landscape Plan



PLAI o be used

Key	Botanical Name - Common Name ***	Size	Qty.*	PF**	Symbol
TREES & PALMS					
T1	Geijera parvifolia - Australian Willow	24" box	M		
T2	Eucalyptus citriodora - Lemon Scented Gum	20' bb	M		
T3	Phoenix roebelenii - Pygmy Date Palm	15 Gal	M		
T4	Washingtonia robusta - Mexican Fan Palm	15' bb	M		
T5	Syagrus romanzoffianum - Queen Palm	24" box	M		
T6	Ulmus parvifolia 'Dynasty' - Chinese Evergreen Elm	24" box	M		

Source: Thomas H. Phelps Landscape Architecture, Inc., July 2017.

Figure 6a Project Elevations: West and North

2. WEST ELEVATION

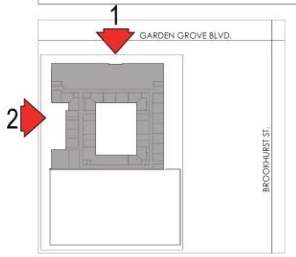
1. NORTH ELEVATION - GARDEN GROVE BLVD.

0 9 18 Feet

N

MATERIAL/COLOR LEGEND

1	LIGHT SAND FINISH STUCCO 16/20
2	DECORATIVE METAL PANEL/CERAMIC TILE
3	VINYL WINDOWS
4	ALUMINUM STOREFRONT
5	PERFORATED METAL RAILING
6	ACRYLIC RAILING
7	CERAMIC TILE
8	HORIZONTAL METAL SLATS (WOOD GRAIN FINISH)
9	METAL TUBING (SCREEN)
10	PAINTED CONCRETE STRUCTURE



KEY MAP

Source: Architects Orange, July 2017.

Figure 6b Project Elevations: East and South

4. EAST ELEVATION

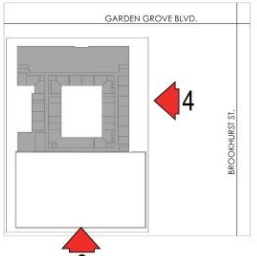
3. SOUTH ELEVATION

0 9 18 Feet

N

MATERIAL/COLOR LEGEND

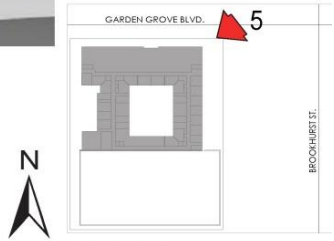
1	LIGHT SAND FINISH STUCCO 16/20
2	DECORATIVE METAL PANEL/CERAMIC TILE
3	VINYL WINDOWS
4	ALUMINUM STOREFRONT
5	PERFORATED METAL RAILING
6	ACRYLIC RAILING
7	CERAMIC TILE
8	HORIZONTAL METAL SLATS (WOOD GRAIN FINISH)
9	METAL TUBING (SCREEN)
10	PAINTED CONCRETE STRUCTURE



Source: Architects Orange, July 2017.

Figure 7 Project Rendering

5. VIEW ALONG GARDEN GROVE BLVD. - (LOOKING SOUTHWEST)



KEY MAP

Source: Architects Orange, July 2017.

Environmental Factors Potentially Affected

This project would potentially affect the environmental factors checked below, involving at least one impact that is "Potentially Significant" or "Potentially Significant Unless Mitigation Incorporated" as indicated by the checklist on the following pages.

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

Determination

Based on this initial evaluation:

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

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

Signature	Date
Printed Name	Title

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Environmental Checklist

1 Aesthetics

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☐	■
b. Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	■
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	■	☐
d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	☐	☐	■	☐

a. Would the project have a substantial adverse effect on a scenic vista?

The project site is located along a commercial corridor in the City of Garden Grove. The project site is partially developed with the steel frame for the previously approved project. The topography of the area is generally flat and there are no scenic views available from or through the project site. Because the proposed project would not substantially increase height or massing beyond that of the existing steel frame, as development would only add three additional stories to the existing structure, it would not alter existing views. Viewers from the Boys and Girls Club south of the site would see eight stories on the southern building façade. However, the proposed building would not adversely affect an identified scenic vista. Based on these facts, the project would have no impact on a scenic vista.

The 2005 MND also found no impact on scenic vistas from the previously approved project. For this reason and because the proposed project and previously approved project would occupy the same building footprint and would generally have the same overall height and massing, with the exception of the three additional stories on the southern facade, the proposed project would not create any new significant impact and no impact would occur.

NO IMPACT

b. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

There are no State-designated scenic highways in Garden Grove. According to the California Department of Transportation (CalTrans), a portion of the California Pacific Coast Highway (Highway 1) is identified as an "Eligible State Scenic Highway – Not Officially Designated" (Caltrans 2017). However, this segment of Highway 1 is located approximately six miles south of the City. Consequently, the proposed project would have no impact on a State scenic highway.

The 2005 MND also determined that the previously approved project would have no impact to scenic resources within a State scenic highway for the same reasons discussed above. Therefore, impacts of the proposed project would not change compared to the previously approved project and no impact would occur.

NO IMPACT

c. Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

Currently, the project site is partially developed with a steel building framework. Surrounding uses include low-to-medium density residential, retail, commercial space, hotel, and recreational uses.

The proposed project would be consistent with the residential/commercial mixed-use character of the Garden Grove Boulevard corridor and would improve on-site visual conditions by completing construction of a partially developed structure (see Figure 7). Further, the architectural style of the proposed structure would contribute to the variety of architectural styles of buildings in the project site vicinity. The contemporary design of the building facades would complement those of other residential developments in the area, particularly the Brookhurst Triangle apartment complex north of the project site across Garden Grove Boulevard. Further, the ground floor commercial uses and tenant apartments on the upper floors would not adversely affect public views in the area. The project would support the City's vision for the entire vicinity of the project site to be developed as a vibrant boulevard that heavily emphasizes pedestrian orientation through use of active street frontages, scaled and designed buildings, and engaging outdoor spaces. Therefore, impacts related to the existing visual character or quality of the site would be less than significant.

Development of the proposed eight-story structure could affect the levels of shading experienced by surrounding land uses, particularly the hotel directly adjacent to the western boundary of the project site. Shadow analysis was performed to determine how the height increase would affect outdoor conditions at this residential use. Shadow-sensitive uses include routinely useable outdoor spaces associated with residential, recreational, or institutional land uses (e.g., schools, convalescent homes); commercial uses such as pedestrian-oriented outdoor spaces or restaurants with outdoor eating areas; nurseries; and existing solar collectors. These uses are considered sensitive because sunlight is important to their function, physical comfort, and/or commerce. The time period between late October and early April includes the winter solstice, and the period between early April and late October includes the summer solstice. In the northern hemisphere, shadows cast to the northwest and northeast are longest during the winter solstice and shortest during the summer solstice.

The estimated summer solstice (June 21) shadows generated by the proposed project are illustrated in Figure 8. At 9:00 AM in the summer months, the proposed building would cast shadows that would increase in comparison to the existing steel framework over a majority of the hotel west of the project site. However, as shown in Figure 8, the hotel already experiences shading generated by the existing steel framework structure, which is approximately five stories in height. As shown, with full development of the proposed eight-story structure, increases in shading generated by the

additional building height would be nominal. Furthermore, at 12:00 PM, the shadows would have fully recessed to not cover any portion of the hotel. Overall, the hotel would be exposed to shading for a period of three hours or less. Beginning at 3:00 PM, the shadows have begun to spread east of the project site and will extend to cover the parking lot area and portions of the commercial building on the property directly east. However, these uses are not considered shadow-sensitive. Therefore, because shadows would not be cast onto light-sensitive uses for a period greater than four hours between the hours of 9:00 AM and 3:00 PM during the summer solstice, impacts of the proposed project would be less than significant.

The estimated winter solstice (December 21) shadows generated by the proposed project are illustrated in Figure 9. At 9:00 AM, the proposed building would cast shadows that would increase in comparison to the existing steel framework over the hotel west of the project site. Shadows would cover the northeastern corner of the hotel as well as a portion of the eastern façade. Shadows generated by the existing steel framework currently only cover the northeastern corner of the hotel. However, the shadows would entirely subside by 11:00 AM and would not cover any portion of the hotel. The hotel would be exposed to shading for a period of less than two hours. Beginning at 1:00 PM, the shadows would increase to the east and would extend to cover the parking lot and portions of the commercial building east of the project site, as well as the parking lots and commercial buildings northeast of the project site across Garden Grove Boulevard. However, these uses are not considered shadow-sensitive. Based on these facts, impacts of the proposed project would be less than significant.

The previously approved project was designed to implement commercial storefronts on Garden Grove Boulevard and set back residential units on the upper floors to minimize the overall height of the building. The 2005 MND concluded that the previously approved project would have no impact on the visual character or quality of the site because the project's use and architecture was consistent with existing development along an urbanized corridor. Because the proposed project's architectural style would also be consistent with existing surrounding development, it would not generate new or increased impacts compared to the previously approved project. Further, although the 2005 MND did not analyze shade and shadow impacts, as the increased building height under the proposed project would have the same general height as the previously approved project and would not generate substantially increased levels of shading compared to the existing steel framework on-site, impacts would not be greater than those of the previously approved project and would be less than significant.

LESS THAN SIGNIFICANT IMPACT

Figure 8 Shadows Cast on the Summer Solstice

Photo 1: Summer Solstice June 21, 9am

Photo 2: Summer Solstice June 21, 12pm

Photo 3: Summer Solstice June 21, 3pm

Photo 4: Summer Solstice June 21, 5pm

Building Shadow Existing Building Shadow

Figure 9 Shadows Cast on the Winter Solstice

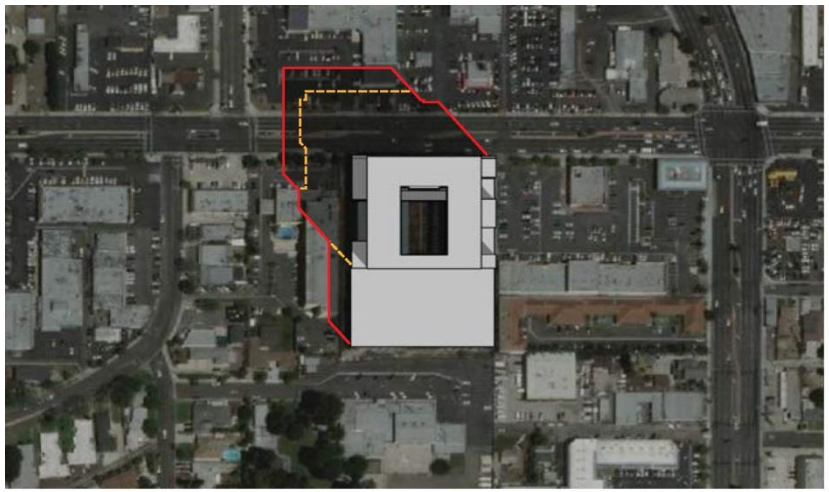

Photo 1: Winter Solstice December 21, 9am

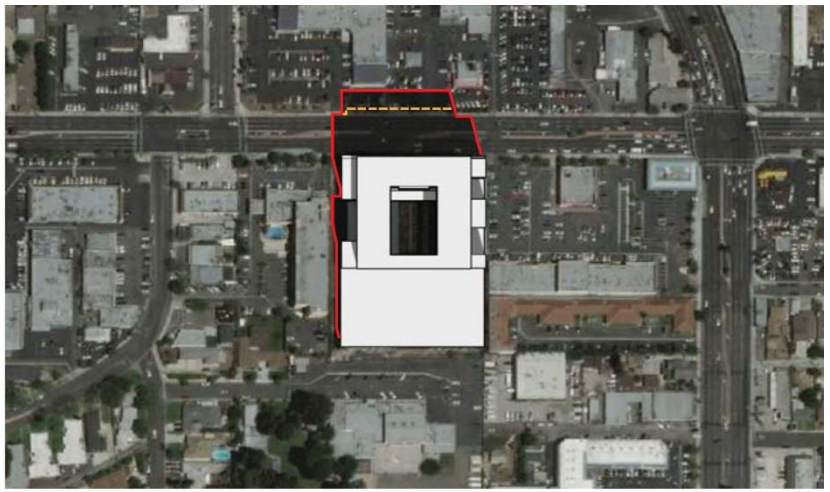

Photo 2: Winter Solstice December 21, 11am

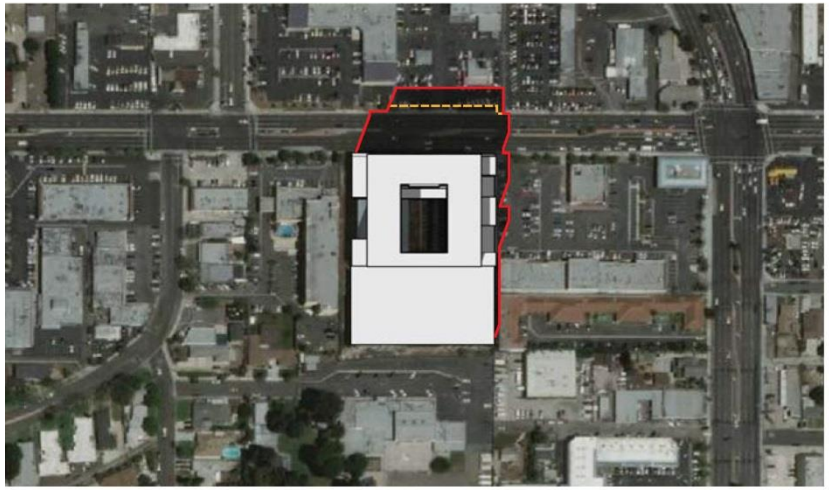

Photo 3: Winter Solstice December 21, 1pm

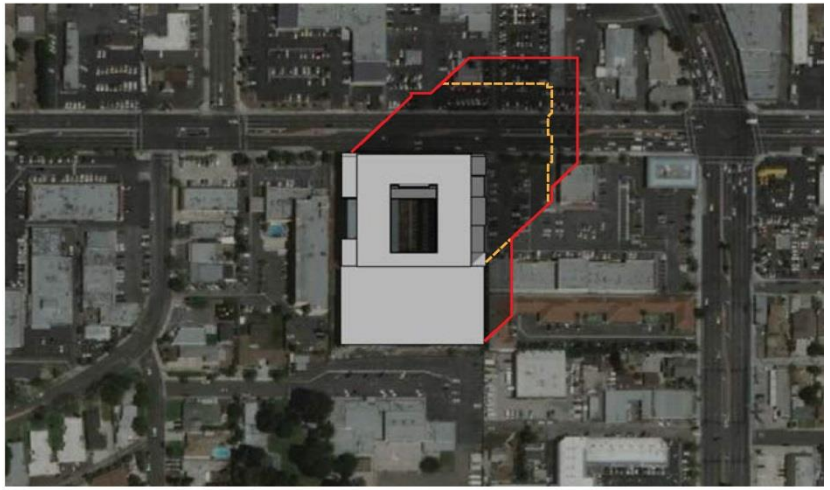

Photo 4: Winter Solstice December 21, 3pm

Building Shadow Existing Building Shadow

d. Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

The project site is located in an urban area that includes various sources of light and glare, including street lights, security lighting, signage, reflective building surfaces, parked vehicles, and head and tail-lights from moving vehicles. According to Section 9.18.100.020 of the Garden Grove Municipal Code (GGMC), all on-site lighting in all mixed-use zones are required to be stationary and directed away from adjoining properties (Garden Grove 2017). The proposed project includes ground floor commercial use, senior housing units, and a three-story parking structure on the southern portion of the site. Sources of light from the proposed project would include commercial storefronts on the ground floor along Garden Grove Boulevard during hours of operation, interior window light from residential uses on upper floors, exterior building security lighting, and security lighting from the parking structure. Although this would add new light sources on the project site, lighting from these uses would be similar to the lighting levels of surrounding land uses and would incrementally add to existing sources of light along the developed corridor. In addition, the proposed project would include use of landscaped trees along the southern border of the project site, which would minimize potential spillover of incident light and glare from the parking structure. Further, the proposed project would be required to comply with Section 9.18.100.020 of the GGMC which would ensure that on-site lighting systems would not be designed in a way that increased existing lighting levels at adjacent development and surrounding uses.

New sources of glare would include headlights from cars entering and leaving the site at night as well as window glare from cars and the proposed building that could reflect sunlight during certain times of the day. However, glare from these sources would be similar to glare generated by surrounding development and associated vehicle traffic and would not considerably increase levels of daytime or nighttime glare within the proposed area. Further, although windows of tenant apartments and ground floor retail space would potentially introduce new sources of glare, the windows would be designed to minimize light reflection. Overall, due to the lighting and landscaping design of the proposed project, the activities associated with the proposed land uses (i.e., resident and visitor vehicle trips), building design, and compliance with City lighting regulations, the proposed project would not substantially increase levels of light and glare within the surrounding area and impacts would be less than significant.

Compared to the previously approved project, levels of light and glare generated by the proposed project would be generally similar since the structural design and building size would generally be the same for both projects even though the proposed project would involve considerably less commercial development on the ground floors, there would be fewer stories of parking, and the southern façade of the building would be three stories higher than that of the previously approved project. The previously approved project involved greater use of lighting as the amount of commercial development on the ground floor was considerably larger than the proposed project. Further, because the parking structure under the previously approved project was five stories, this would generate less light and glare than the proposed project where the parking structure would be three stories and tenant apartments would be located on all eight floors. The 2005 MND concludes that the previously approved project would not result in an impact related to lighting and glare due to lighting system design, but would require a condition of approval for landscaping on the southern border of the project site, adjacent to the existing Boys & Girls Club, to further minimize the effects of light and glare. Because the proposed project would include landscaping at the southern border of the project site, a condition of approval for landscaping would not be required. Therefore, the

proposed project would not substantially increase impacts compared to the previously approved project and impacts would remain less than significant.

LESS THAN SIGNIFICANT IMPACT

2 Agriculture and Forestry Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Convert Prime Farmland, Unique Farmland, Farmland of Statewide Importance (Farmland), as shown on 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 the 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?	☐	☐	☐	■

a. Would the project convert Prime Farmland, Unique Farmland, 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. Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

c. Would the project 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. Would the project result in the loss of forest land or conversion of forest land to non-forest use?

e. Would the project involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?

The following response applies to all of (a) – (e) provided above.

The proposed project would involve development of an eight-story mixed-use senior housing development within a developed urban area in the City of Garden Grove. According to the California Department of Conservation's (DOC) Farmland Mapping and Monitoring Program (FMMP), the project site is located on land designated as urban and built-up land and there is no agricultural land within the project vicinity (DOC 2014). Further, the project site would not be on land enrolled under the Williamson Act or zoned for agricultural use (DOC 2004). Further, the project site and surrounding areas are not zoned as forest land or timberland, and the proposed project would not cause a loss of forest land or conversion of forest land to non-forest use (Garden Grove 2008a; Garden Grove 2017). Due to the absence of agricultural land at the project site or in the surrounding area, the project would not involve changes to the existing environment that could result in conversion of Farmland to a non-agricultural use. No impact to agricultural or forest resources would occur.

The proposed project would be located at the same project site as the previously approved project and would not be in proximity to any agricultural lands. Therefore, the proposed project would have no new impacts compared to the previously approved project.

NO IMPACT

3 Air Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	■	☐
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	■	☐
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. Would the project conflict with or obstruct implementation of the applicable air quality plan?

The project site is in the South Coast Air Basin, which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The local air quality management agency is required to monitor air pollutant levels to ensure that applicable air quality standards are met and, if they are not met, to develop strategies to meet the standards. The SCAQMD has adopted an Air Quality Management Plan (AQMP) that provides a strategy for the attainment of state and federal air quality standards.

According to the SCAQMD Guidelines, a project may be inconsistent with the AQMP if it would generate population, housing, or employment growth exceeding the forecasts used in the development of the AQMP. The 2016 AQMP, the most recent AQMP adopted by the SCAQMD, incorporates local city general plans and the Southern California Association of Government's (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) socioeconomic forecast projections of regional population, housing and employment growth (SCAQMD 2016). The proposed project would consist of 344 more residential units than the previously approved project, which would directly increase population growth beyond within the city compared to existing conditions.

As discussed in Section 13, Population and Housing, the construction of 400 residential units would generate an estimated 769 residents. SCAG forecasts that the population of the City will increase to 178,200 by the year 2040, which is an increase of 1,914 persons from the current population (SCAG 2016). The 769 project residents would constitute about 40 percent of the City's total projected population growth through 2040. Therefore, the level of population growth associated with the proposed project would not exceed regional population forecasts.

The proposed project would include 344 more residential units than the previously approved project and, therefore, would add more residents. Nevertheless, as noted above, because the proposed project would be consistent with the AQMP, its impact would be less than significant and no new impacts would be generated compared to the previously approved project.

LESS THAN SIGNIFICANT IMPACT

b. Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

c. Would the project 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 that exceed quantitative thresholds for ozone precursors)?

The following response applies to (b) and (c).

Temporary construction emissions and long-term operational emissions were calculated for the proposed project using the California Emissions Estimator Model (CalEEMod) Version 2016.3.1 Because site excavation and grading have already been completed, construction emissions are limited to those associated with building construction, paving, and architectural coating (see Appendix B).

The SCAQMD has developed specific numeric thresholds that apply to projects in the South Coast Air Basin. The SCAQMD has established the following significance thresholds for temporary construction activities within the South Coast Air Basin:

- 75 pounds per day of ROG
- 100 pounds per day of NOX
- 550 pounds per day of CO
- 150 pounds per day of SOX
- 150 pounds per day of PM10
- 55 pounds per day of PM2.5

The SCAQMD has also established the following significance thresholds for long-term project operation within the South Coast Air Basin:

- 55 pounds per day of ROG
- 55 pounds per day of NO_X
- 550 pounds per day of CO
- 150 pounds per day of SO_X
- 150 pounds per day of PM_{10}
- 55 pounds per day of $PM_{2.5}$

In addition to the above thresholds, the SCAQMD has developed Localized Significance Thresholds (LSTs) in response to the Governing Board's Environmental Justice Enhancement Initiative (1-4), which was prepared to update the *CEQA Air Quality Handbook*. LSTs were devised in response to concerns regarding exposure of individuals to criteria pollutants in local communities. LSTs represent the maximum emissions from a project that would not cause or contribute to an air quality exceedance of the most stringent applicable federal or state ambient air quality standard at the nearest sensitive receptor, taking into consideration ambient concentrations in each source receptor area (SRA), project size, distance to the sensitive receptor, etc. However, LSTs only apply to emissions within a fixed stationary location, including idling emissions during project construction. LSTs have been developed for NO_X, CO, PM_{10} and $PM_{2.5}$. LSTs are not applicable to mobile sources such as cars on a roadway (SCAQMD 2003). LSTs for operational emissions do not apply to on-site development since the majority of emissions would be generated by cars on the roadways. LSTs for operational emissions include but are not limited to NOx and CO combustion emissions from stationary sources and/or on-site mobile equipment. Some operational activities may also include fugitive $PM_{2.5}$ and PM_{10} dust generating activities such as aggregate operations or earthmoving activities in landfills. As the proposed project would not involve such activities, LSTs for operational emissions are not applicable.

LSTs have been developed for emissions in construction areas up to five acres in size. The SCAQMD provides lookup tables for project sites that measure one, two, or five acres. The project site is 5.09 acres and is located in Source Receptor Area 17 (SRA-17) (SCAQMD 2009). However, as development would only occur on approximately three acres of the project site, LSTs for a two acre site were used to provide a more conservative analysis. LSTs are provided for receptors at a distance of 82 to 1,640 feet (25 to 500 meters) from the project site boundary. The sensitive receptors immediately adjacent to the project site are the Ramada Plaza Hotel to the west and the Boys & Girls Club of Garden Grove south of the project site. The Ramada Inn is within 82 feet of the project site while the Boys & Girls Club facility is at a distance of approximately 115 feet. According to the SCAQMD's publication Final LST Methodology, projects located closer than 82 feet to the nearest receptor should use the LSTs for receptors located at 82 feet. For a conservative comparison, LSTs for construction on a two-acre site in SRA-17 are shown in Table 2, which indicates that the project would not exceed the LSTs.

Construction Emissions

Table 2 compares the estimated maximum daily emissions of pollutants for the proposed project to regional thresholds and LSTs. Emissions from construction of the proposed project would not exceed SCAQMD's regional or LSTs for any pollutant.

Completion of the previously approved project would require essentially the same construction activities as the proposed project since it would involve the same building footprint and only slightly larger building massing. Therefore, maximum daily construction emissions and impacts associated with the proposed project would not be substantially larger compared to the previously approved project and impacts would be less than significant.

Table 2 Construction Maximum Daily Air Pollutant Emissions for the Proposed Project

	Maximum Emissions (lbs/day)					
Construction Year	**ROG**	**NOx**	**CO**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
2018 Maximum lbs/day[1]	23.8	35.3	42.6	0.1	6.9	3.0
2018 Maximum On-site lbs/day[2]	N/A	23.4	17.6	N/A	1.5	1.4
SCAQMD Thresholds	75	100	550	150	150	55
Local Significance Thresholds[3] (LSTs) (on-site only)	N/A	115	715	N/A	6	4
Thresholds Exceeded?	No	No	No	No	No	No

Notes: All calculations were made using CalEEMod Version 2016.3.1. CalEEMod calculations are a part of the Greenhouse Gas Study (see Appendix B). Grading, Paving, Building Construction and Architectural Coating totals include worker trips, soil export hauling trips, construction vehicle emissions and fugitive dust. Numbers may not add up due to rounding.

[1] Maximum lbs/day refers to the total on-site and off-site emissions from construction activities

[2] Maximum on-site lbs/day refers only to emissions from on-site construction activities.

[3] LSTs are for a two-acre project in SRA-17 within a distance of 82 feet (25 meters) from the site boundary.

Operational Emissions

Table 3 summarizes the increase in emissions associated with operation of the proposed project. Emissions generated from operation of the proposed project would not exceed the SCAQMD thresholds for ROG, NO_X, CO, SO_X, PM_{10}, or $PM_{2.5}$. Therefore, air quality impacts associated with operation of the proposed project would be less than significant.

Table 3 Long-Term Operational Emissions (lbs/day)

Emission Source	**ROG**	**NOX**	**CO**	**SO2**	**PM10**	**PM2.5**
Area	21.4	7.6	133.6	0.4	16.6	16.6
Energy	0.1	1.2	0.5	<0.1	0.1	0.1
Mobile	3.9	16.5	38.4	0.1	8.3	2.3
Total Proposed Project Emissions	25.4	25.3	172.5	0.5	25.0	19.0
SCAQMD Thresholds	55	55	550	150	150	55
Threshold Exceeded?	No	No	No	No	No	No

Source: See Appendix B for Greenhouse Gas Study and CalEEMod calculations.

Note: Totals may not add up due to rounding.

Table 4 compares the estimated maximum daily emissions of pollutants for the proposed project compared to those of the previously approved project during each year of the construction period and Table 5 compares the estimated daily operational emissions for each project. As shown, emissions generated by construction of the proposed project would be approximately the same as the previously approved project, although the previously approved project would have slightly lower emissions as overall building size would be smaller than the proposed project. Neither of the

emissions would exceed SCAQMD's regional or local significance thresholds for any pollutant. Therefore, there would be no significant impacts beyond those associated with the previously approved project.

Table 4 Comparison of Construction Maximum Daily Air Pollutant Emissions

	Maximum Emissions (lbs/day)					
Construction Year	**ROG**	**NOx**	**CO**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Proposed Project						
2018 Maximum lbs/day	15.1	35.5	42.6	0.1	6.9	3.0
2018 Maximum On-site lbs/day	N/A	23.4	17.6	N/A	1.5	1.4
Previously Approved Project						
2018 Maximum lbs/day	12.0	35.0	33.5	0.1	4.9	2.5
2018 Maximum On-site lbs/day	N/A	23.4	17.6	N/A	1.5	1.4
SCAQMD Thresholds	75	100	550	150	150	55
Local Significance Thresholds[1] (LSTs) (on-site only)	N/A	115	715	N/A	6	4
Thresholds Exceeded?	No	No	No	No	No	No

Notes: All calculations were made using CalEEMod Version 2016.3.2. CalEEMod calculations are a part of the Greenhouse Gas Study (see Appendix B). Grading, Paving, Building Construction and Architectural Coating totals include worker trips, soil export hauling trips, construction vehicle emissions and fugitive dust. Numbers may not add up due to rounding.

[1] LSTs are for a two-acre project in SRA-17 within a distance of 82 feet (25 meters) from the site boundary.

As shown in Table 5, operational emissions under the proposed project would be higher than the previously approved project for four (4) criteria pollutants due to the vehicle trips associated with the difference in land uses between the proposed and previously approved projects, as well as the larger overall building size of the proposed project. However, because these emissions would not exceed SCAQMD thresholds, air quality impacts during operation of the proposed project not be substantially greater than those of the previously approved project and would be less than significant.

Table 5 Comparison of Operational Emissions (lbs/day)

Emission Source	ROG	NOx	CO	SO2	PM10	PM2.5
Proposed Project Emissions						
Area	21.4	7.6	133.6	0.4	16.6	16.6
Energy	0.1	1.2	0.5	<0.1	0.1	0.1
Mobile	3.9	16.5	38.4	0.1	8.3	2.3
Total Proposed Project Emissions	25.4	25.3	172.5	0.6	25.0	19.0
Previously approved Project Emissions						
Area	6.2	1.3	22.1	<0.1	2.7	2.7
Energy	<0.1	0.3	0.1	<0.1	<0.1	<0.1
Mobile	11.0	49.1	115.7	0.3	25.2	7.0
Total Previously Approved Project Emissions	17.2	50.6	137.9	0.4	28.0	9.8
SCAQMD Thresholds	55	55	550	150	150	55

Source: See Appendix B for Greenhouse Gas Study and CalEEMod calculations.
Note: Totals may not add up due to rounding.

LESS THAN SIGNIFICANT IMPACT

d. Would the project expose sensitive receptors to substantial pollutant concentrations?

Certain population groups, such as children, the elderly, and people with health problems, are particularly sensitive to air pollution. Sensitive receptors are defined as land uses that are more likely to be used by these population groups and include health care facilities, retirement homes, school and playground facilities, and residential areas.

The California Air Resources Board's (ARB's) *Air Quality and Land Use Handbook: A Community Health Perspective* (2005) recommends against siting sensitive receptors within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day. The primary concern with respect to heavy-traffic roadway adjacency is the long-term effect of toxic air contaminants (TACs), such as diesel exhaust particulates, on sensitive receptors. The primary source of diesel exhaust particulates is heavy-duty trucks on freeways and high-volume arterial roadways. However, California State Route (SR-22) is located approximately 0.5 mile south of the site and would not expose on-site receptors to substantial roadway pollutants. Garden Grove Boulevard and Brookhurst Street are the nearest arterial roadways within 500 feet of the project site. However, according to the 2017 Traffic Flow Map for Orange County, Garden Grove Boulevard carries approximately 24,000 vehicles per day and Brookhurst Street carries approximately 43,000 vehicles per day along segments nearest to the project site (Orange County 2017). Therefore, the proposed project would not introduce sensitive receptors within 500 feet of a freeway or urban roads with 100,000 vehicles per day and, therefore, would not expose sensitive receptors to substantial pollutant concentrations.

The 2005 MND also found a less than significant impact to sensitive receptors from the previously approved project. For this reason and because the proposed project and previously approved

project would occupy the same building footprint and generated emissions would not exceed SCAQMD thresholds, impacts under the proposed project would not be substantially greater than the previously approved project and would be less than significant.

LESS THAN SIGNIFICANT IMPACT

e. Would the project create objectionable odors affecting a substantial number of people?

The SCAQMD has identified some common types of facilities that have been known to produce odors: agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting operations, refineries, landfills, rendering plants, dairies, rail yards, and fiberglass molding operations. The proposed project would consist of commercial and residential uses; neither of these land uses is commonly associated with the production of objectionable odors. Although construction activities during project construction would potentially generate odors from fuel combustion, these odors would be temporary and would cease upon project completion. Therefore, there would be no impact related to odors.

The 2005 MND also concluded that the previously approved project would have no impact regarding objectionable odors for the same reasons discussed above. Therefore, the proposed project would not have any new impacts compared to the previously approved project and impacts would be less than significant.

NO IMPACT

4 Biological Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife 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, or regulations, or by the California Department of Fish and Wildlife or U.S. 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 local, regional, or state habitat conservation plan?	☐	☐	☐	■

a) *Would the project 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 Wildlife or U.S. Fish and Wildlife Service?*

b) *Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?*

c) *Would the project 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) *Would the project 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) *Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

f) *Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other previously approved local, regional, or state habitat conservation plan?*

The following response applies to (a) through (f).

The project site is located in a highly developed commercial corridor in the City of Garden Grove. The site is entirely paved and partially developed with steel building framework and is surrounded by similar urban development. There are no known endangered, threatened, or rare species currently on the project site or in the surrounding area. The only adjacent vegetation includes street trees and associated sparse landscaping along Garden Grove Boulevard at the northeast and northwest corners of the project site. Although no birds are known to inhabit these trees, it is possible that migratory birds could use them for nesting. In addition, as these trees are not located on the project site, no tree removal would be required for construction of the proposed project that could violate any local policies or ordinances regarding tree removal or potentially affect habitat of sensitive species. The project site is not near any critical habitat areas for endangered or threatened species per the U.S. Fish and Wildlife Service (USFWS) critical habitat mapper (USFWS 2017a) or any habitat area identified in the Conservation Element of the City of Garden Grove General Plan (City of Garden Grove 2008b). The project site is also not located on or near a federally protected wetland or within a wildlife habitat corridor (USFWS 2017b, CDFW 2017). Further, the project site is not located in an area subject to an adopted conservation plan. Therefore, development of the proposed project would not generate substantial adverse effects related to biological resources.

The proposed project would be located at the same site as the previously approved project. Due to the site's developed condition in an urban community, the 2005 MND determined that the previously approved project would have no impact on known endangered, threatened, or rare species; natural communities; and wildlife movement and wildlife corridors, and would not conflict with an approved local, regional, or State habitat conservation plan . Because the proposed project would be located on the same site analyzed in the 2005 MND and conditions regarding biological resources have not changed, the proposed project would not have new impacts beyond those of the previously approved project.

NO IMPACT

5 Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	■
b. Cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?	☐	☐	☐	■
c. Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	☐	☐	☐	■
d. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	■

a. Would the project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

According to the Conservation Element of the Garden Grove General Plan, three structures in the city are candidates for nomination to the *National Register of Historic Places* (City of Garden Grove 2008b). These include the Stanley or Ware House within Heritage Park, the Harry A. Lake House, and the Reyburn House. None of these structures are located within the vicinity of the project site and the project site contains no resources listed in the California Register of Historical Resources or as defined in CEQA Guidelines § 15064.5(a) (California State Parks 2017b). No impact would occur.

The proposed project would be located on the same site as the previously approved project. Therefore, as identified for the previously approved project in the 2005 MND no impact would occur under the proposed project.

NO IMPACT

b) Would the project cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?

c) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

d) Would the project disturb any human remains, including those interred outside of formal cemeteries?

The Garden Grove General Plan Conservation Element identifies one prehistoric site and twelve historic archaeological sites dating from the early 1900s located within the City (Garden Grove 2008b). However, none of these sites are located within the vicinity of the project site.

The site is currently entirely paved and developed with steel building framework. The site is disturbed from previous grading and paving activities and disturbed soils typically eliminate the original stratigraphic/geologic context for resources, which are therefore not considered "significant" or "unique." The proposed construction site contains no known or recorded archaeological resources, paleontological resources, unique geologic features, or human remains. Therefore, no such resources are anticipated to be discovered on the site and the likelihood for unknown archaeological resources, paleontological resources, human remains, or unique geologic resources to be present in the area of proposed disturbance is low. However, because the current framework would be used to complete construction of the proposed project, no major ground disturbing activities would be required. Though it is likely that some ground disturbance would be needed to install additional framework and foundational support according to current building code, ground disturbing activities would be minimal. As a result, construction of the proposed project would not be expected to affect any potential archaeological or paleontological resources or human remains that may be present on the project site. Further, given that no historic, paleontological or archaeological resources or human remains are anticipated to be discovered at the project site impacts would be less than significant.

The proposed project would be located on the same site as the previously approved project; therefore impacts to cultural resources would be similar. Due to the disturbed condition of the project site, the 2005 MND determined that the previously approved project would have no impact on archaeological, paleontological, or human remains. Because construction of the proposed project would not require additional intensive grading or excavation on-site, and only minimal ground disturbance would occur, no impact would occur with implementation of the proposed project.

NO IMPACT

6 Geology and Soils

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Expose people or structures to potentially substantial adverse effects, including the risk of loss, injury, or death involving:				
1. 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?	☐	☐	■	☐
2. Strong seismic ground shaking?	☐	☐	■	☐
3. Seismic-related ground failure, including liquefaction?	☐	☐	☐	■
4. Landslides?	☐	☐	☐	■
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	■	☐
c. Be located on a geologic unit or soil that is made unstable as a result of the project, and potentially result in on or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	■	☐
d. Be located on expansive soil, as defined in Table 1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	■
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	■

a.1. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving 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?

The project site is located in Southern California, which is a seismically active region at the junction of the North American and Pacific tectonic plates. The proposed project would occur on an approximately 5.09-acre site (134600 sf) in the southwestern portion of the City of Garden Grove in Orange County. This area is relatively flat. Soil groups in the project area primarily consist of alluvial fans typically consisting of deposits of fine sandy loam and silts. (U.S. Department of Agriculture 2017).

The project site is not located in an area that has been identified as having a known earthquake fault as delineated by the Fault Activity Map of California of the California Department of Conservation. The closest fault to the project site is the Los Alamitos Fault located approximately six miles east of the site. This fault is a concealed fault generally running northwest to southeast in direction. Displacement along this fault occurred during the Late Quaternary period (during the past 700,000 years), but this fault is not considered active as displacement has not occurred during the past 11,700 years (CGS 2015). No known fault lines have been mapped across the project site and the Alquist-Priolo Earthquake Fault Zones map for the Anaheim Quadrangle does not show the project site as being in an Earthquake Fault Zone (CGS 1998). Therefore, development of the proposed project would not be expected to expose future residents to risk of fault rupture and impacts would be less than significant.

The proposed project would be located at the same site as the previously approved project, with similar risks related to fault rupture. Because development of the proposed project would be subject to CBC requirements and geologic conditions at the project site have not changed, impacts related to ground rupture would not be greater than those identified in the 2005 MND and would be less than significant.

LESS THAN SIGNIFICANT IMPACT

a.2. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

a.3. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

The following response applies to (a.2) and (a.3).

The project site is located in the seismically active Southern California Region and is, therefore, susceptible to ground shaking during a seismic event. Although no known faults cross the project site, the Los Alamitos fault is approximately six miles east of the project site so ground shaking would be expected in the event of an earthquake as well as other secondary impacts from seismic activity, such as liquefaction. Further, the project site is being located in an area subject to liquefaction according the Earthquake Fault Zones map for the Anaheim Quadrangle as well as the Safety Element of the Garden Grove General Plan (City of Garden Grove 2008c). To reduce geologic and seismic impacts, the City regulates development through the requirements of the California Building Code (CBC). The purpose of the CBC is to establish minimum standards to safeguard the public health, safety, and general welfare through structural strength, means of egress, and general stability by regulating and controlling the design, construction, quality of materials, use and

occupancy, location, and maintenance of all building and structures within its jurisdiction. The earthquake design requirements of the CBC take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients. The CBC provides standards for various aspects of construction, including but not limited to excavation, grading, and earthwork construction, preparation of the site prior to fill placement, specification on fill materials and fill compaction and field testing, retaining wall design and construction, foundation design and construction, and seismic requirements. It includes provisions to address issues such as (but not limited to) construction on expansive soils and soil strength loss. In accordance with California law, project design and construction would be required to comply with provisions of the CBC. The proposed project would comply with CBC provisions and requirements to reduce potential impacts to future residents from ground shaking and liquefaction. Adherence to CBC standards would reduce potential impacts to a less than significant level.

The proposed project would be located at the same site as the previously approved project, with similar risk levels regarding local geologic conditions. Although the proposed project would have a slightly larger building size, and therefore possibly require additional structural support, as the location of the building is the same as the previously approved project, risk of exposure to geologic hazards would be generally the same. The 2005 MND concludes that impacts associated with the previously approved project would be less than significant with adherence to standard engineering practices and design criteria relative to seismic and geologic hazards within the CBC. The proposed project would also be required to adhere to the CBC; therefore, impacts related to seismic ground shaking or ground failure would not be greater than those analyzed in the 2005 MND and would be less than significant.

LESS THAN SIGNIFICANT IMPACT

a.4. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

The geologic character of an area determines its potential for landslides. Steep slopes, the extent of erosion, and the rock composition of a hillside all contribute to the potential for slope failure and landslide events. In order to fail, unstable slopes need to be disturbed. Common triggering mechanisms of slope failure include undercutting slopes by erosion or grading, saturation of marginally stable slopes by rainfall or irrigation, and shaking of marginally stable slopes during earthquakes. The topography of the project site and the surrounding area is generally flat. According to the Earthquake Fault Zones map for the Inglewood Quadrangle, the project site is not located in a landslide hazard zone (CGS 1998). Therefore, no impact would occur with respect to landslides.

The 2005 MND determined that development of the project site with the previously approved project would have no impact associated with respect to landslides given the generally flat topography of the surrounding area. The proposed project would be located on the same site and construction activities would use the existing steel framework; therefore, landslide risks would not be greater than those of the previously approved project as analyzed in the 2005 MND.

NO IMPACT

b. Would the project result in substantial soil erosion or the loss of topsoil?

The proposed project would involve construction of an eight-story mixed-use senior living facility. The project site is currently partially developed with a steel building framework that would be used for construction of the proposed project. The site is entirely paved and no demolition or grading

activities would be required for project construction. Because construction of the proposed project would not involve major ground disturbance activities, there would be no anticipated increase in the potential for soil erosion from the project site. Although the proposed project would have a slightly larger building size, and therefore possibly require ground disturbance to install additional structural and foundational support, ground disturbance would be minimal and would not substantially increase potential soil erosion. Nevertheless, construction of the proposed project would be required to comply with Construction General Permit (Order Nos. 2009-0009-DWQ and 2010-0014-DWQ), which is issued by the State Water Resources Control Board (SWRCB). The Construction General Permit requires the development of a Storm Water Pollution Prevention Plan (SWPPP), which outlines best management practices (BMP) to reduce erosion and topsoil loss from stormwater runoff. Compliance with the Construction General Permit would ensure that BMPs are implemented during construction, and prevent substantial soil erosion or the loss of topsoil and no impacts related to soil erosion would occur.

Construction activities under the proposed project would be similar to those of the previously approved project. Therefore, with adherence to building code and the City's Engineering Services Division requirements, impacts to topsoil generated by construction of the proposed project would not be substantially greater than those of the previously approved project and would be less than significant.

LESS THAN SIGNIFICANT IMPACT

c. Would the project be located on a geologic unit or soil that is made unstable as a result of the project, and potentially result in on or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?

As discussed under item b, although the project site is located in a seismically active area and is within an area designated for liquefaction risk, the proposed project would comply with CBC building requirements to reduce potential effects from unstable soils and liquefaction. Further, the proposed project would not involve any activities known to cause or trigger subsidence and is not anticipated to adversely affect soil stability or increase the potential for local or regional landslides, subsidence, liquefaction, or collapse. Compliance with CBC requirements would further help reduce these potential risks. Because the project would not create or exacerbate conditions related to unstable soils, impacts would be less than significant.

The proposed project would be located on the same site as the previously approved project and would therefore have a similar risk of unstable soils. Therefore, with adherence to applicable building codes, the proposed project would not generate greater impacts than those of the previously approved project and impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

d. Would the project be located on expansive soil, as defined in Table 1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Expansive soils are those with the ability to shrink or swell as its water content changes. According to the Natural Resource Conservation Service Web Soil Survey, the project site is located on alluvial fans consisting of fine sandy loam and silts. These soils are not associated with high shrink/swell potential. Further, neither the Garden Grove General Plan nor the City Municipal Code currently address risks associated with expansive soils in the City. However, the development of the proposed project would be required to adhere to CBC regulations. Foundation and structural design would be

required to incorporate measures prescribed in the CBC to address these design considerations and minimize project impacts related to expansive soils. Because the project would not create or exacerbate the potential for soil expansion, impacts related to expansive soils would be less than significant.

The proposed project would be located on the same site as the previously approved project; therefore impacts from expansive soils would not be greater than those identified for the previously approved project. The 2005 MND determined that the previously approved project would comply with applicable building codes, and therefore would have no impact regarding expansive soils. As described, the proposed project would also comply with building code regulations and would have no impacts similar to the previously approved project.

NO IMPACT

e. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

The proposed project would require a lift station for waste to connect to the City's sewage disposal system and would not use septic tanks or an alternative wastewater disposal system. Therefore, the proposed project would have no impact related to septic tanks or alternative wastewater systems and would not generate new impacts compared to the previously approved project.

NO IMPACT

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7 Greenhouse Gas Emissions

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	■	☐
b. Conflict with any applicable plan, policy, or regulation adopted for the purposes of reducing the emissions of greenhouse gases?	☐	☐	☐	■

The analysis below is based on the Greenhouse Gas Study prepared by Rincon Consultants for the proposed project (see Appendix B). The Greenhouse Gas Study analyzes the proposed project's greenhouse gas (GHG) emissions and associated impacts to regional climate change in comparison to existing conditions on the project site.

Based on Appendix G of the CEQA Guidelines, there are two paths to evaluate the significance of impacts related to GHG emissions from a project:

- Calculate GHG emissions to evaluate if they may have a significant impact on the environment; and/or
- Evaluate consistency with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHG that qualifies as a GHG reduction plan as defined in in CEQA Guidelines Section 15183.5.

The majority of individual projects do not generate sufficient GHG emissions to directly influence climate change. However, physical changes caused by a project can contribute incrementally to cumulative effects that are significant, even if individual changes resulting from a project are limited. The issue of climate change typically involves an analysis of whether a project's contribution towards an impact would be cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines, Section 15064[h][1], AEP 2017).

According to CEQA Guidelines, projects can tier off of a qualified GHG reduction plan, which allows for project-level evaluation of GHG emissions through the comparison of the project's consistency with the GHG reduction policies included in a qualified GHG reduction plan. This approach is considered by the Association of Environmental Professionals (AEP) in their white paper, *Beyond Newhall and 2020*, to be the most defensible approach presently available under CEQA to determine the significance of a project's GHG emissions (AEP 2015). However, Garden Grove does not currently have a qualified GHG reduction plan; therefore, this approach is not currently feasible.

To evaluate whether a project may generate a quantity of GHG emissions that may have a significant impact on the environment, a number of operational bright-line significance thresholds have been developed by State agencies. Significance thresholds are numeric mass emissions thresholds that identify the level at which additional analysis of project GHG emissions is necessary. Projects that attain the significance target, with or without mitigation, would result in less than significant GHG emissions. Many significance thresholds have been developed to reflect a 90 percent capture rate tied to the 2020 reduction target established in Assembly Bill (AB) 32. These targets have been identified by numerous lead agencies as appropriate significance screening tools for projects with horizon years before 2020.

In guidance provided by the SCAQMD's GHG CEQA Significance Threshold Working Group in September 2010, SCAQMD considered a tiered approach to determine the significance of residential and commercial projects. The draft tiered approach is outlined in meeting minutes dated September 29, 2010.

- **Tier 1** If the project is exempt from further environmental analysis under existing statutory or categorical exemptions, there is a presumption of less than significant impacts with respect to climate change. If not, then the Tier 2 threshold should be considered.
- **Tier 2** Consists of determining whether or not the project is consistent with a GHG reduction plan that may be part of a local general plan, for example. The concept embodied in this tier is equivalent to the existing concept of consistency in CEQA Guidelines section 15064(h)(3), 15125(d) or 15152(a). Under this Tier, if the proposed project is consistent with the qualifying local GHG reduction plan, it is not significant for GHG emissions. If there is not an adopted plan, then a Tier 3 approach would be appropriate.
- **Tier 3** Establishes a screening significance threshold level to determine significance. The Working Group has provided a recommendation of 3,000 metric tons (MT) of carbon dioxide equivalent (CO2e)[1] per year for low-density mixed use projects. Low-density mixed use developments commonly include low-density housing combined with supporting land uses in close proximity that are generally consistent with the characteristics of the surrounding neighborhood.
- **Tier 4** Establishes a service population threshold to determine significance. The Working Group has provided a recommendation of 4.8 MT of CO2e per year for land use projects.

The Tier 4 threshold applies best to evaluating impacts of the proposed project's GHG emissions because the proposed project is not exempt from analysis (Tier 1), the City does not have a qualified GHG reduction plan (Tier 2), and the proposed project is not a low-density development (Tier 3). A series of sensitivity analyses was performed by SCAQMD to assess the likely project size for the Tier 3 threshold and included single-family residential projects up to 80 units in size or commercial office projects up to 265,000 sf, which is not consistent with the density or mixed-use character of the proposed project (SCAQMD 2008). Rather, the proposed project is more comparable to a high-density development the impacts of which would be more appropriately quantified by a service population threshold (Tier 4) to reflect per-person emission efficiency.

[1] Because GHGs absorb different amounts of heat, a common reference gas (CO_2) is used to related the amount of heat absorbed to the amount of the gas emissions, referred to as "carbon dioxide equivalent" (CO_2e), and is the amount of a GHG emitted multiplied by its global warming potential (GWP). CO_2 has a 100-year GWP of one. By contrast, CH_4 has a GWP of 25, meaning its global warming effect is 25 times greater than CO2 on a molecule per molecule basis (Intergovernmental Panel for Climate Change [IPCC] 2007).

The Tier 4 SCAQMD threshold was designed to ensure that the AB 32 2020 statewide GHG reduction target for land use sectors would be achieved by dividing the 2020 target by 2020 statewide service population (population plus employment for land use sectors only). The AEP white paper, *Beyond Newhall and 2020*, recommends that for projects with a horizon of 2020 or earlier, a threshold based on meeting AB 32 targets should be used (AEP 2016). Thus, projects with horizon years of 2020 or earlier, and emissions below the SCAQMD threshold are not expected to require GHG mitigation for state mandates to be achieved. Based on an assumed construction start date of January 2019 for the proposed project, and the applicant's estimated a 12-month construction period, project construction would be completed in late 2019 and the proposed project would be fully operational in 2020. Therefore, the horizon year is 2020. However, a construction period of January 2018 to December 2018 was modeled in CalEEMod to provide a more conservative analysis and discount any future regulatory changes that may be implemented to increase equipment efficiencies and/or restrict GHG emissions.

This analysis is based on the methodologies recommended by the California Air Pollution Control Officers Association [CAPCOA] (2008) CEQA and Climate Change white paper. The analysis focuses on CO_2, N_2O, and CH_4 because these are the GHG emissions that onsite development would generate in the largest quantities.

a. Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

The proposed project would generate temporary GHG emissions through the burning of fossil fuels or other GHG emissions during construction, including on-site stationary emissions and off-site mobile emissions. Construction emissions are associated with the operation of diesel powered equipment. Operational emissions include area sources (consumer products, landscape maintenance equipment, and painting), energy use (electricity and natural gas), solid waste, electricity to deliver water, and transportation emissions associated with the previously approved project and the proposed project. The following summarizes emissions associated with construction and operation of the proposed project. Total project emissions were compared to the recommended GHG emissions threshold of 4.8 MT of CO_2e per the service population shown in Table 6.

Construction Emissions

As shown in **Error! Reference source not found.**Table 7, construction activity for the proposed project would generate an estimated 984 MT of CO_2e that, when amortized over 30 years, would be approximately 32.8 MT of CO_2e per year.

Stationary and Mobile Source Emissions

Under the Tier 4 threshold, total emissions generated by a project are estimated over a service population. For this analysis, the service population for each project was determined by the population and employment growth generated from development under each project. The proposed project would include 400 residential units and 12,938 sf of commercial space. As discussed in Section 13, *Population and Housing*, the proposed project would generate an estimated 769 residents. Further, according to SCAG's employment density study, which provides employment density factors for different land use categories in Orange County, the employment density factor for commercial retail development in Orange County is 450 sf per employee. Therefore, the proposed project would generate 29 new employees. Table 6 shows the total combined population

and employment growth generated under the proposed project. In total, the proposed project would generate an estimated population increase of 798.

Table 6 Proposed Project Service Population

Land Use	Growth Projections
Residential	769
Commercial	29
Total	798

Notes:

Employment growth estimated with the following calculation methodology: land use sf/employment density rate= estimated employee generation

An employment density rate of 450 median sf per employee was used for the proposed project based on the land use category of Other Retail/Svc.

Source: SCAG 2001

Table 7 summarizes construction, operational, and mobile GHG emissions associated with development of the proposed project per its associated service population estimate. Annual emissions from the proposed project would total approximately 4.1 MT of CO_2e per service population. The increase in emissions compared to existing conditions on the unoccupied site, which currently generates no emissions, would result from mobile emissions (i.e., CO_2, CH_4, and N_2O) caused by vehicle trips to and from the project site. However, as emissions generated from the proposed project would be below SCAQMD thresholds, impacts would be less than significant.

Table 7 Proposed Project Annual GHG Emissions

Emission Source	Proposed Project Annual Emissions
Construction[1]	32.8
Operational	
Area	119.0
Energy	1,111.0
Solid Waste	99.4
Water	210.0
Mobile	
CO2 and CH4	1,514.0
N2O	67.6
Total	3,153.8
Service Population	769
Total/Service Population	4.1 MT CO2e/ service population/year
SCAQMD Tier 4 Threshold	4.8 MT CO_2e/service population/year

[1] Amortized per year construction emissions for a 30 year period.
See Appendix B for CalEEMod results. Some numbers may not add due to rounding. Emission data is pulled from "mitigated" results that account for compliance with regulations and project features, such as project proximity to public transit.

The 2005 MND does not include an analysis of greenhouse gas emissions or climate change, as it was not required by CEQA at the time. Therefore, emissions associated with construction and operation of the previously approved project are calculated herein.

Construction activity for the previously approved project would generate an estimated 784 MT of CO_2e, 26.1 MT of CO_2e per year over a 30-year period. In comparison, the proposed project would generate more emissions (approximately 984 MT of CO_2e, or 32.8 MT of CO_2e per year over a 30-year period). Table 8 compares the service population generated under the proposed project and the previously approved and Table 9 compares operational emissions.

Table 8 Service Population Comparison

	Growth Projections	
Project	**Previously Approved Project**	**Proposed Project**
Population	246	769
Employees	275	29
Total	521	798

Notes:

Employment growth estimated with the following calculation methodology: land use sf/employment density rate= estimated employee generation

An employment density rate of 450 median sf per employee was used for both previously approved and proposed projects based on the land use category of Other Retail/Svc.

Source: SCAG 2001

Table 9 Annual GHG Emission Comparison

	Project Emissions (MT CO2e)	
Emission Source	**Previously Approved Project**	**Proposed Project**
Construction	32.8[1]	32.8
Operational		
Area	19.6	119
Energy	1,041	1,111
Solid Waste	81.3	99.4
Water	105	210
Mobile		
CO2 and CH4	4,556	1,514
N2O	205	67.6
Total	6,034	3,153.8
Service Population	521	798
Total/Service Population	11.6 MT CO2e/ service population/year	4.1 MT CO2e/ service population/year
SCAQMD Tier 4 Threshold	4.8 MT CO2e/service population/year	

Notes:
[1] As the previously approved and proposed project would be approximately the same size, construction emissions would be approximately the same for development under each.
Numbers may not add due to rounding.
See Appendix B for CalEEMod results. Some numbers may not add due to rounding. Emission data is pulled from "mitigated" results that account for compliance with regulations and project features, such as project proximity to public transit.

The proposed project would result in a net reduction in operational emissions of 7.5 MT of CO_2e per service population in comparison to the previously approved project. This would be primarily because the proposed project would generate fewer mobile emissions (i.e., CO_2, CH_4, and N_2O) caused by vehicle trips to and from the project site due to the decrease in commercial use (from 123,662 sf to 12,938 sf). Per capita emissions for the previously approved project would exceed the SCAQMD threshold of 4.8 MT of CO_2e per service population. By comparison and as discussed above, the proposed project's emissions would be below the per service population threshold; thus, the proposed project's impact would be lower than that of the previously approved project.

LESS THAN SIGNIFICANT IMPACT

b. Would the project conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The proposed project would be generally consistent with applicable regulations or plans addressing GHG reductions, including the SCAG 2016 RTP/SCS. Specifically, SCAG's 2016-2040 RTP/SCS provides transportation and development strategies to reduce regional emissions. The City has not adopted a GHG reduction plan, such as a CAP and there are no adopted General Plan policies that directly address citywide levels of GHG. In addition, Orange County has not adopted a regional GHG reduction plan that the City has adopted. As such, the County refers to the AQMP regulations

regarding GHG reduction strategies. The initiatives and strategies in the AQMP are guided by the growth projections and development strategies provided in the 2016 RTP/SCS.

The design and implementation of development of the proposed project would comply with CalGreen Building Standards, which include measures to reduce emissions. The proposed project would also comply with SCAQMD Rule 1113 that limits ROGs from building architectural coatings to 50 g/L. Table 10 provides an analysis of the proposed project's consistency with applicable goals and strategies set forth in Chapter 5, *On the Road to Greater Mobility and Sustainable Growth*, of the 2016 RTP/SCS (SCAG 2016).

Table 10 Consistency with Applicable SCAG RTP/SCS GHG Emission Reduction Strategies

Reduction Strategy	Project Consistency
Land Use and Action Strategies	
Focus new growth around transit The 2016 RTP/SCS land use pattern reinforces the trend of focusing growth in the region's High Quality Transit Areas (HQTAs). Concentrating housing and transit in conjunction concentrates roadway repair investments, leverages transit and active transportation investments, reduces regional life cycle infrastructure costs, improves accessibility, avoids greenfield development, and has the potential to improve public health and housing affordability. HQTAs provide households with alternative modes of transport that can reduce VMT and GHG emissions.	**Consistent** The proposed project would involve construction of a mixed-use residential and commercial project in an area well-served by public transit. The project is located less than one quarter of a mile from five bus stops served by OCTA routes 35 and 56, and within a mile of numerous bus stops served by the same routes.
Provide more options for short trips 38 percent of all trips in the SCAG region are less than three miles. The 2016 RTP/SCS provides two strategies to promote the use of active transport for short trips. Neighborhood Mobility Areas are meant to reduce short trips in a suburban setting, while "complete communities" support the creation of mixed-use districts in strategic growth areas and are applicable to an urban setting.	**Consistent** The proposed project would involve construction of a mixed-use project in an urban area currently served by a mix of commercial and retail uses, public services (e.g., post office, police, and fire department), schools, libraries, and residences. The site is located less than one quarter of a mile from five bus stops, and nearest bus stop is located within 0.1 mile of the site. The transit options provide public access to local and regional destinations. Walking or biking would also be viable modes of transportation to reach numerous destinations or public transit.
Other Initiatives	
Reduce emissions resulting from a project through implementation of project features, project design, or other measures. Incorporate design measures to reduce energy consumption and increase use of renewable energy.	**Consistent** The design and implementation of the proposed project would comply with CalGreen Building Standards, which includes measures to reduce emissions. The project would also comply with SCAQMD Rule 1113 that limits ROGs from building architectural coatings to 50 g/ L.

Source: SCAG, RTP/SCS, 2016.

The proposed project would comply with the California Building Standards Code, which requires energy efficiency, water efficiency, and material conservation and resource efficiency, and SCAQMD rules (e.g., Rule 1113 and 445). It is also consistent with regional and local strategies to reduce GHG emissions, as detailed in Table 10. The proposed project is infill development at a site served by

public transit in short distance of retail, commercial, and public uses, and would generate approximately 4.5 MT of CO_2e per service population per year. This falls below the SCAQMD significance threshold of 4.8 MT CO_2e per service population per year. The proposed project would not substantially contribute to City, regional or statewide GHG emissions or obstruct achievement of local targets and state mandates. Therefore, the proposed project would be consistent with state, local, and regional plans to reduce GHG emissions and no impact would occur.

As discussed, construction activities under the previously approved project would be similar to those of the proposed project, and therefore would generate similar levels of construction emissions. However, because of the smaller amount of commercial development, the proposed project would generate considerably less vehicle trips, and therefore would have less operational emissions. In result, the proposed project would have fewer overall emissions compared to the previously approved project. Although the 2005 MND does not specifically analyze GHG emissions, the report concludes that the previously approved project would implement mitigation measures recommended in the General Plan EIR to reduce overall emissions to a level that would not conflict with local attainment plans or emissions thresholds, and therefore would have a less than significant impact with regard to pollutant emissions. Because the proposed project would generate fewer emissions than the previously approved project and would comply with applicable SCAQMD reduction strategies, impacts to GHG reduction targets would be less than the previously approved project and no impact would occur.

NO IMPACT

8 Hazards and Hazardous Materials

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	■
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	■
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?	☐	☐	☐	■
d. Be located on a site that is included on a list of hazardous material 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 in 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?	☐	☐	☐	■

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	■
h. Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	■

a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

b. Would the project 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?

The following response applies to (a) and (b).

Potentially hazardous materials such as fuels, lubricants, and solvents would be used by heavy machinery during construction of the project. However, the transport, use, and storage of hazardous materials during construction of the project would be conducted in accordance with all applicable state and federal laws, such as the Hazardous Materials Transportation Act, Resource Conservation and Recovery Act, the California Hazardous Material Management Act, and the California Code of Regulations, Title 22.

The proposed project involves development of a senior housing development with supporting commercial and some open space use. Activities associated with these uses would not involve on-site handling or use of hazardous materials; common household cleaners would likely be the chemicals most often used on-site during operation of the proposed project and are not considerably hazardous. Therefore, the proposed project would not subject future residents or the general public to risk of exposure to hazardous materials and no impacts would occur.

Compared to the previously approved project, although the proposed project would involve more residential units and less commercial use, activities associated with construction and operation would be generally equivalent to the previously approved project. The 2005 MND concludes that the previously approved project would not generate health hazards and the proposed project would not generate any new impacts given that it would be on the same site as the previously approved project and would not involve uses (senior housing and commercial) that would not involve the handling, use, or transport of large quantities of hazardous materials.

NO IMPACT

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

The school nearest to the project site is Sunnyside Elementary School located approximately 0.3 miles to the south. There are no schools within a 0.25-mile radius of the project site. Though potentially hazardous materials such as fuels, lubricants, solvents, and oils could be used during construction of the proposed project, the transport, use, and storage of any and all hazardous materials would be conducted in accordance with all applicable State and federal laws, such as the Hazardous Materials Transportation Act, Resource Conservation and Recovery Act, the California Hazardous Material Management Act, and the California Code of Regulations, Title 22. Impacts to schools associated with hazardous emissions would be less than significant.

Construction and operational activities of the proposed project would be generally similar to those of the previously approved project and the project site would remain the same. The 2005 MND concludes that the previously approved project would not result in impacts to any school from use or transport of hazardous materials. Given that the proposed project would occur at the same site and would involve uses that do not involve the handling, use, or transport of large quantities of hazardous materials. Household cleaners would be the primary chemicals used on-site. Therefore, no new impacts would be generated compared to the previously approved project.

NO IMPACT

d. Would the project be located on a site included on a list of hazardous material 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?

The following databases compiled pursuant to Government Code Section 65962.5 were checked on November, 2017 for known on-site hazardous materials contamination:

- **United States Environmental Protection Agency (U.S. EPA).** Superfund Enterprise Management System (SEMS) Database
- **California State Water Resources Control Board (SWRCB).** GeoTracker Database search for leaking underground storage tanks (LUSTs)
- **California Department of Toxic Substances Control (DTSC).** Brownfields and Environmental Restoration Program Cleanup (Cleanup Program) EnviroStor Database

The project site is not located on or adjacent to any known hazardous or contaminated sites. The SEMS and Envirostor database searches did not produce any results with the project site, indicating that the site is free of known hazards and contaminants (U.S. EPA 2017, DTSC 2017). A search of the GeoTracker Database identified the project site as listed for potential gasoline contamination in 1999 associated with the former on-site car dealership (SWRCB 2017). However, according to the GeoTracker Database records, the cleanup case was closed as of 2003 and “No Further Action” letter from the County of Orange Health Care Agency was issued (SWRCB 2017). The GeoTracker database identified two cleanup sites listed for gasoline contamination within a 1,000-foot radius of the project site; however, both have been designated as closed cases for over 20 years. Therefore, the project site does not contain any hazardous materials. Construction and operation would be subject to State regulations and would not affect nearby areas. Impacts related to hazardous material sites would be less than significant.

The proposed project would be located on the same site as the previously approved project. Because the 2005 MND concludes that the previously approved project would not result in exposure of potential future residents or the public to hazardous materials based on the location of the

project site, impacts under the proposed project would not be greater than those identified in the 2005 MND and would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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 near a private airstrip, would it result in a safety hazard for people residing or working in the project area?

The following response applies to (e) and (f).

The project site is not located within two miles of a public airport or private airstrip. The nearest airport to the project site is the Fullerton Airport located approximately seven miles north of the site. There is also a joint forces training base with an air traffic control tower in Los Alamitos approximately 5.5 miles northwest of the project site. Therefore, the proposed project would not result in any impacts related to hazards near airports and airstrips. Because the previously approved project would be on the same site as the proposed project, it would have no impacts with respect to aircraft-related hazards. Although the proposed project would increase the number of on-site residents compared to the previously approved project, residents would not be exposed to aircraft-related hazards.

NO IMPACT

g. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

According to the General Plan Safety Element, the City has a detailed Emergency Operations Plan (EOP) which provides the basis for the City's emergency planning. The General Plan Safety Element also identifies the Emergency Operations Centers, and indicates the personnel responsible for managing the emergency operations systems (City of Garden Grove 2008c).

No roads would be permanently closed as a result of the construction or operation of the proposed project, and no structures would be developed that could potentially impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Construction activities would cause temporary street closures; however, activities would be coordinated with the City police and fire departments to determine adequate alternative site access and travel routes during this time. The proposed project would be accessed via driveways along Garden Grove Boulevard at the eastern and western boundaries of the project site. In addition, the proposed project would not implement features, such as inadequate stair access or security lighting, that would interfere with the EOP. Therefore, the proposed project would not result in impacts related to emergency response or evacuation plans. No impact would occur.

Compared to the previously approved project, the proposed project would generally have the same building design and site access features. The 2005 MND concludes that the previously approved project would not interfere with emergency response or evacuation plans. Although the proposed project would have a slightly different building design than the previously approved project, with eight stories along the southern façade as compared to five stories, this would not affect existing City evacuation plans or emergency response plans. Therefore the proposed project would not generate new impacts compared to those under the previously approved project.

NO IMPACT

h. Would the project 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?

The City of Garden Grove has a generally negligible risk of wildfires as it is substantially urbanized and built-out and the General Plan Safety Element does not identify any areas within the City as having wild fire risk. Despite these conditions, development of the proposed project would abide by all federal and local codes applicable to fire prevention including the Uniform Fire Code (UFC), Uniform Building Code (UBC), California Administrative Code Title 19 (State Fire Code), and all fire prevention and protection measures stated in the GGMC. Further, the City Fire Department would review all building plans prior to construction to ensure that all required fire prevention and protection measures are included in the final plans. Due to the urbanized location of the site and compliance with applicable safety measures, no impact would occur.

The proposed project would be located on the same site as the previously approved project. The 2005 MND concludes that development of the previously approved project on the project site would not cause impacts related to wildland fires, therefore the proposed project would not generate substantially greater impacts.

NO IMPACT

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9 Hydrology and Water Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements?	☐	☐	☐	■
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering or the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that 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 that would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	■
d. Substantially alter the existing drainage pattern of the site or area, including the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	☐	☐	☐	■
e. Create or contribute runoff water that 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?	☐	☐	☐	■

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
g. Place housing in a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary, Flood Insurance Rate Map, or other flood hazard delineation map?	☐	☐	☐	■
h. Place structures in a 100-year flood hazard area that would impede or redirect flood flows?	☐	☐	☐	■
i. Expose people or structures to a significant risk of loss, injury, or death involving flooding, including that occurring as a result of the failure of a levee or dam?	☐	☐	☐	■
j. Result in inundation by seiche, tsunami, or mudflow?	☐	☐	☐	■

Huitt-Zollars, Inc. prepared a Water Quality Management Plans (WQMP) for the proposed project in August 2017. This report is included as Appendix C of this document.

a) Would the project violate any water quality standards or waste discharge requirements?

e) Would the project 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) Would the project otherwise substantially degrade water quality?

The following response applies to (a), (e), and (f).

As part of Section 402 of the Clean Water Act (CWA), the U.S. EPA has established regulations under the National Pollution Discharge Elimination System (NPDES) program to control both storm water discharges during construction and operation of the development projects. In California, the State Water Quality Control Board administers the NPDES permitting program and is responsible for developing permitting requirements. Under the conditions of the NPDES permit, the project applicant would be required to eliminate or reduce non-storm water discharges, develop and implement a Storm Water Pollution Prevention Plan (SWPPP) for the project construction activities, and perform inspections of the SWPPP measures and control practices to ensure conformance. The SWPPP identifies best management practices (BMPs) that control surface runoff, erosion, and sedimentation. The applicant would be required to control pollutant discharge by utilizing BMPs such as the Best Available Technology Economically Achievable (BAT) and the Best Conventional Pollutant Control Technology (BCT) to avoid discharging pollutants into the storm drain system.

The project site is located in an urban area and is currently entirely paved and developed with the steel frame for the previously approved project. Drainage is collected in storm drains along sidewalk

gutters and directed to the City's existing stormwater system. Construction of the proposed project would not involve ground disturbing activities that would alter the amount of impervious surface area on the project site, therefore existing drainage conditions would not be changed in a way that increases or decreases on-site flows. In result, upon completion, the proposed project would not affect existing stormwater flows off the site and would not affect water quality.

In addition, the proposed project would be required to comply with all established regulations under the National Pollution Discharge Elimination System (NPDES) permitting program to control both construction and operation stormwater discharges, including developing and implementing a SWPPP and implementing applicable BMPs. The proposed project would also be required to comply with Section 9.18.120.020 of the City Municipal Code that requires all irrigation systems for mixed-use projects to avoid runoff, low-head drainage, overspray or other similar conditions where irrigation water flows onto non-targeted areas, such as adjacent property, non-irrigated areas, hardscapes, roadways, or structures (Garden Grove 2017). Furthermore, the proposed project would comply with the measures and requirements provided in the Water Quality Management Plan (WQMP) prepared for the proposed building (Appendix C). Overall, compliance with NPDES permit requirements, the City Municipal Code, and the WQMP would ensure that the proposed project would not cause adverse impacts related to water quality standards or existing drainage conditions.

Compared to the previously approved project, development of the proposed project would have similar building design and construction, even though the proposed project would be slightly larger in overall building size. The 2005 MND concludes that the previously approved project would not substantially degrade water quality standards or surface runoff as it would comply with City Municipal Code requirements, NPDES permit requirements, and would incorporate drainage plans into the construction plans to be previously approved by the City's Engineering services Division. The proposed project would also be subject to these requirements as well as the measures provided in the WQMP, and therefore would not have greater impacts than those identified in the 2005 MND.

NO IMPACT

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 or 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)?

According to the City's Urban Water Management Plan (UWMP), the City of Garden Grove receives its water service from the Water Services Division of the Public Works Department, which has provided water service to the City since 1958. The City receives its water from two main sources, local well water from the Lower Santa Ana River Groundwater Basin, and imported water from the municipal Water District of Orange County (City of Garden Grove 2016). The existing project site is urbanized, entirely paved, and partially developed with the steel building framework from the previously approved project. There is no vegetation presently on the project site, and adjacent areas are predominately built-out. Because no ground major disturbance activities would be required for construction of the proposed project, such as demolition and grading, there would be no anticipated changes to groundwater recharge or surface runoff conditions. Although some ground disturbance may be needed to install additional structural and foundational support for the proposed building, this disturbance would be minor and would not considerably affect existing hydrologic conditions. In addition, the 2015 UWMP states that the Water Services Division would be

able to provide reliable water supplies for an average year, single dry year, and multiple dry years for its existing and planned supplies. Therefore, the proposed project would be able to be served by available water supply and would not result in an exceedance of safe yield or a significant depletion of groundwater supplies. Impacts would be less than significant.

Construction of the proposed project would be similar to that of the previously approved project. The 2005 MND concludes that implementation of the previously approved project would not substantially impact groundwater supplies or recharge as would not require substantial excavations or other related below-grade work and would not expected to use large quantities of water. Therefore, the proposed project would not have greater impacts to groundwater conditions compared to the previously approved project.

LESS THAN SIGNIFICANT IMPACT

c) *Would the project 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) *Would the project substantially alter the existing drainage pattern of the site or area, including 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?*

The following response applies to (c) and (d).

Currently, the project site is entirely paved and partially developed with the steel building framework from the previously approved project. There are no streams or rivers in the project vicinity and no on-site vegetation. According to the Water Quality Management Plan developed by Huitt-Zollars, Inc., on-site sheet flows currently travel in a southwesterly direction with a high point at the northeast corner of the site and a low point at the southwest corner of the site. The site is bounded by Garden Grove Boulevard on the north and stormwater flows from the north, including those within Garden Grove Boulevard, are contained within the street and do not run-on to the site. Therefore, the proposed project would not be expected to alter the course of any stream or other drainage and would not increase the potential for flooding from off-site runoff (Huitt-Zollars, Inc. 2017, Appendix C). In addition, the proposed project would comply with the City's urban runoff requirements as stated in the Municipal Code, which require payment of a drainage facilities fee to mitigate the costs of potential new or expanded storm drain facilities, although no such need is anticipated. There would be no impact to existing drainage patterns on or adjacent to the project site.

Compared to the previously approved project, the proposed project would have similar building construction and site design. The 2005 MND concludes that the previously approved project would not impact surface waters since run-off would continue to be collected in local and regional storm drain facilities and City and County discharge facilities have sufficient capacity to handle existing flows. The proposed project would not substantially alter the overall amount of on-site impervious surface area compared to the previously approved project and would comply with current regulations pertaining to control of surface runoff. Therefore, no new impacts would be generated under the proposed project and no impact would occur.

NO IMPACT

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

h) Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows?

i) Would the project create 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?

The following response applies to (g) through (i).

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), Panel Number 06059C0139J, the project site is located in Flood Zone X, which is characterized by a minimal risk of flooding and is located outside the 100-year flood hazard area (FEMA 2009). There are also no dams or levees in the vicinity of the project site. The nearest dam to the project site is Prado Dam located approximately 20 miles to the northeast. Therefore, development of the proposed project would not expose people or structures to significant flood hazards and would not impede or redirect flood flows. No impact would occur.

The proposed project would be located at the same site as the previously approved project and the 2005 MND concludes that the previously approved project would not be subject to a flood hazard; therefore, impacts under the proposed project related to flood hazards would not be greater than those analyzed in the 2005 MND.

NO IMPACT

j. Would the project result in inundation by seiche, tsunami, or mudflow?

The project site is located approximately eight miles inland from the coast of the Pacific Ocean and is not inside the boundaries of any regional tsunami impact areas (DOC 2015). In addition, the project site is flat and surrounded by residential and commercial development away from crests and very steep ridges and is not near any inland bodies of water. There would be no impacts related to risk of seiches, tsunamis, or mudflow.

The proposed project would be located at the same site as the previously approved project. The 2005 MND concludes that the project site is not at risk of seiches, tsunamis, or mudflows due to its distance from the coast, the absence of large bodies of water, and the absence of hilly or mountainous terrain. As noted above, the risk of such events under the proposed project would not be greater than those of the previously approved project.

NO IMPACT

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10 Land Use and Planning

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Physically divide an established community?	☐	☐	☐	■
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	■	☐
c. Conflict with an applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	■

a. Would the project physically divide an established community?

The project site is located on a mixed-use development site and is immediately surrounded by other mixed-use development including restaurants, hotel uses, car dealerships, and other commercial development. Residential development is located east of the project site across Brookhurst Street, southwest of the project site off of Kerry Street, and north of the project site along Brookhurst Way. The closest of these residential developments is approximately 250 feet southwest of the project site. No new streets or other structures or facilities that would divide the community are included in the proposed project and all project components would be developed within the project site. In addition, the proposed project would help expand the existing residential community as it would include high density development of senior housing with supporting commercial and open space recreational uses. Therefore, the proposed project would not divide an established community and there would be no impact.

Similarly, the 2005 MND concludes that the previously approved project would not physically divide an established community because it would develop higher density residential and commercial uses in in an urbanized corridor. Because the proposed project would be in the same location, would involve the same general pattern of use as the previously approved project, and would not include any features (such as new roads) that would divide the community, impacts related to nearby communities would not be greater than those identified in the 2005 MND.

NO IMPACT

b. Would the project 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?

According to the City's General Plan Land Use Element, the project site is currently designated Residential/Commercial Mixed Use 1 and is within Focus Area F, the Brookhurst Triangle Area. The proposed project requires an amendment to the General Plan land use designation for the property from Residential/Commercial Mixed Use 1 to Community Residential (which currently allows densities of 48.1 to 60 dwelling units per acre) as the proposed project would include development of 400 residential units on an approximately five acre site (density of 80 dwelling units per acre). The project site is zoned Garden Grove Boulevard Mixed Use 1 (GGMU-1). The GGMU-1 zone applies to specific properties along Garden Grove Boulevard and provides for urban-scale, fully integrated commercial and residential mixed use developments near key intersection locations.

Based on the Land Use Element, the Community Residential designation is the most intensive residential land use designation that is intended exclusively for senior housing, convalescent homes, congregate housing, and institutional quarters, and the Brookhurst Triangle Area is intended for mixed uses with commercial, office and residential uses (Garden Grove 2008a). The proposed project would develop an eight-story mixed-use building consisting of 400 senior housing units and 12,938 sf of commercial use. Based on the GGMU-1 zoning, development of the project site with a high density, mixed-use project has been anticipated.

According to Section 9.18.110.030 of the GGMC, a minimum of 300 square feet of open space per dwelling unit is required for all residential/commercial mixed use developments. However, based on current site plans, the proposed project would only include approximately 64 square feet of open space per unit. Although the amount of open space provided would be considerably less than what is required by the GGMC, because the intended building tenants would be senior citizens, this population would likely not require a large amount of open space and the amount provided under the proposed project would be sufficient to meet their demand.

Overall, the project would generally comply with the land use provisions included in the General Plan, even though it would provide less open space that what is currently required by the GGMC. Potential land use impacts would be less than significant.

The Land Use Plan provides the following applicable policies regarding mixed use and residential development within the city:

- Policy LU-1.1 Identify appropriate locations for residential and non-residential development to accommodate growth through the year 2030 on the General Plan Land Use Diagram (Exhibit LU-3).
- Policy LU-1.2 Encourage modern residences in areas designated as Mixed Use. Mixed use housing should minimize impacts on designated single-family neighborhoods.
- Policy LU-1.3 Encourage a wide variety of retail and commercial services, such as restaurants and cultural arts / entertainment, in appropriate locations.
- Policy LU-1.4 Encourage active and inviting pedestrian-friendly street environments that include a variety of uses within commercial and mixed use areas.
- Policy LU-1.5 Mixed Use should be designed to:
    - Create a pleasant walking environment to encourage pedestrian activity.
    - Create lively streetscapes, interesting urban spaces, and attractive landscaping.
    - Provide convenient shopping opportunities for residents close to their residence.

  - Integrate with surrounding uses to become a part of the neighborhood rather than an isolated project.
  - Use architectural elements or themes from the surrounding area, as appropriate.
  - Provide appropriate transition between land use designations to minimize neighbor compatibility conflicts.
- LU-IMP-3B Design multi-family housing in mixed use areas and on major corridors to provide a buffer between the corridor and lower density residential areas.
- LU-IMP-3C Require attractive side and rear facades and landscaping on multi-family housing structures in order to improve the streetscape and effect a visual transition to lower density residential areas.
- Policy LU-4.1 Locate higher density residential uses within proximity of commercial uses to encourage pedestrian traffic, and to provide a consumer base for commercial uses.
- Policy LU-4.2 Ensure that infill development is well-planned and allows for increased density in Focus Areas along established transportation corridors.
- Policy LU-4.3 Allow for mixed use development at varying intensities in Focus Areas as a means of revitalizing underutilized parcels.

The proposed project would be consistent with the policies listed above as development would include higher-density multi-family housing as well as commercial and retail uses in a mixed-use building along a major transit corridor in proximity to existing commercial uses. In addition, the architecture on the building's facades would be designed to be visually appealing and ground floor commercial uses would enhance pedestrian-orientation of the building. Overall, development included in the proposed project would help facilitate the vision to increase density along transit and commercial corridors while helping create a vibrant environment that supports a variety of uses include residential and commercial development.

Although the proposed project would include more residential units and less commercial space than the previously approved project, the general classification of development would remain mixed-use. The 2005 MND concludes that the previously approved project would be consistent with General Plan land use regulations as it would include a mix of residential and commercial development that is anticipated by the General Plan. As the proposed project would contain a similar mix of development, it would also be consistent with the General Plan and impacts would not be greater than those analyzed in the 2005 MND.

LESS THAN SIGNIFICANT IMPACT

c. Would the project conflict with an applicable habitat conservation plan or natural community conservation plan?

The project site is located in a highly developed corridor in Garden Grove. As discussed under Section 4, *Biological Resources*, the project site is not located within the boundaries of a habitat conservation plan or natural community conservation plan. No impact would occur. Further, because the previously approved project would occur on the same site and the 2005 MND determined that no impacts would occur under the previously approved project, no new impacts would be generated by the proposed project.

NO IMPACT

11 Mineral Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	■
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	■

a. Would the project 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. Would the project 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?

The following response applies to (a) and (b).

The project site is currently unoccupied and is partially developed with steel framework from the previously approved project. The site is not used for oil or mineral recovery, and the City's General Plan does not identify the project site as an important mineral resource recovery site (City of Garden Grove 2008b). Therefore, the proposed project would have no impact related to mineral resources.

The previously approved project would be on the same site as the proposed project. As the 2005 MND determined the previously approved project would have no impact to mineral resources, the proposed project would not generate any new impacts with respect to mineral resources.

NO IMPACT

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12 Noise

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project result in:				
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	■	☐	☐
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	■	☐
c. A substantial permanent increase in ambient noise levels above those existing prior to implementation of 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 in 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 near a private airstrip, would it expose people residing or working in the project area to excessive noise?	☐	☐	☐	■

General Noise Background

Noise level (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels to be consistent with that of human hearing response, which is most sensitive to frequencies around 4,000 Hertz (about the highest note on a piano) and less sensitive to low frequencies (below 100 Hertz).

Sound pressure level is measured on a logarithmic scale with the 0 dBA level based on the lowest detectable sound pressure level that people can perceive (an audible sound that is not zero sound

pressure level). Based on the logarithmic scale, a doubling of sound energy is equivalent to an increase of 3 dBA, and a sound that is 10 dBA less than the ambient sound level has no effect on ambient noise. Because of the nature of the human ear, a sound must be about 10 dBA greater than the ambient noise level to be judged as twice as loud. In general, a 3 dBA change in the ambient noise level is noticeable, while 1-2 dBA changes generally are not perceived. Quiet suburban areas typically have noise levels in the range of 40-50 dBA, while areas adjacent to arterial streets are typically in the 50-60+ dBA range. Normal conversational levels are usually in the 60-65 dBA range, and ambient noise levels greater than 65 dBA can interrupt conversations.

Noise levels from point sources, such as those from individual pieces of machinery, typically attenuate (or drop off) at a rate of 6 dBA per doubling of distance from the noise source. Noise levels from lightly traveled roads typically attenuate at a rate of about 4.5 dBA per doubling of distance. Noise levels from heavily traveled roads typically attenuate at about 3 dBA per doubling of distance. Noise levels may also be reduced by intervening structures; generally, a single row of buildings between the receptor and the noise source reduces noise levels by about 5 dBA, while a solid wall or berm reduces noise levels by 5 to 10 dBA (Federal Transit Administration [FTA] 2006). The manner in which homes in California are constructed generally provides a reduction of exterior-to-interior noise levels of approximately 20 to 25 dBA with closed windows (FTA 2006).

In addition to the instantaneous measurement of sound levels, the duration of sound is important since sounds that occur over a long period of time are more likely to be an annoyance or cause direct physical damage or environmental stress. One of the most frequently used noise metrics that considers both duration and sound power level is the equivalent noise level (Leq). The Leq is defined as the single steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual fluctuating levels over a period of time (essentially, the average noise level). Typically, Leq is summed over a one-hour period. For other time periods, the duration is shown in brackets. For example, a 30-minute Leq would be shown as Leq [30]. Lmax is the highest root mean squared (RMS) sound pressure level within the measuring period, and Lmin is the lowest RMS sound pressure level within the measuring period.

The time period in which noise occurs is also important since noise that occurs at night tends to be more disturbing than that which occurs during the day. Community noise is usually measured using Day-Night Average Level (Ldn), which is the 24-hour average noise level with a 10-dBA penalty for noise occurring during nighttime (10:00 PM to 7:00 AM) hours, or Community Noise Equivalent Level (CNEL), which is the 24-hour average noise level with a 5 dBA penalty for noise occurring from 7:00 PM to 10:00 PM and a 10 dBA penalty for noise occurring from 10:00 PM to 7:00 AM. Noise levels described by Ldn and CNEL typically do not differ by more than 1 dBA. In practice, CNEL and Ldn are often used interchangeably.

The relationship between peak hourly Leq values and associated Ldn values depends on the distribution of traffic over the entire day. There is no precise way to convert a peak hour Leq to Ldn. However, in urban areas near heavy traffic, the peak hourly Leq is typically 2-4 dBA lower than the daily Ldn. In less heavily developed areas, such as suburban areas, the peak hourly Leq is often roughly equal to the daily Ldn. For rural areas with little nighttime traffic, the peak hourly Leq will often be 3-4 dBA greater than the daily Ldn value (California State Water Resources Control Board [SWRCB] 1999). The project site is located in a suburban area; therefore, the daily Ldn (or CNEL) value would be roughly equivalent the peak hourly Leq at the project site.

Vibration

Vibration refers to groundborne noise and perceptible motion. Vibration is a unique form of noise because its energy is carried through buildings, structures, and the ground, whereas noise is simply carried through the air. Thus, vibration is generally felt rather than heard. Some vibration effects can be caused by noise (e.g., the rattling of windows from passing trucks). This phenomenon is caused by the coupling of the acoustic energy at frequencies that are close to the resonant frequency of the material being vibrated. Typically, groundborne vibration generated by manmade activities attenuates rapidly as distance from the source of the vibration increases. The ground motion caused by vibration is measured as particle velocity in inches per second and is referenced as vibration decibels (VdB) in the U.S.

The background vibration velocity level in residential areas is usually around 50 VdB. The vibration velocity level threshold of perception for humans is approximately 65 VdB. A vibration velocity of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for many people. The range of interest is from approximately 50 VdB, which is the typical background vibration velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings. Building damage can also occur at 95 VdB. Most perceptible indoor vibration is caused by sources in buildings such as operation of mechanical equipment, movement of people, or the slamming of doors. Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel wheeled trains, and traffic on rough roads.

Project Site Noise Conditions

The primary off-site noise sources in the project area are motor vehicles (e.g., automobiles, buses, and trucks) along Garden Grove Boulevard, which is located at the northern boundary of the project site. A secondary noise source is vehicle traffic along Brookhurst Street, located approximately 450 feet east of the project site. Motor vehicle noise is a concern because it is characterized by a high number of individual events that often create sustained noise levels. Ambient noise levels would be expected to be highest during the daytime and rush hour unless congestion slows speeds substantially. Additional sources of noise in the project site vicinity include activities associated with nearby commercial and residential uses, including delivery trucks and landscaping equipment. The project site is currently partially developed with the steel frame of the previously approved project, so there are no existing sources of noise on the project site.

To characterize existing ambient noise levels at the project site, four 15-minute sound measurements were taken using a Casella CEL-633 ANSI Type II sound level meter between 7:00 AM and 9:00 AM on November 9, 2017 (refer to Appendix D for sound measurement data). Measurement locations were selected based on the potential exposure of the nearest noise-sensitive receptors to noise levels from construction and operation of the proposed project. These receptors include multi-family residences northwest of the project site along Brookhurst Way, the single-family residences and Boys & Girls Club facility immediately southwest of the project site, and single family residences east of the project site along Brookhurst Street. The measurements were taken on a weekday during the morning peak traffic hour time to represent maximum noise levels in the area. See Figure 8 for the locations of sound measurements. As shown in Table 11, noise levels in the vicinity of the project site range from approximately 58.0 dBA Leq and 70.0 dBA Leq.

Table 11 Project Sound Level Monitoring Results

Measurement Number	Measurement Location	Sample Time	Approximate Distance to Centerline of Roadway (in feet)	Leq[15] (dBA)[1]	Lmin (dBA)	Lmax (dBA)
1	Garden Grove Boulevard adjacent to the northern boundary of the project site	7:35 AM – 7:50 AM	30	70.0	48.5	88.7
2	Brookhurst Street approximately 550 feet east of the project site	7:58 AM – 8:13 AM	30	67.0	47.2	78.8
3	Larson Avenue at the southwest corner of the project site	7:13 AM – 7:28 AM	N/A[2]	57.9	45.9	77.9
4	Brookhurst Way approximately 650 northwest of the project site	8:22 AM – 8:37 AM	35	60.2	45.4	79.1

See Appendix D for noise monitoring data. See Figure 8 for a map of the sound measurement locations.

[1] The equivalent noise level (Leq) is defined as the single steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual fluctuating levels over a period of time (essentially, the average noise level). For this measurement, the Leq was over a 15-minute period (Leq [15]).

[2] This measurement was taken in a cul-de-sac-ending street and not a through roadway with an approximate distance to a centerline.

Source: Rincon Consultants, field measurements on November 9, 2017 using ANSI Type II Integrating sound level meter.

Sensitive Receptors

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with those uses. Typically, noise sensitive land uses include single family residential, multiple family residential, churches, hospitals and similar health care institutions, convalescent homes, libraries, and school classroom areas. The predominant noise sensitive land uses in the City are residential uses.

Several City General Plan Noise Element policies are aimed at reducing noise exposure of noise-sensitive receptors, including schools, hospitals, convalescent homes, churches, and residences (Garden Grove 2008e). The noise-sensitive uses closest to the project site include the Ramada Inn immediately adjacent to the western boundary of the project site as well as several single-family residences and a Boys & Girls Club facility immediately adjacent to the southwestern corner of the project site along Larson Avenue. Other noise-sensitive receptors in the site vicinity are single family residences along the east side of Brookhurst Way approximately 550 feet east of the project site, and multi-family residences along Brookhurst Way, approximately 560 feet northwest of the project site. A new residential development being constructed approximately 250 feet northeast of the project site, the Brookhurst Triangle apartments, which has just completed phase one of construction, would also be a sensitive receptor. See Figure 8 for location of existing noise-sensitive receptors.

Figure 8 Noise Measurement Locations

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Noise Regulation

The goals, policies, and actions contained in the Noise Element focus on establishing and applying criteria for acceptable noise levels for different land uses to minimize the negative impacts of noise, especially at sensitive receptors. To achieve these goals and actions, the City has adopted noise standards that stipulate base ambient exterior noise limits, shown in Table 12. According to Section 8.47.040, Ambient Base Noise Levels, of the GGMC, noise standards in the land use and noise compatibility matrix of the Noise Element define the acceptable and unacceptable noise levels for various land uses in the City (Garden Grove 2008a). As discussed under *Sensitive Receptors*, the closest noise-sensitive land uses near the project site include the Ramada Inn, the Boys & Girls Club facility and the single family residences along Larson Avenue. According to the City's land use and noise compatibility matrix shown in Table 13, an exterior noise exposure of 50-65 dBA CNEL or less is acceptable for schools and nursing homes, and exterior noise exposure of 50-70 CNEL or less is acceptable for multi-family residences. The proposed project is a multi-unit residential housing complex for senior citizens for which these standards would apply. However, per Section 8.47.040 of the GGMC, when the actual measured ambient noise level exceeds the ambient base noise level stipulated in the noise ordinance, the actual measured ambient noise level shall be utilized as the new basis for determining whether or not the subject noise exceeds the level allowed (Garden Grove 2017a). That is, if ambient noise levels measured using a noise meter are found to be higher than the 50-70 CNEL level threshold provided in the ordinance, the measured noise levels are used as the new threshold level. Further, these regulations are not applicable to motor vehicles operating on public rights-of-way (GGMC Section 8-47.050) and are not applicable to construction noise levels, which are regulated exclusively by hour of operation limitations.

The Noise Element also references Title 25, Section 1092 of the California Code of Regulations, which sets forth requirements for the insulation of multiple-family residential dwelling units from excessive and potentially harmful noise. Whenever multiple-family residential dwelling units are proposed in areas with excessive noise exposure, the developer must incorporate construction features into the building's design that reduce interior noise levels to 45 dBA CNEL.

Table 12 Garden Grove Ambient Base Noise Levels by Land Use

Land Use Sensitivity	Use	Time	Ambient Base Noise Levels dB(A)
Sensitive	Residential Use	7 AM to 10 PM 10 PM to 7 AM	55 50
Conditionally Sensitive	Institutional Use	Anytime	65
	Office-Professional Use	Anytime	65
	Hotel & Motels	Anytime	65
Non-Sensitive	Commercial Uses	Anytime	70
	Commercial / Industrial Uses within 150 feet of Residential	7 AM to 10 PM 10 PM to 7 AM	65 50
	Industrial Use	Anytime	70

All activities within land use zones are subject to provisions of Section 8.47.060 (A-D)

Source: Garden Grove 2017a

Table 13 Garden Grove Noise and Land Use Compatibility Guidelines

Land Use Category	Noise Exposure Levels (Ldn or CNEL, dBA)			
	Normally Acceptable	**Conditionally Acceptable**	**Normally Unacceptable**	**Clearly Unacceptable**
Residential - Low Density, Single-Family, Duplex, Mobile Homes	50-60	60-70	70-75	75-85
Residential - Multiple Family	50-65	60-70	70-75	70-85
Transient Lodging - Motel, Hotels	50-65	60-70	70-80	80-85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50-65	60-70	70-80	80-85
Auditoriums, Concert Halls, Amphitheaters	NA	50-70	NA	65-85
Sports Arenas, Outdoor Spectator Sports	NA	50-75	NA	70-85
Playgrounds, Neighborhood Parks	50-70	NA	67.5-75	72.5-85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50-70	NA	70-80	80-85
Office Buildings, Business Commercial and Professional	50-70	67.5-77.5	75-85	NA
Industrial, Manufacturing, Utilities, Agriculture	50-75	70-80	75-85	NA

Normally Acceptable – Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Conditionally Acceptable – New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.

Normally Unacceptable – New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable – New construction or development should generally not be undertaken.

Source: Garden Grove 2017a

For construction noise within the City, according to GGMC Section 8.47.060, *Special Noise Sources*, construction activity is prohibited between the hours of 10:00 p.m. of one day and 7:00 AM of the next day in such a manner that a person of normal sensitiveness, as determined utilizing the criteria established in Section 8.47.050(a), is caused discomfort or annoyance unless such operations are of an emergency nature.

GGMC Section 8.47.050, General Noise Regulation, further states that no person may create a noise level that exceeds the acceptable exterior noise levels in Table 12 such that the noise level exceeds the following noise limit categories:

- The noise standard for a cumulative period of more than 30 minutes in any hour;
- The noise standard plus five dB(A) for a cumulative period of more than 15 minutes in any hour;
- The noise standard plus 10 dB(A) for a cumulative period of more than five minutes in any hour;
- The noise standard plus 15 dB(A) for a cumulative period of more than one minute in any hour; or
- The noise standard plus 20 dB(A) for any period of time.

The Noise Element of the General Plan also provides the following policies and objectives regarding noise impacts in the City:

Goal N-1. Noise considerations must be incorporated into land use planning decisions.

Policy N-1.1. Require all new residential construction in areas with an exterior noise level greater than 55 dBA to include sound attenuation measures.

Policy N-1.2. Incorporate a noise assessment study into the environmental review process, when needed for a specific project for the purposes of identifying potential noise impacts and noise abatement procedures.

Policy N-1.4. Incorporate a noise assessment study into the environmental review process, when needed for a specific project for the purposes of identifying potential noise impacts and noise abatement procedures.

Policy N-1.5. Require the design of mixed use structures to incorporate techniques to prevent the transfer of noise and vibration from the commercial to residential use.

N-IMP-1B. Require that new commercial, industrial, any redevelopment project, or any proposed development near existing residential land use demonstrate compliance with the City's Noise Ordinance prior to approval of the project.

N-IMP-1C. Implement noise mitigation by placing conditions of approval on development projects, and require a clear description of mitigation on subdivision maps, site plans, and building plans for inspection purposes.

N-IMP-1D. Require construction activity to comply with the limits established in the City's Noise Ordinance.

N-IMP-1G. Encourage truck deliveries to commercial or industrial properties abutting residential or noise sensitive uses after 7:00 AM and before 10:00 PM.

N-IMP-1L. Enforce the Noise Ordinance to ensure that stationary noise and noise emanating from construction activities, private development, and/or special events are minimized.

Methodology and Significance Thresholds

The analysis of noise impacts considers the effects of both temporary construction-related noise and long-term noise associated with operation of the project. Four noise measurements were collected during the AM peak hour. As shown in Table 11, ambient noise in the project area ranged from approximately 58.0 dBA at the cul-de-sac of Larson Avenue to 70.0 dBA along Garden Grove Boulevard. As stated in the GGMC, where measured ambient noise levels exceed those stated in the Noise Ordinance the measured noise levels should be used as the new ambient base level. As the measured ambient noise levels in the project area exceeded the thresholds provided in the noise ordinance, this analysis uses the measured Leq at each of the noise measurement locations as the base ambient noise level threshold for operational noise at the project site. The proposed project, therefore, would have significant noise impacts if operational activities generated noise levels that exceeded the measured ambient noise levels.

The City has not adopted specific thresholds construction or operational groundborne vibration impacts. However, according to the Federal Railroad Administration (FRA), vibration impacts would be significant if they exceed the following thresholds:

- 65 VdB where low ambient vibration is essential for interior operations, such as hospitals and recording studios
- 72 VdB for residences and buildings where people normally sleep, including hotels
- 75 VdB for institutional land uses with primary daytime use, such as churches and schools
- 95 VdB for physical damage to extremely fragile historic buildings
- 100 VdB for physical damage to buildings

In addition to the groundborne vibration thresholds outlined above, the Federal Transit Administration (FTA) outlined human response to different levels of groundborne vibration as described in described in the FTA *Transit Noise and Vibration Impact Assessment.* These levels determined that groundborne vibration would result in a significant impact if it would exceed 65 VdB (i.e., the threshold of perception) and 100 VdB (i.e., the threshold for minor damage in fragile buildings). They further determined that vibration that is 85 VdB is acceptable only if there are an infrequent number of events per day. These thresholds are provided in Table 14.

Table 14 Human Response to Different Levels of Groundborne Vibration

Vibration Velocity Level	Human Reaction
65 VdB	Approximate threshold of perception for many people.
75 VdB	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is unacceptable.
85 VdB	Vibration acceptable only if there are an infrequent number of events per day.

Source: FTA 2006

a. Would the project result in 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?

The dominant source of noise on the site is traffic along area roadways, particularly Garden Grove Boulevard and Brookhurst Street. The proposed project would qualify as a new noise-sensitive receptor with residential uses. Based on measurement results shown in Table 11, the project site is exposed to a noise level of approximately 70 dBA Leq at the northern project boundary along Garden Grove Boulevard (see Figure 8 for location of noise measurements).

As discussed under the *General Noise Background* above, CNEL is roughly equivalent to the peak hourly Leq in urban environments. Based on a measured noise level of 70 dBA Leq at the northern project site boundary, the CNEL at the project is also approximately 70 dBA. According to the City's adopted noise guidelines (Table 13), for a mixed-use residential and commercial development, noise levels between 70 and 75 dBA CNEL are considered normally unacceptable. Therefore, under these guidelines, new construction or development should be discouraged, but if new development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design (Garden Grove 2017a).

Usable exterior areas of the site consist of courtyards that would be shielded from traffic noise by the proposed building itself so the primary concern would be interior noise. The proposed project would require noise insulation features included in the design to achieve an interior noise level of 45 dBA CNEL. As discussed under the *General Noise Background* above, the manner in which homes in California are constructed generally provides a reduction of exterior-to-interior noise levels of

approximately 20 to 25 dBA with closed windows (FTA 2006). Therefore, based on an exterior noise exposure level up to 74 dBA CNEL, interior noise levels at the modified project would be up to 54 dBA CNEL and additional sound attenuation features would be needed to further reduce interior noise levels. With implementation of N-1, which requires use of STC materials, noise levels would be reduced to be below City thresholds and impacts would be less than significant.

The previously approved project would generate greater levels of operational noise compared to the proposed project primarily due to the greater amount of vehicle trips associated with the larger commercial space. Commercial uses associated with the previously approved project would generate considerably greater vehicle trips than the senior tenant residences associated with the proposed project. In result, the previously approved project would generate greater levels of traffic noise in proximity to the residential apartments that would also be developed. The 2005 MND determined that adherence to the City's noise ordinance and conditions of approval for a non-squeal surface in the parking structure would reduce noise levels to be less than significant. Due to the reduced amount of commercial use and vehicle use characteristics of senior-citizen tenants, the proposed project would generate less overall traffic and operational noise than the previously approved project. Furthermore, with implementation of N-1 and adherence to the City's noise ordinance, interior noise would be further mitigated under the proposed project. Impacts would be less than significant.

Mitigation Measure

N-1 **Install STC Rated Materials.** The provision of forced-air mechanical ventilation, enabling new residents to retain adequate air quality with windows closed, and the installation of residential windows, exterior doors, and exterior wall assemblies would substantially reduce interior noise in habitable rooms. Exterior materials with an STC 30 rating would reduce exterior noise at a 500 Hz frequency by approximately 30 dBA in the interior environment. This STC rating is calculated for specific materials in a laboratory setting by measuring sound transmission loss in 1/3 octave increments between 125 Hz and 4,000 Hz. Although STC 30-rated materials would not perform equally at all frequencies of ambient noise, they would reduce overall exterior noise by approximately 30 dBA. The resulting interior noise level would be 44 dBA CNEL (74 dBA CNEL minus 30 dBA) and would meet the City's interior noise standard of 45 dBA CNEL.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

c. Would the project result in a substantial permanent increase in ambient noise levels above levels existing without the project?

d. Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

The following response applies to (c) and (d).

The proposed senior housing complex would generate two types of noise that are characterized and evaluated for significance using different methodologies and significance thresholds: on-site operational noise and construction noise. The following discussion addresses each of these potential noise impacts.

Operational Noise

Sources of noise associated with the proposed project would be similar to those of the other residential and commercial uses in the vicinity of the project site. On-site noise would be generated by activities such as visitor parking, human conversations, indoor TV use, and noise from trash hauling or delivery trucks. Noise sources could also include use of heating, ventilation, and air conditioning (HVAC) equipment that would be installed in the new building. These activities are similar in nature to what occurs at the other residential and commercial uses immediately adjacent to the east, west, and south boundaries of the project site. As discussed under *Noise Regulation*, per Section 8.47.050 of the GGMC existing ambient noise levels (shown in Table 11) would serve as the new ambient base noise levels since they currently exceed the 55 dBA ambient noise limit for residential uses and the 65 dBA ambient noise limit for hotel uses given in the City Noise Ordinance. The following are the anticipated noise levels associated with the proposed project.

Trash and Delivery Trucks

The California Motor Vehicle Code establishes maximum sound levels for trucks operating at speeds less than 35 miles per hour (Section 23130) of 86 dBA at 50 feet. In addition, Chapter 8.47.050 of the GGMC states that trash collection vehicles shall not operate during the stationary compaction process within 150 feet of residential property between the hours of 10:00 p.m. of one day and 7:00 AM of the next day. As a senior housing complex with limited commercial space, the proposed project would not have frequent delivery truck traffic and trash truck operation would be the same as currently conducted for nearby residential and commercial uses. Delivery and trash truck trips to the site would be a periodic source of operational noise, but would not result in a substantial increase in the CNEL[2] (24-hour average). Therefore, noise impacts from delivery and trash trucks during the operation period would be less than significant.

Parking Structure

Typical noise sources associated with parking structures include car alarms, door slams, radios, and tire squeals. According to an acoustical analysis prepared by Gordon Bricken and Associates, these sources typically range from about 30 to 66 dBA at a distance of 100 feet and are generally short-term and intermittent (Gordon Bricken 1996). Noise levels in the parking structure would fluctuate with the amount of automobile and human activity. More generally, noise levels would be highest during the day, when the largest number of employees and visitors would enter and exit the parking lot.

The adjacent residential, school club, and hotel uses are considered noise sensitive receptors. The sensitive receptors nearest to the project site are the Ramada Inn located immediately adjacent to the western boundary of the project site and the Boys & Girls Club facility located approximately 115 feet south from the southern boundary of the project site. Considering typical noise levels from parking lot activities at 10 feet (65 CNEL maximum), the 115-foot distance of existing sensitive uses to the project site, and the noise attenuation rate over these distances (6 dBA per doubling of distance), noise experienced at the nearest sensitive uses would be approximately between 47 and 45 CNEL, which is within the acceptable exterior noise levels for sensitive receptors (50-60 dBA CNEL). As a result, the proposed parking lot would not be a significant source of noise for adjacent

[2] CNEL is a weighted average of noise levels over a 24-hour period that adds 5 dBA to noise that occurs from 7-10 PM and adds 10 dBA to noise that occurs from 10 PM to 7 AM. The infrequent activity of delivery and trash trucks within the vicinity of the project site would not substantially change the 24-hour average noise levels.

uses. Further, the parking structure would be partially enclosed which would further attenuate noise generated from resident vehicle parking activities.

Noise from parking structure activities would be a periodic source of operational noise and would not result in a substantial increase in the CNEL or generate noise above the existing measured ambient residential noise levels around the project site (approximately 58 dBA at the Boys & Girls Club facility and 70 dBA along Garden Grove Boulevard near the Ramada Inn). Therefore, noise impacts from the parking lot would be less than significant.

Traffic Noise

Because the proposed project would accommodate approximately 769 new senior residents at the project site, operation of the proposed project would generate new vehicle trips associated with resident vehicle use. According to traffic study prepared by Kunzman Associates, Inc. (2017), the proposed project would generate approximately 2,015 weekday daily trips. This would increase resident vehicle traffic compared to existing conditions. As stated in the Traffic Impact Analysis (see Appendix E), the proposed project would not substantially affect traffic conditions on roadways in the vicinity of the project site (Kunzman 2017). Traffic generated from operation of the proposed project would utilize Garden Grove Boulevard for site access. This segment of Garden Grove Boulevard currently has an average daily traffic volume of 24,000 and a measured noise level of 70 dBA Leq (roughly equivalent to 70 CNEL). A doubling of average daily traffic volumes would increase traffic noise levels by 3 dBA. However, as the proposed project would generate approximately 1,888 additional trips (an 8.4 percent increase), noise levels from resident vehicle use would not substantially increase current traffic noise levels within the vicinity of the project site. Therefore, noise impacts from resident vehicle traffic would be less than significant.

The 2005 MND determined that the previously approved project and its subsequent activities would not generate a substantial increase in ambient noise levels because the development would be subject to the City's noise ordinance. However, when comparing the density of land uses between the proposed project and the previously approved project, although the proposed project would increase residential units, it would substantially decrease commercial space and parking spaces compared to the previously approved project. As a result, the proposed project would generate fewer overall vehicle trips to the project site; the proposed project would generate 2,015 trips while the previously approved project would generate 5,820 trips. In result, the proposed project would generate less traffic noise in the project area compared to the previously approved project, and any increase in traffic noise levels would be less than 3 dBA and would be within City noise thresholds.

Construction Noise

Project construction would generate noise that could be audible to nearby noise-sensitive receptors. Peak noise levels associated with the use of individual pieces of heavy equipment can range from about 70 to 89 dBA at 50 feet from the source, depending upon the types of equipment in operation at any given time and phase of construction (FHWA 2006). To determine noise impacts associated with project construction, construction noise levels during grading and building construction (the loudest phases of construction) were modeled using FHWA's Roadway Construction Noise Model (RCNM) software at three receptors: the single-family residences approximately 550 feet east of the project site, the Ramada Inn approximately 25 feet west of the project site, and the Boys & Girls Club facility approximately 115 feet south of the project site. The types of building construction equipment used in the RCNM software were garnered from the default equipment list provided from the CalEEMod software used for Section 3, *Air Quality*, and

Section 7, *Greenhouse Gas Emissions*. See Appendix B for CalEEMod assumptions and construction equipment list and Appendix D for more details regarding RCNM software results and assumptions.

As shown in Table 15, project construction would generate exterior noise levels of up to about 95 dBA at the Ramada Inn, up to 81.3 dBA at the Boys & Girls Club facility along Larson Avenue, and 68 dBA at the single family residences along Brookhurst Street 550 feet east of the project site. Noise levels at the Ramada Inn and at the Boys & Girls Club facility would exceed the measured ambient base noise levels (70.0 dBA and 57.9 dBA, respectively) at those locations.

Table 15 Construction Noise Levels at Sensitive Receptors

	Noise Level in Leq (dBA)		
Construction Phase	**Ramada Inn**	**Boys & Girls Club**	**Residences along Brookhurst Street[1]**
Building Construction	94.6	81.3	67.7
Paving	90.5	77.2	63.6
Architectural Coating	79.7	66.5	52.9

See Appendix D for RCNM worksheets.

[1] Actual construction noise levels experienced by these residences would be lower due to shielding by the existing commercial development immediately east of the project site. This development would help attenuate construction noise to be below the levels modeled.

Construction noise would be intermittently audible at immediately adjacent receptors since it would exceed ambient levels. However, as discussed under *Noise Regulation*, the City's noise ordinance noise level restrictions do not apply to construction work. Rather, construction noise is regulated exclusively by hours of operation limitations and all construction work for the proposed project would occur between the permitted hours of 7:00 AM and 10:00 PM. Construction activities would not occur during normal sleeping hours. Further, noise from construction activity would be temporary since construction of the proposed project is estimated to be completed in less than one year (see Appendix B for CalEEMod results). Therefore, project construction would have a less than significant temporary noise impact. However, although no significant noise impacts from construction equipment are anticipated, implementation of mitigation measure N-2 would help attenuate noise levels from construction equipment.

As the previously approved project would be generally the same size as the proposed project and include similar kinds of land uses, construction activities and timeline would be similar to those of the proposed project. The 2005 MND determined that although construction of infrastructure improvements or on-site development may temporarily increase noise levels at the project site, construction-related activities are temporary in nature and would end once construction is completed. Furthermore, the contractor would be required to comply with the County and City noise ordinances which would reduce potential noise impacts to be less than significant. Because proposed project would have the same general construction activities and would also be subject to County and City noise ordinances, the proposed project would not generate greater levels of noise from construction activities and impacts would be less than significant. Furthermore, although construction activities would not generate significant noise impacts, implementation of mitigation measure N-2 would minimize construction noise from the project site.

Mitigation Measure

N-2 **Construction Equipment Staging.** The following measures shall be followed during construction of the mixed-use residential building.

- **Mufflers**. During all project site excavation and grading, all construction equipment, fixed or mobile, shall be operated with closed engine doors and shall be equipped with properly operating and maintained mufflers consistent with manufacturers' standards.
- **Stationary Equipment.** All stationary construction equipment shall be placed so that emitted noise is directed away from the nearest sensitive receptors.
- **Equipment Staging Areas.** Equipment staging shall be located in areas that will create the greatest distance feasible between construction-related noise sources and noise-sensitive receptors.
- **Electrically-Powered Tools and Facilities.** Electrical power shall be used to run air compressors and similar power tools and to power any temporary structures, such as construction trailers or caretaker facilities.

LESS THAN SIGNIFICANT IMPACT

b. Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Operation of the proposed project would not perceptibly increase groundborne vibration or groundborne noise on the project site above the existing conditions as the senior housing complex developed under the proposed project would not include equipment that generates substantial groundborne vibration. However, construction of the proposed project would temporarily generate vibration. Table 16 lists the anticipated construction equipment and their associated vibration levels at varying distances from the sensitive receptors described above.

Table 16 Construction Equipment Vibration

	Approximate VdB		
Equipment	**25 Feet[1]**	**115 Feet[2]**	**550 Feet[3]**
Large Bulldozer[4]	87	67	47
Loaded Trucks	86	66	45
Jackhammer[5]	79	59	39
Small Bulldozer	58	38	17

[1] Distance of Ramada Inn to the project site.
[2] Distance of Boys & Girls Club facility to the project site.
[3] Distance of single family residences along Brookhurst Street to the project site.
[4] Large and Small Bulldozer provided for additional information and reference. Construction of the proposed project would not involve use of bulldozers.
[5] Jackhammer provided for additional information and reference. Construction of the proposed project would not involve use of a jackhammer.
Source: Federal Railroad Administration, 1998 (see Appendix B for vibration model calculations).

The nearest sensitive uses to the project site include the Ramada Inn approximately 25 feet west of the project site, the Boys & Girls Club facility approximately 115 feet south of the project site, the single family residences approximately 550 feet east of the project site, and the multi-family residences approximately 650 feet northwest of the project site. Project construction-generated vibration levels would only exceed 75 VdB, the approximate level at which individuals can perceive vibration, at the Ramada Inn. Vibration levels at all other sensitive receptors, including the multi-family residences 650 feet northwest of the project site (distance not included in Table 16), would be considerably below 75 VdB. However, the City of Garden Grove does not currently have vibration standards for noise-sensitive receptors. Section 9.08.020.040, *General Limitations on Uses*, states that activities within residential zones shall not be objectionable by reason of noise, odor, dust, mud, smoke, steam, vibration or other similar causes. However, vibration generated from construction equipment use would be below 95 VdB, the level at which structural damage to buildings can occur. Maximum vibration generated from construction equipment would be 86 VdB. Further, vibration would be temporary, and construction activity would be in accordance with the GGMC and would not occur between 7:00 AM and 10:00 PM. Therefore, overall construction activities would not expose noise-sensitive receptors to excessive vibration levels. Although the Ramada Inn would be exposed to vibration above the threshold for human perception, vibration would be temporary and intermittent and would only occur during permitted construction hours. Therefore, construction-generated vibration would not be considered objectionable by the GGMC and vibration-related impacts would be less than significant.

The previously approved project would generate construction-generated vibration similar to that of the as the proposed project since similar construction equipment would be used. As determined in the 2005 MND, vibration generated from the previously approved project would be less than significant as construction activities would be temporary and would comply with the City noise ordinances regarding permitted construction hours. Construction of the proposed project would not require considerable additional intensive site preparation, grading, or excavation activities. As such, resumed construction on the project site would not generate excess noise levels typically associated with the preliminary phases of construction, nor would on-site vibration from equipment result in damage to adjacent structures. In addition, as with the previously approved project, construction activity would also be limited to daytime hours and would not disturb adjacent residences (i.e., Ramada Plaza Hotel west of the project site) during hours of sleep. Therefore, the project would not generate greater vibration impacts than the previously approved project and impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

e. For a project located in 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?

The following response applies to (e) and (f).

As discussed in Section 8, *Hazards and Hazardous Materials*, the project site is not located within two miles of a public airport and there are no private airstrips near the project site. The nearest airport to the project site Fullerton Airport, located approximately seven miles north from the site, and a military joint forces base air traffic control tower is located approximately 5.5 miles northwest

of the site. Therefore, the proposed project would not expose people working in the project area to excessive noise levels associated with air travel. No impact would occur.

The previously approved project would be on the same site as the proposed project and, therefore, also would not be subject to aircraft-related noise. Impacts of the proposed project would not be greater than the previously approved project and no impacts would occur.

NO IMPACT

13 Population and Housing

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	■	☐
b. Displace substantial amounts of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	■
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	■

a. Would the project 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)?

As discussed in Section 3, *Air Quality*, the proposed project would consist of 400 senior residential units, generating a potential population increase of approximately 769 residents. As discussed in Section 4, *Land Use and Planning*, development of the project site with a higher intensity mixed-use has been anticipated since the site is designated Residential/ Commercial Mixed Use 1 by the City's General Plan Land Use Element. According to the Land Use Element, this designation includes tall, urban, mixed-use development at important intersections and locations that are eight to ten stories in height. In addition, senior housing can be considered in this designation with density bonuses (Garden Grove 2008c). Therefore, the proposed project would be consistent with the City's anticipated residential density of the project site.

According to data provided by the California Department Finance (DOF), the estimated population of the City is 176,286 and the average person per household is 3.74 (California DOF 2017a; California DOF 2017b). Because the proposed project would involve 400 senior residential units, per unit occupancy would be lower than the 3.74 person average. It is assumed that each studio would have one resident, each one-bedroom unit would have two residents, and each two-bedroom unit would have four residents. Based on these conservative assumptions, the project would add 769 residents with an average per unit occupancy of 1.92.

SCAG forecasts that the population of the City will increase to 178,200 by the year 2040, which is an increase of 1,914 persons from the current population (SCAG 2016). The addition of 769 new residents in the project area would constitute about 40 percent of the City's total projected population growth through 2040. Therefore, the level of population growth associated with the proposed project would not exceed official regional population projections. Moreover, the above

assumes that all project residents are new to Garden Grove, whereas the more likely scenario is that many future project residents already live in the City. Impacts associated with population growth would be less than significant and, therefore, would not directly or indirectly require the expansion of any City infrastructure.

The 2005 previously approved project included the development of 66 multi-family residential units. Although such units would not likely house the citywide average of 3.74 people per household, they would likely house more people per unit than would be proposed senior housing development. Assuming an average of 3 persons per unit, the previously approved project would add 198 new residents, or about 29 percent of the new residents associated with the proposed project. Although the increase in resident population would be lower under the previously approved project, the population growth associated with the proposed project would be within population forecasts for the City. Therefore, the proposed project would not generate greater population impacts than the previously approved project.

LESS THAN SIGNIFICANT IMPACT

b. Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

c. Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

The following response applies to (b) and (c).

The project site is currently vacant and does not include any housing or people. The proposed project would involve development of apartment units for senior citizens. Therefore, the proposed project would not displace housing, people, or require the construction of replacement housing elsewhere. No impact would occur.

The previously approved project would occur on the same site as the proposed project. Because the 2005 MND determined that the previously approved project would not generate any impacts as the site does not have housing or people, no new impacts with regard to displacement would occur under the proposed project.

NO IMPACT

14 Public Services

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a.	Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the 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:				
	1 Fire protection?	☐	☐	■	☐
	2 Police protection?	☐	☐	■	☐
	3 Schools?	☐	☐	☐	■
	4 Parks?	☐	☐	■	☐
	5 Other public facilities?	☐	☐	■	☐

a.1. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, or the 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?

The Garden Grove Fire Department (GGFD) responds to fire emergencies from seven local stations in the City. The station nearest to the project site is Fire Station 1 located at 11301 Acacia Parkway (Civic Center) approximately 1.2 miles northeast of the project site. This station has 29 firefighters on duty daily and is equipped with a fire engine, a fire truck, two paramedic squads, two shift commander vehicles, and one air utility unit (Garden Grove 2017b).

The commercial and residential development under the proposed project would incrementally increase the demand for fire services in comparison to the existing conditions. However, the GGFD has a current staff of approximately 110 firefighters and the amount of population growth that would require increased staffing would be approximately 10 percent of the current population (17,600 individuals) (GGFD 2018). Therefore, the GGFD's current staff would be able to sufficiently serve the proposed project. In addition, fire safety features would be required, including fire sprinklers, fire alarms, a smoke removal system, and a fire control room, and the GGFD would review site plans, site construction, and the actual structure prior to occupancy to ensure that required fire protection safety features, including building sprinklers and emergency access, are

implemented in accordance with the City's standards, codes, and conditions of approval set forth by the GGFD. Overall, because the project site is within the GGFD's existing service area, new or expanded fire protection facilities would not be needed and the project's impact would be less than significant.

Compared to the previously approved project, the proposed project would include development of 334 more residential units and generate a larger population increase. In addition, proposed project residents would be senior. Therefore, the increased demand for fire and emergency medical services associated with the proposed project would be greater than that of the previously approved project. Despite the increase in demand for service compared to the previously approved project, the proposed project would not generate the requisite population growth that would require an increase in fire protection facilities or staff, and therefore would not result in any new significant impact. As identified in the 2005 MND, impacts to fire protection facilities would remain less than significant.

LESS THAN SIGNIFICANT IMPACT

a.2. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered police protection facilities, or the need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

Police protection on the project site would be provided by the Garden Grove Police Department (GGPD). The police station nearest to the site is located at 11301 Acacia Parkway (Civic Center), approximately 1.2 miles northeast of the project site. The current GGPD staffing level is 166 officers to 170,000 residents, or a ratio of 0.98 GGPD staff per 1,000 residents, and the citywide average response time for emergency calls was 4 minutes, 29 seconds as of January 2017 (Matthew Fagan Consulting Services, Inc. 2017) Because the proposed project would generate a population increase of approximately 769 residents, the project would increase local demand for police protection services. However, this increase would not substantially change the GGPD service ratio, as it would only be reduced to 0.97 from 0.98, or create the need for new or expanded police protection facilities. Further, the proposed project would comply with conditions of approval from the GGPD to minimize increased demand, such as limiting ABC licenses at the project site. Impacts would be less than significant.

As compared to the previously approved project, the decrease in commercial use of the proposed project would reduce the demand for police protection services since vehicle traffic, guest and ABC-licensed establishments at the project site would be lower. The 2005 MND identifies impacts related police protection resulting from the previously approved project as less than significant. Therefore the proposed project's increase in demand for police protection service would be lower than the previously approved project, and impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

a.3. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered schools, or the need for new or physically altered schools, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

Although the proposed project would include residential development, residential units would be restricted to senior citizens and senior residents and would not generate an increase in school-age

children in the project area. Therefore, the proposed project would not increase demand for schools or otherwise adversely affect schools. No impact would occur.

Although the residential component of the previously approved project would have generated new students at local schools, the 2005 MND concluded that the previously approved project would have a less than significant impact with respect to schools with payment of applicable school impact fees. As noted above, the proposed senior housing project would have no direct or indirect impact to schools. Nevertheless, the applicant would be required to pay applicable school impact fees. No new impacts would be generated under the proposed project and no impacts would occur.

NO IMPACT

a.4. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered parks, or the need for new or physically altered parks, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

As identified in the City's General Plan Parks, Recreation, and Open Space Element, the City's park system consists of 157.1 acres of parkland. The City currently owns 14 park properties and uses five public schools as additional park facilities through joint-use agreements with the School District. The City's General Plan also establishes the City's goal ratio of 2.0 acres of parkland per 1,000 persons (City of Garden Grove 2008d). As discussed in Section 13, *Population and Housing*, the City's current population is estimated at 176,285 people (California DOF 2017a). Based on this population and the 157.1 acres of parkland within the City limits, there are approximately 0.9 acres of parkland for every 1,000 residents, which is below the City's goal of 2.0 acres per 1,000 persons.

The proposed project would generate a population increase of approximately 769 residents. Although the residential component of the proposed project would include development of recreational uses such as outdoor decks, a recreation courtyard, and common rooms for use by senior residents that reside in the building, the proposed project would not include provision of park facilities and the amount of open space provided would be below what is required for residential development within the City. Therefore, residents may generate greater use of parks within the City. Furthermore, as the City currently is below their target parkland ratio, it is possible residents may travel to other cities for park recreation. However, given that the new population generated by the proposed project would consist of senior-citizen tenants, it is not likely that residents would generate substantial demand for new or altered park facilities in the area.

The 2005 MND concludes that the previously approved project would not increase demand for public facilities, such as public parks, or have a physical effect on existing parks since the project would also include recreational uses. Although the proposed project would provide considerably less open space than the previously approved project and would increase the overall number of on-site residents, it would limit residents to seniors who would generally be expected to create lower per capita demand for parks and recreational services. Therefore, overall impacts under the proposed project would not be substantially greater than those of the previously approved project and would be less than significant.

LESS THAN SIGNIFICANT IMPACT

a.5. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the 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 other public facilities?

The proposed project would incrementally increase the use of the City's public services and facilities. As discussed in Section 8, *Hydrology and Water Quality*, and Section 13, *Utilities and Service Systems*, the proposed project would have no significant impact to the storm drain system, solid waste disposal, water usage, and wastewater disposal. In addition, the proposed project would not generate adverse physical impacts on other public services or public facilities, such as libraries or hospitals. Impacts under the proposed project would be less than significant.

As determined in the 2005 MND, the previously approved project would have no impact on additional governmental services. The proposed project would not generate any new significant impacts related to governmental or public facilities compared to those under the previously approved project and impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

15 Recreation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	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. 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?

The following response applies to (a) and (b).

The public parks nearest to the project site are Garden Grove Park, located approximately 0.80 mile southeast of the site, and Community Center Park, located approximately 1.2 miles northeast of the site. Residents of the proposed project may use local parks; however, as discussed in Section 15, *Public Services*, the proposed project would include private and public open space and recreational uses, including outdoor decks, a recreation courtyard, and common rooms (see Figure 5, Landscape Plan). However, the proposed project would not provide the amount of open space required for residential development within the City. Currently, the proposed project includes provision of 25,503 square feet of open space uses, whereas 120,000 square feet would be required under City building regulations. Further, a majority of the open space provided would be within the internal courtyard of the proposed building. In result, it is possible that residents may generate greater use of parks within the City for open space and recreational uses. Furthermore, as the City's current parkland ratio is considerably below the target goal ratio (two acres per 1,000 residents), it is also possible that residents would travel to other cities for park recreational use. However, given that the residential component of the proposed project would be senior housing, it is not likely that senior-citizen tenants would generate substantially increased demand for park facilities. Open space and recreational use by senior citizens would likely involve a smaller amount and intensity of physical activity as compared to younger tenants. Therefore, senior citizen tenants would not require the same amount of park or other open space and their needs would be met with the amount provided under the proposed project. Resident use of local public parks would likely be minimal. Therefore, the project would not result in the physical deterioration or required expansion

of off-site recreation or park facilities. Impacts related to recreational facilities would be less than significant.

The previously approved project also included recreational uses for on-site tenants and the 2005 MND concludes that the previously approved project would not substantially increase demand for regional parks or have a physical effect on existing parks. Though the proposed project would generate more overall residents and would provide considerably less open space than the previously approved project, the senior residents that would occupy the proposed project would generate less demand for parks and recreational facilities on a per capita basis. Therefore, overall impacts associated with the proposed project would not be considerably greater compared to the previously approved project and would be less than significant.

LESS THAN SIGNIFICANT IMPACT

16 Transportation/Traffic

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
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 use (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 substantially decrease the performance or safety of such facilities?	☐	☐	■	☐

a. Would the project conflict with an applicable plan, ordinance or policy establishing a measure 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?

Kunzman Associates, Inc. prepared the Traffic Impact Analysis (TIA) for the proposed project (Kunzman 2017, Appendix E). Trip generation estimates were developed using trip generation rates and equations from Trip Generation, 10th Edition (Institute of Transportation Engineers [ITE] 2017). Based on the project description, the average trips for ITE land uses Senior Adult Housing-Attached and Specialty Retail were utilized to forecast the project's trip generation potential. Table 17 summarizes the trip generation potential, which shows that the project would generate an estimated 2,015 new weekday daily trips (half arriving, half departing) compared to current conditions (0 weekday daily trips), including 96 trips (38 inbound, 58 outbound) produced during the AM peak hour and 152 trips (81 inbound, 71 outbound) produced during the PM peak hour.

Table 17 Estimated Project Traffic Trip Generation

ITE Land Use Code / Project Description	Daily 2-Way	AM Peak Hour			PM Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Trip Generation Rates							
Senior Adult Housing-Attached	3.70	0.07	0.13	0.20	0.14	0.12	0.26
Specialty Retail	40.00	0.72	0.48	1.2	1.80	1.80	3.60
Generation Rates							
Senior Adult Housing-Attached	1,480	28	52	80	57	47	104
Specialty Retail	535	10	6	16	24	24	48
Total	**2,015**	**38**	**58**	**96**	**81**	**71**	**152**

Source*: Trip Generation, 10th Edition*, Institute of Transportation Engineers, (ITE) [Washington, D.C. (2017)]. Kunzman 2017 (see Appendix E).

Trips generated by the residential component of the project could also be making trips to the specialty retail land use within the project, thus double counting trips. In order to analyze a "conservative" scenario in terms of the assignment of project trips, the traffic volumes from the project site have not been reduced as a result of the internal interaction between the proposed land uses. Further, for specialty retail land use, a portion of the trips would come from pass-by trips, trips that are currently on the roadway system. In order to analyze a "conservative" scenario in terms of the assignment of trips, the traffic volumes from the specialty retail portion of the project site have not been reduced to take pass-by trips into consideration.

Ten key study intersections were selected for evaluation utilizing the Orange County Congestion Management Program (CMP) analysis criteria and requirements of the City of Garden Grove. The intersections listed below provide both local and regional access to the project area and define the extent of the boundaries for this traffic impact investigation. None of these are CMP intersections. The jurisdictions responsible for the intersections are located are identified in parenthesis.

- Magnolia Street (NS) at:
  Chapman Avenue (EW) (Garden Grove)
  Lampson Avenue (EW) (Garden Grove)
  Garden Grove Boulevard (EW) (Garden Grove)
  Trask Avenue (EW) (Garden Grove)
- Gilbert Street (NS) at Garden Grove Boulevard (EW) (Garden Grove)
- SR-22 Free WB Ramps (NS) at Trask Avenue (EW) (Caltrans)
- Brookhurst Street (NS) at:
  Chapman Avenue (EW) (Garden Grove)
  Lampson Avenue (EW) (Garden Grove)
  Garden Grove Boulevard (EW) (Garden Grove)
  Trask Avenue (EW) (Garden Grove)

Average daily traffic volumes for the 10 key study intersections identified above were factored from intersection turning movement counts obtained in October 2017, the Annual Traffic Volume Maps by the Orange County Transportation Authority, and the 2015 Traffic Counts on California State Highways by the California Department of Transportation.

The following scenarios are those for which volume/capacity calculations have been performed at the 10 key intersections for existing year (Year 2017) and opening year (Year 2017) conditions:

- Existing traffic
- Existing plus Project conditions
- Opening year (Year 2019) cumulative traffic without the proposed project
- Opening year (Year 2019) cumulative traffic plus proposed project traffic

According to the City's guidelines, Level of Service (LOS) D is the minimum acceptable LOS for its arterial roadway system and roadway facilities operating at LOS E or F are considered deficient. Per these guidelines, a significant traffic impact occurs when the intersections or roadway projected to operate at LOS D or better without the project would exceed LOS D with the project. A significant traffic impact would also occur if the project results in an increase of 0.01 or more in the volume-to-capacity (V/C) ratio at a location that is projected to operate at LOS E or F without the project.

The Orange County CMP definition of deficiency is based on maintaining a LOS standard of LOS E or better, except where an existing LOS F was identified in a prior CMP. However, intersection with existing LOS F may not increase by more than 0.1 above the baseline Intersection Capacity Utilization (ICU) value.

In the event that an intersection is operating at or is forecast to operate at a deficient LOS, the City's guidelines, as well as the CMP guidelines, have defined a series of steps to be completed to determine the project's contribution to the deficiency of intersections. The steps are as follows:

- Determine the mitigation measures necessary to achieve an acceptable service level.
- Calculate the project's share in the future traffic volume projections for the peak hours.
- Estimate the cost to implement recommended mitigation measures.
- Calculate the project's fair-share contribution to offset the project's traffic impacts.

Existing Plus Project Traffic Conditions

Table 18 summarizes the peak hour LOS results at the ten key study intersections for existing plus project traffic conditions. The first column (1) of Highway Capacity Method (HCM)/LOS values in Table 19 presents a summary of existing AM and PM peak hour traffic conditions while the second column (2) lists plus project traffic conditions. The third column (3) indicates whether traffic associated with the project would have significant impacts based on the LOS standards and significant impact criteria defined by the City of Garden Grove and Orange County.

Table 18 Existing Plus Project Peak Hour Intersection Capacity Analysis

	(1) Existing Traffic Conditions			(2) Existing Plus Project Traffic Conditions		(3) Significant Impact	
Key Intersection	**AM/PM**	**V/C**	**LOS**	**V/C**	**LOS**	**V/C Increase**	**Yes/No**
Magnolia Street at	AM	0.723	C	0.725	C	0.002	No
Chapman Avenue	PM	0.765	C	0.766	C	0.001	No
Lampson Avenue	AM	0.614	B	0.615	B	0.001	No
	PM	0.658	B	0.661	B	0.003	No
Garden Grove Boulevard	AM	0.565	A	0.567	A	0.002	No
	PM	0.811	D	0.823	D	0.012	No
Trask Avenue	AM	0.754	C	0.754	C	0	No
	PM	0.698	B	0.698	B	0	No
Gilbert Street at:	AM	0.486	A	0.489	A	0.003	No
Garden Grove Boulevard	PM	0.593	A	0.595	A	0.002	No
SR-22 Freeway WB Ramps at:	AM	0.618	B	0.626	B	0.008	No
Trask Avenue	PM	0.570	A	0.579	A	0.009	No
Brookhurst Street at:	AM	0.686	B	0.689	B	0.003	No
Chapman Avenue	PM	0.774	C	0.779	C	0.005	No
Lampson Avenue	AM	0.588	A	0.589	A	0.001	No
	PM	0.657	B	0.659	B	0.002	No
Garden Grove Boulevard	AM	0.669	B	0.677	B	0.008	No
	PM	0.789	C	0.799	C	0.01	No
Trask Avenue	AM	0.695	B	0.699	B	0.004	No
	PM	0.810	D	0.813	D	0.003	No

Source: Kunzman 2017

Traffic associated with the proposed project would not have a significant impact at any of the 10 key study intersections, when compared to the LOS standards and significant impact criteria. As shown in the TIA (Appendix E) LOS would not change for any of the study intersections and all V/C increases would be equal to or less than 0.012 (as shown in Column 3 of Table 18). All study intersections are forecast to operate at LOS D or better during the weekday AM and PM peak hours with the addition of project traffic.

Cumulative Plus Project Traffic Conditions

Table 19 summarizes the weekday AM peak hour and PM peak Level of Service results at the 10 key study intersections for the proposed project operational year 2019. As stated in the TIA, Operational Year (2019) traffic volumes have been calculated based on a 1.0 percent annual growth rate of existing traffic volumes over a two-year period (See Appendix E). All intersections are forecast to operate at acceptable levels of service in Year 2019 Cumulative Without Project Traffic Conditions and Year 2019 Cumulative Plus Project Traffic Conditions as they would continue to operate at LOS D or better during the AM peak hour and/or PM peak hours with the addition of ambient traffic growth and cumulative project traffic.

Traffic associated with the proposed project would not have a significant impact at any of the 10 key study intersections when compared to the LOS standards and significant impact criteria. The proposed project is not expected to add greater than 0.015 to the volume-to-capacity ratio at any of the intersections and all key study intersections are forecast to operate at LOS D or better during the weekday AM and PM peak hours with the addition of project traffic. Therefore, increases in volume-to-capacity ratio generated by the proposed project would be less than significant based on the City's LOS standards and impact criteria.

Although the proposed project would generate a greater amount of residents, it would have fewer associated daily vehicle trips with reduced commercial space compared to the previously approved project. Though the previously approved project would involve development of 334 fewer residences, it would generate approximately 3,805 trips more than the proposed project with development of 114,588 square feet more commercial use. Table 20 compares the daily trip generation associated with each project.

The 2005 MND determined that vehicle trips generated by the previously approved project would not generate significant impacts at any of the study intersections within the project area as it would not cause LOS at any intersection to drop below LOS D. Further, the previously approved project would involve implementation of driveway mitigation measures to reduce potential impacts from increased vehicle trips and traffic congestion to a less than significant level. Because the proposed project would generate nearly 3,805 fewer vehicle trips than the previously approved project, impacts to local traffic conditions would not be greater than those of the previously approved project and would be less than significant.

LESS THAN SIGNIFICANT IMPACT

Table 19 Year 2019 Cumulative Traffic Impacts

	(1) Existing Traffic Conditions			(2) Year 2019 Cumulative Traffic Conditions		(3) Year 2019 Cumulative Plus Project Traffic Conditions		(3) Significant Impact	
Key Intersection	**AM/PM**	**V/C**	**LOS**	**V/C**	**LOS**	**V/C**	**LOS**	**V/C Increase[1]**	**Yes/ No**
Magnolia Street at:									
Chapman Avenue	AM	0.723	C	0.741	C	0.743	C	0.002	No
	PM	0.765	C	0.791	C	0.793	C	0.002	No
Lampson Avenue	AM	0.614	B	0.632	B	0.633	B	0.001	No
	PM	0.658	B	0.684	B	0.687	B	0.003	No
Garden Grove Boulevard	AM	0.565	A	0.583	A	0.585	A	0.002	No
	PM	0.811	D	0.855	D	0.867	D	0.012	No
Trask Avenue	AM	0.754	C	0.774	C	0.774	C	0	No
	PM	0.698	B	0.718	C	0.718	C	0	No
Gilbert Street at:									
Garden Grove Boulevard	AM	0.486	A	0.502	A	0.505	A	0.003	No
	PM	0.593	A	0.618	B	0.621	B	0.003	No
SR-22 Freeway WB Ramps Street at:									
Trask Avenue	AM	0.618	B	0.680	B	0.673	B	0[2]	No
	PM	0.570	A	0.618	B	0.624	B	0.006	No
Brookhurst Street at:									
Chapman Avenue	AM	0.686	B	0.716	C	0.717	C	0.001	No
	PM	0.774	C	0.815	D	0.819	D	0.004	No
Lampson Avenue	AM	0.588	A	0.600	B	0.601	B	0.001	No
	PM	0.657	B	0.678	B	0.680	B	0.002	No
Garden Grove Boulevard	AM	0.669	B	0.713	C	0.719	C	0.006	No
	PM	0.789	C	0.853	D	0.863	D	0.01	No
Trask Avenue	AM	0.695	B	0.730	C	0.734	C	0.004	No
	PM	0.810	D	0.848	D	0.8	D	0.005	No

Source: Kunzman 2017

[1] V/C Increase refers to difference between column (3) and column (2).

[2] traffic conditions during this peak hour would be improved as the V/C ratio would decrease.

Table 20 Trip Generation Summary Comparison

ITE Land Use Code / Project Description	Quantity	Units	AM Peak Hour			PM Peak Hour			Daily
			Enter	Exit	Total	Enter	Exit	Total	
Previously Approved									
Condominium/Townhouse (Previous ITE 7th Edition)	66	DU	5	24	29	23	11	34	387
Specialty Retail (Previous ITE 7th Edition)	126.588	TSF	80	50	130	228	245	473	5,433
Total Trips – Previously Approved Traffic Study			**85**	**74**	**159**	**251**	**256**	**507**	**5,820**
Proposed									
Senior Adult Housing-Attached	400	DU	28	52	80	57	47	104	1,480
Specialty Retail	12,000	TSF	10	6	16	24	24	28	535
Total Trips – Proposed			**38**	**58**	**96**	**81**	**71**	**152**	**2,015**
Trip Difference (Previously Approved – Proposed)			**-47**	**-16**	**-63**	**-170**	**-185**	**-355**	**-3,805**

Source: *Trip Generation, 10th Edition*, Institute of Transportation Engineers, (ITE) [Washington, D.C. (2017)]. Kunzman 2017 (see Appendix E).

b. Would the project 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?

Based on the Orange County CMP, a project needs a traffic impact analysis to determine the significance level of potential impacts if it generates more than 200 daily trips (See Appendix E of the TIA). According to the project's peak hour trips shown in Table 17 the proposed project would generate 2,015 daily trips, which exceed the 200 daily trip threshold for the project area. In conformance with the City's study guidelines and Orange County CMP requirements, AM peak hour and PM peak hour operating conditions were evaluated on the 10 key study intersections for conditions including Existing Plus Project Traffic and Year 2019 Cumulative Plus Project Traffic to determine if the volume of daily trips generated by the proposed project would significantly impact traffic conditions during those periods. As stated under item a above, all 10 of the key study intersections are forecast to operate at an acceptable LOS D or higher under both Existing Plus Project and Year 2019 Cumulative Plus Project conditions. Further, the proposed project is expected to at most result in a volume-to-capacity ratio of 0.015 at any of the intersections and, therefore, all increases in volume-to-capacity ratios would be less than significant based on the City's LOS standards and impact criteria and would be consistent with the Orange County CMP. Impacts would be less than significant.

Because the proposed project would include less commercial development than the previously approved project, it would generate fewer vehicle trips associated with project operation. The 2005 MND determined that because the 5,820 vehicle trips generated by the previously approved project would not cause any of the study intersections to operate below an acceptable LOS D, impacts to traffic congestion conditions would be less than significant. Because the proposed project would generate approximately 3,800 fewer vehicle trips than the previously approved project, impacts would not be greater than those under the previously approved project and would be less than significant.

LESS THAN SIGNIFICANT IMPACT

c. Would the project 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?

As discussed in Section 8, *Hazards and Hazardous Materials*, and Section 12, *Noise*, because the project site is located approximately seven miles northeast from the nearest airport (Fullerton Airport) at this distance the project would not present any impediments to air traffic, and would not affect air traffic patterns. Therefore, no impact would occur.

The previously approved project would be on the same site as the proposed project; therefore, similar to the proposed project, no impact to air traffic patterns would occur.

NO IMPACT

d. Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?

The proposed project would include primary access from Garden Grove Boulevard via a driveway at the northeast corner of the project site. The planned Brookhurst Place residential development directly north of the project site across Garden Grove Boulevard includes construction of a driveway directly opposite the proposed project driveway. New vehicle traffic from this driveway could generate cumulative traffic impacts when combined with new vehicle traffic from the proposed driveway. Therefore, a Traffic Signal Warrant Analysis was conducted for the unsignalized intersection of the

proposed project driveway at Garden Grove Boulevard using the California Department of Transportation Warrant 3 Peak Hour traffic signal warrant analysis as specified in the California Manual of Uniform Traffic Control Devices (November 2014). The analysis determined that a traffic signal is warranted at this intersection under Year 2019 Cumulative Plus Project Traffic conditions. Therefore, absent a traffic signal at this location, traffic safety issues could arise as drivers attempt to enter and exit both project driveways, which would be a significant impact unless mitigation is incorporated. Implementation of mitigation measure TRAF-1 would require installation of a traffic signal at the project site driveway and, in result, would reduce potential traffic safety issues to a less than significant level.

The proposed project would abide by local and regional requirements regarding site access features, such as on-site parking and driveway sight distance. Specifically, as provided in the TIA, the applicant will submit plans to the City of Garden Grove Planning Services Division to provide compliance with the following recommended roadway improvements:

- Site-specific circulation and access recommendations as depicted in Figure 29 of the Traffic Study (Appendix E)
- Sufficient on-site parking shall be provided to meet City of Garden Grove parking code requirements.
- On-site traffic signing and striping shall be implemented in conjunction with detailed construction plans for the project. Circulation within the project site should allow relatively free flow of vehicular traffic with no constrictions.
- Sight distance at project accesses shall comply with standard California Department of Transportation and City of Garden Grove sight distance standards. The final grading, landscaping, and street improvement plans shall demonstrate that sight distance standards are met. Such plans must be reviewed by the City and previously approved as consistent with this measure prior to issue of grading permits.

Although the proposed project would not be expected to have design features that would potentially cause traffic hazards, adherence to City regulations for site access would ensure that potential impacts would be less than significant.

The 2005 MND determined that conditions of approval would be required for site access hazards under the previously approved project to be reduced to a less than significant level. Specifically, the previously approved project would require construction of a traffic signal at the intersection of Garden Grove Boulevard and the main project entrance, a raised median on Garden Grove Boulevard to extend the left turn pocket to provide access to the main project entrance, relocation of the left pocket in front of the site to the west to allow for left turns into the proposed west side driveway, and implementation of a signal timing coordination plan along Garden Grove Boulevard. The proposed project would generate substantially fewer vehicle trips than the previously approved project. In result, the TIA determined that the proposed project would only require one of the same mitigation measures as the previously approved project, specifically installation of a traffic signal at the project site driveway through implementation of mitigation measure TRAF-1. No further mitigation would be necessary. Therefore, the proposed project would not generate greater impacts than the previously approved project and impacts would be less than significant.

Mitigation Measure

TRAF-1 **Traffic Signal.** A traffic signal shall be installed at the intersection of the proposed project driveway at Garden Grove Boulevard at the northeast corner of the project site prior to building occupancy to reduce potential traffic safety issues for drivers attempting to enter

and exit the driveway of the proposed project and the driveway of the proposed Brookhurst Place Residential development on the opposite side of Garden Grove Boulevard.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

e. Would the project result in inadequate emergency access?

A turning analysis was completed for the proposed project driveways to ensure the fire department would have acceptable access to and from the project site. In the vicinity of the project site, Garden Grove Boulevard is a six lane divided roadway with no on-street parking allowed. Garden Grove Boulevard Street is currently posted for 40 miles per hour. The turning template analysis has been based upon the parameters within the California Department of Transportation (Caltrans), Highway Design Manual, 2008 and American Association of State Highway and Transportation Offices (AASHTO), A Policy on Geometric Design of Highways and Streets, 2004. As provided in the TIA, the turning template analysis demonstrates adequate on-site circulation for expected fire department vehicles (see Appendix E of the TIA in Appendix E).

In addition, the proposed project would not result in inadequate emergency access because it would be subject to review by the Garden Grove Fire Department for the site plans, site construction, and the actual structures prior to occupancy to ensure that required fire protection safety features, including building sprinklers and emergency access, are implemented. Further, because the closest GGFD fire station is approximately 1.1 miles south of the site, firefighters would be able to quickly access the site if emergency conditions associated with senior housing occur, and, as discussed under item a, traffic generated by the proposed project would not substantially impact existing or future circulation conditions that would affect the ability of emergency vehicles to access the site. However, during the construction period, the circulation recommendations provided in the TIA and identified mitigation measures should be implemented to provide adequate vehicle access and circulation in and around the project site, which include installation of a stop sign and a traffic signal at the project driveway. Further, prior to the start of construction, the applicant shall submit a construction traffic plan to the City of Garden Grove Planning Services Division adhering to the standards set forth in the California Manual of Uniform Traffic Control Devices (2012) and applicable local ordinances. Overall, implementation of the circulation and construction traffic recommendations and project review by the City fire department would reduce potential impacts to a less than significant level.

Compared to the previously approved project, the proposed project would involve similar construction activities that could impact emergency access, but would have reduced impacts related to project operation. The 2005 MND determined that with approval of the City Police Department regarding building design plans that include increased floor height and elevator space to accommodate access for emergency vehicles and services, there would be no impacts to emergency access under the previously approved project. The proposed project would have the same design plans for emergency vehicle and services access and would generate considerably fewer vehicle trips and associated traffic that could potentially affect emergency access to the site. Therefore, impacts to emergency access would not be greater than the previously approved project and would be less than significant.

LESS THAN SIGNIFICANT IMPACT

f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise substantially decrease the performance or safety of such facilities?

Existing pedestrian facilities are shown in Figure 10 of the TIA (Appendix E). Pedestrian circulation would be provided via existing public sidewalks along Garden Grove Boulevard and Brookhurst Street to the

east of the site. The existing sidewalk system in the project vicinity provides direct connectivity to the existing residential and commercial development in the surrounding area. The nearest bus stop to the project site is located in front of the Ramada Inn approximately 50 feet west of the eastern boundary of the site, which is within walking distance, and is served by the Route 56 bus line. This route provides transit access to regional shopping malls, St. Joseph's Hospital, and the Orange Transportation Center, which provides connections to other bus routes and Metrolink trains that provide greater access to the rest of the city. As shown in Table 18 and**Error! Reference source not found.**, the traffic generated by the proposed project is not expected to adversely affect existing or forecasted traffic conditions that would cause a decrease in LOS below the acceptable LOS D threshold. A majority of the intersections would retain the same LOS under both analyzed scenarios. In result, traffic generated by the proposed project would not be expected to affect pedestrian facilities, including public transit bus schedules, in the surrounding area, or affect the level of pedestrian safety of local sidewalks and crosswalks. Therefore, the proposed project would not conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decrease the performance or safety of such facilities. Impacts would be less than significant.

The proposed project would be located at the same site as the previously approved project, and therefore would have similar levels of accessibility regarding pedestrian, bicycle, and public transit access. The 2005 MND determined that the previously approved project would not impact pedestrian or bicyclist facilities or alternative transportation during project operation, and only temporary impacts to pedestrians or bicyclists could occur during project construction. However, implementation of a traffic safety plan would ensure pedestrian and bicyclist safety during construction activities. Because construction and operational activities under the proposed project would be similar to the previously approved project, and the proposed project would include a construction traffic plan to avoid potential impacts to pedestrian, bicyclist, and transit facilities impacts to plans or programs related to use of these facilities would not be greater than those under the previously approved project and impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

17 Tribal Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in a Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☐	■
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Cod Section 2024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significant of the resource to a California Native American tribe.	☐	☐	☐	■

As of July 1, 2015, California Assembly Bill 52 of 2014 (AB 52) was enacted and expands CEQA by defining a new resource category, "tribal cultural resources." AB 52 establishes that "A project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment" (PRC Section 21084.2). It further states that the lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a tribal cultural resource, when feasible (PRC Section 21084.3).

PRC Section 21074 (a)(1)(A) and (B) defines tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" and is:

1. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying these criteria, the lead agency shall consider the significance of the resource to a California Native American tribe.

AB 52 also establishes a formal consultation process for California tribes regarding those resources. Under AB 52, lead agencies are required to "begin consultation with a California Native American tribe

that is traditionally and culturally affiliated with the geographic area of the proposed project." Native American tribes to be included in the process are those that have requested notice of projects proposed within the jurisdiction of the lead agency.

a. Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074 that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?

b. Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074 that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 2024.1?

The following response applies to (a) and (b).

The steel framework and underlying building foundation of the previously approved project remain on the existing project site. The site had also been previously developed with vacant buildings remnant from a closed car dealership. As such, the ground underlying the project site has been heavily disturbed. In addition, as discussed in Section 5, *Cultural Resources*, the project site is not known to have any historical or cultural resources that would be impacted by construction of the proposed project. No major excavation, grading, or other ground-disturbing activities are expected to occur for the proposed project and no tribal cultural resources are expected to be uncovered.

The Gabrieleno Band of Mission Indians – Kizh Nation requested consultation with the City in regards to the proposed project and potential impacts to tribal cultural resources from ground disturbance activities. Although no major ground disturbance would occur, minor excavation activities may be needed to install additional structural and foundational support for the proposed building. Such activities could impact unanticipated tribal cultural resources and would require mitigation. With implementation of TCR-1, impacts to tribal resources would be less than significant.

When construction of the previously approved project began, AB 52 had not yet been enacted and the issue of tribal cultural resources was not specifically addressed under CEQA. Therefore, the 2005 MND did not specifically address these issues. As excavation and grading of the site have already occurred, impacts to tribal cultural resources are not anticipated for the proposed project. Further, if tribal cultural resources are discovered, mitigation measure TCR-1 would reduce potential impacts to be less than significant.

Mitigation Measures

TCR-1 **Native American Monitoring.** The principal archaeologist identified by the City shall retain representatives of Gabrieleno heritage to perform Native American monitoring of all ground disturbance. If multiple tribal groups request to participate in monitoring, a rotation shall be established and the archaeologist shall be responsible to ensure work is distributed as equitably as possible. If prehistoric cultural resources are recovered, all tribal groups participating in the monitoring shall have input in regard to treatment and all materials will be reburied on site at a location deep enough not to be disturbed in the future. Native American monitoring shall cease if bedrock or loose sediments that can be demonstrated to be more than 10,000 years old are encountered.

LESS THAN SIGNIFICANT IMPACT

18 Utilities and Service Systems

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
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?	☐	☐	■	☐

a. Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

b. Would the project 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?

e. Would the project 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?

The following response applies to (a), (b), and (e).

The Garden Grove Sanitary District (GGSD) provides sewer service in the City. The City's wastewater system consists of over 312 miles of gravity sewer pipes, which collect wastewater from the service area and convey it to the Orange County Sanitation District's (OCSD) trunk sewers. The trunk sewers further convey the wastewater to OCSD's two treatment facilities in Fountain Valley and Huntington Beach. OCSD's Plant No. 1 in Fountain Valley has a capacity of 320 million gallons per day (MGD) and Plant No. 2 in Huntington Beach has a capacity of 312 MGD (City of Garden Grove 2016). As such, these facilities have a combined treatment capacity of 632 MGD of wastewater. These facilities currently treat approximately 200 MGD of wastewater (OCWD 2017).

Wastewater generated by the proposed project would be treated by the OCSD. Generally, a sewer system experiences between 65 and 85 percent return rates of water use to the sewer, depending on the land uses being serviced and the amount of outdoor water use (VWD 2010). As shown in **Error! Reference source not found.**, conservatively assuming that generated wastewater is approximately 80 percent of total water demand, the proposed project would generate approximately 96,438 gallons per day of wastewater, or approximately 0.02 percent of OCSD's daily combined treatment capacity. Therefore, wastewater flow associated with the proposed project would not result in exceedance of OCSD's wastewater conveyance or treatment capacity and new or expanded wastewater treatment facilities would not be needed. The project would connect to the existing sewer system and the applicant would be responsible for any improvements needed to make this connection. Because sewer lines are under existing streets, upgrades could involve temporary disruption of the street. However, as discussed in *Hazards and Hazardous Materials*, construction activities would be coordinated with the fire and police departments to ensure that alternative circulation routes are implemented as needed to prevent impacts to traffic circulation and emergency access. Therefore, sewer improvements would not result in any long-term environmental impacts.

Table 21 Wastewater Generation Comparison

Project	Annual Water Demand (Mgal)[1]	Estimated Daily Water Demand (gpd)	Wastewater Generation	Estimated Amount (gpd)
Proposed	44.0	120,547	80% of Daily Water Demand	96,438
Previously Approved	21.9	60,000	80% of Daily Water Demand	48,000

[1] Mgal to gpd conversion: Mgal/365 = gpd
Notes: Mgal = million gallons, gpd = gallons per day
Source: CalEEMod, see Appendix B

The proposed project would generate approximately twice as much wastewater as the previously approved project. Specifically, the proposed project would generate an estimated net increase of 48,438

gallons per day of wastewater in comparison to the previously approved project, or approximately 0.008% of OCSD's daily combined treatment capacity, as shown in**Error! Reference source not found.** The 2005 MND determined that the previously approved project would have no impact to wastewater treatment facilities since existing infrastructure was adequate to meet the demands of the City, including those generated by the project. Despite the increase in wastewater generation, wastewater generated by the proposed project would also not exceed the capacity of existing wastewater infrastructure and would not generate greater impacts than the previously approved project. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

c. Would the project 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??

As discussed in Section 9, *Hydrology and Water Quality*, the proposed project would be required to comply with NPDES requirements, which would ensure reduction of non-storm water discharges during operation and implementation of a SWPPP for project construction activities. Under the conditions of the permit, the SWPPP identifies BMPs that control surface runoff, erosion, and sedimentation. In addition, per Section 9.18.120.020 of the GGMC, all irrigation systems for mixed-use projects are required to avoid runoff, low-head drainage, overspray or other similar conditions where irrigation water flows onto non-targeted areas, such as adjacent property, non-irrigated areas, hardscapes, roadways, or structures (Garden Grove 2017a).

Further, according to the WQMP prepared by Huitt-Zollars, Inc., the proposed project would be able to use the City's existing stormwater drainage facilities to handle on-site flows from storm events. All roof drainage would be collected and conveyed via down drains to two sump pits located in the ground level garage. All surface drainage at ground level would then pass through infiltration inserts before being directed to the sump pits where the drainage flows will be discharged to the street from sump pumps through force mains. As there are no existing storm drain systems in the immediate vicinity of the project, all site drainage would be conveyed to Garden Grove Boulevard through parkway drains where stormwater flows are conveyed downstream to the west. Existing catch basins would then intercept these flows. The WQMP estimates the Design Capture Volume of stormwater for the entire site to be approximately 20,683 cubic feet per year, and the existing storm drain system maintained by the City would be able to sufficiently handle this flow. In addition, the proposed project would be required to comply with the requirements and measures provided in the WQMP that would ensure that drainage from the project site would not substantially affect existing City facilities. The complete WQMP is provided in Appendix C.

Overall, the proposed project would comply with the required measures of the NPDES permit and the existing drainage infrastructure has the capacity to accommodate the stormwater flows from the project site. Therefore, potential stormwater impacts would be less than significant.

The amount of impervious surfaces on the project site would be the same for the proposed project as for the previously approved project since the building footprint would be similar. As a result, stormwater flows from the project site would be expected to be similar between the two projects. The 2005 MND determined that the previously approved project would not have an impact on storm water drainage facilities since the City's existing drainage facilities are adequate to meet the demands of the area, including those generated by the previously approved project. As the proposed project would have

similar stormwater flows, impacts would not be substantially greater than those of the previously approved project and would be less than significant.

LESS THAN SIGNIFICANT IMPACT

d. Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

The City of Garden Grove relies on a combination of imported water and local groundwater to meet its water needs. The City works with three primary agencies, the Metropolitan Water District (MWD), Municipal Water District of Orange County (MWDOC), and Orange County Water District (OCWD) to ensure a safe and reliable water supply that would continue to serve the community in periods of drought and shortage. Sources of imported water supplies include the Colorado River Aqueduct (CRA) and the State Water Project (SWP) provided by MWD and delivered through MWDOC. The City's main source of water supply is groundwater from the Lower Santa Ana River Groundwater Basin, also known as the OC Basin. Currently, the City relies on approximately 70 percent groundwater and 30 percent imported and the water supply mix is projected to remain roughly the same by 2040 (Garden Grove 2016).

As shown in **Error! Reference source not found.**, the proposed project would demand an estimated 120,547 gallons per day (gpd) of water, or 135 acre-feet per year (AFY).[3, 4] According to the City's 2015 UWMP, the City's 2015 water demand was approximately 24,049 AFY. The City's future water demand and supply projections are provided in Table 22. The City estimates that water supplies will be sufficient to meet all demand through the year 2040 during normal, single dry year, and multiple dry year hydrologic conditions, and forecasts an approximate 2,000 AFY increase in water demand and supply over the next 20 years. The proposed project's water demand would constitute approximately 6.8 percent of the projected demand and therefore would be within the City's forecasted citywide supplies. No new or expanded entitlements for additional water provision would be needed, and the proposed project would not result in a substantial physical deterioration of public water facilities. Therefore, impacts to water supplies would be less than significant.

[3] One gpd = 4.4 x 10-8m^3/s; 1 AFY = 3.9 x 10-^{5} m^3/s; Conversion: 120,547 gpd/ 10-8m^3/s x 3.9 x 10-^{5} m^3/s/ 1 AFY. Source: Kylesconverter.com

[4] Water consumption estimates based on CalEEMod results. CalEEMod uses total residential indoor and outdoor water use rates taken from Table ES-1 of the Pacific Institute "Waste Not Want Not" report. Values were divided by the total number of occupied households in California in the year 2000 to give water demand per dwelling unit. The report assumes that these water use values are representative of all residential dwelling unit types (single-family, apartment, condo, etc.).

Table 22 Garden Grove Water Supply in Normal, Single Dry and Multiple Dry Years (Acre-Feet)

	2020	2025	2030	2035	2040
Normal Year					
Supply Totals	24,078	25,847	26,024	26,07	26,055
Demand Totals	24,078	25,847	26,024	26,07	26,055
Single Dry Year					
Supply Totals	25,523	27,398	27,585	27,578	27,618
Demand Totals	25,523	27,398	27,585	27,578	27,618
Multiple Dry Year					
Supply Totals	25,523	27,398	27,585	27,578	27,618
Demand Totals	25,523	27,398	27,585	27,578	27,618

Source: Tables 3-6, 307, and 3-8, "Table 13, "Supply and Demand Assessment" of the 2016 Urban Water Management Plan (Garden Grove 2016).

As shown in Table 22, the water demand for the proposed project would be nearly twice that of the previously approved project. This would be due to the larger population increase resulting from the increase in residential units constructed by the proposed project. Nevertheless, as discussed above, project demand would be within the City's forecast supplies, therefore the proposed project would not generate substantially greater impacts than the proposed project and impacts on water distribution facilities would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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

g. Would the project comply with federal, state, and local statutes and regulations related to solid waste?

The following response applies to (f) and (g).

The GGSD administers solid waste collection and disposal services through a private contract with Republic Services (Garden Grove 2017c). Waste generated and hauled from the project site would be disposed of at the Olinda Landfill, which is permitted to accept a maximum of 8,000 tons per day of solid waste. The average disposal rate at Olinda Landfill is 7,000 tons per day of solid waste; therefore, the landfill has an available average capacity of 1,000 tons per day (County of Orange 2016).

As shown in**Error! Reference source not found.**, the proposed project would generate approximately 198 tons of solid waste per year, or 0.54 tons per day. This would constitute about 0.1 percent of the currently available average capacity of the Olinda Landfill (1,000 tons). The proposed project's solid waste generation would be within the Olinda Landfill's capacity. In addition, the project would participate in local solid waste reduction, reuse, and recycling programs, which aim to divert about 50

percent of solid waste generated in the City from landfills in accordance with AB 939. Therefore, the project's impact would be less than significant.

Table 23 Solid Waste Generation Comparison

Land Use	Area (SF)	Dwelling Units	Solid Waste Generation	
			Tons per Year[1]	Tons per Day
Previously Approved Project				
Residential	--	66	30.4	0.083
Commercial	96,894	--	131.3	0.36
Previously approved Project Subtotal			161.7	0.44
Proposed Project				
Residential	--	400	184	0.50
Commercial	12,938	--	13.7	0.038
Proposed Project Subtotal			197.7	0.54
Net Increase in Solid Waste under the Proposed Project (tons per year)			36	
Net Increase in Solid Waste under the Proposed Project (tons per day)			0.1	

[1] Waste generation estimated by CalEEMod using annual waste disposal rates from the California Department of Resources Recycling and Recovery (CalRecycle) data for individual land uses. If waste disposal information was not available, waste generation data was used. CalEEMod uses the overall California Waste Stream composition to generate the necessary types of different waste disposed into landfills.
Source: CalEEMod, see Appendix B.

Error! Reference source not found. compares waste generation of the proposed project to that of the previously approved project. Because the proposed project would increase in solid waste disposal demand by approximately 0.1 tons per day, the project would generally require the same use of the currently available capacity at the Olinda Landfill (0.1 percent). The 2005 MND determined that the previously approved project would have no impact caused by the project's solid waste disposal needs since it would comply with applicable waste collection regulations. Therefore, the proposed project's solid waste solid waste impact would not be substantially greater than that of the previously approved project and impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

19 Mandatory Findings of Significance

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Does the project:				
a. Have the potential to substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, 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. Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☐	■
c. Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	■

a. Does the project have the potential to substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, 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?

As discussed in Section 4, *Biological Resources*, Section 5, *Cultural Resources*, and Section 17, *Tribal Cultural Resources*, no impact to biological or cultural resources would occur under development of the proposed project.

NO IMPACT

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

As described in the discussion of environmental checklist Sections 1 through 17, the proposed project would have no impact, a less than significant impact, or a less than significant impact with mitigation incorporated, with respect to all environmental issues. Cumulative impacts of several resource areas have been addressed in the individual resource sections above: Air Quality, Greenhouse Gases, Noise, and Transportation/Traffic (see CEQA Guidelines Section 15064(h)(3)). CalEEMod was utilized to assess the air quality and greenhouse gas impacts resulting from the proposed project, concluding that the impacts associated with these two issues were less than significant. Within the South Coast Air Basin, SCAMD considers projects that exceed the project-specific significance thresholds for emissions to have cumulatively considerable impacts. Although the proposed project would result in an increase in temporary and long-term daily operational emissions compared to current unoccupied conditions, emissions would not exceed SCAQMD operational or construction thresholds or LSTs, and would be consistent with the AQMP. Therefore, the proposed project's contribution to cumulative impacts to air quality and greenhouse gases would not be cumulatively considerable.

In addition, both noise and traffic studies conducted as part of this Initial Study considered cumulative increases in traffic and concluded that cumulative impacts would be less than significant. Although the Brookhurst Triangle apartments are currently under construction and are within proximity to the project site, construction of this development is expected to be completed by the start of construction of the previously approved project and there would be no anticipated cumulative impacts with regard to traffic or noise generated from concurrent construction schedules. Certain resource areas (e.g., agricultural and mineral) were determined to have no impact in comparison to existing conditions. Therefore, the project would not contribute to cumulative impacts related to these issues. Other issues (e.g., geology and hazards and hazardous materials) are by their nature project-specific and impacts at one location do not add to impacts at other locations or create additive impacts. As such, cumulative impacts would be less than significant (not cumulatively considerable).

LESS THAN SIGNIFICANT IMPACT

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

In general, impacts to human beings are associated with air quality, hazards and hazardous materials, and noise impacts. As detailed in Section 1*, Air Quality*; Section 8, *Hazards and Hazardous Materials*; and Section 12; *Noise*, the proposed project would not result, either directly or indirectly, in significant effects related to air quality, hazardous materials, or noise. Compliance with applicable rules and regulations and recommended mitigation measures would reduce potential impacts on human beings to a less than significant level.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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Appendix A

2005 Mitigated Negative Declaration

Appendix B

CalEEMod Results

Appendix C

Water Quality Management Plan

Appendix D

Noise Measurement Data

Appendix E

Traffic Study