Greenfield Apartments

14041, 14051 and 14061 Locust Street

Initial Study and Mitigated Negative Declaration

Lead Agency
City of Westminster
Planning Division
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Westminster, California 92683

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July 12, 2016

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City of Westminster
Environmental Analysis Checklist Explanations

Greenfield Apartments
14041, 14051 and 14061 Locust Street

1. Project Location and Surrounding Land Uses

The Project site for the proposed Greenfield Apartments is located at 14041, 14051 and 14061 Locust Street in Westminster, California. The site is near the intersection of Westminster Boulevard and Goldenwest Street. The site is south of a fast food restaurant that fronts Westminster Boulevard. The Project is north of the Brentwood Lane Townhomes on Locust Street and east of a coin-op auto spa and other auto-related businesses on Goldenwest Street. The properties include several old residential structures that are slated for demolition.

The subject properties are designated as "General Commercial" per the City's General Plan and are zoned C-2 "General Business."

Exhibit 1 shows the regional location of the Project. Exhibit 2 shows the Project site and Project vicinity. Exhibit 3 is an aerial photograph of the Project area. Exhibit 4 shows the site plan. Exhibit 5, Exhibit 6, and Exhibit 7 show the proposed floor plans, and Exhibit 8 through Exhibit 12 illustrate the proposed building elevations. The Project plans are on file with the City of Westminster, Planning Department.

2. Project Description

The Project consists of the consolidation of three parcels on Locust Street in the City of Westminster into an approximately 1.8-acre site for the development of 50 residential rental units that includes an affordable component. The applicant is requesting a density bonus to accommodate the proposed number of dwelling units. The Project will include single-level flats and two-story townhome-style units with one, two and three bedrooms. A total of 84 unenclosed parking spaces are provided on-site in compliance with parking standards for affordable housing projects imposed by the state (*California Government Code* §65915). A portion of the parking spaces will be provided in detached carport structures arranged along the south and west property lines. The Project will take access from a single driveway on Locust Street.

The site(s) is currently designated by the City of Westminster General Plan as "General Commercial" and is zoned C2, "General Business." The Project will require a General Plan Amendment to change the land use designation to "Residential High Density 15-25 Dwelling Units per Gross Acre" and a Zoning Map Amendment to re-zone these Project parcels to R5-PD (Multiple Family Residential 19 to 25 Units/Acre – Planned Development Overlay). A Comprehensive Plan is required for the Project site and architectural design, and a Tentative Parcel Map for the lot consolidation.

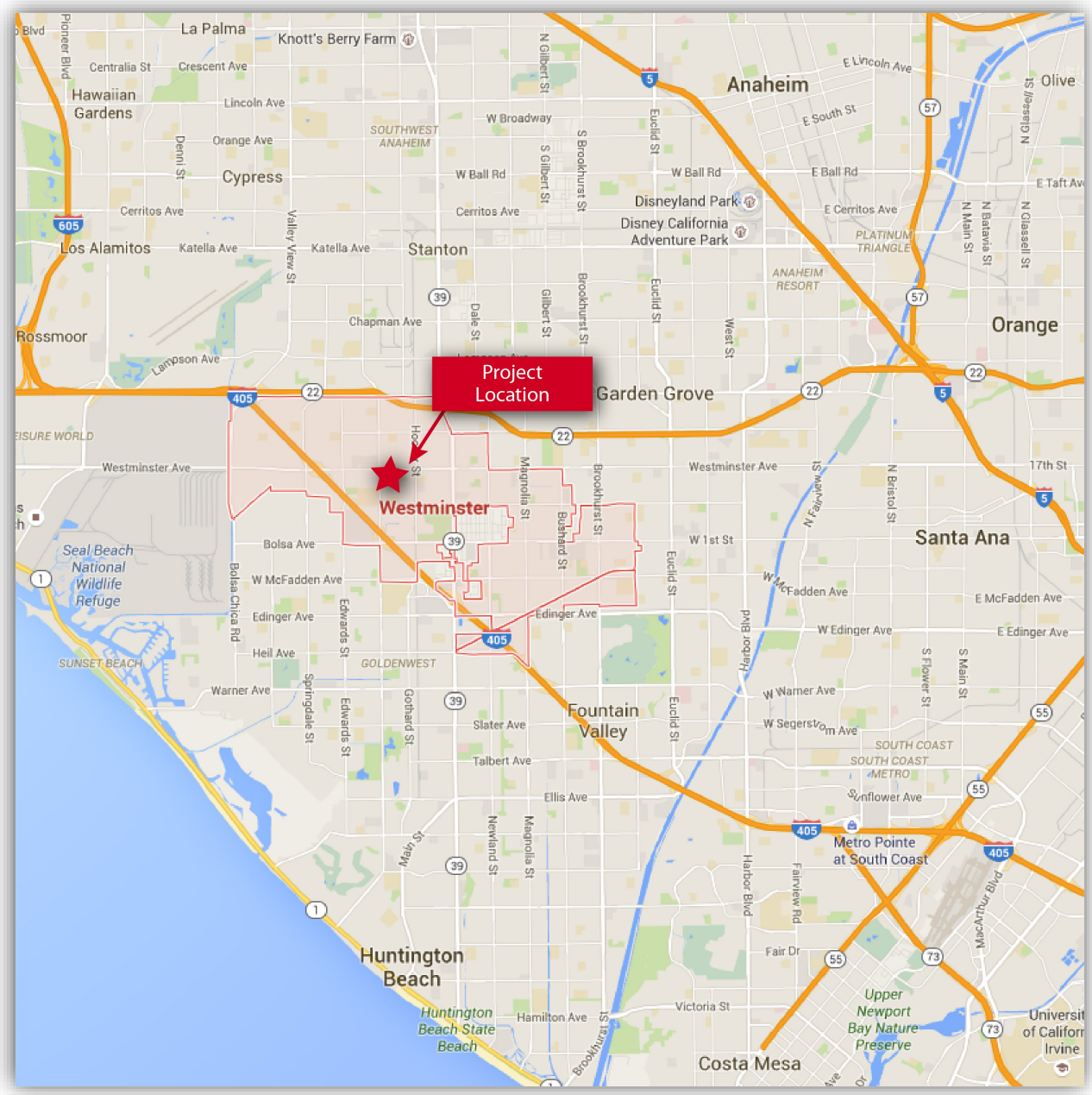


Exhibit 1. Regional Location

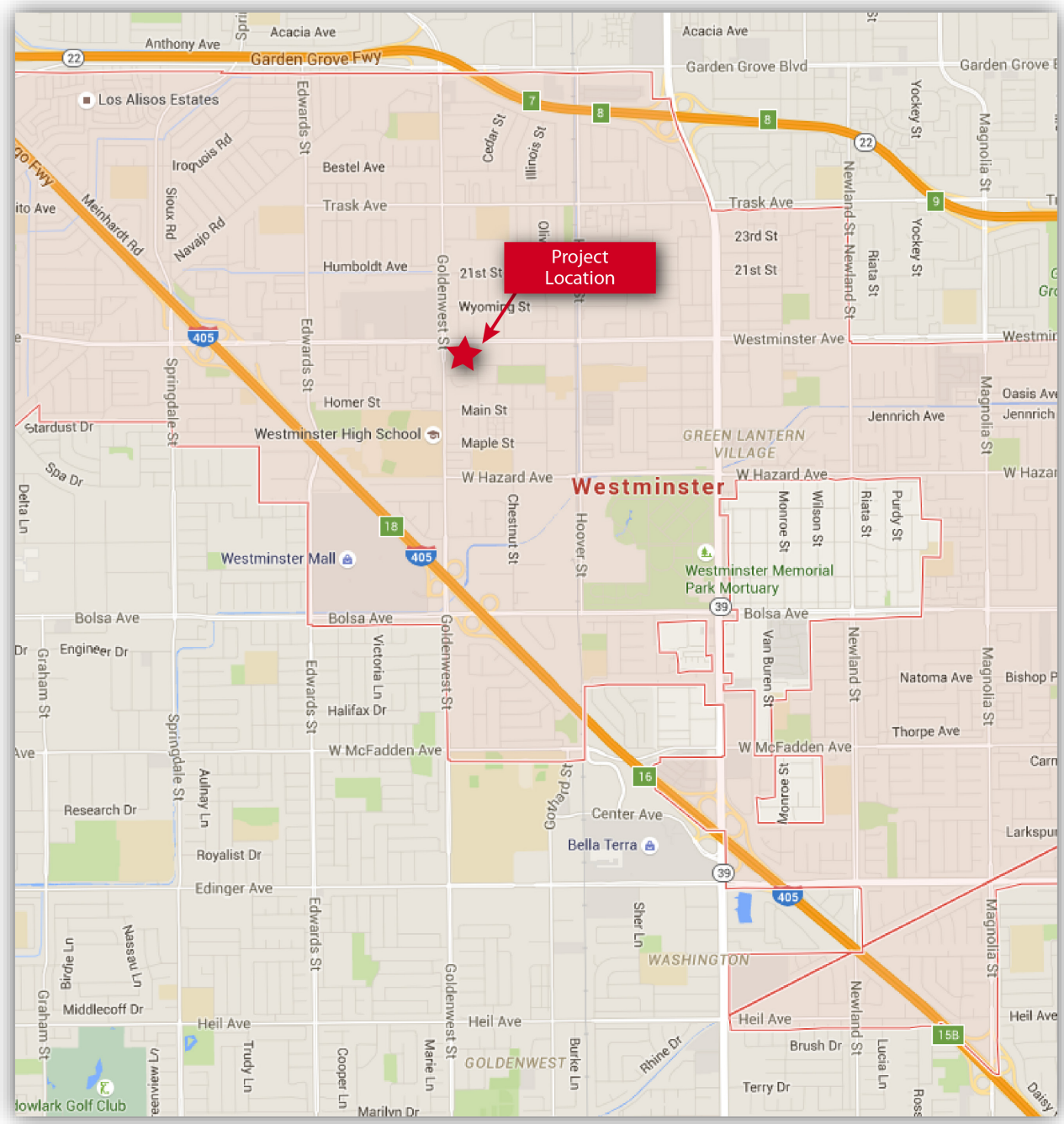


Exhibit 2. Project Vicinity

Exhibit 3. Aerial Photo of Project Site

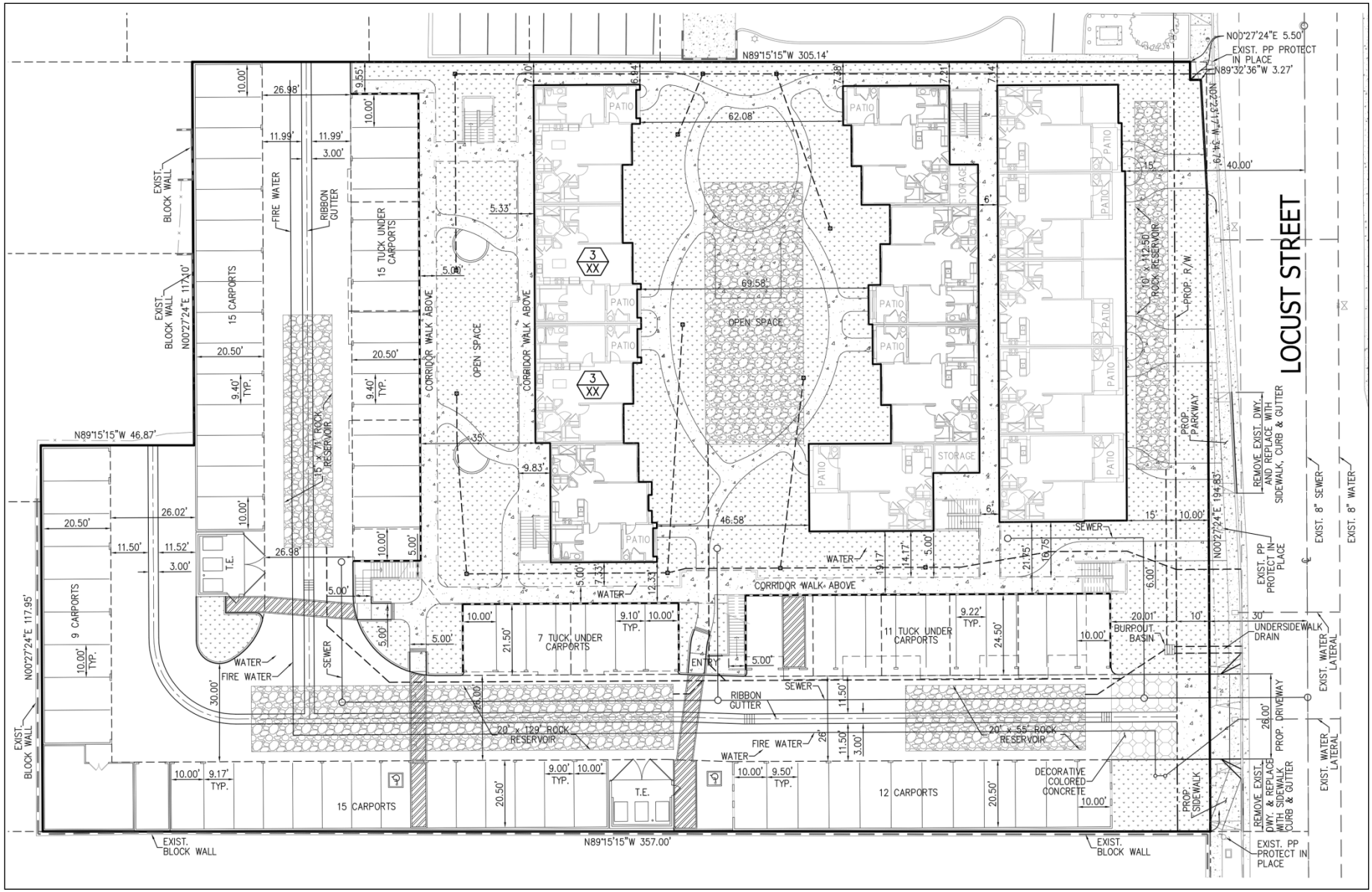


Exhibit 4. Proposed Site Plan

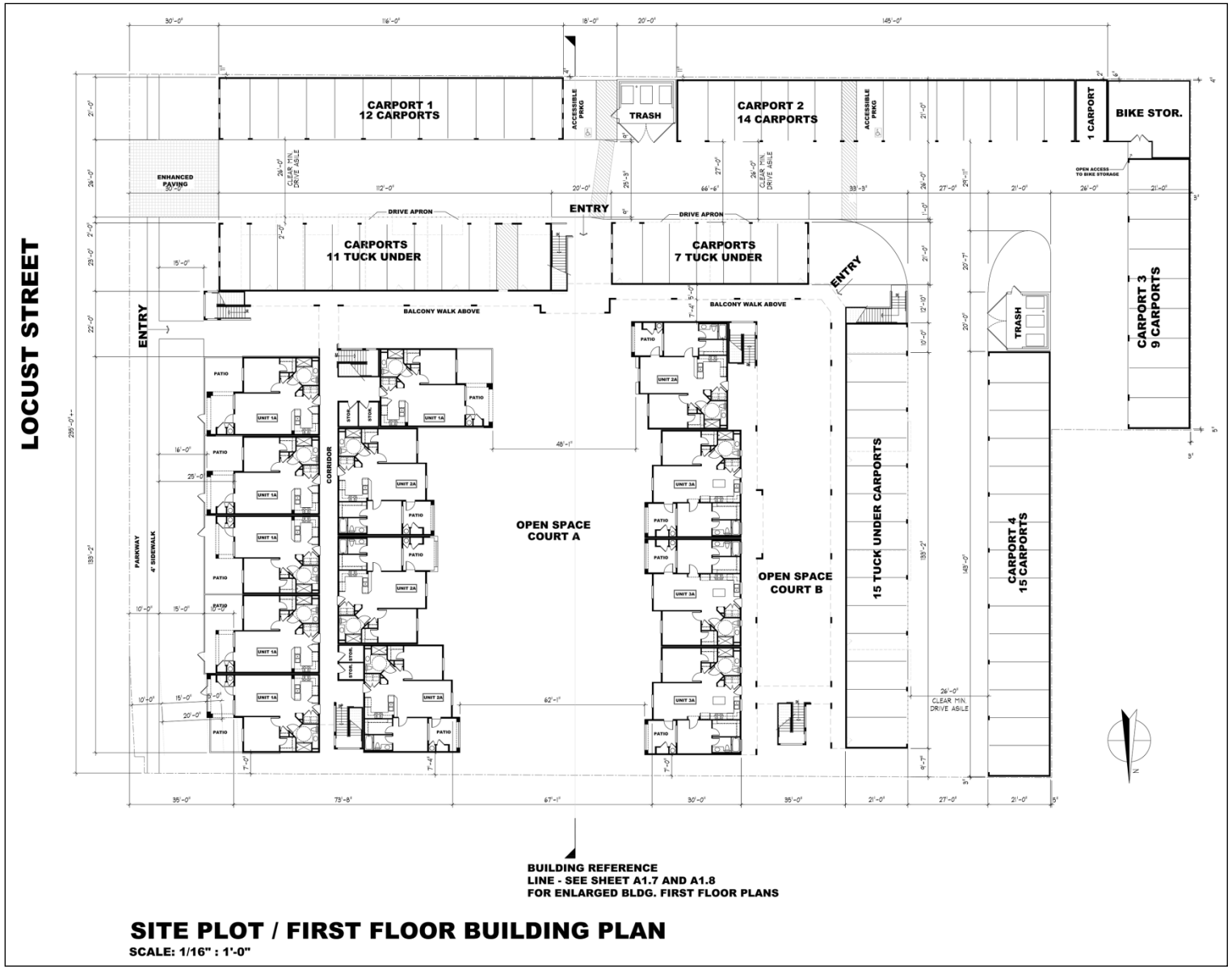


Exhibit 5. First Floor Building Plan

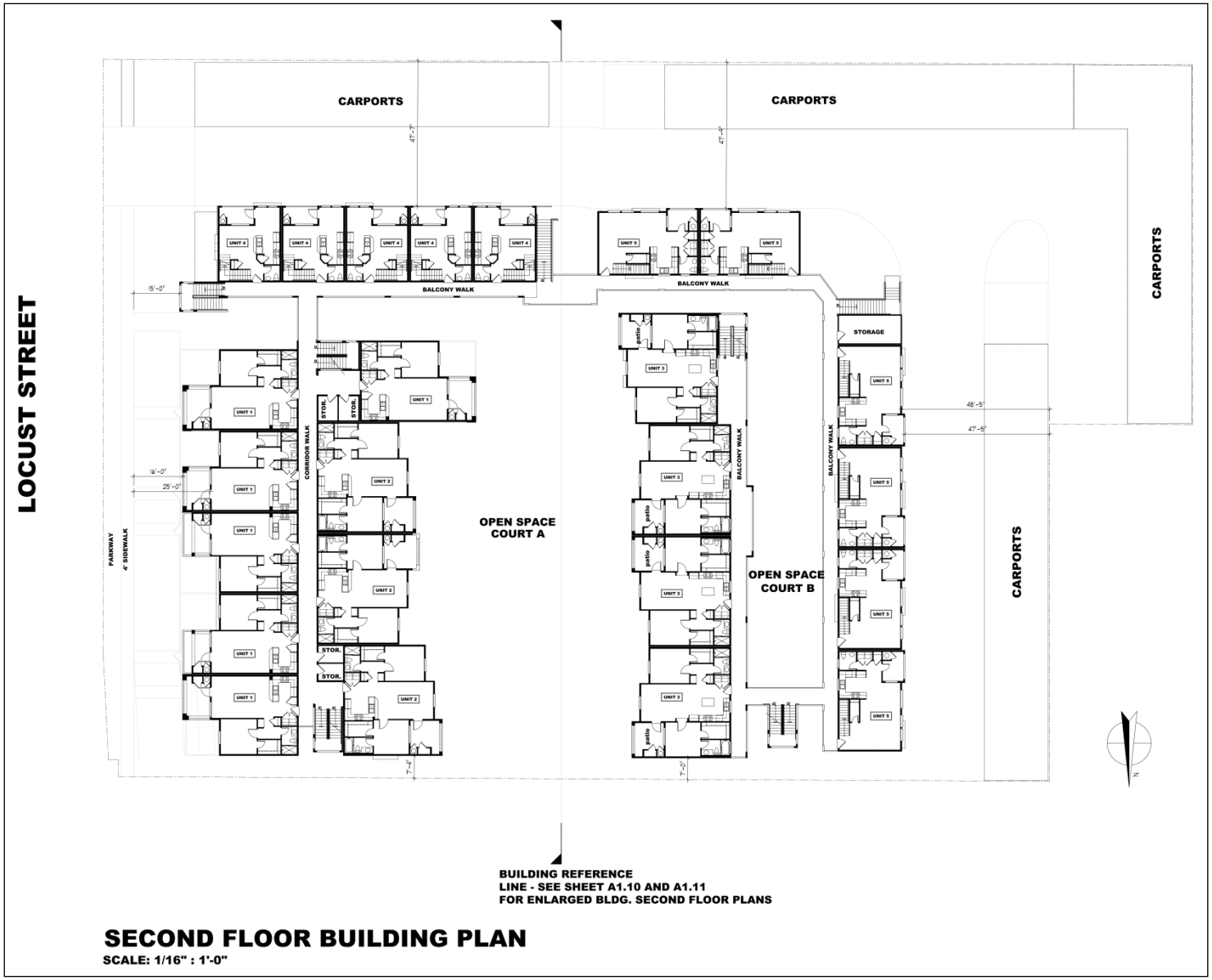


Exhibit 6. Second Floor Building Plan

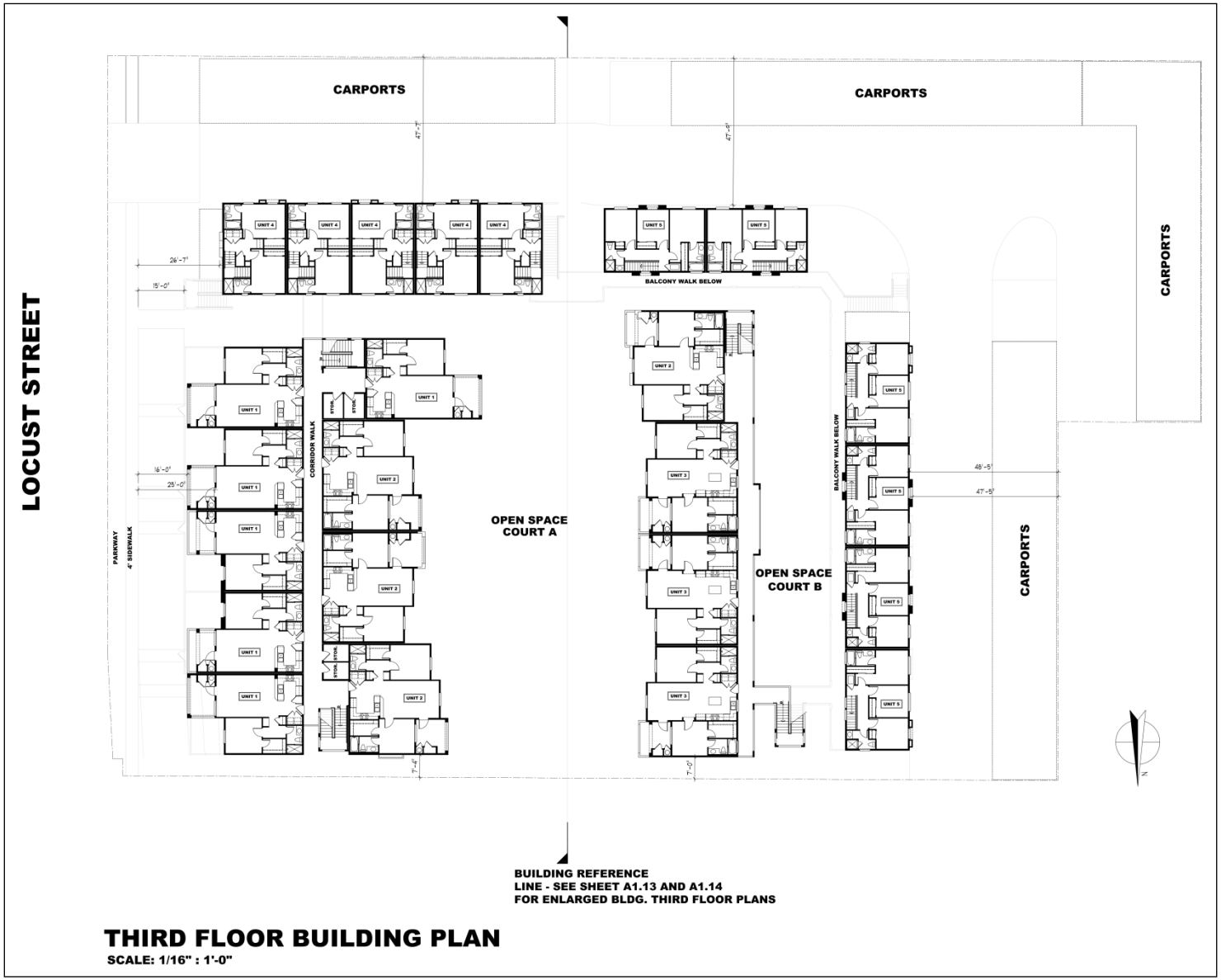


Exhibit 7. Third Floor Building Plan

Exhibit 8. Proposed Exterior Elevations 1

Exhibit 9. Proposed Exterior Elevations 2

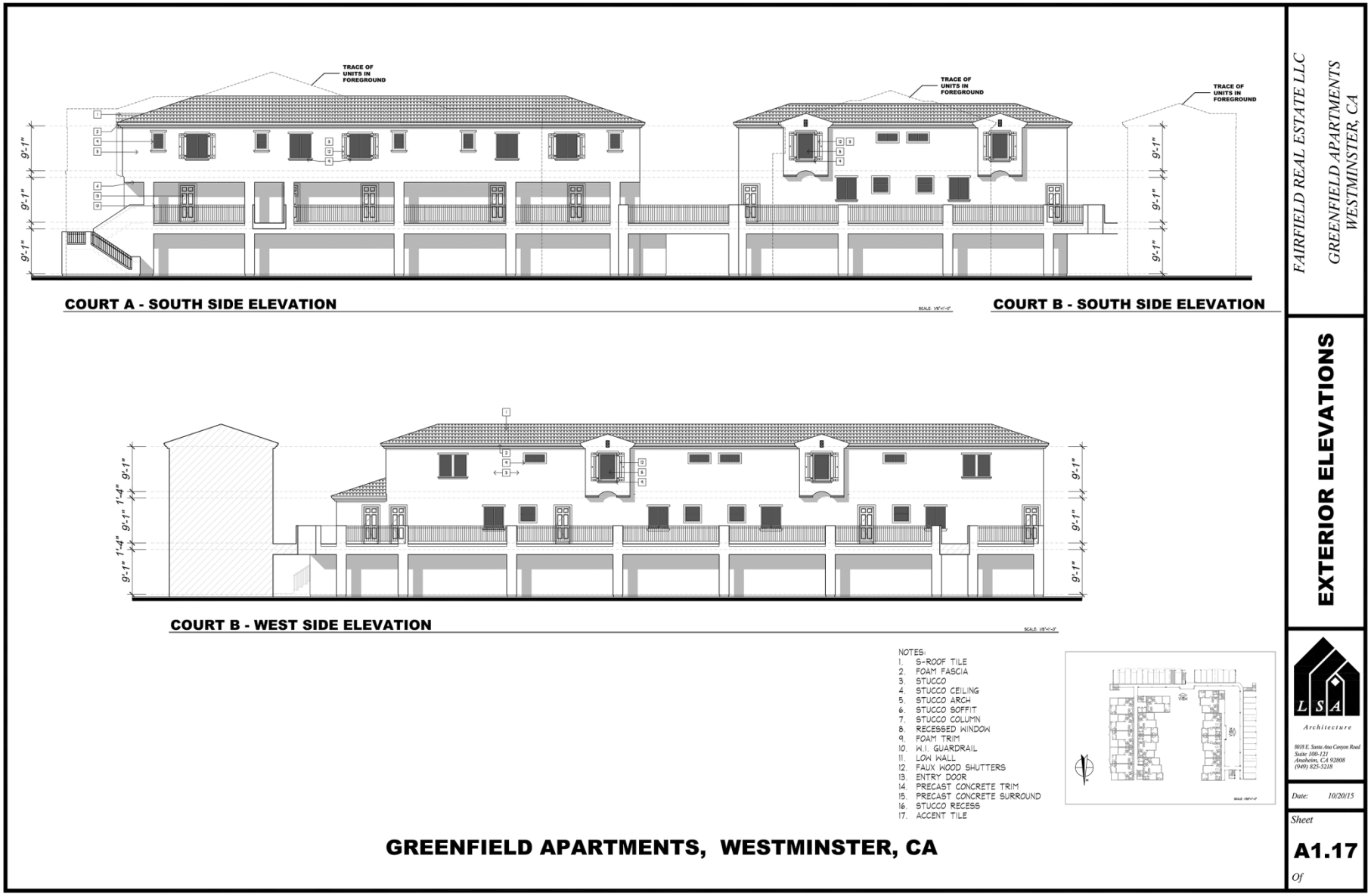
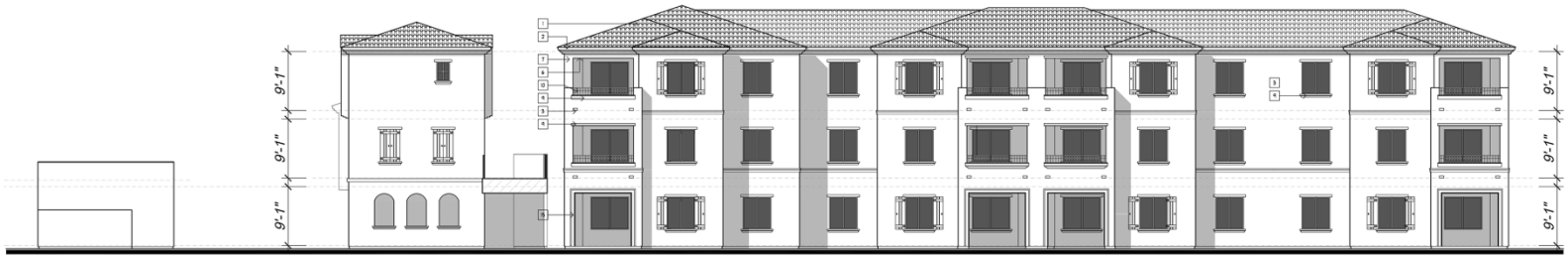


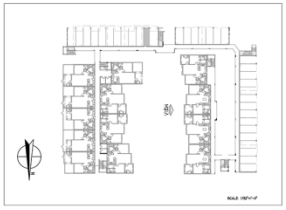
Exhibit 10. Proposed Exterior Elevations 3

Exhibit 11. Proposed Exterior Elevations 4



COURT A - WEST SIDE ELEVATION

NOTES:
1. S-ROOF TILE
2. FOAM FASCIA
3. STUCCO
4. STUCCO CEILING
5. STUCCO ARCH
6. STUCCO SOFFIT
7. STUCCO COLUMN
8. RECESSED WINDOW
9. FOAM TRIM
10. W.I. GUARDRAIL
11. LOW WALL
12. FAUX WOOD SHUTTERS
13. ENTRY DOOR
14. PRECAST CONCRETE TRIM
15. PRECAST CONCRETE SURROUND
16. STUCCO RECESS
17. ACCENT TILE



GREENFIELD APARTMENTS, WESTMINSTER, CA

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GREENFIELD APARTMENTS
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EXTERIOR ELEVATIONS

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Of

Exhibit 12. Proposed Exterior Elevations 5

3. Proposed Actions

The Project will require City approval of a General Plan Amendment, a Zoning Map Amendment, a Comprehensive Plan, a Tentative Parcel Map, and an affordable housing density bonus. The proposed Project requires compliance with environmental procedures (CEQA and the CEQA Guidelines). The Amendments require City Council approval.

4. Statutory Authority

The preparation of the Initial Study and Mitigated Negative Declaration is governed by two principal sets of documents: the California Environmental Quality Act (hereinafter CEQA, *Public Resources Code* §21000, et seq.) and the CEQA Guidelines (*California Code of Regulations* §15000, et seq.). Additionally, City of Westminster procedures and case law provide guidance to this Initial Study and Mitigated Negative Declaration.

In compliance with state law and procedures, the City has determined that the Mitigated Negative Declaration is the appropriate environmental compliance for the proposed Project. Therefore, the City will not cause to be prepared an Environmental Impact Report (EIR). In compliance with §15063 of the CEQA Guidelines, the City conducted an Initial Study to determine if the Project may have a significant effect on the environment. The Initial Study checklist form and explanation discussion format meets the requirements of the CEQA. Section 15063(d)(3) requires that the entries on the Initial Study checklist identifying environmental effects be briefly explained to indicate that there is some evidence to support the entries. An Initial Study may rely upon expert opinion supported by facts, technical studies, or other substantial evidence to document its findings. An Initial Study is not intended nor required to include a level of detail that would be provided in an EIR. Therefore, in compliance with CEQA and the CEQA Guidelines, the IS/MND is not intended to be a lengthy detailed document.

5. Incorporation by Reference

Certain documents are incorporated by reference into this Initial Study and Mitigated Negative Declaration pursuant to CEQA Guidelines §15150. These documents and the locations where they can be inspected are identified in the Initial Study Checklist (page 67 of this Initial Study and Mitigated Negative Declaration). Where a document is referenced, its pertinent sections will be briefly summarized in the discussions in this environmental document.

6. Analysis

The initial step in the City's environmental evaluation is the completion of an Environmental Checklist (also known as an "Initial Study") to identify known or potential impacts and eliminate environmentally irrelevant issues. After each issue listed on the checklist, the City has marked "potentially significant impact," "less than significant with mitigation incorporated," "less than significant impact," or "no impact" depending on the potential of the Project to have adverse impacts. The Environmental Checklist prepared for the proposed Project is presented in Appendix A of this environmental document.

The following discussion provides explanations for the conclusions contained in the Environmental Checklist regarding the proposed Project's environmental impacts.

1. Aesthetics

Would the Project:

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

No Impact

The Project site is not located in an area that provides a scenic vista. Surrounding properties are developed with commercial establishments, residences, and roads. The Project site is located in a developed area of the City. The Project site is not located in an area that contains a scenic vista. Therefore, the Project will not result in 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?

No Impact

See response to Item 1.a) above. The Project will not have a significant impact to any scenic resources such as trees, rock outcroppings, or historic buildings. Additionally, the property is not located along a state scenic highway. Therefore, the Project will not result in any significant impacts for this topical area.

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

No Impact

It is not anticipated that the Project will substantially impact the visual character or quality of the site and its surroundings. The Project plans were previously presented in the Project Description Section of this document (Exhibit 4 through Exhibit 12). The proposed apartments are compatible with the surrounding land uses. Surrounding and nearby land uses to the Project site include commercial businesses and residential uses. Therefore, the proposed apartment buildings on the subject site will not result in any significant impacts relative to visual character or quality of the site and its surroundings.

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

Less Than Significant Impact with Mitigation Incorporated

The surrounding properties are already developed with existing commercial and residential uses. Exterior lighting is proposed on the apartment buildings. Final lighting design (fixture locations) will be implemented with attention to the surrounding uses. While lighting associated with the Project will be visible, a mitigation measure is proposed that requires a lighting plan for the building to be approved by the City, recognizing the urbanized location. All light sources should be designed to eliminate light and glare spillage onto adjacent properties or uses. Therefore, substantial light and/or glare impacts with mitigation incorporated should be less than significant.

Mitigation Measure 1 – Prior to issuance of any building permits, the applicant shall demonstrate to the Planning Department that the lighting system has been designed and directed in such a manner as to minimize the light source and to minimize light spillage and glare to the adjacent properties. Applicant shall provide a lighting plan that identifies light fixture product types and technical specifications, including photometric information to determine the extent of light spillage of glare that can be anticipated. This information shall be made a part of the building set of plans for the issuance of the building permit.

2. Agriculture and Forest Resources

Would the Project:

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

No Impact

The proposal does not involve conversion of any farmland. The proposed Project does not call for rezoning of farmland, nor is it currently zoned for agriculture. Therefore, the proposed Project will not have any impacts on agriculture resources.

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

No Impact

See response to Item 2.a) above. The Project would not conflict with existing zoning for agricultural use, or a Williamson Act contract. The property is not under a Williamson Act contract. Therefore, no impacts to this topical area would occur as a result of the proposed Project.

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))?

No Impact

The Project does not involve land that is considered forest land or timberland zoned for timberland production. Therefore, no impacts to this topical area would occur as a result of the proposed Project.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact

The Project is located in an existing urban area and does not involve conversion of forest land to non-forest use. Therefore, no impacts to this topical area would occur as a result of the proposed Project.

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?

No Impact

The proposed Project will not have any impact on farmland or agricultural uses. The Project site is within a developed area surrounded by commercial and residential uses. Therefore, the

Project will not have any impact that could result in the conversion of property to non-agricultural use.

3. Air Quality

An Air Quality and Greenhouse Gas Impact Analysis by Giroux & Associates (dated May 9, 2016, Appendix B) was prepared for the Greenfield Apartments project. The analysis considered the climatological setting of the Project and examined the Clean Air Act requirements and the air quality standards that would be applied to the Project. The analysis modeled the Project and projected the air quality impacts that would be expected with implementation of the Project.

The climate of Westminster, technically called a Mediterranean-type climate, is characterized by warm summers, mild winters, infrequent rainfall, moderate afternoon breezes, and generally fair weather. Temperatures near the Project area average a very comfortable 63 °F year-round. Summer afternoons are typically in the middle 80s, and winter mornings drop to the low- to mid-40s. About 45 summer days reach 90 °F, and 5 days per year may drop to 32 degrees, but significant extremes of temperature are rare in the Project area. Rainfall in the Los Angeles Basin varies considerably in both time and space. Rainfall amounts vary from an average of 10 to 18 inches as a function of local exposure and topography. Westminster averages 14.6 inches of rain during a normal year. Almost all the annual rainfall comes from the fringes of mid-latitude storms from late November to early April with summers often completely dry. Light rain (0.1 inch in 24 hours) falls on 20 days during a normal year with 10 days in the moderate (0.5 inch in 24 hours) category.

Winds blow primarily from southwest to northeast by day and from northeast to the southwest at night in response to the regional pattern of onshore flow by day and offshore flow at night. Average wind speeds are 5 miles per hour average in the Westminster area, reaching 6 to 8 miles per hour in the afternoon but dropping to near calm conditions (1 to 3 miles per hour) at night.

The net effect of local airflow in terms of air pollution is that daytime ventilation is good, and any locally generated air pollutants will be rapidly dispersed by the strong daytime turbulence. At night, however, pooling of cool air in low elevations combined with light winds allows for air stagnation in protected areas, especially near area freeways with elevated pollution levels. However, because such effects are highly localized, the Project area is sufficiently far from any major roadways such that it will be little affected by such air stagnation effects.

In addition to winds that control the rate and direction of pollution dispersal, Southern California is notorious for strong temperature inversions that limit the vertical depth through which pollution can be mixed. In summer, coastal areas are characterized by a sharp discontinuity between the cool marine air at the surface and the warm, sinking air aloft within the high-pressure cell over the ocean to the west. This marine/subsidence inversion allows for good local mixing, but acts like a giant lid over the basin. Air starting onshore at the beach is relatively clean, but becomes progressively more polluted as sources continue to add pollution from below without any dilution from above. Air arriving at Westminster during warm season marine flow conditions has undergone limited photochemical reactions, but not to its fullest extent possible. Summer smog levels in Westminster are much lower than in inland valleys of the basin such as the San Gabriel Valley or the Pomona-Walnut Valley. Summer air quality is only moderately degraded compared to the severe degradation found farther inland within the air basin.

A second inversion type forms on clear, winter nights when cold air off the mountains sinks to the surface while the air aloft remains warm. This process forms radiation inversions. These inversions, in conjunction with calm winds, trap pollutants such as automobile exhaust near their source. During the long nocturnal drainage flow from land to sea, the exhaust pollutants continually accumulate

within the shallow, cool layer of air near the ground. Central Orange County thus may experience elevated levels of carbon monoxide and nitrogen oxides because of this winter inversion condition. With ongoing vehicular improvements, clean air standards are generally not exceeded during nocturnal stagnation periods as they were 10 to 20 years ago.

Both types of inversions occur throughout the year to some extent, but the marine inversions are very dominant during the day in summer, and radiation inversions are much stronger on winter nights when nights are long and air is cool. The governing role of these inversions in atmospheric dispersion leads to a substantially different air quality environment in summer near the Project area than in winter.

Ambient Air Quality Standards (AAQS)

To gauge the significance of the air quality impacts of the proposed Project, those impacts, together with existing background air quality levels, must be compared to the applicable ambient air quality standards. These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect "sensitive receptors," including those people most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed. However, recent research has shown that chronic exposure to ozone (the primary ingredient in photochemical smog) may lead to adverse respiratory health even at concentrations close to the ambient standard.

National AAQS were established in 1971 for six pollution species with states retaining the option to add other pollutants, to require more stringent compliance, or to include different exposure periods. The initial attainment deadline of 1977 has been extended several times in air quality problem areas like Southern California. In 2003, the Environmental Protection Agency (EPA) adopted a rule, which extended and established a new attainment deadline for ozone for the year 2021. Because the State of California had established AAQS several years before the federal action and because of unique air quality problems introduced by the restrictive dispersion meteorology, considerable difference exists between state and national clean air standards. Those standards currently in effect in California are shown in Table 0. Sources and health effects of various pollutants are shown in Table 2.

The Federal Clean Air Act Amendments (CAAA) of 1990 required that the U.S. Environmental Protection Agency (EPA) review all national AAQS in light of currently known health effects. EPA was charged with modifying existing standards or promulgating new ones where appropriate. EPA subsequently developed standards for chronic ozone exposure (8+ hours per day) and for very small diameter particulate matter ($PM_{2.5}$). New national AAQS were adopted in 1997 for these pollutants.

Planning and enforcement of the federal standards for $PM_{2.5}$ and for ozone (8 hours) were challenged by trucking and manufacturing organizations. In a unanimous decision, the U.S. Supreme Court ruled that EPA did not require specific congressional authorization to adopt national clean air standards. The Court also ruled that health-based standards did not require preparation of a cost-benefit analysis. However, the Court did find that there was some inconsistency between existing and "new" standards in their required attainment schedules. Such attainment-planning schedule inconsistencies centered mainly on the 8-hour ozone standard. EPA subsequently agreed to downgrade the attainment designation for a large number of communities to "non-attainment" for the 8-hour ozone standard.

Table 1. Ambient Air Quality Standards

Ambient Air Quality Standards						
Pollutant	**Averaging Time**	**California Standards [1]**		**National Standards [2]**		
		Concentration [3]	**Method [4]**	**Primary [3,5]**	**Secondary [3,6]**	**Method [7]**
Ozone (O_3)[8]	1 Hour	0.09 ppm (180 μg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 μg/m^3)		0.070 ppm (137 μg/m^3)		
Respirable Particulate Matter (PM10)[9]	24 Hour	50 μg/m^3	Gravimetric or Beta Attenuation	150 μg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 μg/m^3		—		
Fine Particulate Matter (PM2.5)[9]	24 Hour	—	—	35 μg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 μg/m^3	Gravimetric or Beta Attenuation	12.0 μg/m^3	15 μg/m^3	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
Nitrogen Dioxide (NO_2)[10]	1 Hour	0.18 ppm (339 μg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 μg/m^3)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 μg/m^3)		0.053 ppm (100 μg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[11]	1 Hour	0.25 ppm (655 μg/m^3)	Ultraviolet Fluorescence	75 ppb (196 μg/m^3)	—	Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 μg/m^3)	
	24 Hour	0.04 ppm (105 μg/m^3)		0.14 ppm (for certain areas)[11]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[11]	—	
Lead[12,13]	30 Day Average	1.5 μg/m^3	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 μg/m^3 (for certain areas)[12]	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 μg/m^3		
Visibility Reducing Particles[14]	8 Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	**No National Standards**		
Sulfates	24 Hour	25 μg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 μg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 μg/m^3)	Gas Chromatography			

See footnotes on next page …

For more information please call ARB-PIO at (916) 322-2990 **California Air Resources Board (5/4/16)**

Source: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf (accessed May 12, 2016)

Table 21 (continued)

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.

8. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

9. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM10 standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

10. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

11. On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

    Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

12. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

13. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

14. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

For more information please call ARB-PIO at (916) 322-2990 **California Air Resources Board (5/4/16)**

Table 2. Health Effects of Major Criteria Pollutants

Pollutants	Sources	Primary Effects
Carbon Monoxide (CO)	• Incomplete combustion of fuels and other carbon-containing substances, such as motor exhaust. • Natural events, such as decomposition of organic matter.	• Reduced tolerance for exercise. • Impairment of mental function. • Impairment of fetal development. • Death at high levels of exposure. • Aggravation of some heart diseases (angina).
Nitrogen Dioxide (NO_2)	• Motor vehicle exhaust. • High temperature stationary combustion. • Atmospheric reactions.	• Aggravation of respiratory illness. • Reduced visibility. • Reduced plant growth. • Formation of acid rain.
Ozone (O_3)	• Atmospheric reaction of organic gases with nitrogen oxides in sunlight.	• Aggravation of respiratory and cardiovascular diseases. • Irritation of eyes. • Impairment of cardiopulmonary function. • Plant leaf injury.
Lead (Pb)	• Contaminated soil.	• Impairment of blood function and nerve construction. • Behavioral and hearing problems in children.
Fine Particulate Matter (PM-10)	• Stationary combustion of solid fuels. • Construction activities. • Industrial processes. • Atmospheric chemical reactions.	• Reduced lung function. • Aggravation of the effects of gaseous pollutants. • Aggravation of respiratory and cardio respiratory diseases. • Increased cough and chest discomfort. • Soiling. • Reduced visibility.
Fine Particulate Matter (PM-2.5)	• Fuel combustion in motor vehicles, equipment, and industrial sources. • Residential and agricultural burning. • Industrial processes. • Also, formed from photochemical reactions of other pollutants, including NOx, sulfur oxides, and organics.	• Increases respiratory disease. • Lung damage. • Cancer and premature death. • Reduces visibility and results in surface soiling.
Sulfur Dioxide (SO_2)	• Combustion of sulfur-containing fossil fuels. • Smelting of sulfur-bearing metal ores. • Industrial processes.	• Aggravation of respiratory diseases (asthma, emphysema). • Reduced lung function. • Irritation of eyes. • Reduced visibility. • Plant injury. • Deterioration of metals, textiles, leather, finishes, coatings, etc.
Source: California Air Resources Board, 2002		

Evaluation of the most current data on the health effects of inhalation of fine particulate matter prompted the California Air Resources Board (ARB) to recommend adoption of the statewide $PM_{2.5}$ standard, which is more stringent than the federal standard. This standard was adopted in 2002. The California $PM_{2.5}$ standard is more of a goal in that it does not have specific attainment planning requirements like a federal clean air standard, but only requires continued progress towards attainment.

Similarly, the ARB extensively evaluated health effects of ozone exposure. A new state standard for an 8-hour ozone exposure was adopted in 2005, which aligned with the exposure period for the federal 8-hour standard. The California 8-hour ozone standard of 0.07 parts per million (ppm) is more stringent than the federal 8-hour standard of 0.075 ppm. However, the state standard does not have a specific attainment deadline. California air quality jurisdictions are required to make steady progress towards attaining state standards, but there are no hard deadlines or any consequences of non-attainment. During the same re-evaluation process, the ARB adopted an annual state standard for nitrogen dioxide (NO_2) that is more stringent than the corresponding federal standard, and strengthened the state one-hour NO_2 standard.

As part of EPA's 2002 consent decree on clean air standards, a further review of airborne particulate matter (PM) and human health was initiated. A substantial modification of federal clean air standards for PM was promulgated in 2006. Standards for $PM_{2.5}$ were strengthened, a new class of PM in the 2.5- to 10-micron size was created, some PM_{10} standards were revoked, and a distinction between rural and urban air quality was adopted. In December 2012, the federal annual standard for $PM_{2.5}$ was reduced from 15 $\mu g/m^3$ to 12 $\mu g/m^3$ which matches the California AAQS. The severity of the basin's non-attainment status for $PM_{2.5}$ may be increased by this action and thus require accelerated planning for future $PM_{2.5}$ attainment.

In response to continuing evidence that ozone exposure at levels just meeting federal clean air standards is demonstrably unhealthful, EPA proposed a further strengthening of the 8-hour standard. A new 8-hour ozone standard was adopted in 2015 after extensive analysis and public input. The adopted national 8-hour ozone standard is 0.07 ppm, which matches the current California standard. It will require 3 years of ambient data collection, then 2 years of non-attainment findings and planning protocol adoption, then several years of plan development and approval. Final air quality plans for the new standard are likely to be adopted around 2022. Ultimate attainment of the new standard in ozone problem areas such as Southern California might occur after 2025.

In 2010 a new federal one-hour primary standard for nitrogen dioxide (NO_2) was adopted. This standard is more stringent than the existing state standard. Based upon air quality monitoring data in the South Coast Air Basin, the California Air Resources Board has requested the EPA to designate the basin as being in attainment for this standard. The federal standard for sulfur dioxide (SO_2) was also recently revised. However, with minimal combustion of coal and mandatory use of low sulfur fuels in California, SO_2 is typically not a problem pollutant.

Baseline Air Quality in Project Area

Existing and probable future levels of air quality around the Project area can best be inferred from ambient air quality measurements conducted by the SCAQMD at the Anaheim monitoring station. This station measures regional pollution levels such as smog, as well as primary vehicular pollution levels, such as carbon monoxide and nitrogen oxides, near busy roadways. Pollutants such as particulates (PM_{10} and $PM_{2.5}$) are also monitored at Anaheim. Table 3 is a 6-year summary of monitoring data for the major air pollutants compiled from this air monitoring station. From this data the following conclusions regarding air quality trends can be drawn:

1. Photochemical smog (ozone) levels occasionally exceed standards. All state and federal ozone standards have been exceeded 1% or less of all days in the past 6 years. Measurements from more recent years demonstrate progressively improved ozone levels in the area except perhaps for some temporary "backsliding" in 2004. While ozone levels are still occasionally elevated, they are much lower than 10 to 20 years ago.

2. Respirable dust (PM_{10}) levels occasionally exceed the state standard on approximately 2% of measured days. The less stringent federal PM_{10} standard has not been exceeded in the last 6 years.
3. The federal ultra-fine particulate ($PM_{2.5}$) standard of 35 μg/m³ has been exceeded on less than 1% of measurement days in the last 6 years.
4. More localized pollutants such as carbon monoxide and nitrogen oxides are very low near the Project site. There is substantial excess dispersive capacity to accommodate localized vehicular air pollutants such as NO_X or CO without any threat of violating applicable AAQS. Data from a recent "near roadway" monitoring study directly along the Interstate 5 shoulder (<50 feet) in Anaheim showed noticeably elevated levels of NO_X and CO, but even at this close distance federal clean air standards were not exceeded.

Although complete attainment of every clean air standard is not yet imminent, extrapolation of the steady improvement trend suggests that such attainment could occur within the reasonably near future.

Table 3. Air Quality Monitoring Summary (2009-2014)

Pollutant/Standard	2009	2010	2011	2012	2013	2014
Ozone						
Days standards were exceeded						
1-Hour > 0.09 ppm (S)	0	1	0	0	0	2
8-Hour > 0.07 ppm (S)	2	1	1	0	0	6
8- Hour > 0.075 ppm (F)	1	1	0	0	0	4
Maximum levels during such violations						
Max. 1-Hour Conc. (ppm)	0.093	0.104	0.088	0.079	0.084	0.111
Max. 8-Hour Conc. (ppm)	0.077	0.088	0.072	0.067	0.070	0.081
Carbon Monoxide						
Days standards were exceeded						
8- Hour > 9. ppm (S,F)	0	0	0	0	0	0
Maximum levels during such violations						
Max 8-hour Conc. (ppm)	2.7	2.0	2.1	2.3	2.6	2.1
Nitrogen Dioxide						
Days standards were exceeded						
1-Hour > 0.18 ppm (S)	0	0	0	0	0	0
Maximum levels during such violations						
Max. 1-Hour Conc. (ppm)	0.068	0.073	0.074	0.067	0.082	0.076
Inhalable Particulates (PM_{10})						
Days standards were exceeded						
24-hour > 50 μg/m³ (S)	1/56	0/57	2/57	0/61	1/59	2/61
24-hour > 150 μg/m³ (F)	0/56	0/57	0/57	0/61	0/59	0/61
Maximum levels during such violations						
Max. 24-Hr. Conc. (μg/m³)	62.	43.	53.	48.	77.	85.
Ultra-Fine Particulates ($PM_{2.5}$)						
Days standards were exceeded						
24-Hour > 35 μg/m³ (F)	4/334	0/331	2/352	4/347	1/331	6/xx*
Maximum levels during such violations						
Max. 24-Hr. Conc. (μg/m³)	64.5	31.7	39.2	50.1	37.8	56.2

*xx = data not yet available
Source: South Coast AQMD Air Monitoring Station Data Summary, Anaheim Station (3176)

Air Quality Planning

The Federal Clean Air Act (1977 Amendments) required that designated agencies in any area of the nation not meeting national clean air standards must prepare a plan demonstrating the steps that would bring the area into compliance with all national standards. The SCAB could not meet the deadlines for ozone, nitrogen dioxide, carbon monoxide, or PM_{10}. In the SCAB, the agencies designated by the governor to develop regional air quality plans are the SCAQMD and the Southern California Association of Governments (SCAG). The two agencies first adopted an Air Quality Management Plan (AQMP) in 1979 and revised it several times as earlier attainment forecasts were shown to be overly optimistic.

The 1990 Federal Clean Air Act Amendment (CAAA) required that all states with air-sheds with "serious" or worse ozone problems submit a revision to the State Implementation Plan (SIP). Amendments to the SIP have been proposed, revised, and approved over the past decade. The most current regional attainment emissions forecast for the ozone precursor NO_X and for particulate matter are shown in Table 4. Substantial reductions in emissions of NO_X are forecast to continue throughout the next several decades. Unless new particulate control programs are implemented, PM_{10} and $PM_{2.5}$ are forecast to increase slightly.

Table 4. South Coast Air Basin Emissions Forecasts

	Emissions in Tons per Day				
Pollutant	**2012[a]**	**2015[b]**	**2020[b]**	**2025[b]**	**2030**
NO_X	512	451	357	289	266
VOC	466	429	400	393	393
PM_{10}	154	155	161	165	170
$PM_{2.5}$	68	67	67	68	170

[a]2012 base year
[b]With current emissions reduction programs and adopted growth forecasts
Source: California Air Resources Board, 2013 Almanac of CEPAM

The Air Quality Management District (AQMD) adopted an updated clean air "blueprint" in August 2003. The 2003 Air Quality Management Plan (AQMP) was approved by the EPA in 2004. The AQMP outlined the air pollution measures needed to meet federal health-based standards for ozone by 2010 and for particulates (PM_{10}) by 2006. The 2003 AQMP was based upon the federal one-hour ozone standard, which was revoked late in 2005 and replaced by an 8-hour federal standard. Because of the revocation of the hourly standard, a new air quality planning cycle was initiated.

With re-designation of the air basin as non-attainment for the 8-hour ozone standard, a new attainment plan was developed. This plan shifted most of the 1-hour ozone standard attainment strategies to the 8-hour standard. As previously noted, the attainment date was to "slip" from 2010 to 2021. The updated attainment plan also includes strategies for ultimately meeting the federal $PM_{2.5}$ standard.

Because projected attainment by 2021 requires control technologies that do not exist yet, the SCAQMD requested a voluntary "bump-up" from a "severe non-attainment" area to an "extreme non-attainment" designation for ozone. The extreme designation will allow a longer time period for these technologies to develop. If attainment cannot be demonstrated within the specified deadline without relying on "black-box" measures, EPA would have been required to impose sanctions on the region if the bump-up request had not been approved. In April 2010, the EPA approved the change in the non-attainment designation from "severe-17" to "extreme." This reclassification sets a later attainment deadline (2024), but also requires the air basin to adopt even more stringent emissions controls.

In other air quality attainment plan reviews, EPA has disapproved part of the SCAB $PM_{2.5}$ attainment plan included in the AQMP. EPA has stated that the current attainment plan relies on $PM_{2.5}$ control regulations that have not yet been approved or implemented. It is expected that a number of rules that are pending approval will remove the identified deficiencies. If these issues are not resolved within the next several years, federal funding sanctions for transportation projects could result. The 2012 AQMP included in the ARB submittal to EPA as part of the California State Implementation Plan (SIP) is expected to remedy identified $PM_{2.5}$ planning deficiencies.

The federal Clean Air Act requires that non-attainment air basins have EPA-approved attainment plans in place. This requirement includes the federal 1-hour ozone standard even though that standard was revoked almost 10 years ago. There was no approved attainment plan for the 1-hour federal standard at the time of revocation. Through a legal quirk, the SCAQMD is now required to develop an AQMP for the long-since revoked 1-hour federal ozone standard. Because the 2012 AQMP contains a number of control measures for the 8-hour ozone standard that are equally effective for 1-hour levels, the 2012 AQMP is believed to satisfy hourly attainment planning requirements.

AQMPs are required to be updated every 3 years. The 2012 AQMP was adopted in early 2013. An updated AQMP must therefore be adopted in 2016. Planning for the 2016 AQMP is currently ongoing. The current attainment deadlines for all federal non-attainment pollutants are now as follows:

- 8-hour ozone (70 ppb) 2032
- Annual $PM_{2.5}$ (12 $\mu g/m^3$) 2025
- 8-hour ozone (75 ppb) 2024 (old standard)
- 1-hour ozone (120 ppb) 2023 (rescinded standard)
- 24-hour $PM_{2.5}$ (35 $\mu g/m^3$) 2019

The key challenge is that NO_X emission levels, as a critical ozone precursor pollutant, are forecast to continue to exceed the levels that would allow the above deadlines to be met. Unless additional NO_X control measures are adopted and implemented, attainment goals may not be met.

The proposed Project does not directly relate to the AQMP in that there are no specific air quality programs or regulations governing residential projects. Conformity with adopted plans, forecasts, and programs relative to population, housing, employment and land use is the primary yardstick by which impact significance of planned growth is determined. However, the SCAQMD, while acknowledging that the AQMP is a growth-accommodating document, does not favor designating regional impacts as “less than significant” just because the proposed development is consistent with regional growth projections. Air quality impact significance for the proposed Project has therefore been analyzed on a project-specific basis.

Air Quality Impact Standards of Significance

Air quality impacts are considered “significant” if they cause clean air standards to be violated where they are currently met, or if they “substantially” contribute to an existing violation of standards. Any substantial emissions of air contaminants for which there is no safe exposure, or nuisance emissions such as dust or odors, would also be considered a significant impact.

Appendix G of the CEQA Guidelines offers the following five tests of air quality impact significance. A project would have a potentially significant impact if any of the following would occur.

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

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 pollutants 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) Would the project expose sensitive receptors to substantial pollutant concentrations?

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

Primary Pollutants

Air quality impacts generally occur on two scales of motion. Near an individual source of emissions or a collection of sources such as a crowded intersection or a parking lot, levels of those pollutants that are emitted in their already unhealthful form will be highest. Carbon monoxide (CO) is an example of such a pollutant. Primary pollutant impacts can generally be evaluated directly in comparison to appropriate clean air standards. Violations of these standards where they are currently met, or a measurable worsening of an existing or future violation, would be considered a significant impact. Many particulates, especially fugitive dust emissions, are also primary pollutants. Because of the non-attainment status of the South Coast Air Basin (SCAB) for PM_{10}, an aggressive dust control program is required to control fugitive dust during project construction.

Secondary Pollutants

However, many pollutants require time to transform from a more benign form to a more unhealthful contaminant. Their impact occurs regionally far from the source. Their incremental regional impact is minute on an individual basis and cannot be quantified except through complex photochemical computer models. Analysis of significance of such emissions is based upon a specified amount of emissions (e.g., pounds, tons) even though there is no way to translate those emissions directly into a corresponding ambient air quality impact.

Because of the chemical complexity of primary versus secondary pollutants, the SCAQMD has designated significant emissions levels as surrogates for evaluating regional air quality impact significance independent of chemical transformation processes. Projects with daily emissions that exceed any of the emissions thresholds in Table 5 are recommended by the SCAQMD to be considered significant under CEQA guidelines.

Table 5. Daily Emissions Thresholds

Pollutant	Construction (pounds per day)	Operations (pounds per day)
ROG	75	55
NO_X	100	55
CO	550	550
PM_{10}	150	150
$PM_{2.5}$	55	55
SO_X	150	150
Lead	3	3

Source: SCAQMD CEQA Air Quality Handbook, November, 1993 Rev.

Additional Indicators

In its CEQA Handbook, the SCAQMD states that additional indicators should be used as screening criteria to determine the need for further analysis with respect to air quality. The additional indicators are as follows:

- Project could interfere with attainment of the federal or state ambient air quality standards by either violating or contributing to an existing or projected air quality violation
- Project could result in population increases within the regional statistical area that would be in excess of that projected in the AQMP and in other than planned locations for the project's build-out year.
- Project could generate vehicle trips that cause a CO hot spot.

Therefore, the Greenfield Apartments project has been evaluated using the five tests of air quality impact significance enumerated in the CEQA Guidelines.

Would the Project:

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

No Impact

An Air Quality Study dated May 9, 2016 (Appendix B) prepared by Giroux & Associates analyzed the air quality impacts from the proposed Greenfield Apartments project. Projects such as the proposed apartments do not directly relate to the AQMP in that there are no specific air quality programs or regulations governing general development. Conformity with adopted plans, forecasts, and programs relative to population, housing, employment, and land use is the primary yardstick by which impact significance of planned growth is determined. Therefore, the Greenfield Apartments Project has no impact on implementation of or is in conflict with the applicable air quality plan for the South Coast Air Basin.

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

Less Than Significant with Mitigation Incorporated

The project involves construction of a 50-unit apartment project on Locust Street in the City of Westminster.

Air quality impacts are considered "significant" if they cause clean air standards to be violated where they are currently met, or if they "substantially" contribute to an existing violation of standards. Any substantial emissions of air contaminants for which there is no safe exposure, or nuisance emissions such as dust or odors, would also be considered a significant impact. Impacts from the proposed Project are considered from construction activities as well as future operation of the apartments.

Construction Activity Impacts

CalEEMod was developed by the SCAQMD to provide a model by which to calculate construction emissions and operational emissions from a variety of land use projects. It calculates the daily maximum and annual average emissions for criteria pollutants, as well as total or annual greenhouse gas (GHG) emissions.

Although exhaust emissions will result from on-site and off-site equipment, the exact types and numbers of equipment will vary among contractors such that such emissions

cannot be quantified with certainty. Estimated construction emissions were modeled using CalEEMod2013.2.2 to identify maximum daily emissions for each pollutant during project construction.

The proposed project entails construction of 50 apartments. Construction was modeled in CalEEMod2013.2.2 using default construction equipment and schedule for a project of this size schedule as shown in Table 6.

Table 6. Construction Activity Equipment Fleet

Phase Name and Duration	Equipment
Demo (20 days) 2,000 square feet	1 concrete saw 1 dozer 3 loader/backhoes
Grading (4 days)	1 grader 1 dozer 1 loader/backhoe
Construction (200 days)	1 crane 1 loader/backhoe 1 forklift 1 gen set 3 welder
Paving (10 days)	1 paver 1 paving equipment 1 loader/backhoe 1 roller

Utilizing the indicated equipment fleet and durations shown in Table 6, the following worst case daily construction emissions are calculated by CalEEMod and are listed in Table 7.

Table 7. Construction Activity Emissions

	Maximum Daily Emissions (pounds per day)					
Maximal Construction Emissions	**ROG**	**NOx**	**CO**	**SO_2**	**PM-10**	**PM-2.5**
2017						
Unmitigated	39.5	26.7	21.6	0.0	6.1	3.5
Mitigated	39.5	26.7	21.6	0.0	3.4	2.1
SCAQMD Thresholds	75	100	550	150	150	55

Peak daily construction activity emissions are estimated to be below SCAQMD CEQA thresholds. The only mitigation measure modeled is shown below.

- Exposed surfaces will be watered two times per day during grading activities

Construction equipment exhaust contains carcinogenic compounds within the diesel exhaust particulates. The toxicity of diesel exhaust is evaluated relative to a 24-hour per day, 365 days per year, 70-year lifetime exposure. The SCAQMD does not generally require the analysis of construction-related diesel emissions relative to health risk due to the short period for which the majority of diesel exhaust would occur. Health risk analyses are typically assessed over a 9-, 30-, or 70-year timeframe and not over a relatively brief construction period due to the lack of health risk associated with such a brief exposure.

Localized Significance Thresholds

The SCAQMD has developed analysis parameters to evaluate ambient air quality on a local level in addition to the more regional emissions-based thresholds of significance. These analysis elements are called Localized Significance Thresholds (LSTs). LSTs were developed in response to Governing Board's Environmental Justice Enhancement Initiative 1-4 and the LST methodology was provisionally adopted in October 2003 and formally approved by SCAQMD's Mobile Source Committee in February 2005.

Use of an LST analysis for a project is optional. For the proposed Project, the primary source of possible LST impact would be during construction. LSTs are applicable for a sensitive receptor, where it is possible that an individual could remain for 24 hours such as a residence, hospital, or convalescent facility.

LSTs are only applicable to the following criteria pollutants: oxides of nitrogen (NO_X), carbon monoxide (CO), and particulate matter (PM_{10} and $PM_{2.5}$). LSTs represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each source receptor area and distance to the nearest sensitive receptor. LST screening tables are available for 25-, 50-, 100-, 200-, and 500-meter source-receptor distances. For this project the most stringent 25-meter distance was used to reflect adjacent residences.

The SCAQMD has issued guidance on applying CalEEMod to LSTs. LST pollutant screening level concentration data is currently published for 1-, 2- and 5-acre sites for varying distances. Since CalEEMod calculates construction emissions based on the number of equipment hours and the maximum daily soil disturbance activity possible for each piece of equipment, Table 8 and Table 9 should be used to determine the maximum daily disturbed-acreage for comparison to LSTs.

Table 8. Maximum Daily Disturbed Acreage per Equipment Type

Equipment Type	Acres per 8-Hour Day
Crawler tractor	0.5
Graders	0.5
Rubber tired dozers	0.5
Scrapers	1.0

Based on Table 8 above, the proposed Project will result in 1.0 disturbed daily acre during peak construction grading activity:

- 1 dozer × 0.5 + 1 grader × 0.5 = 1.0 acre disturbed

The thresholds and emissions in Table 9 are therefore determined.

Table 9. LST and Project Emissions (pounds/day)

	Project Emissions (pounds per day)			
	CO	NO_X	PM_{10}	$PM_{2.5}$
Local Significance Thresholds (1 acre per 25 meters; Central Orange County	485	81	4	3
Max On-Site Emissions Unmitigated	21	27	6	4
Max On-Site Emissions Mitigated	21	27	3	2

CalEEMod Output in Appendix

LSTs were compared to the maximum daily construction activities. As seen above, emissions will meet the LST for construction thresholds with the application of the following mitigation measure.

Mitigation Measure 2 – Exposed surfaces will be watered at least two times per day during grading activities

LST impacts are less than significant with the application of this mitigation measure.

Operational Impacts

Operational emissions were calculated using CalEEMod 2013.2.2 for an assumed Project build-out year of 2017 as a target for full occupancy. The Project would generate 333 daily trips using trip generation numbers provided by the Project traffic consultant. In addition to mobile sources from vehicles, general development causes smaller amounts of "area source" air pollution to be generated from on-site energy consumption (primarily landscaping) and from off-site electrical generation (lighting). These sources represent a minimal percentage of the total project NO_X and CO burdens, and a few percent other pollutants. The inclusion of such emissions adds negligibly to the total significant project-related emissions burden as shown in Table 10.

Table 10. Daily Operational Impacts

	Operational Emissions (pounds per day)					
Source	**ROG**	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Area	14.4	0.4	29.3	0.0	3.8	3.8
Energy	0.0	0.1	0.1	0.0	0.0	0.0
Mobile	1.0	2.5	12.1	0.0	2.5	0.7
Total	**15.4**	**3.0**	**41.5**	**0.0**	**6.3**	**4.5**
SCAQMD Threshold	55	55	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No

Source: CalEEMod 2013.2.2 Output in Appendix

As seen in Table 10 above, the Project would not cause any operational emissions to exceed their respective SCAQMD CEQA significance thresholds. Operational emission impacts are judged to be less than significant. No impact mitigation for operational activity emissions is considered necessary to support this finding.

Fast Food Restaurant Proximity

A McDonald's restaurant is located along the northern site boundary. A drive-through facility is located close to the project property line. Idling vehicles may sit in the drive-through waiting to move forward. Modern cars, however, are so "clean" that it requires thousands of cars per hour to create a measurable air pollution impact. Impacts of adjacent idling vehicles will be negligible.

Restaurants may have exhaust emissions from grills, broilers, and deep-fat fryers that could be perceived as an odor nuisance. McDonald's in particular produces a noticeable odor from its fryers when some of the cooking oil blend (mainly canola) is volatilized. The odor is not typically considered unpleasant. However, continuous 24/7 exposure as the odor permeates and clings to carpet, drapes, and soft surface furniture could be annoying.

Fortunately, over 90% of prevailing winds are from the proposed apartments toward McDonald's and not the other way around. Exhibit 13 shows the wind direction frequency at the nearest SCAQMD weather station (Los Alamitos) from almost 45 years of recorded observations. Winds are predominantly from the S-SW, with a secondary node from the W-NW. The frequency of winds from the N-NE, which might carry cooking odors from the restaurant exhaust vents toward the proposed Project site is almost zero. The adjacency of McDonalds is not considered an odor nuisance impediment because of the favorable wind patterns.

Sensitive Receptors

Air quality impacts are analyzed relative to those persons with the greatest sensitivity to air pollution exposure. Such persons are called "sensitive receptors." Sensitive population groups include young children, the elderly, and the acutely and chronically ill (especially those with cardio-respiratory disease).

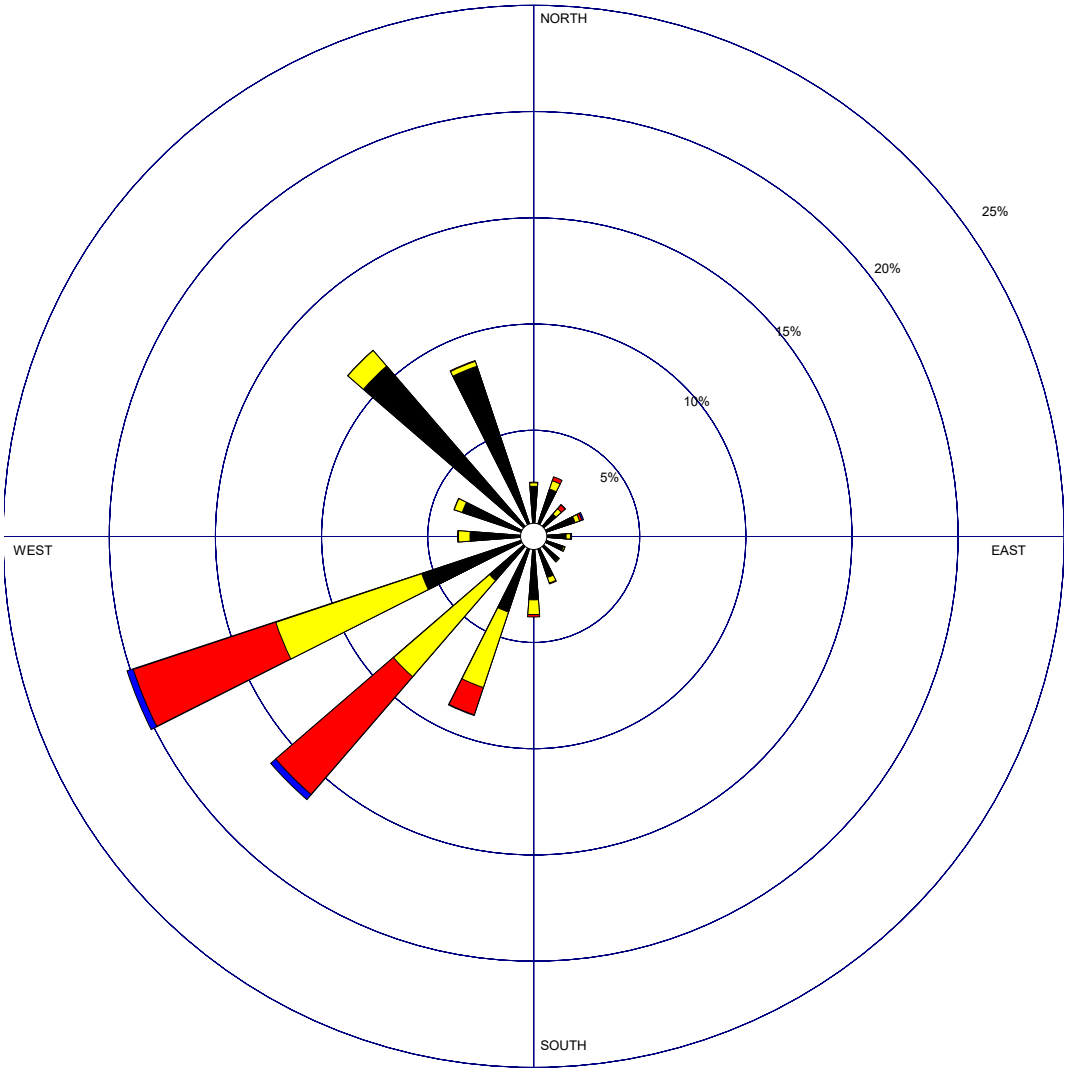
Residential areas are considered to be sensitive to air pollution exposure because they may be occupied for extended periods, and residents may be outdoors when exposure is highest. Schools are similarly considered to be sensitive receptors. The closest existing sensitive uses to the proposed project are the townhomes south of the site on Locust Street.

Dust is typically the primary concern during construction of new buildings and infrastructure. Because such emissions are not amenable to collection and discharge through a controlled source, they are called "fugitive emissions." Emissions rates vary as a function of many parameters, such as soil silt, soil moisture, wind speed, area disturbed, number of vehicles, depth of disturbance or excavation. Because of the inherent uncertainty in the predictive factors for estimating fugitive dust generation, regulatory agencies typically use one universal "default" factor based on the area disturbed, assuming that all other input parameters into emission rate prediction fall into midrange average values.

Construction activities are not anticipated to cause dust emissions to exceed SCAQMD CEQA thresholds. Nevertheless, mitigation through enhanced dust control measures is recommended for use because of the non-attainment status of the air basin and the proximity of existing residences. Mitigation measures are recommended to further reduce short-term impacts associated with construction emissions in compliance with the SCAQMD. Therefore, no impacts to this topical area would result from the project with implementation of the following recommended mitigation measures.

WIND ROSE PLOT

Station #53127 - , 1981



Wind Speed (m/s) > 11.06 8.49 - 11.06 5.40 - 8.49 3.34 - 5.40 1.80 - 3.34 0.51 - 1.80	MODELER	DATE **5/29/2003**	COMPANY NAME
	DISPLAY **Wind Speed**	UNIT **m/s**	COMMENTS
	AVG. WIND SPEED **2.18 m/s**	CALM WINDS **5.71%**	
	ORIENTATION **Direction (blowing from)**	PLOT YEAR-DATE-TIME **1981** **Jan 1 - Dec 31** **Midnight - 11 PM**	PROJECT/PLOT NO. **1981**

WRPLOT View 3.5 by Lakes Environmental Software - www.lakes-environmental.com

Exhibit 13. Los Alamitos, SCAQMD

Mitigation Measure 3 – During construction activities, the contractor shall ensure that measures are complied with to reduce short-term (construction) air quality impacts associated with the Project: a) apply soil stabilizers or moisten inactive disturbed areas (such as covering stock piles with tarps) to meet South Coast Air Quality Management District (SCAQMD) Rule 403 (Fugitive Dust); b) stabilize previously disturbed areas if subsequent construction is delayed; c) apply water two times daily, or non-toxic soil stabilizers according to manufacturer's specifications, to all disturbed unpaved surfaces; d) minimize in-out traffic from construction zone; e) cover all trucks hauling dirt, sand, or loose material or require all trucks to maintain at least two feet of freeboard; f) sweep streets daily if visible soil material is carried out from the construction site; g) prepare a high wind dust control plan; h) cover all stock piles with tarps at the end of each day as needed; i) provide water spray during loading and unloading of earthen materials; j) utilize well-tuned off-road construction equipment; k) establish a preference for contractors using Tier 3 or better heavy equipment; and l) enforce 5-minute idling limits both on-road trucks and off-road equipment.

Mitigation Measure 4– During construction activities, the project contractor shall ensure that the project will comply with SCAQMD Rule 402 (Nuisance) Rule 402 prohibits the discharge from any source quantities of air contaminants or other material which would cause injury, detriment, nuisance, or annoyance to any considerable number of persons, the public, or damage to business or property.

Ongoing operational emissions are not anticipated to exceed their respective SCAQMD significance thresholds. Therefore, there will be no impact from operational activities ongoing with the project.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?

Less Than Significant Impact

See response to Item 3.b above and recommend mitigation in compliance with the SCAQMD for short-term construction related impacts. The Project site is located in the South Coast Air Basin that is a designated non-attainment area. The Project does not represent significant growth beyond that already previously evaluated and forecasted for air quality cumulative impacts of basin-wide growth and development. Therefore, the project will result in less than significant impacts cumulatively to air quality.

d) Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact

See response to Item 3.b above and recommend mitigation in compliance with the SCAQMD for short-term construction-related impacts. The apartments Project will involve minimal grading, because the site is already flat. Proposed mitigation measures (previously presented in Section 3.b) will also significantly reduce impacts from construction activities. Therefore, it is not anticipated that the Project will result in any significant impacts to sensitive receptors.

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

Less Than Significant Impact

The apartments will not create any objectionable odors. A mitigation measure has been presented in Section 3.b above requiring compliance with SCAQMD Rule 402 (Nuisance). Additionally, the McDonald's Restaurant located north of the project site is not expected to produce nuisance odors due to the prevailing wind condition, which blows away from the project site toward the restaurant. Therefore, the proposed project will not result in any significant impacts of objectionable odors affecting a substantial number of people.

4. Biological Resources

Would the Project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

No Impact

The City's General Plan EIR describes vegetation in Westminster as primarily a combination of lawn grasses, ground covers, shrubs, and trees planted for their ornamental and functional qualities, and no threatened or endangered species are known to occur in the City.[1] The site has been previously graded in conjunction with the prior land uses. The site is located in an area developed with urban land uses, including commercial and residential structures. The site does not contain any sensitive habitat or wildlife resources. Therefore, the Project will not result in any impacts to biological resources.

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

No Impact

See response to Item 4.a) above. The Project sites do not contain any riparian habitat or sensitive natural communities. Therefore, no impacts to riparian or other sensitive natural communities are anticipated.

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?

No Impact

See response to Item 4.a above. The site is located in an urbanized area of the City and does not contain wetlands. The Project does not propose any activities that would potentially impact wetlands. Therefore, no impacts to wetlands will result from the proposed Project.

1 City of Westminster General Plan/EIR, Volume II – Technical Document, 1996, page IVC-10 through IVC-17

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

Less Than Significant Impact with Mitigation Incorporated

The project site contains several trees that will be removed per the site plan. While the trees themselves do not represent substantial biological resources and will be replaced by other kinds of trees on the site per the landscaping plan, the existing trees could contain migratory bird nests that are protected by the federal Migratory Bird Treaty Act of 1918 when occupied. Therefore, prior to removing the trees, a certified biologist should determine that there are no active nests in the trees. Therefore, the Project will not conflict with any policies or ordinance pertaining to biological resources.

Mitigation Measure 5 – If tree clearing is scheduled to begin during the nesting season (February 1 to September 15), a qualified biologist shall be retained to survey the trees to determine the presence of any bird nests in the trees prior to their removal. If nests are identified, removal of the trees should not proceed until after the nesting season concludes on September 15.

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

No Impact

See response to Item 4.a) above. The Project site does not contain any biological resources. The Project does not conflict with any ordinances or policies protecting biological resources. Therefore, the Project will not conflict with any policies or ordinance pertaining to biological resources.

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

No Impact

See responses to Items 4.a) and e) above. The site is located in an urbanized area. The development of the property does not involve any activities that would impact biological resources that would be subject to a conservation plan.

5. Cultural Resources

Would the Project:

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

No Impact

The City's General Plan EIR included a complete evaluation of cultural resources citywide.[2] Additionally, under AB 52 the City contacted two Native American tribes associated with the geographical area and received no concerns about the proposed Project in reference to potential cultural resources on the site. The Project site is also surrounded by urban uses, including commercial and residential uses. The sites do not contain any historical resources (including historic structures). Therefore, due to the existing condition of the site, it is

2 City of Westminster General Plan/EIR, Volume II – Technical Document, 1996, page IVC-25 through IVC-36.

anticipated that the Project will not have any impacts on cultural (including historical) resources.

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

No Impact

See response to Item 5.a above. The Project is proposed at a property that has already been graded in conjunction with the previous uses and is located in an area completely surrounded by developed commercial and residential properties. The proposed Project will require minimal grading due to the existing conditions of the land and the nature of the Project. Therefore, it is not anticipated that the Project will result in any significant impact to archaeological resources.

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

No Impact

See responses to Items 5.a) and 5.b) above. The General Plan EIR identified that a record search found no recorded paleontological sites within two miles of the City boundaries. It is not anticipated that the Project will result in any direct or indirect impacts to unique paleontological resources or geologic features due to the type of Project and existing developed condition of the property.

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

No Impact

See responses to Items 5.a) and 5.b) above. The sites are located in an urbanized area with adjacent developed uses (commercial and residential). Due to the developed condition of the site it is not anticipated that the Project would result in any impacts relative to disturbance of human remains, including those interred outside formal cemeteries.

6. Geology and Soils

Would the Project:

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

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

Less Than Significant Impact

The City's General Plan EIR includes an evaluation of public safety that addresses geology and soils of the City and is herein incorporated by reference.[3]

The City, as well as most of Southern California, is located in a region of historic seismic activity. There are no known active fault systems located within the limits of the City. Therefore, no part of the City has been delineated on the Alquist-Priolo Earthquake Fault Zone. However, there are active or potential active fault systems that can affect the Westminster area.

3 City of Westminster General Plan/EIR, Volume II – Technical Document, 1996, page VIIA-1 through VIIA-19.

The principal seismic hazard which could affect the site is ground shaking resulting from an earthquake occurring along any of the major active faults in Southern California.

The most significant known active faults include the San Andreas, Newport-Inglewood, Whittier, San Fernando, Sierra Madre and Verdugo faults. The closest known active fault to the Project site includes Newport Inglewood (LA Basin) fault which is approximately four miles from the Greenfield Apartments site. The San Joaquin Hills blind thrust and Elysian Park thrust faults are located in the subsurface with no mapped fault trace at the ground surface, and have been estimated to be approximately six and 12 miles from the site, respectively.

Surface rupture occurs when there is a break in ground surface during or as a consequence of seismic activity. As indicated previously, the site is not located within an Alquist-Priolo zone nor are there any identified faults near or within the Project site property. Therefore, potential for surface rupture on site is considered very low due to the lack of known active faults on-site.

The potential for damage resulting from seismic-related events exists within the City as it does throughout Southern California. Seismic hazards include ground shaking, ground failure, ground displacement, tsunamis and seiches. The site is located in an area of the City that is designated as Moderate Liquefaction Potential per the City's General Plan EIR. The site is also located in a liquefaction hazard area, based on the California Department of Conservation's Official Maps of Seismic Hazard Zones Newport Beach-Quadrangle (1997).

The site is expected to be subject to moderate to severe ground shaking from a regional seismic event within the Project life of the apartments. However, the apartments will be constructed using current building codes designed for earthquake and seismic protection which minimizes the impact of seismic-related events on the Project.

The topography of the site is relatively flat. The site is not located in an area of generally unique geologic or physical features.

ii) Strong seismic ground shaking?

Less Than Significant Impact

See response to Item 6.a)i above. Due to the nature of the Project, all potential impacts relative to geology and soils are less than significant.

iii) Seismic-related ground failure, including liquefaction?

Less Than Significant Impact

See response to Item 6.a)i) above. The site is located in an area of the City that is designated as Moderate Liquefaction Potential per the City's General Plan EIR (Figure VIIA 2, page VIIA-9). The site is also located in a liquefaction hazard area, based on the California Department of Conservation's Official Maps of Seismic Hazard Zones Newport Beach-Quadrangle (1997). However, the Project is not located in a High Liquefaction Potential Zone. Also, the new apartments will be constructed utilizing contemporary building codes with seismic standards. Therefore, all potential impacts relative to geology and soils are at a less than significant level.

iv) Landslides?

No Impact

The property is flat. The site is not subject to potential impacts associated with landslides. Therefore, it is not anticipated that Project activities will result in any impacts associated with landslides.

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

No Impact

The Project will not result in any impacts to soil erosion or loss of topsoil. The site has been previously graded in conjunction with the existing uses. The site is relatively flat in topography and will not require extensive grading. Therefore, there are no impacts from the Project in the area of potential loss of topsoil.

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

Less Than Significant Impact

See response to Item 6.a)i above. Due to the nature of the Project, all potential impacts relative to geology and soils are at a less than significant level.

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

Less Than Significant Impact

See response to Item 6.a)i, which addresses geology and soils. The Project, construction of new apartments, will involve minimal grading. Building foundations will be designed for compatibility with expansive soils. All potential impacts relative to geology and soils will be at a less than significant level.

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?

No Impact

The Project site will be served by the local sewer and water system; as such, the Project does not involve issues pertaining to soils incapable of supporting septic tanks or alternative wastewater disposal systems.

7. Greenhouse Gas Emissions

Would the Project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less Than Significant Impact

"Greenhouse gases" (so called because of their role in trapping heat near the surface of the earth) emitted by human activity are implicated in global climate change, commonly referred to as "global warming." These greenhouse gases contribute to an increase in the temperature of the earth's atmosphere by transparency to short wavelength visible sunlight, but near opacity to outgoing terrestrial long wavelength heat radiation. The principal greenhouse gases (GHGs) are carbon dioxide, methane, nitrous oxide, ozone, and water vapor. Fossil fuel consumption in the transportation sector (on-road motor vehicles, off-highway mobile sources, and aircraft) is the single largest source of GHG emissions, accounting for approximately one-half of GHG emissions globally. Industrial and commercial sources are the second largest contributors of GHG emissions with about one-fourth of total emissions.

California has passed several bills and the Governor has signed at least three executive orders regarding greenhouse gases. GHG statues and executive orders (EO) include AB 32, SB 1368, SB 375, EO S-03-05, EO S-20-06 and EO S-01-07.

AB 32 is one of the most significant pieces of environmental legislation that California has adopted. Among other things, it is designed to maintain California's reputation as a "national and international leader on energy conservation and environmental stewardship." It will have wide-ranging effects on California businesses and lifestyles, as well as far reaching effects on other states and countries. A unique aspect of AB 32, beyond its broad and wide-ranging mandatory provisions and dramatic GHG reductions, are the short time frames within which it must be implemented. Major components of the AB 32 include:

- Require the monitoring and reporting of GHG emissions beginning with sources or categories of sources that contribute the most to statewide emissions.
- Requires immediate "early action" control programs on the most readily controlled GHG sources.
- Mandates that by 2020, California's GHG emissions be reduced to 1990 levels.
- Forces an overall reduction of GHG gases in California by 25% to 40%, from business as usual, to be achieved by 2020.
- Must complement efforts to achieve and maintain federal and state ambient air quality standards and to reduce toxic air contaminants.

Statewide, the framework for developing the implementing regulations for AB 32 is under way. Maximum GHG reductions are expected to derive from increased vehicle fuel efficiency, from greater use of renewable energy, and from increased structural energy efficiency. Additionally, through the California Climate Action Registry (CCAR, now called the Climate Action Reserve), general and industry-specific protocols for assessing and reporting GHG emissions have been developed. GHG sources are categorized into direct sources (i.e., company owned) and indirect sources (i.e., not company owned). Direct sources include combustion emissions from on-road and off-road mobile sources, and fugitive emissions. Indirect sources include off-site electricity generation and non-company owned mobile sources.

Thresholds of Significance

In response to the requirements of SB97, the State Resources Agency developed guidelines for the treatment of GHG emissions under CEQA. These new guidelines became state laws as part of Title 14 of the *California Code of Regulations* in March 2010. The CEQA Appendix G Guidelines were modified to include GHG as a required analysis element. A project would have a potentially significant impact if it:

- Generates GHG emissions, directly or indirectly, that may have a significant impact on the environment, or,
- Conflicts with an applicable plan, policy or regulation adopted to reduce GHG emissions.

Section 15064.4 of the CEQA specifies how significance of GHG emissions is to be evaluated. The process is broken down into quantification of project-related GHG emissions, making a determination of significance, and specification of any appropriate mitigation if impacts are found to be potentially significant. At each of these steps, the new GHG guidelines afford the lead agency with substantial flexibility.

Emissions identification may be quantitative, qualitative, or based on performance standards. CEQA Guidelines allow the lead agency to "select the model or methodology it considers most

appropriate." The most common practice for transportation/combustion GHG emissions quantification is to use a computer model such as CalEEMod, as was used in the ensuing analysis.

The significance of those emissions then must be evaluated; the selection of a threshold of significance must take into consideration what level of GHG emissions would be cumulatively considerable. The Guidelines are clear that they do not support a zero net emissions threshold. If the lead agency does not have sufficient expertise in evaluating GHG impacts, it may rely on thresholds adopted by an agency with greater expertise.

On December 5, 2008 the SCAQMD Governing Board adopted an Interim quantitative GHG Significance Threshold for industrial projects where the SCAQMD is the lead agency (e.g., stationary source permit projects, rules, plans) of 10,000 metric tons (MT) CO_2 equivalent per year. In September 2010, the SCAQMD CEQA Significance Thresholds GHG Working Group released revisions that recommended a threshold of 3,500 MT CO_2e for residential use projects. This 3,500 MT per year recommendation has been used as a guideline for this analysis. In the absence of an adopted numerical threshold of significance, Project-related GHG emissions in excess of the guideline level are presumed to trigger a requirement for enhanced GHG reduction at the project level.

Construction Activity GHG Emissions

A greenhouse gas impact analysis was conducted by Giroux & Associates (dated May 9, 2016) and is included within Appendix B of this document. The Project is assumed to be built in approximately 1 year. During Project construction, the CalEEMod 2013.2.2 computer model predicts that the construction activities will generate the annual CO_2e emissions identified in Table 11.

Table 11. Construction Emissions (Metric Tons CO_2e)

	CO_2e
Year 2017	264.4
Amortized	**8.8**

CalEEMod Output provided in appendix

SCAQMD GHG emissions policy from construction activities is to amortize emissions over a 30-year lifetime. The amortized level is also provided. GHG impacts from construction are considered individually less than significant.

Project Operational GHG Emissions

The input assumptions for operational GHG emissions calculations, and the GHG conversion from consumption to annual regional CO_2e emissions are summarized in the CalEEMod 2013.2.2 output files found in the appendix of this report.

The total operational and annualized construction emissions for the proposed project are identified in Table 12.

Table 12. Proposed Uses Operational Emissions

Consumption Source	MT CO_2e
Area Sources	16.8
Energy Utilization	81.3
Mobile Source	449.6
Solid Waste Generation	10.5
Water Consumption	22.8
Construction	8.8
Total	**589.7**
Guideline Threshold	3,500
Exceeds Threshold?	No

Total project GHG emissions are substantially below the proposed significance threshold of 3,500 MT suggested by the SCAQMD. Hence, the project will not result in generation of a significant level of greenhouse gases.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less Than Significant Impact

The City of Westminster has not yet developed a Greenhouse Gas Reduction Plan. The applicable GHG planning document is AB 32. As discussed above, the Project is not expected to result in a significant increase in GHG emissions. As a result, the Project results in GHG emissions well below the recommended SCAQMD 3,500-ton threshold. Therefore, the Project would not conflict with any applicable plan, policy, or regulation to reduce GHG emissions and impacts in this area are less than significant.

8. Hazards and Hazardous Materials

Would the Project:

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

No Impact

The proposed Project will be built within the three lots on Locust Street in the City of Westminster. The Project, 50 apartment units, does not generate the routine transport, use or disposal of hazardous materials that could create a significant hazard to the public or the environment. The Project involves the construction of the Greenfield Apartments on the property. Therefore, there is no impact to this issue area.

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

Less Than Significant Impact with Mitigation Incorporated

See response to 8.a) above. The Project will not be a generator of hazardous materials. However, the Project includes demolition of several older residential structures on the site that could contain lead or other hazardous material associated with older development. A mitigation measure is proposed to cover any potential release of hazardous materials through the demolition of these structures. No significant hazardous materials would be stored or handled on-site associated with the operational characteristics of the Project once it is developed.

Mitigation Measure 6– Prior to demolition of the existing residential structures on the Project site, the contractor shall survey the structures to determine the presence of any hazardous substances such as asbestos or lead-based paint. If such materials are present, they will be remediated using mandatory procedures specified by the SCAQMD (Rule 4102, Asbestos Emissions from Demolition/Renovation Activities) and state air toxics agencies.

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

Less Than Significant Impact with Mitigation Incorporated

There are a number of schools located close to the Greenfield Apartments Project. Blessed Sacrament Preschool is located closest at 14146 Olive Street. Several other schools near the Project site include Webber School at 14142 Hoover Street, Willmore School at 7112 Maple Street, and Westminster High School at 14325 Goldenwest Street. The presence of sensitive receptors (school children) in proximity to the Project site necessitates mitigation measures. The construction of the Project will include short-term use of construction equipment that will emit emissions, and the use of construction material, such as paint, including hazardous materials. The operations of the proposed Project, however, will not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste. Additionally, in relation to construction activities, the proper use and maintenance of equipment, along with the use of general common sense, greatly reduces the potential for contamination. A mitigation measure is presented below that addresses hazardous materials related to short-term construction activities.

Mitigation Measure 7 – During the Project the applicant shall ensure that grading and building plans include the following measures and that the measures shall be followed by the construction contractor and crew: a) the storage of hazardous materials, chemicals, fuels, and oils and fueling of construction equipment shall be a minimum of 45 meters (150 feet) from any drainage, water supply, or other water features; b) hazardous materials stored on-site shall be stored in a neat, orderly manner in appropriate containers and, if possible, under a roof or other enclosure; c) whenever possible, all of a product shall be used up before disposal of its container; d) if surplus product must be disposed of, the manufacturer's or the local and state recommended methods for disposal shall be followed; e) spills shall be contained and cleaned up immediately after discovery. Manufacturer's methods for spill cleanup of a material shall be followed as described on the Material Safety Data Sheets (MSDS) for each product.

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

Less Than Significant Impact

The Greenfield Apartments site is not on a list of hazardous sites.[4] However, one site, located at 7001 Westminster Boulevard, has been assessed for leaking underground storage tanks (LUST). The site is a Unocal service station. The facility has been completed for cleanup and the

4 http://geotracker.waterboards.ca.gov/map

case is closed. Therefore, the site presents no issues to the proposed Project, and impacts to this issue area are less than significant.

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

No Impact

The Project site is located within the Airport Environs Land Use Plan height restriction area for the Los Alamitos Joint Forces Training Base. However, the Project is only three stories high, well under the aviation height restriction in the area. Therefore, the Project is not anticipated to have any impacts associated with a public airport or the safety of people working within the airport environs.

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?

No Impact

See response to Item 8.e) above. Additionally, the Project would not result in a safety hazard for people residing in the Project area. Therefore, there are no impacts to this topical area from the Project.

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

No Impact

The Project will not result in any impacts to an adopted emergency response plan or an 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?

No Impact

The Project is located in a developed area and is not adjacent to wildland areas. The Project itself (or location) will not be a significant risk involving wildland fires.

9. Hydrology and Water Quality

Would the Project:

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

Less Than Significant Impact with Mitigation Incorporated

The City of Westminster (and the Project site) is located in the Santa Ana River Basin. The Project area is under the jurisdiction of the California Regional Water Quality Control Board (RWQCB) Santa Ana Region for issues related to water quality. The Santa Ana Region of the RWQCB is nearly 3,000 square miles in size, with a population of almost five million people. The Santa Ana Region includes cities and municipalities in a portion of Orange County (includes Westminster), and Riverside and San Bernardino counties. Each of the nine Regional Boards within California is required to adopt a Water Quality Control Plan, or Basin Plan. Each Basin Plan is designed to preserve and enhance water quality and protect the beneficial uses of all regional waters. Specifically, the Basin Plan: 1) designates beneficial uses for surface and

ground waters; 2) sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's anti-degradation policy; 3) describes implementation programs to meet the objectives and protect the beneficial uses of all waters in the region; and 4) describes surveillance and monitoring activities to evaluate the effectiveness of the Basin Plan.

There is a Drainage Area Management Plan (DAMP) which is implemented by the cities (including Westminster), the County of Orange, and the Orange County Flood Control District. The DAMP was prepared in compliance with specific requirements of the National Pollutant Discharge Elimination System (NPDES) storm water program. The DAMP includes a wide range of Best Management Practices (BMPs) and control techniques to further reduce the amount of pollutants entering the storm drain system.

There are two primary types of source pollution: single-point source and nonpoint Source pollution. Single-point sources are water pollutants that originate from a single-point source such as factories. Potential impacts to water quality associated with this type of Project (residential facilities) are nonpoint source pollution. Nonpoint source pollution includes materials and/or chemicals (e.g., motor oils/grease, paint, pet wastes, garden chemicals, litter) that may be washed into the storm drain system from various sources. Nonpoint source pollutants are typically washed into the storm drain system by rainwater and other means from streets, parking areas, residential neighborhoods, commercial/retail centers, construction sites. Since storm drains flow directly into the ocean without treatment, potential pollution can have an impact on water quality and wildlife. The Project site is currently undeveloped. The proposed Project involves the construction of a 50-unit apartment complex at 14041, 14051 and 14061 Locust Street in the City of Westminster. The proposed construction activities at the site will implement BMPs to reduce any potential impacts to water quality. Post-development activities have the potential to discharge contaminants into the storm water and urban runoff and into the municipal storm drain system of the City of Westminster.

Implementation of the Project will include compliance with the adopted Drainage Area Management Plan and adoption of Best Management Practices for handling any runoff from the proposed apartment buildings or the parking area. The BMPs are construction devices, procedures and methods that are implemented to reduce (or eliminate) source pollution (runoff). Additionally, the Project will disturb more than one acre of the existing Project site, which requires the preparation of a Storm Water Pollution Prevention Plan (SWPPP). Therefore, potential impacts to water quality will be reduced to less than significant level.

Mitigation Measure 8 – Prior to construction activities, a Storm Water Pollution Prevention Plan (SWPPP) and Water Quality Management Plan (WQMP) will be prepared pursuant to the requirements of the Orange County DAMP and the State Regional Water Quality Control Board.

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

No Impact

See response to Item 9.a) above. The Project proposes to construct a 50-unit apartment complex at 14041, 14051 and 14061 Locust Street in the City of Westminster that will be served by the local sewer and water system.

The Project implementation at this site does not involve any construction activities (or long-term Project operations) that would impact groundwater. The proposed use at the site is also not anticipated to have any significant impacts relative to groundwater. Therefore, it is not anticipated that the Project will have any significant impact on groundwater. The Project will not impact groundwater supplies or interfere with groundwater recharge.

c) Substantially alter 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?

No Impact

See response to Item 9.a) above. The Project will not result in a significant change to the drainage pattern of the property. The development of the site will not alter the course of a stream or a river. The Project does not propose any alterations to the existing or planned storm drain system in Westminster. Therefore, it is not anticipated that the Project will result in any impacts to erosion or siltation on- or off-site.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of a 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?

No Impact

See response to Item 9.c) above. The Project does not involve any alteration of the existing and/or planned drainage system (pattern) of the area, including a substantial increase in the rate or amount of surface runoff. The Project property has been developed previously. The proposed Project will increase building coverage on the site, but is not anticipated to create runoff beyond that which could be handled by the existing storm drain system. Therefore, the runoff is not anticipated to significantly increase in a manner that would have impacts relative to flooding on or offsite. Therefore, no impacts to this topical area will occur as a result of the Project.

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

No Impact

See responses to Items 9.a) and 9.c) above. The City of Westminster is primarily built-out and contains an existing storm water drainage system. Local drainage facilities are maintained by the City of Westminster and provide for the collection of surface storm water. Surface water is then deposited into regional drainage channels that are owned and maintained by the Orange County Flood Control District (OCFCD). The OCFCD plans its drainage facilities to accommodate a 100-year flood. The closest major channel (less than one mile away from the site) to the site is the Westminster Channel (OCFCD channel). The OCFCD also maintains a channel that runs along Humboldt Avenue north of the property. The City's General Plan identified that the City's storm drain system is operating at approximately 80% of its capacity.

The Project is consistent with the capacity of the existing storm drain system in the City of Westminster and will be designed and constructed to comply with storm drain requirements. Additionally, the Project will not provide substantial additional sources of polluted runoff since the improvements will not increase the hard surface area of the site. Therefore, impacts associated with runoff will be less than significant as a result of the proposed Project.

f) Otherwise substantially degrade water quality?

No Impact

See responses to Items 9.a) and 9.c) above. The Project will comply with all existing requirements regarding water quality, and the Project does not propose any changes to the drainage of the facility. Therefore, it is not anticipated that the Project will substantially degrade water quality.

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

No Impact

The proposed Project includes the construction of housing. However, the Project site is located within Zone X per the Federal Emergency Management Agency (FEMA) and on the Federal Flood Insurance Rate Map Panel No. 06059C-0119J (2009). The site is located outside the 100-year flood plain. Therefore, no impacts relative to the 100-year flood hazard will occur as a result of the proposed Project.

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

No Impact

See responses to Items 9.a), 9.c) and 9.g) above. The Project site is not located within a 100-year flood plan and therefore will not result in any potential impacts associated with a 100-year flood hazard area.

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

No Impact

See responses to Items 9.a), 9.c) and 9.g) above. Also, the Project does not involve exposing structures or people to potential flooding hazards.

j) Inundation by seiche, tsunami, or mudflow?

No Impact

See responses to Items 9.a) and 9.c) above. Therefore, impacts associated with inundation by seiche, tsunami, or mudflow would not be associated with the proposed Project.

k) Potentially impact storm water runoff from construction activities?

Less Than Significant Impact

See response to Item 9.a) above and Mitigation Measure 8. The Project will utilize Best Management Practices (BMPs) and will comply with the Drainage Area Management Plan (DAMP). The DAMP is implemented by the cities (including Westminster), the County of Orange, and the Orange County Flood Control District. The DAMP was prepared in compliance with specific requirements of the National Pollutant Discharge Elimination System (NPDES) storm water program to reduce storm water pollution. The DAMP includes a wide range of BMPs and control techniques to further reduce the amount of pollutants entering the storm drain system. Therefore, potential impacts to storm water runoff from construction activity will be less than significant.

l) Potentially impact storm water runoff from Post-construction activities?

Less Than Significant Impact

See response to Item 9.a) above and Mitigation Measure 6. The Project will construct a new 50-unit apartment complex at 14041, 14051 and 14061 Locust Street in the City of Westminster. As such, the Project will not fundamentally change the existing storm water runoff from the facility. Therefore, there is a less than significant impact from post-construction activities.

m) Result in a potential for discharge of storm water pollutants (e.g., oil, grease, pesticides, nutrients, sediments, pathogens, etc.) from areas of material storage, vehicle or equipment fueling, vehicle or equipment maintenance (Including washing), waste handling, hazardous materials handling or storage, delivery areas, loading docks or other outdoor work areas?

Less Than Significant Impact

The Project is a new 50-unit residential apartment complex. The site will not include vehicle or equipment fueling and storage, waste handling, hazardous materials handling, or storage and delivery areas. The Project requires a Storm Water Pollution Protection Plan (SWPPP) and a Water Quality Management Plan (WQMP) for the construction activities of the Project. Therefore, there is less than significant impact in this area.

n) Result in the potential for discharge of storm water to affect the beneficial uses of the receiving waters?

No Impact

The Project will not result in the potential for discharge of storm water that would affect the beneficial uses of the receiving waters. Therefore, there is no impact in this area.

o) Create the potential for significant changes in the flow velocity for volume of storm water runoff to cause environmental harm?

No Impact

There will be no increase in the flow velocity of storm water runoff as a result of this Project. The Project is construction of apartments on a 1.8-acre site that will channel runoff from the property into existing storm drain facilities. Therefore, there will be no impact in this issue area.

p) Create significant increases in erosion of the project site or surrounding areas?

No Impact

The Project site will be developed into a 50-unit apartment Project. Storm drain facilities are already in place and designed to handle storm water runoff from the facility. Therefore, this Project will not increase erosion of the Project site or surrounding areas.

q) Include new or retrofitted stormwater treatment control Best Management Practices (BMPs), (e.g., water quality treatment basin, constructed treatment wetlands), the operation of which could result in significant environment effects?

Less Than Significant Impact

The Project involves construction of a 50-unit apartment complex. It will not provide water quality treatment basins or constructed treatment wetlands. The Project is located on a site that already includes storm drain facilities designed to handle runoff from the site. Therefore, impacts will be less than significant.

r) Is the project tributary to an already impaired water body, as listed on the Clean Water Act Section 303(d) list? If so, could the project result in an increase in any pollutant for which the water body is already impaired?

Less Than Significant Impact

The Project includes BMPs designed to protect storm water runoff during construction activities and will not result in any increase in pollutants to any water body already impaired. Therefore, there is less than significant impact.

10. Land Use and Planning

Would the Project:

a) Physically divide an established community?

No Impact

The Project site is three lots located at 14041, 14051 and 14061 Locust Street in the City of Westminster that include several older residential structures. The Project proposes the construction of a 50-unit apartment complex on the existing site. The Project is compatible with surrounding land uses. The Project will not physically divide an established community. Therefore, no significant impacts relative to this topic will result due to the implementation of the Project.

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

Less Than Significant Impact

The proposed Project site is currently zoned C2, General Business and the General Plan Land Use Designation is General Commercial. However, the proposed Project is consistent with adjoining residential properties (Brentwood Lane Townhomes) adjacent to the Project site. Therefore, the applicant is proposing a General Plan Amendment from "General Business" to "Residential High Density 15-25 Dwelling Units Per Gross Acre" and a Zoning Map Amendment to re-zone these Project parcels to R5-PD (Multiple Family Residential 19 to 25 Units/Acre—Planned Development Overlay). Additionally, the proposed changes in General Plan and Zoning designations would be consistent with the City's Housing Element since the Project is proposed to provide affordable housing options.

The Project provides the parking required under the *California Government Code* §65915. Therefore, it is anticipated that the proposed apartment complex will result in less than significant impacts relative to land use.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact

See responses to Items 10.a) and 10.b) above. The Project site is located in a developed area. The site is not subject to any applicable habitat conservation plan or natural community conservation plan (NCCP). Therefore, no impacts relative to this topic will occur as a result of implementation of the Project.

11. Mineral Resources

Would the Project

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

No Impact

The Project site is not located within a known and/or designated mineral resources area. Therefore, no significant decrease of natural resources is anticipated as a result of the Project.

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?

No Impact

See response to Item 11.a) above. The City's General Plan does not delineate any locally important mineral resource in the Project area. Therefore, the proposed Project will not result in any significant impacts to a locally important mineral resource.

12. Noise

Would the Project result in:

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

Less Than Significant With Mitigation Incorporated

A noise assessment of the Project was completed by Giroux and Associates on May 10, 2016 to determine noise impacts from the proposed Project. The noise study is included as Appendix C to this environmental document. The Project itself will not generate noise levels in excess of standards established in the General Plan. The existing noise environment of the site includes noise associated with the adjacent fast food restaurant. There are no railroads or concentrated aircraft operations in the immediate vicinity of the Project site.

Baseline Noise Levels

A noise measurement was made to document existing baseline levels on the Project site as shown in Exhibit 14. The noise measurement was conducted on Monday, March 28, 2016, between the hours of 2:30 p.m. and 2:45 p.m. The measurement results are shown in Table 13 below, and the monitoring location is shown on Exhibit 14.

Table 13. Short-Term Noise Measurements (dB[A])

Leq	Lmax	Lmin	L_{10}	L_{33}	L_{50}	L_{90}
58	70	51	61	57	55	53

The noise meter was located in the middle of the eastern site perimeter, about 45 feet from the Locust Street centerline. The observed existing noise level was 58 dB Leq. Monitoring experience shows that 24-hour weighted CNELs are approximately equal to mid-day Leq plus 2 to 3 dB (Caltrans Technical Noise Supplement, 2009). This would equate to an existing CNEL of 60-61 dB.

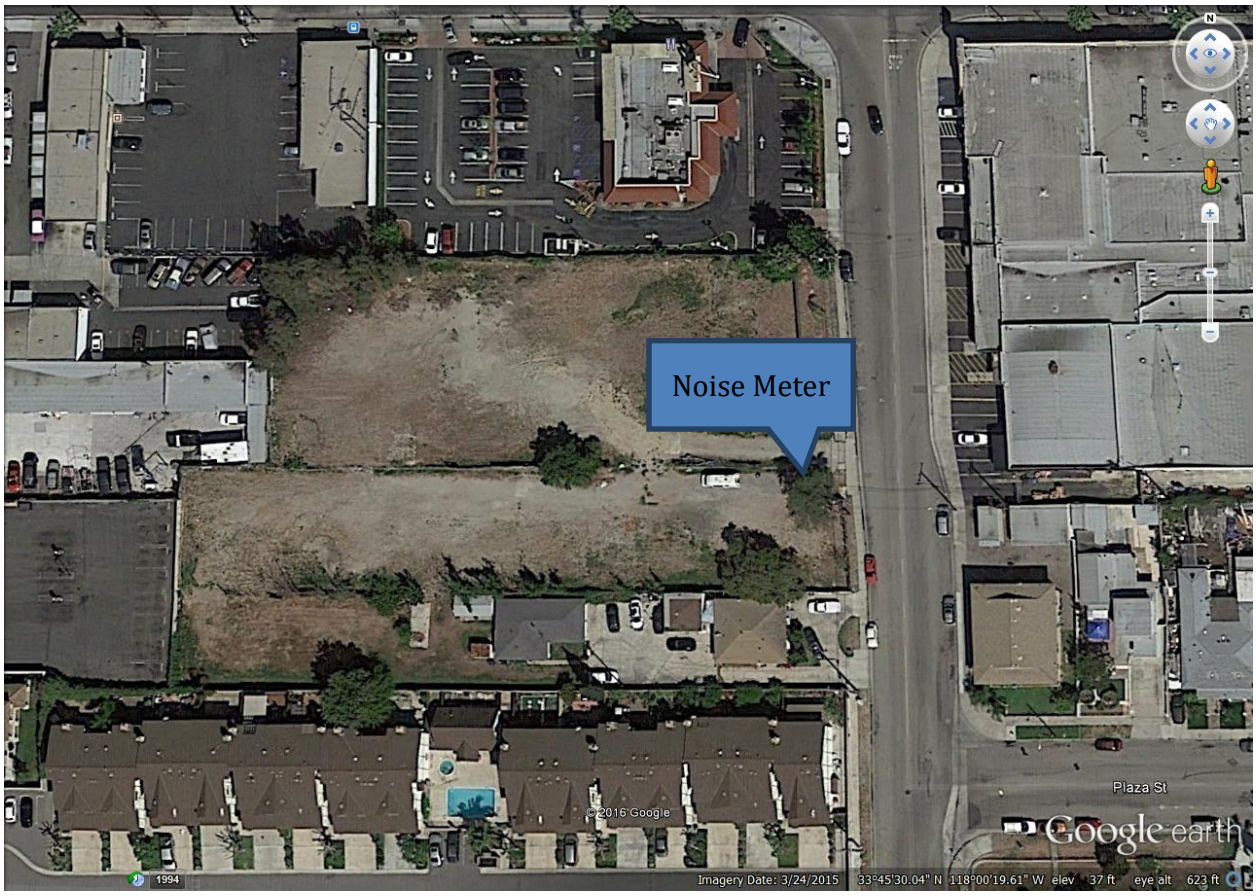


Exhibit 14. Noise Monitor Location

Noise measurements were also made on Monday, May 9, 2016, adjacent to the northern site boundary close to the McDonald's drive-through order board. Measurements were made from 9:30 to 10:00 p.m. assuming that future Project residents would become progressively noise-sensitive during that time period. One set of readings was made at the property line directly across from the order board speaker, and a second set of readings was made at the property line 50 feet west of the speaker unaffected by drive-through activities. The decibel difference between the two data sets would represent the noise contribution from the restaurant. The measured data, compared to the City's Noise Ordinance standards, were as follows (dB):

				City Standard	
Time Period	Order Board	Background	Board Only	Day	Night
30-minute	52	51	45	55	50
15-minute	55	53	51	60	55
5-minute	58	57	55	65	60
0-minute	68	63	66	75	70

To the extent that the drive-through activity level was "normal" from 9:30 to 10:00 p.m. (sometimes one car at the board, two waiting, and sometimes nobody at the board for 20 to 30 seconds), the City's noise standards are met at the shared property line with a reasonable margin of safety for all four exposure periods studied. The speaker volume was low with none of the "Welcome to ___. How can I help you?" sometimes heard all over the neighborhood at some drive-throughs. The existing speaker configuration and ordering procedure are not seen as significant noise impediments to the proposed Greenfield Apartments.

Noise Significance Criteria

Noise impacts are considered significant if they result in:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

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

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

"Substantially" is not defined in any guidelines. The accuracy of sound level meters and of sound propagation computer models is no better than ±1 dB. This is also the human loudness difference discrimination level under ideal laboratory conditions. Most people cannot distinguish a change in the noise environment that differs by fewer than 3 dB between the pre- and post-Project exposure if the change occurs under ambient conditions. For the purposes of this analysis, a traffic noise increase of more than 3 dB that creates or worsens an area of noise/land use incompatibility would be considered a significant degradation of noise quality if it also would expose sensitive residential land uses to exterior noise levels greater than 65 dB CNEL.

Sources of Impact

Two characteristic noise sources are typically identified with general development such as the proposed residential development. Construction activities, especially heavy equipment, will create short-term noise increases near the project site. Upon completion, vehicular traffic on streets around the proposed Project area may create a higher noise exposure. Traffic noise impacts are generally analyzed both to ensure that the Project does not adversely impact the acoustic environment of the surrounding community, and to ensure that the Project site is not exposed to an unacceptable level of noise resulting from the ambient noise environment acting on the Project. In already-developed areas, the added land use intensity associated with a single project only increases traffic incrementally on existing roadways. These noise impacts are often masked by the baseline, and often preclude perception of any substantial noise level increase.

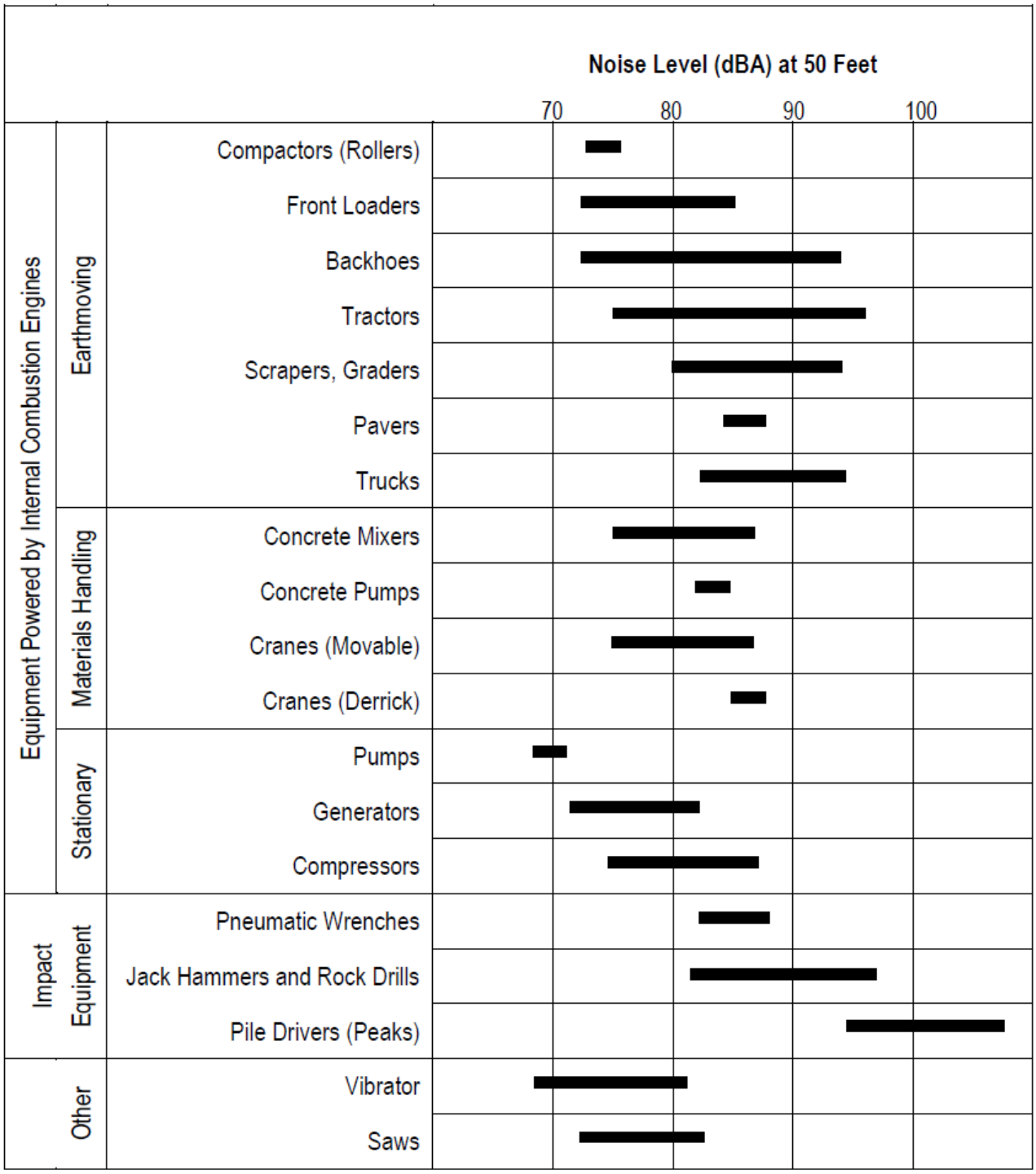
Construction Noise Impacts

The proposed Project would entail construction of 50 apartments. The Project site is situated on the west side of Locust Street, south of Westminster Boulevard in the City of Westminster.

Temporary construction noise impacts will vary markedly, because the noise strength of construction equipment ranges widely as a function of the equipment used and its activity level. Short-term construction noise impacts tend to occur in discrete phases dominated initially by demolition of existing structures and large earth-moving sources, then by foundation and parking facilities, and finally for finish construction. The demolition and earth-moving sources are the noisiest, with equipment noise typically ranging from 75 to 90 dB at 50 feet from the source.

The new building will be built on a level site. No major grading will be performed, and there is minimal demolition. Utility connections and foundation preparation will require use of equipment such as backhoes, trenchers, and dozers. Peak noise levels from such equipment are seen in Exhibit 15 to be 85 dB at 50 feet. The closest homes are approximately 50 feet south of the site. Construction noise could be disturbing if windows facing the construction activity were open. Temporary window closure would help minimize disturbance to quiet activities such as taking a nap, reading a book, or talking on the telephone, but noise levels would still be noticeable. However, many people are away from home during the hours from 7:00 a.m. to 3:00 p.m. when temporary construction disturbance would be greatest.

Construction activities are exempt from numerical noise regulations if they occur during the hours allowed by the Municipal Code. However, as noted above, heavy equipment noise may be a nuisance even if generated during allowable hours. Compliance with these hours (7:00 a.m. to 8:00 p.m. Monday through Saturday) will maintain construction activity noise impacts at less than significant levels.



Source: EPA PB 26717, Environmental Protection Agency, December 31, 1971, "Noise from Construction Equipment and Operations"

Exhibit 15. Typical Construction Equipment Noise Generation Levels

Vehicular Noise Impacts

Long-term noise concerns associated with development of the proposed Project center primarily on mobile source emissions on project area roadways. These concerns were addressed using the California specific vehicle noise curves (CALVENO) in the federal roadway noise model (the FHWA Highway Traffic Noise Prediction Model, FHWA-RD-77-108). The model calculates the Leq noise level for a particular reference set of input conditions, and then makes a series of adjustments for site-specific traffic volumes, distances, roadway speeds, or noise barriers.

The Project is expected to generate 333 daily trips. Project impact would result from the additional trips on existing traffic volumes. Locust Street is not a major roadway, and therefore the City of Westminster does not provide traffic counts. Therefore, as a conservative analysis, a volume of 2,000 average daily traffic vehicles (ADT) was used as an estimate. The increase in traffic noise from 2,000 vehicles to 2,333 vehicles would be as follows:

Locust Street		
	Traffic Count (ADT)	**Noise Level**
Traffic Noise Level No Project	2,000	55.3 dB CNEL
Traffic Noise Level With Project	2,333	56.0 dB CNEL
Increase Change		0.7 dB CNEL

Project impact is minimal. The above analysis is very conservative, as not all project traffic will travel in a single direction entering or leaving the site. Vehicles may turn left or right onto Locust Street thereby diluting the noise impact at any single receptor. Project related traffic impacts are less than significant.

On-Site Noise Generation

Residential uses are considered passive and not substantial noise generators. The only source of noise impact that the existing residences to the south might experience are those associated with parking.

Site Compatibility

An existing McDonald's restaurant is located just north of the Project site. The order board is on the south side of the restaurant building directly facing the Project site. Noise monitoring at the property line during late evening drive-through operations found that daytime and/or nighttime City of Westminster noise ordinance standards were met with a substantial margin of safety.

To summarize, there would be no significant new or changed noise impacts associated with the addition of 50 apartment units.

Traffic noise resulting from Project implementation on area roadways will be less than significant.

Short-term construction noise intrusion and vibration impacts will be limited by standard conditions on construction permits imposed by the City of Westminster. The following construction noise control conditions are recommended:

- All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers and other state-required noise attenuation devices.
- During construction, stationary construction equipment such as air compressors shall be placed such that emitted noise is directed away from sensitive noise receivers as much as possible.
- Construction activities shall not take place outside of the allowable hours specified by the City's Municipal Code Section 8.28.060E, *Exemptions* (7:00 a.m. and 8:00 p.m. on weekdays and Saturdays; construction activities are not permitted on Sundays or federal holidays).

Mitigation Measure 9 – The City and the general contractor shall be responsible for limiting construction activities to 7:00 a.m. to 8:00 p.m. Monday through Saturday. No noise-generating construction activities shall occur on Sundays and holidays. Prior to issuance of any Grading or Building Permit, the Contractor shall provide evidence that a construction staff member will be designated as a Noise Disturbance Coordinator and will be present on-site during construction activities. The Noise Disturbance Coordinator shall be responsible for responding to any local complaints about construction noise. When a complaint is received, the Noise Disturbance Coordinator shall notify the City within 24-hours of the complaint, and determine the cause of the noise complaint (e.g., starting too early, bad muffler) and shall implement reasonable measures to resolve the complaint, as deemed acceptable by the Planning Manager. All notices that are sent to residential units immediately surrounding the construction site and all signs posted at the construction site shall include the contact name and the telephone number for the Noise Disturbance Coordinator.

Mitigation Measure 10– All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers and other state required noise attenuation devices. During construction, stationary construction equipment such as air compressors shall be placed such that emitted noise is directed away from sensitive noise receivers as much as possible.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact

Construction activities generate groundborne vibration when heavy equipment travels over unpaved surfaces or when it is engaged in soil movement. The effects of groundborne vibration include discernible movement of building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. Within the "soft" sedimentary surfaces of much of Southern California, ground vibration is quickly damped out. Because vibration is typically not an issue, very few jurisdictions have adopted vibration significance thresholds. Vibration thresholds have been adopted for major public works construction projects, but these relate mostly to structural protection (cracking foundations or stucco) rather than to human annoyance.

Possible vibration nuisance is most commonly expressed in terms of the root mean square (RMS) velocity of a vibrating object. RMS velocities are expressed in units of vibration decibels

relative to a reference velocity of 1.0 micro-inch per second. The range of vibration decibels (VdB) is as follows:

65 VdB	threshold of human perception
72 VdB	annoyance due to frequent events
80 VdB	annoyance due to infrequent events
100 VdB	minor cosmetic damage

To determine potential impacts of the project's construction activities, estimates of vibration levels induced by the construction equipment at various distances are presented below:

	Approximate Vibration Levels (VdB)*			
Equipment	**25 feet**	**50 feet**	**100 feet**	**200 feet**
Large Bulldozer	87	81	75	69
Loaded Truck	86	80	74	68
Jackhammer	79	73	67	61
Small Bulldozer	58	52	46	40

*FTA Transit Noise & Vibration Assessment, Chapter 12, Construction, 1995

The on-site construction equipment that will create the maximum potential vibration is a large bulldozer. The stated vibration source level in the FTA Handbook for such equipment is 81 VdBA at 50 feet from the source. With typical vibrational energy spreading loss, the vibration annoyance standard is met at 56 feet. Effects of vibration perception such as rattling windows could only occur at the nearest residential structures, though vibration resulting from project construction would not exceed cosmetic damage thresholds.

Regardless, large bulldozers will not likely operate directly at the shared southern property line with the perimeter homes. Any fine grading at the property line should be performed with small bulldozers which are seen above to have 30 VdB less vibration potential. Therefore, to ensure adequate vibration annoyance protection the following mitigation measure is recommended.

Mitigation Measure 11 – Only small bulldozers shall be permitted to operate within 56 feet of the nearest residential structures.

Construction activity vibration impacts are judged as less than significant.

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

Less Than Significant Impact

See response to Item 12.a) above. The project itself will not result in any substantial permanent increase in ambient noise levels above levels existing without the project. The overall noise is not significant nor does it exceed noise requirements. Mitigation relative to the noise levels associated with construction activities has been presented in responses to Items 12.a above.

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

Less Than Significant Impact

There will be short-term increases in ambient noise levels above levels existing without the project due to construction activities at the site. However, these temporary increases can be

mitigated by limiting the hours of construction in accordance with City regulations. Mitigation is presented in Items 12.a).

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

Less Than Significant Impact

The project is located within an airport environs land use plan for the Los Alamitos Joint Forces Training Center. However, the land use designation in this area relates to building height and there will be no impact and no people working at the project site who will be exposed to excessive noise levels from aircraft.

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

No Impact

The project is not located within the vicinity of a private airstrip nor would the project expose people to excessive noise levels. Therefore, there are no project impacts associated with a private airstrip.

13. Population and Housing

Would the Project:

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

No Impact

The Project involves the construction of a 50-unit apartment complex that will include an affordable component. The Project is not anticipated to induce substantial population growth in the area and will assist the City of Westminster in achieving a portion of its housing allocation under the Regional Housing Needs Assessment. Additionally any population increase would be in line with population Projections included in the build-out of the Westminster General Plan.

The property is located in an area that is developed with other residential and commercial structures and is an in-fill project in an urbanized area. No new or unanticipated significant infrastructure will be required for the Project. Therefore, due to the limited size of the Project, it is not anticipated that the Project will induce substantial population growth in the area, either directly or indirectly.

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

No Impact

The Project proposes a 50-unit apartment complex in an area that is substantially vacant. While a few structures are on the property, they will be demolished and the Project will result in a net increase in housing supply. The Project does not displace existing housing. Therefore, the Project will not displace substantial numbers of existing housing.

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

No Impact

See response to Item 13.b) above. The Project will not result in the displacement of substantial numbers of people and/or housing. The Project will not displace substantial numbers of people and will result in a net increase in housing for the area.

14. Public Services

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered government 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: Utilities and service systems are already servicing the City of Westminster. It is not anticipated that the project would result in substantial adverse impacts to public services since it is located in an area already being serviced by utility and service.

i) Fire protection?

Less Than Significant Impact with Mitigation Incorporated

The Orange County Fire Authority provides fire protection and emergency response services for the City. Response times to the site are dependent on various factors. The OCFA response goal is for the first unit to reach the emergency scene within 7 minutes and 20 seconds from receiving the call, 80% of the time. Emergency calls receive the quickest response times with alarm calls and non-emergency calls having longer response times respectively. The availability of personnel and extenuating circumstances may further affect response times. The closest fire station to the property is located at 7351 Westminster Boulevard (Station #64) in Westminster, about one-quarter mile from the Project site. There are three fire stations in Westminster. The proposed Project will not result in any potential significant increase in the number of calls for service to the area beyond that anticipated per the buildout of the City's General Plan. The Project development will be subject to compliance with City and OCFA requirements. Therefore, it is not anticipated that the proposed Project will result in any significant impacts relative to fire protection services and/or facilities with implementation of the following mitigation measure ensuring compliance with fire protection requirements.

Mitigation Measure 12– Prior to the start of building construction activities, the City and the general contractor shall submit project plans for review and approval by the Fire Chief. The plans shall demonstrate that the Project meets the requirements of the OCFA, Uniform Building Code (UBC) and Titles 19 and 24 of the California Administrative Code.

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ii) Police protection?

Less Than Significant Impact

The City of Westminster Police Department provides law enforcement services to the Project area. The Project involves construction of a new 50-unit apartment complex. The improvements are not anticipated to result in a significant increase in calls for serve beyond that anticipated in the City of Westminster General Plan. Therefore, impacts are projected to be less than significant.

iii) Schools?

Less Than Significant Impact)

The Project involves construction of a 50-unit apartment complex. The Project likely would not increase the number of students significantly in the area. Therefore, the Project is not anticipated to have a significant impact on schools.

iv) Parks?

No Impact

The Project involves construction of a new 50-unit apartment complex. The new apartments will not necessitate new park requirements or impact park facilities in the City beyond that contemplated in the buildout of the Westminster General Plan. Therefore, the Project will have no impact on park facilities.

v) Other public facilities?

No Impact

See above responses under Public Services. Due to the type of project, it is not anticipated that the Project will have any significant impact on public services and/or facilities.

15. Recreation

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

Less Than Significant Impact

The proposed Project consists of construction of a new 50-unit apartment complex on Locust Street in the City of Westminster. While the new apartments will increase use of existing neighborhood and regional parks, it is not anticipated that the Project will have any impacts on recreation beyond that already projected for buildout of the City per the General Plan and would not lead to the physical deterioration of the recreation facilities. Additionally, the Project includes play area equipment and open space designed to accommodate some recreational opportunities on the Project site for residents. Therefore, less than significant impacts to park facilities will occur as a result of this Project.

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

No Impact

See response to Item 15.a) above. It is not anticipated that the Project will result in any significant impacts to recreational facilities.

16. Transportation/Traffic

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?

Less Than Significant Impact

A Trip Generation Worksheet was prepared by Fehr & Peers Transportation Consultants for the proposed Greenfield Apartments at 14041, 14051 and 14061 Locust Street in the City of Westminster. The Worksheet is included as Appendix D of this environmental document. The worksheet identifies a peak hour impact from the proposed apartment project as 28 trips in the AM peak and 34 trips in the PM peak. Those numbers break down into 17 trips in and 11 trips out in the AM peak and 21 trips in and 13 trips out in the PM peak. Total daily trips over a 24-hour period from the Project are 333. The projected trips are not significant enough to conflict with any applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. Therefore, transportation impacts will be less than significant.

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?

Less Than Significant Impact

See response to Item 16.a) above. The Project will not generate a significant amount of vehicle trips during the peak hours. Therefore, the Project will not conflict with an applicable congestion management program (CMP), because it does not add a sufficient amount of trips to a CMP intersection to affect existing levels of service. Therefore, less than significant impacts would result due to the implementation of the Project.

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?

No Impact

See response to Item 16.a) above for analysis. Additionally, the Project does not have any impact on existing and/or planned air traffic (or safety risks) because it is under the height limit restriction imposed by its proximity to Los Alamitos Joint Forces Training Facility. Therefore, there are no impacts that would trigger a change in air traffic patterns.

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

No Impact

See response to Item 16.a) above. The Project does not propose any design features relative to curves, intersections, or incompatible uses.

e) Result in inadequate emergency access?

No Impact

See response to Item 16.a) above. The Project does not propose to change the existing emergency access into the neighborhood. The Project will be required to meet emergency access design requirements of the Orange County Fire Authority (OCFA). Therefore, no significant impacts regarding emergency access are anticipated as a result of the Project.

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

No Impact

See response to Item 16.a) above. The proposed Project will not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities or otherwise decrease the performance or safety of such facilities.

The Orange County Transportation Authority (OCTA) provides public transportation services in Orange County, including Westminster. Bus routes operate along Westminster Boulevard (OCTA Bus Route 60) and Goldenwest Street (OCTA Bus Route 25). The Project is not expected to negatively impact any current facility, service or service expansion plans for the Project area and/or site. Therefore, the Project will not conflict with adopted policies, plans, or programs supporting alternative transportation.

17. Utilities and Service Systems

Would the Project:

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

Less Than Significant Impact

It is anticipated that all wastewater treatment generated by the Project can be accommodated and treated by existing facilities or those planned by the Orange County Sanitation District (OCSD). The Project does not propose an increase in wastewater treatment capacity beyond that contemplated in the buildout of the Westminster General Plan. The proposed Project involves the construction of a 50-unit apartment complex. Therefore, it is not anticipated that the proposal will result in any significant impact relative to wastewater or treatment requirements.

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?

No Impact

The Project will not result in the significant alteration or expansion of existing utility and service systems. The Project does not create any significant additional burden on these facilities that would require construction of new or expanded facilities. Therefore, the Project will have no impact on existing wastewater treatment facilities.

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?

No Impact

See response to Item 17.b) above. The Project involves construction of a 50-unit apartment complex. The Project is designed to utilize the existing storm drain water drainage facilities.

Therefore, the Project will not result in any impacts to the storm water drainage facilities that would cause significant impacts.

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

No Impact

See response to Item 17.b) above. Water is supplied to the City of Westminster by imported water sources purchased from the Metropolitan Water District. The City also has water production wells that pump imported groundwater and provide approximately 70% of the City's water supply.[5] The City's General Plan EIR (page VIB-24) identified that the approximately 16 mgd of water use would occur at buildout (2010) for peak day demand. The General Plan EIR also noted that although it is anticipated that there will be adequate available water to serve development planned per the General Plan, supplies of imported water to Southern California could be constrained in the future. Therefore, the General Plan EIR emphasized the importance of water conservation and adhering to State and municipal laws requiring water-efficient plumbing fixtures in new structures. The Project proposes a new 50-unit apartment complex in line with development projected in the City's General Plan Housing Element. The Project does not represent any development beyond that anticipated in the General Plan that would involve water supply. The Project will comply with all applicable city, state and municipal laws pertaining to water conservation as required through City standard conditions of approval. Therefore, no impacts to this topical area will occur.

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?

No Impact

See response to Item 17.b) above. The Project will not result in any significant impacts to wastewater treatment.

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

No Impact

The Project site is located in the Midway City Sanitary District. The City's General Plan EIR (page VIC-42) indicates that at build-out solid waste generation could increase by an estimated 25,677 tons per year (based on 1.2 tons per capita per year). The estimate does not take into account increases in recycling that will occur and have been occurring under the California Integrated Waste Management Act (AB 939). The General Plan EIR concluded that build-out of the City would not result in a significant impact to solid waste with implementation of the City's Source Reduction and Recycling Element (SRRE). The Project will also be required to comply with SRRE adopted by the City of Westminster to achieve mandated reductions of generated waste. Therefore, the Project itself will not have any significant impact on solid waste disposal.

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

No Impact

See response to Item 17.b) above. The Project itself will comply with federal, state and local statutes on solid waste disposal.

5 City of Westminster General Plan/EIR, Volume II – Technical Document, 1996, page VIB-2

18. Mandatory Findings of Significance

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

No Impact

On the basis of the foregoing analysis, the proposed Project does not have the potential to significantly degrade the quality of the environment. The Project site does not contain any habitat of fish or wildlife species that would be impacted by the Project. The site is located in an urbanized setting. The proposed Project consists of construction of a new 50-unit apartment complex located at 14041, 14051 and 14061 Locust Street in the City of Westminster. The property currently includes several residential structures that would be eliminated by the Project. The Project is compatible with the surrounding land uses. The Project will not impact any sensitive or special status habitat and/or wildlife species.

b) Does the project have the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals?

No Impact

The site is located in a developed area that already provides infrastructure to support the proposed Project. There are no long-term environmental goals that would be compromised by the Project. The Project does not have the potential to achieve short-term goals to the disadvantage of long-term goals.

c) 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)?

No Impact

No cumulative impacts are anticipated in connection with this or other projects with the General Plan Amendment. The Project is consistent with the City's General Plan land use designation. The Project will not result in environmental effects which are cumulatively considerable since the proposal is consistent with the goals and policies of the City's General Plan. The Project does not have any impact on projected growth and planned projects for the City of Westminster as of the date of this analysis. Recommended mitigation measures as well as the Project design will reduce all potential impacts to a level of less than significant. Therefore, it is not anticipated that the Project will result in significant cumulative impacts.

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

No Impact

There are no known substantial adverse effects on human beings that would be caused by the proposed Project. The Project is consistent with the land uses in the Project area and the environmental evaluation has concluded that no adverse significant environmental impacts will result from the Project.

Source List

The following enumerated documents are available at the offices of the City of Westminster, Planning Department, 8200 Westminster Boulevard, Westminster, California 92683.

1. City of Westminster, 1996 General Plan Volume I – Policy Document, 1996, all amendments
2. City of Westminster, 1996 General Plan, Volume II – Technical Document/EIR, 1996.
3. Zoning Map, City of Westminster.
4. Westminster Municipal Code.
5. City of Westminster, CEQA Handbook, Adopted by Resolution 3577 of the City Council
6. California Environmental Quality Act as amended January 1, 2014. §§21000-21178 of the Public Resources Code, State of California.
7. Guidelines for California Environmental Quality Act as amended January 1, 2016. §15000-15387 of the California Code of Regulations, Title 14, Chapter 3, State of California.
8. California Department of Conservation, Official Maps of Seismic Hazard Zones Newport Quadrangle, 1997.
9. Federal Flood Insurance Rate Map, Panel No. 06059C-0119J, 2009.
10. Air Quality and GHG Impact Analysis for Greenfield Apartments dated May 9, 2016 prepared by Giroux and Associates
11. Noise Impact Analysis for Greenfield Apartments dated May 10, 2016 prepared by Giroux and Associates.
12. Trip Generation Worksheet for Greenfield Apartments dated April 20, 2016 prepared by Fehr & Peers, Inc.
13. http://geotracker.swrcb.ca.gov

Appendix A –
Environmental Checklist

Initial Study Checklist

1. Background

1.	**Project Title:** Greenfield Apartments
2.	**Lead Agency Name and Address:** City of Westminster Planning Division 8200 Westminster Boulevard Westminster, CA 92683
3.	**Contact Person and Phone Number:** Steve Ratkay Tel. 714.548.3486 Fax 714.899.9660
4.	**Project Location:** 14041, 14051, and 14061 Locust Street Westminster, CA 92683-3546
5.	**Project Sponsor's Name and Address:** Fairfield Real Estate LLC % LSA Architecture 8018 E. Santa Ana Canyon Road, Ste. 100-121 Anaheim, CA 92808
6.	**General Plan Designation:** General Commercial
7.	**Zoning:** C-2 General Business
8.	**Description of the Project:** (Describe the whole action involved, including but not limited to, later phases of the Project, and any secondary support or off-site features necessary for its implementation.) The Project consists of the consolidation of three parcels on Locust Street in the City of Westminster into an approximately 1.8-acre site for the development of 50 residential rental units that includes an affordable component. The Project would include the demolition of several existing residential structures on the Project site. The applicant is requesting a density bonus to accommodate the proposed number of dwelling units. The Project will include single-level flats and two-story townhome-style units with one, two and three bedrooms. The apartment building will be three stories in height. A total of 84 unenclosed parking spaces are provided on-site in compliance with parking standards for affordable housing projects imposed by the state (*California Government Code* §65915). A portion of the parking spaces will be provided in detached carports structures arranged along the south and west property lines. The Project will take access from a single driveway on Locust Street. The site(s) is currently designated by the City of Westminster General Plan as "General Commercial" and is zoned C2, "General Business." The Project will require a General Plan Amendment to change the land-use designation to "Residential High Density 15-25 Dwelling Units per Gross Acre" and a Zoning Map Amendment to re-zone these Project parcels to R5-PD (Multiple Family Residential 19 to 25 Units/Acre – Planned Development Overlay). A

	Comprehensive Plan is required for the Project site and architectural design, and a Tentative Parcel Map for the lot consolidation.
9.	**Surrounding Land Uses and Setting**: (This includes any tributaries to already impaired water bodies, as listed on the Clean Water Act Section 303(d) list.) The Project sites for the proposed 50 residential rental units are located at 14041, 14051 and 14061 Locust Street in Westminster, California. The site is south of the intersection of Westminster Boulevard and Locust Street. The sites are surrounded by a McDonald's Restaurant on Westminster Boulevard to the north, the Brentwood Lane townhomes to the south, and the Westminster Coin-Op Auto Spa and other auto-related uses along Goldenwest Street to the west of the Project sites. A residential neighborhood and a commercial property are east of the Project sites. The sites are privately-owned. The sites currently contain two single family dwellings.
10.	**Other public agencies whose approval is required (e.g., permits, financing approval or participation agreement).** Orange County Fire Authority

2. Environmental Factors Potentially Affected

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

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

3. Evaluation of Environmental Impacts

This section analyzes potential environmental impacts associated with the proposed Project. The issue areas evaluated in this Initial Study include:

- 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
- Utilities and Service Systems

The environmental analysis in this section is patterned after the Initial Study Checklist recommended by the CEQA Guidelines and used by the City of Westminster in its environmental review process. For the preliminary environmental assessment undertaken as part of this Initial Study's preparation, a determination that there is a potential for significant effects indicates the need to more fully analyze the development's impacts and identify mitigation.

For the evaluation of potential impacts, the questions in the Initial Study Checklist are stated and an answer is provided according to the analysis undertaken as part of the Initial Study. The analysis considers the long-term, direct, indirect, and cumulative impacts of the development. To each question, there are four possible responses:

- **No Impact.** The development will not have any measurable environmental impact on the environment.
- **Less Than Significant Impact.** The development will have the potential for impacting the environment, although this impact will be below established thresholds that are considered to be significant.
- **Less Than Significant With Mitigation Incorporated.** The development will have the potential to generate impacts, which may be considered as a significant effect on the environment, although mitigation measures or changes to the development's physical or operational characteristics can reduce these impacts to levels that are less than significant.
- **Potentially Significant Impact**. The development will have impacts, which are considered significant, and additional analysis is required to identify mitigation measures that could reduce these impacts to less than significant levels.

Where potential impacts are anticipated to be significant, mitigation measures will be required to avoid or reduce impacts to less than significant levels.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
1. AESTHETICS. Would the Project:				
a. Have a substantial adverse effect on a scenic vista?				✗
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic 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, which would adversely affect day or nighttime views in the area?		✗		
2. AGRICULTURE AND FOREST RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Project Would the Project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				✗
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?				✗
3. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the Project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?				✗
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?		✗		
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?			✗	

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e. Create objectionable odors affecting a substantial number of people?			✗	
4. BIOLOGICAL RESOURCES. *Would the Project:*				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game 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, and regulations or by the California Department of Fish and Game 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 approved local, regional, or state habitat conservation plan?				✗
5. CULTURAL RESOURCES. *Would the Project:*				
a. Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5?				✗
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?				✗
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				✗
d. Disturb any human remains, including those interred outside of formal cemeteries?				✗
6. GEOLOGY AND SOILS. *Would the Project:*				
a. Expose people or structures to potential 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? Refer to Division of Mines and Geology Special Publication 42.			✗	

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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 unstable, or that would become unstable as a result of the Project, and potentially result in on-or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			✗	
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?			✗	
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				✗
7. GREENHOUSE GAS EMISSIONS: Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			✗	
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			✗	
8. HAZARDS AND HAZARDOUS MATERIALS: *Would the Project:*				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?				✗
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?		✗		
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?		✗		
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			✗	
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard for people residing or working in the Plan 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 Plan area?				✗
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				✗

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				✗
9. HYDROLOGY AND WATER QUALITY. *Would the Project:*				
a. Violate any water quality standards or waste discharge requirements?		✗		
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				✗
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?				✗
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?				✗
e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?				✗
f. Otherwise substantially degrade water quality?				✗
g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				✗
h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				✗
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				✗
j. Inundation by seiche, tsunami, or mudflow?				✗
k. Potentially impact storm water runoff from construction activities?			✗	
l. Potentially impact storm water runoff from post-construction activities?			✗	
m. Result in a potential for discharge of storm water pollutants(e.g., oil, grease, pesticides, nutrients, sediments, pathogens, etc.) from areas of material storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas, loading docks or other outdoor work areas?			✗	
n. Result in the potential for discharge of storm water to affect the beneficial uses of the receiving waters?				✗

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
o. Create the potential for significant changes in the flow velocity for volume of storm water runoff to cause environmental harm?				✗
p. Create significant increases in erosion of the project site or surrounding areas?				✗
q. Would the project include new or retrofitted stormwater treatment control Best Management Practices (BMPs), (e.g. water quality treatment basin, constructed treatment wetlands), the operation of which could result in significant environment effects?			✗	
r. Is the project tributary to an already impaired water body, as listed on the Clean Water Act Section 303(d) list? If so, cold the project result in an increase in any pollutant for which the water body is already impaired?			✗	
10 LAND USE AND PLANNING. *Would the Project:*				
a. Physically divide an established community?				✗
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?			✗	
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?				✗
11. MINERAL RESOURCES. *Would the Project:*				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				✗
b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				✗
12. NOISE. *Would the Project result in:*				
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		✗		
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?		✗		
c. A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?			✗	
d. A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?			✗	
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Plan area to excessive noise levels?			✗	

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
f. For a project within the vicinity of a private airstrip, would the Project expose people residing or working in the Plan area to excessive noise levels?				✗
13. POPULATION AND HOUSING. *Would the Project:*				
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				✗
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				✗
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				✗
14. PUBLIC SERVICES.				
a. Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
1) Fire protection?		✗		
2) Police protection?			✗	
3) Schools?			✗	
4) Parks?				✗
5) Other public facilities?				✗
15. RECREATION.				
a. Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			✗	
b. Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				✗
16. TRANSPORTATION/TRAFFIC. *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?			✗	

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				✗
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				✗
e. Result in inadequate emergency access?				✗
f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?				✗
17. UTILITIES AND SERVICE SYSTEMS. *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?				✗
18. MANDATORY FINDINGS OF SIGNIFICANCE.				
a. Does the Project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?				✗
b. Does the project have the potential to achieve short-term environmental goals to the disadvantage of long term environmental goals?				✗
c. 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)?				✗

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d. Does the Project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?				✗

4 DETERMINATION (To be completed by the Lead Agency)

On the basis of this initial evaluation:

I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.	❑
I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.	☑
I find that the proposed project MAY have a significant effect on the environment, and ENVIRONMENTAL IMPACT REPORT is required.	❑
I find that the proposed project MAY have a significant effect(s) 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, there WILL NOT be a significant effect in this case because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.	❑

Submitted by: City of Westminster, Planning Division

Prepared by: William E. Hodge — Signature — August 25, 2016 — Date
Hodge & Associates

Appendix B –
Air Quality and GHG Impact Analysis

AIR QUALITY and GHG IMPACT ANALYSES

GREENFIELD APARTMENTS

CITY OF WESTMINSTER, CALIFORNIA

Prepared for:

Hodge & Associates
Attn: Bill Hodge
P. O. Box 2842
Palm Desert, CA 92261

Date:

May 9, 2016

Project No.: P16-018 AQ

ATMOSPHERIC SETTING

The climate of Westminster, technically called a Mediterranean-type climate, is characterized by warm summers, mild winters, infrequent rainfall, moderate afternoon breezes, and generally fair weather. Temperatures near the project area average a very comfortable 63°F year-round. Summer afternoons are typically in the middle 80s and winter mornings drop to the low- to mid-40s. About 45 summer days reach 90 degrees F, and five days per year may drop to 32 degrees, but significant extremes of temperature are rare in the project area. Rainfall in the Los Angeles Basin varies considerably in both time and space. Rainfall amounts vary from an average of 10 to 18 inches as a function of local exposure and topography. Westminster averages 14.6 inches of rain during a normal year. Almost all the annual rainfall comes from the fringes of mid-latitude storms from late November to early April with summers often completely dry. Light rain (0.1" in 24 hours) falls on 20 days during a normal year with 10 days in the moderate (0.5" in 24 hours category).

Winds blow primarily from southwest to northeast by day and from northeast to the southwest at night in response to the regional pattern of onshore flow by day and offshore flow at night. Average wind speeds are 5 mph average in the Westminster area, reaching 6-8 mph in the afternoon but dropping to near calm conditions (1-3 mph) at night.

The net effect of local airflow in terms of air pollution is that daytime ventilation is good and any locally generated air pollutants will be rapidly dispersed by the strong daytime turbulence. At night, however, pooling of cool air in low elevations combined with light winds does allow for air stagnation in protected areas, especially near area freeways with elevated pollution levels. Because such effects are highly localized, however, the project area is sufficiently far from any major roadways such that it will be little affected by such air stagnation effects.

In addition to winds that control the rate and direction of pollution dispersal, Southern California is notorious for strong temperature inversions that limit the vertical depth through which pollution can be mixed. In summer, coastal areas are characterized by a sharp discontinuity between the cool marine air at the surface and the warm, sinking air aloft within the high-pressure cell over the ocean to the west. This marine/subsidence inversion allows for good local mixing, but acts like a giant lid over the basin. Air starting onshore at the beach is relatively clean, but becomes progressively more polluted as sources continue to add pollution from below without any dilution from above. Air arriving at Westminster during warm season marine flow conditions has undergone limited photochemical reactions, but not to its fullest extent possible. Summer smog levels in Westminster are much lower than in inland valleys of the basin such as the San Gabriel or the Pomona-Walnut Valleys. Summer air quality is only moderately degraded compared to the severe degradation found farther inland within the air basin.

A second inversion type forms on clear, winter nights when cold air off the mountains sinks to the surface while the air aloft remains warm. This process forms radiation inversions. These inversions, in conjunction with calm winds, trap pollutants such as automobile exhaust near their source. During the long nocturnal drainage flow from land to sea, the exhaust pollutants continually accumulate within the shallow, cool layer of air near the ground. Central Orange County thus may experience elevated levels of carbon monoxide and nitrogen oxides because of

this winter inversion condition. With ongoing vehicular improvements, clean air standards are generally not exceeded during nocturnal stagnation periods as they were 10-20 years ago.

Both types of inversions occur throughout the year to some extent, but the marine inversions are very dominant during the day in summer, and radiation inversions are much stronger on winter nights when nights are long and air is cool. The governing role of these inversions in atmospheric dispersion leads to a substantially different air quality environment in summer near the project area than in winter.

AIR QUALITY SETTING

AMBIENT AIR QUALITY STANDARDS (AAQS)

In order to gauge the significance of the air quality impacts of the proposed project, those impacts, together with existing background air quality levels, must be compared to the applicable ambient air quality standards. These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those people most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise, called "sensitive receptors." Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed. Recent research has shown, however, that chronic exposure to ozone (the primary ingredient in photochemical smog) may lead to adverse respiratory health even at concentrations close to the ambient standard.

National AAQS were established in 1971 for six pollution species with states retaining the option to add other pollutants, require more stringent compliance, or to include different exposure periods. The initial attainment deadline of 1977 was extended several times in air quality problem areas like Southern California. In 2003, the Environmental Protection Agency (EPA) adopted a rule, which extended and established a new attainment deadline for ozone for the year 2021. Because the State of California had established AAQS several years before the federal action and because of unique air quality problems introduced by the restrictive dispersion meteorology, there is considerable difference between state and national clean air standards. Those standards currently in effect in California are shown in Table 1. Sources and health effects of various pollutants are shown in Table 2.

The Federal Clean Air Act Amendments (CAAA) of 1990 required that the U.S. Environmental Protection Agency (EPA) review all national AAQS in light of currently known health effects. EPA was charged with modifying existing standards or promulgating new ones where appropriate. EPA subsequently developed standards for chronic ozone exposure (8+ hours per day) and for very small diameter particulate matter (called "PM-2.5"). New national AAQS were adopted in 1997 for these pollutants.

Planning and enforcement of the federal standards for PM-2.5 and for ozone (8-hour) were challenged by trucking and manufacturing organizations. In a unanimous decision, the U.S. Supreme Court ruled that EPA did not require specific congressional authorization to adopt national clean air standards. The Court also ruled that health-based standards did not require preparation of a cost-benefit analysis. The Court did find, however, that there was some inconsistency between existing and "new" standards in their required attainment schedules. Such attainment-planning schedule inconsistencies centered mainly on the 8-hour ozone standard. EPA subsequently agreed to downgrade the attainment designation for a large number of communities to “non-attainment” for the 8-hour ozone standard.

Table 1

Ambient Air Quality Standards						
Pollutant	Averaging Time	California Standards [1]		National Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3)[8]	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
Respirable Particulate Matter (PM10)[9]	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
Fine Particulate Matter (PM2.5)[9]	24 Hour	—	—	35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3	15 µg/m^3	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
Nitrogen Dioxide (NO_2)[10]	1 Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 µg/m^3)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		0.053 ppm (100 µg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[11]	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	—	Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for certain areas)[10]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[10]	—	
Lead[12,13]	30 Day Average	1.5 µg/m^3	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m^3 (for certain areas)[12]	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m^3		
Visibility Reducing Particles[14]	8 Hour	See footnote 13	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

See footnotes on next page ...

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Table 1 (continued)

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.

8. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

9. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM10 standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

10. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

11. On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

    Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

12. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

13. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

14. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

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Table 2
Health Effects of Major Criteria Pollutants

Pollutants	Sources	Primary Effects
Carbon Monoxide (CO)	• Incomplete combustion of fuels and other carbon-containing substances, such as motor exhaust. • Natural events, such as decomposition of organic matter.	• Reduced tolerance for exercise. • Impairment of mental function. • Impairment of fetal development. • Death at high levels of exposure. • Aggravation of some heart diseases (angina).
Nitrogen Dioxide (NO_2)	• Motor vehicle exhaust. • High temperature stationary combustion. • Atmospheric reactions.	• Aggravation of respiratory illness. • Reduced visibility. • Reduced plant growth. • Formation of acid rain.
Ozone (O_3)	• Atmospheric reaction of organic gases with nitrogen oxides in sunlight.	• Aggravation of respiratory and cardiovascular diseases. • Irritation of eyes. • Impairment of cardiopulmonary function. • Plant leaf injury.
Lead (Pb)	• Contaminated soil.	• Impairment of blood function and nerve construction. • Behavioral and hearing problems in children.
Fine Particulate Matter (PM-10)	• Stationary combustion of solid fuels. • Construction activities. • Industrial processes. • Atmospheric chemical reactions.	• Reduced lung function. • Aggravation of the effects of gaseous pollutants. • Aggravation of respiratory and cardio respiratory diseases. • Increased cough and chest discomfort. • Soiling. • Reduced visibility.
Fine Particulate Matter (PM-2.5)	• Fuel combustion in motor vehicles, equipment, and industrial sources. • Residential and agricultural burning. • Industrial processes. • Also, formed from photochemical reactions of other pollutants, including NOx, sulfur oxides, and organics.	• Increases respiratory disease. • Lung damage. • Cancer and premature death. • Reduces visibility and results in surface soiling.
Sulfur Dioxide (SO_2)	• Combustion of sulfur-containing fossil fuels. • Smelting of sulfur-bearing metal ores. • Industrial processes.	• Aggravation of respiratory diseases (asthma, emphysema). • Reduced lung function. • Irritation of eyes. • Reduced visibility. • Plant injury. • Deterioration of metals, textiles, leather, finishes, coatings, etc.

Source: California Air Resources Board, 2002.

Evaluation of the most current data on the health effects of inhalation of fine particulate matter prompted the California Air Resources Board (ARB) to recommend adoption of the statewide PM-2.5 standard that is more stringent than the federal standard. This standard was adopted in 2002. The State PM-2.5 standard is more of a goal in that it does not have specific attainment planning requirements like a federal clean air standard, but only requires continued progress towards attainment.

Similarly, the ARB extensively evaluated health effects of ozone exposure. A new state standard for an 8-hour ozone exposure was adopted in 2005, which aligned with the exposure period for the federal 8-hour standard. The California 8-hour ozone standard of 0.07 ppm is more stringent than the federal 8-hour standard of 0.075 ppm. The state standard, however, does not have a specific attainment deadline. California air quality jurisdictions are required to make steady progress towards attaining state standards, but there are no hard deadlines or any consequences of non-attainment. During the same re-evaluation process, the ARB adopted an annual state standard for nitrogen dioxide (NO_2) that is more stringent than the corresponding federal standard, and strengthened the state one-hour NO_2 standard.

As part of EPA's 2002 consent decree on clean air standards, a further review of airborne particulate matter (PM) and human health was initiated. A substantial modification of federal clean air standards for PM was promulgated in 2006. Standards for PM-2.5 were strengthened, a new class of PM in the 2.5 to 10 micron size was created, some PM-10 standards were revoked, and a distinction between rural and urban air quality was adopted. In December, 2012, the federal annual standard for PM-2.5 was reduced from 15 $\mu g/m^3$ to 12 $\mu g/m^3$ which matches the California AAQS. The severity of the basin's non-attainment status for PM-2.5 may be increased by this action and thus require accelerated planning for future PM-2.5 attainment.

In response to continuing evidence that ozone exposure at levels just meeting federal clean air standards is demonstrably unhealthful, EPA had proposed a further strengthening of the 8-hour standard. A new 8-hour ozone standard was adopted in 2015 after extensive analysis and public input. The adopted national 8-hour ozone standard is 0.07 ppm which matches the current California standard. It will require three years of ambient data collection, then 2 years of non-attainment findings and planning protocol adoption, then several years of plan development and approval. Final air quality plans for the new standard are likely to be adopted around 2022. Ultimate attainment of the new standard in ozone problem areas such as Southern California might be after 2025.

In 2010 a new federal one-hour primary standard for nitrogen dioxide (NO_2) was adopted. This standard is more stringent than the existing state standard. Based upon air quality monitoring data in the South Coast Air Basin, the California Air Resources Board has requested the EPA to designate the basin as being in attainment for this standard. The federal standard for sulfur dioxide (SO_2) was also recently revised. However, with minimal combustion of coal and mandatory use of low sulfur fuels in California, SO_2 is typically not a problem pollutant.

BASELINE AIR QUALITY

Existing and probable future levels of air quality around the project area can best be best inferred from ambient air quality measurements conducted by the SCAQMD at the Anaheim monitoring station. This station measures both regional pollution levels such as smog, as well as primary vehicular pollution levels near busy roadways such as carbon monoxide and nitrogen oxides. Pollutants such as particulates (PM-10 and PM-2.5) are also monitored at Anaheim. Table 3 is a 6-year summary of monitoring data for the major air pollutants compiled from this air monitoring station. From this data the following conclusions regarding air quality trends can be drawn:

a. Photochemical smog (ozone) levels occasionally exceed standards. All state and federal ozone standards have been exceeded 1 percent or less of all days in the past six years. Measurements from more recent years demonstrate progressively improved ozone levels in the area except perhaps for some temporary "backsliding" in 2004. While ozone levels are still occasionally elevated, they are much lower than 10 to 20 years ago.

b. Respirable dust (PM-10) levels occasionally exceed the state standard on approximately two percent of measured days. The less stringent federal PM-10 standard has not been exceeded in the last six years.

c. The federal ultra-fine particulate (PM-2.5) standard of 35 $\mu g/m^3$ has been exceeded on less than one percent of measurement days in the last six years.

d. More localized pollutants such as carbon monoxide, nitrogen oxides, etc. are very low near the project site. There is substantial excess dispersive capacity to accommodate localized vehicular air pollutants such as NOx or CO without any threat of violating applicable AAQS. Data from a recent "near roadway" monitoring study directly along the I-5 shoulder (<50 feet) in Anaheim showed noticeably elevated levels of NOx and CO, but even at this close distance federal clean air standards were not exceeded.

Although complete attainment of every clean air standard is not yet imminent, extrapolation of the steady improvement trend suggests that such attainment could occur within the reasonably near future.

Table 3
Air Quality Monitoring Summary (2009-2014)
(Number of Days Standards Were Exceeded, and
Maximum Levels During Such Violations)
(Entries shown as ratios = samples exceeding standard/samples taken)

Pollutant/Standard	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Ozone						
1-Hour > 0.09 ppm (S)	0	1	0	0	0	2
8-Hour > 0.07 ppm (S)	2	1	1	0	0	6
8- Hour > 0.075 ppm (F)	1	1	0	0	0	4
Max. 1-Hour Conc. (ppm)	0.093	0.104	0.088	0.079	0.084	0.111
Max. 8-Hour Conc. (ppm)	0.077	0.088	0.072	0.067	0.070	0.081
Carbon Monoxide						
8- Hour > 9. ppm (S,F)	0	0	0	0	0	0
Max 8-hour Conc. (ppm)	2.7	2.0	2.1	2.3	2.6	2.1
Nitrogen Dioxide						
1-Hour > 0.18 ppm (S)	0	0	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.068	0.073	0.074	0.067	0.082	0.076
Inhalable Particulates (PM-10)						
24-hour > 50 $\mu g/m^3$ (S)	1/56	0/57	2/57	0/61	1/59	2/61
24-hour > 150 $\mu g/m^3$ (F)	0/56	0/57	0/57	0/61	0/59	0/61
Max. 24-Hr. Conc. ($\mu g/m^3$)	62.	43.	53.	48.	77.	85.
Ultra-Fine Particulates (PM-2.5)						
24-Hour > 35 $\mu g/m^3$ (F)	4/334	0/331	2/352	4/347	1/331	6/xx
Max. 24-Hr. Conc. ($\mu g/m^3$)	64.5	31.7	39.2	50.1	37.8	56.2

xx data not yet available

Source: South Coast AQMD Air Monitoring Station Data Summary, Anaheim Station (3176)

AIR QUALITY PLANNING

The Federal Clean Air Act (1977 Amendments) required that designated agencies in any area of the nation not meeting national clean air standards must prepare a plan demonstrating the steps that would bring the area into compliance with all national standards. The SCAB could not meet the deadlines for ozone, nitrogen dioxide, carbon monoxide, or PM-10. In the SCAB, the agencies designated by the governor to develop regional air quality plans are the SCAQMD and the Southern California Association of Governments (SCAG). The two agencies first adopted an Air Quality Management Plan (AQMP) in 1979 and revised it several times as earlier attainment forecasts were shown to be overly optimistic.

The 1990 Federal Clean Air Act Amendment (CAAA) required that all states with air-sheds with "serious" or worse ozone problems submit a revision to the State Implementation Plan (SIP). Amendments to the SIP have been proposed, revised and approved over the past decade. The most current regional attainment emissions forecast for ozone precursors (ROG and NOx) and for carbon monoxide (CO) and for particulate matter are shown in Table 4. Substantial reductions in emissions of ROG, NOx and CO are forecast to continue throughout the next several decades. Unless new particulate control programs are implemented, PM-10 and PM-2.5 are forecast to slightly increase.

The Air Quality Management District (AQMD) adopted an updated clean air "blueprint" in August 2003. The 2003 Air Quality Management Plan (AQMP) was approved by the EPA in 2004. The AQMP outlined the air pollution measures needed to meet federal health-based standards for ozone by 2010 and for particulates (PM-10) by 2006. The 2003 AQMP was based upon the federal one-hour ozone standard which was revoked late in 2005 and replaced by an 8-hour federal standard. Because of the revocation of the hourly standard, a new air quality planning cycle was initiated.

With re-designation of the air basin as non-attainment for the 8-hour ozone standard, a new attainment plan was developed. This plan shifted most of the one-hour ozone standard attainment strategies to the 8-hour standard. As previously noted, the attainment date was to "slip" from 2010 to 2021. The updated attainment plan also includes strategies for ultimately meeting the federal PM-2.5 standard.

Because projected attainment by 2021 requires control technologies that do not exist yet, the SCAQMD requested a voluntary "bump-up" from a "severe non-attainment" area to an "extreme non-attainment" designation for ozone. The extreme designation will allow a longer time period for these technologies to develop. If attainment cannot be demonstrated within the specified deadline without relying on "black-box" measures, EPA would have been required to impose sanctions on the region had the bump-up request not been approved. In April 2010, the EPA approved the change in the non-attainment designation from "severe-17" to "extreme." This reclassification sets a later attainment deadline (2024), but also requires the air basin to adopt even more stringent emissions controls.

Table 4

South Coast Air Basin Emissions Forecasts (Emissions in tons/day)

Pollutant	2012[a]	2015[b]	2020[b]	2025[b]	2030
NOx	512	451	357	289	266
VOC	466	429	400	393	393
PM-10	154	155	161	165	170
PM-2.5	68	67	67	68	170

[a]2012 Base Year.
[b]With current emissions reduction programs and adopted growth forecasts.
Source: California Air Resources Board, 2013 Almanac of CEPAM

In other air quality attainment plan reviews, EPA has disapproved part of the SCAB PM-2.5 attainment plan included in the AQMP. EPA has stated that the current attainment plan relies on PM-2.5 control regulations that have not yet been approved or implemented. It is expected that a number of rules that are pending approval will remove the identified deficiencies. If these issues are not resolved within the next several years, federal funding sanctions for transportation projects could result. The 2012 AQMP included in the ARB submittal to EPA as part of the California State Implementation Plan (SIP) is expected to remedy identified PM-2.5 planning deficiencies.

The federal Clean Air Act requires that non-attainment air basins have EPA approved attainment plans in place. This requirement includes the federal one-hour ozone standard even though that standard was revoked almost ten years ago. There was no approved attainment plan for the one-hour federal standard at the time of revocation. Through a legal quirk, the SCAQMD is now required to develop an AQMP for the long since revoked one-hour federal ozone standard. Because the 2012 AQMP contains a number of control measures for the 8-hour ozone standard that are equally effective for one-hour levels, the 2012 AQMP is believed to satisfy hourly attainment planning requirements.

AQMPs are required to be updated every three years. The 2012 AQMP was adopted in early 2013. An updated AQMP must therefore be adopted in 2016. Planning for the 2016 AQMP is currently on-going. The current attainment deadlines for all federal non-attainment pollutants are now as follows:

8-hour ozone (70 ppb)	2032
Annual PM-2.5 (12 $\mu g/m^3$)	2025
8-hour ozone (75 ppb)	2024 (old standard)
1-hour ozone (120 ppb)	2023 (rescinded standard)
24-hour PM-2.5 (35 $\mu g/m^3$)	2019

The key challenge is that NOx emission levels, as a critical ozone precursor pollutant, are forecast to continue to exceed the levels that would allow the above deadlines to be met. Unless additional NOx control measures are adopted and implemented, attainment goals may not be met.

The proposed project does not directly relate to the AQMP in that there are no specific air quality programs or regulations governing residential projects. Conformity with adopted plans, forecasts and programs relative to population, housing, employment and land use is the primary yardstick by which impact significance of planned growth is determined. The SCAQMD, however, while acknowledging that the AQMP is a growth-accommodating document, does not favor designating regional impacts as less-than-significant just because the proposed development is consistent with regional growth projections. Air quality impact significance for the proposed project has therefore been analyzed on a project-specific basis.

AIR QUALITY IMPACT

STANDARDS OF SIGNIFICANCE

Air quality impacts are considered "significant" if they cause clean air standards to be violated where they are currently met, or if they "substantially" contribute to an existing violation of standards. Any substantial emissions of air contaminants for which there is no safe exposure, or nuisance emissions such as dust or odors, would also be considered a significant impact.

Appendix G of the California CEQA Guidelines offers the following five tests of air quality impact significance. A project would have a potentially significant impact if it:

a. Conflicts with or obstructs implementation of the applicable air quality plan.

b. Violates any air quality standard or contributes substantially to an existing or projected air quality violation.

c. Results in a cumulatively considerable net increase of any criteria pollutants 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. Exposes sensitive receptors to substantial pollutant concentrations.

e. Creates objectionable odors affecting a substantial number of people.

Primary Pollutants

Air quality impacts generally occur on two scales of motion. Near an individual source of emissions or a collection of sources such as a crowded intersection or parking lot, levels of those pollutants that are emitted in their already unhealthful form will be highest. Carbon monoxide (CO) is an example of such a pollutant. Primary pollutant impacts can generally be evaluated directly in comparison to appropriate clean air standards. Violations of these standards where they are currently met, or a measurable worsening of an existing or future violation, would be considered a significant impact. Many particulates, especially fugitive dust emissions, are also primary pollutants. Because of the non-attainment status of the South Coast Air Basin (SCAB) for PM-10, an aggressive dust control program is required to control fugitive dust during project construction.

Secondary Pollutants

Many pollutants, however, require time to transform from a more benign form to a more unhealthful contaminant. Their impact occurs regionally far from the source. Their incremental regional impact is minute on an individual basis and cannot be quantified except through complex photochemical computer models. Analysis of significance of such emissions is based

upon a specified amount of emissions (pounds, tons, etc.) even though there is no way to translate those emissions directly into a corresponding ambient air quality impact.

Because of the chemical complexity of primary versus secondary pollutants, the SCAQMD has designated significant emissions levels as surrogates for evaluating regional air quality impact significance independent of chemical transformation processes. Projects with daily emissions that exceed any of the following emission thresholds are recommended by the SCAQMD to be considered significant under CEQA guidelines.

Table 5
Daily Emissions Thresholds

Pollutant	Construction	Operations
ROG	75	55
NOx	100	55
CO	550	550
PM-10	150	150
PM-2.5	55	55
SOx	150	150
Lead	3	3

Source: SCAQMD CEQA Air Quality Handbook, November, 1993 Rev.

Additional Indicators

In its CEQA Handbook, the SCAQMD also states that additional indicators should be used as screening criteria to determine the need for further analysis with respect to air quality. The additional indicators are as follows:

- Project could interfere with the attainment of the federal or state ambient air quality standards by either violating or contributing to an existing or projected air quality violation

- Project could result in population increases within the regional statistical area which would be in excess of that projected in the AQMP and in other than planned locations for the project's build-out year.

- Project could generate vehicle trips that cause a CO hot spot.

CONSTRUCTION ACTIVITY IMPACTS

CalEEMod was developed by the SCAQMD to provide a model by which to calculate both construction emissions and operational emissions from a variety of land use projects. It calculates both the daily maximum and annual average emissions for criteria pollutants as well as total or annual greenhouse gas (GHG) emissions.

Although exhaust emissions will result from on and off-site equipment, the exact types and numbers of equipment will vary among contractors such that such emissions cannot be quantified with certainty. Estimated construction emissions were modeled using CalEEMod2013.2.2 to identify maximum daily emissions for each pollutant during project construction.

The proposed project entails construction of 50 apartments. Construction was modeled in CalEEMod2013.2.2 using default construction equipment and schedule for a project of this size schedule as shown in Table 6.

Table 6

Construction Activity Equipment Fleet

Phase Name and Duration	Equipment
Demo (20 days) 2,000 sf	1 Concrete Saw
	1 Dozer
	3 Loader/Backhoes
Grading (4 days)	1 Grader
	1 Dozer
	1 Loader/Backhoe
Construction (200 days)	1 Crane
	1 Loader/Backhoe
	1 Forklift
	1 Gen Set
	3 Welder
Paving (10 days)	1 Paver
	1 Paving Equipment
	1 Loader/Backhoe
	1 Roller

Utilizing this indicated equipment fleet and durations shown in Table 6 the following worst case daily construction emissions are calculated by CalEEMod and are listed in Table 7.

Table 7
Construction Activity Emissions
Maximum Daily Emissions (pounds/day)

Maximal Construction Emissions	ROG	NOx	CO	SO_2	PM-10	PM-2.5
2017						
Unmitigated	39.5	26.7	21.6	0.0	6.1	3.5
Mitigated	39.5	26.7	21.6	0.0	3.4	2.1
SCAQMD Thresholds	75	100	550	150	150	55

Peak daily construction activity emissions are estimated to be below SCAQMD CEQA thresholds. The only mitigation measure modeled is as follows:

- Exposed surfaces will be watered two times per day during grading activities

Construction equipment exhaust contains carcinogenic compounds within the diesel exhaust particulates. The toxicity of diesel exhaust is evaluated relative to a 24-hour per day, 365 days per year, 70-year lifetime exposure. The SCAQMD does not generally require the analysis of construction-related diesel emissions relative to health risk due to the short period for which the majority of diesel exhaust would occur. Health risk analyses are typically assessed over a 9-, 30-, or 70-year timeframe and not over a relatively brief construction period due to the lack of health risk associated with such a brief exposure.

LOCALIZED SIGNIFICANCE THRESHOLDS

The SCAQMD has developed analysis parameters to evaluate ambient air quality on a local level in addition to the more regional emissions-based thresholds of significance. These analysis elements are called Localized Significance Thresholds (LSTs). LSTs were developed in response to Governing Board's Environmental Justice Enhancement Initiative 1-4 and the LST methodology was provisionally adopted in October 2003 and formally approved by SCAQMD's Mobile Source Committee in February 2005.

Use of an LST analysis for a project is optional. For the proposed project, the primary source of possible LST impact would be during construction. LSTs are applicable for a sensitive receptor where it is possible that an individual could remain for 24 hours such as a residence, hospital or convalescent facility.

LSTs are only applicable to the following criteria pollutants: oxides of nitrogen (NOx), carbon monoxide (CO), and particulate matter (PM-10 and PM-2.5). LSTs represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each source receptor area and distance to the

nearest sensitive receptor. LST screening tables are available for 25, 50, 100, 200 and 500 meter source-receptor distances. For this project the most stringent 25 meter distance was used to reflect adjacent residences.

The SCAQMD has issued guidance on applying CalEEMod to LSTs. LST pollutant screening level concentration data is currently published for 1, 2 and 5 acre sites for varying distances. Since CalEEMod calculates construction emissions based on the number of equipment hours and the maximum daily soil disturbance activity possible for each piece of equipment, the following tables should be used to determine the maximum daily disturbed-acreage for comparison to LSTs.

Table 8
Maximum Daily Disturbed Acreage per Equipment Type

Equipment Type	Acres/8-hr-day
Crawler Tractor	0.5
Graders	0.5
Rubber Tired Dozers	0.5
Scrapers	1.0

Based on this table, the proposed project will result in 1.0 disturbed daily acre during peak construction grading activity:

(1 dozer x 0.5 + 1 grader x 0.5 = 1.0 acre disturbed).

The following thresholds and emissions in Table 9 are therefore determined (pounds per day):

Table 9
LST and Project Emissions (pounds/day)

LST 1 acre/25 meters Central Orange County	CO	NOx	PM-10	PM-2.5
LST Thresholds	485	81	4	3
Max On-Site Emissions Unmitigated	21	27	6	4
Max On-Site Emissions Mitigated	21	27	3	2

CalEEMod Output in Appendix

LSTs were compared to the maximum daily construction activities. As seen above, emissions will meet the LST for construction thresholds with the application of the following mitigation measure:

- Exposed surfaces will be watered at least two times per day during grading activities

LST impacts are less-than-significant with the application of this mitigation measure.

OPERATIONAL IMPACTS

Operational emissions were calculated using CalEEMod2013.2.2 for an assumed project build-out year of 2017 as a target for full occupancy. The project would generate 333 daily trips using trip generation numbers provided by the project traffic consultant. In addition to mobile sources from vehicles, general development causes smaller amounts of "area source" air pollution to be generated from on-site energy consumption (primarily landscaping) and from off-site electrical generation (lighting). These sources represent a minimal percentage of the total project NOx and CO burdens, and a few percent other pollutants. The inclusion of such emissions adds negligibly to the total significant project-related emissions burden as shown in Table 10.

Table 10
Daily Operational Impacts

	Operational Emissions (lbs/day)					
Source	**ROG**	**NOx**	**CO**	**SO_2**	**PM-10**	**PM-2.5**
Area	14.4	0.4	29.3	0.0	3.8	3.8
Energy	0.0	0.1	0.1	0.0	0.0	0.0
Mobile	1.0	2.5	12.1	0.0	2.5	0.7
Total	**15.4**	**3.0**	**41.5**	**0.0**	**6.3**	**4.5**
SCAQMD Threshold	55	55	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No

Source: CalEEMod2013.2.2 Output in Appendix

As seen in Table 10, the project would not cause any operational emissions to exceed their respective SCAQMD CEQA significance thresholds. Operational emission impacts are judged to be less than significant. No impact mitigation for operational activity emissions is considered necessary to support this finding.

FAST FOOD RESTAURANT PROXIMITY

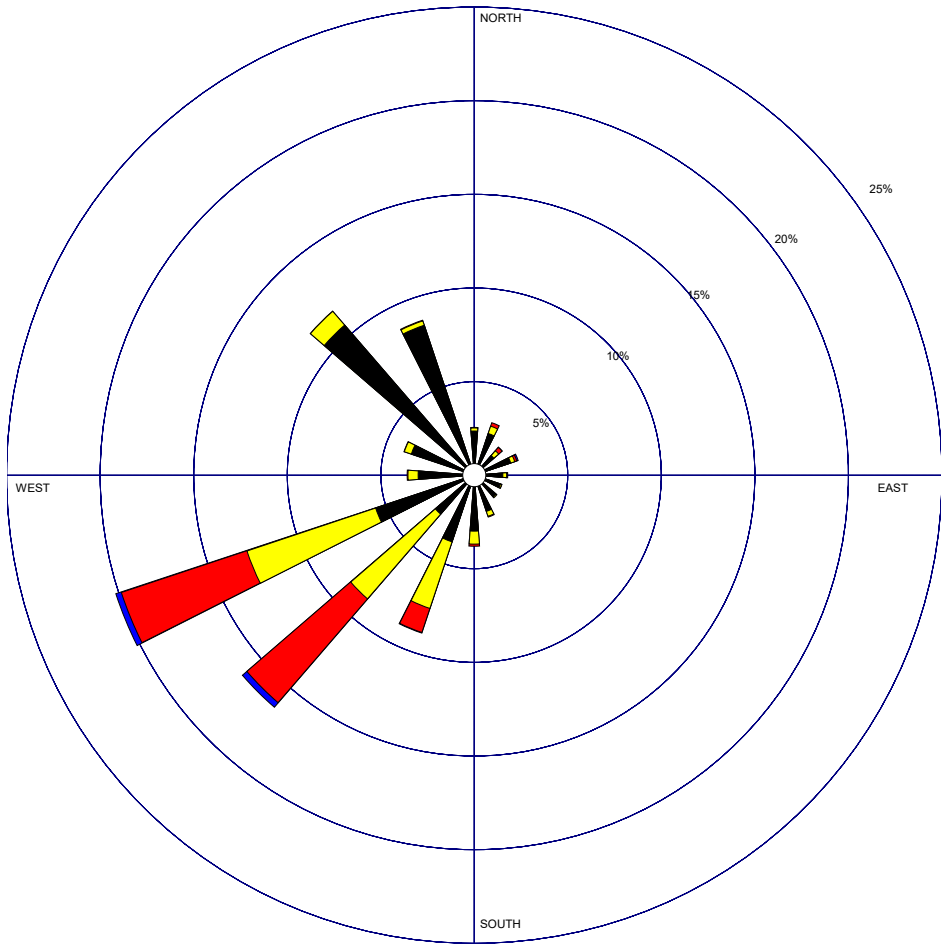
A McDonalds restaurant is located along the northern site boundary. A drive-through facility is located close to the project property line. Idling vehicles may sit in the drive-through waiting to move forward. Modern cars, however, are so "clean" that it requires thousands of cars per hour to create a measurably air pollution impact. Impacts of adjacent idling vehicles will be negligible.

Restaurants may have exhaust emissions from grills, broilers, deep-fat fryers, etc. that could be perceived as an odor nuisance. McDonalds in particular produces a noticeable odor from its fryers when some of the cooking oil blend (mainly canola) is volatilized. The odor is not typically considered unpleasant. However, continuous 24/7 exposure as the odor permeates and clings to carpet, drapes, soft surface furniture, etc. could be annoying. Fortunately, over 90 percent of prevailing winds are from the proposed apartments toward McDonalds and not the other way around. Figure 1 shows the wind direction frequency at the nearest SCAQMD weather station (Los Alamitos) from almost 45 years or recorded observations. Winds are predominately from the S-SW, with a secondary node from the W-NW. The frequency of winds from the N-NE which might carry cooking odors from the restaurant exhaust vents toward the proposed project sit is almost zero. The adjacency of McDonalds is not considered an odor nuisance impediment because of the favorable wind patterns.

Figure 1
Los Alamitos, SCAQMD

WIND ROSE PLOT

Station #53127 - , 1981



Wind Speed (m/s)

- > 11.06
- 8.49 - 11.06
- 5.40 - 8.49
- 3.34 - 5.40
- 1.80 - 3.34
- 0.51 - 1.80

MODELER	DATE	COMPANY NAME
	5/29/2003	
DISPLAY **Wind Speed**	UNIT **m/s**	COMMENTS
AVG. WIND SPEED **2.18 m/s**	CALM WINDS **5.71%**	
ORIENTATION **Direction (blowing from)**	PLOT YEAR-DATE-TIME **1981** **Jan 1 - Dec 31** **Midnight - 11 PM**	PROJECT/PLOT NO. **1981**

WRPLOT View 3.5 by Lakes Environmental Software - www.lakes-environmental.com

CONSTRUCTION EMISSIONS MINIMIZATION

Construction activities are not anticipated to cause dust emissions to exceed SCAQMD CEQA thresholds. Nevertheless, emissions minimization through enhanced dust control measures is recommended for use because of the non-attainment status of the air basin and proximity to existing residential uses. Recommended measures include:

Fugitive Dust Control

- Apply soil stabilizers or moisten inactive areas.
- Prepare a high wind dust control plan.
- Address previously disturbed areas if subsequent construction is delayed.
- Water exposed surfaces as needed to avoid visible dust leaving the construction site (typically 2-3 times/day).
- Cover all stock piles with tarps at the end of each day or as needed.
- Provide water spray during loading and unloading of earthen materials.
- Minimize in-out traffic from construction zone
- Cover all trucks hauling dirt, sand, or loose material and require all trucks to maintain at least two feet of freeboard
- Sweep streets daily if visible soil material is carried out from the construction site

Similarly, ozone precursor emissions (ROG and NOx) are calculated to be below SCAQMD CEQA thresholds. However, because of the regional non-attainment for photochemical smog, the use of reasonably available control measures for diesel exhaust is recommended. Combustion emissions control options include:

Exhaust Emissions Control

- Utilize well-tuned off-road construction equipment.
- Establish a preference for contractors using Tier 3 or better heavy equipment.
- Enforce 5-minute idling limits for both on-road trucks and off-road equipment.

GREENHOUSE GAS EMISSIONS

"Greenhouse gases" (so called because of their role in trapping heat near the surface of the earth) emitted by human activity are implicated in global climate change, commonly referred to as "global warming." These greenhouse gases contribute to an increase in the temperature of the earth's atmosphere by transparency to short wavelength visible sunlight, but near opacity to outgoing terrestrial long wavelength heat radiation in some parts of the infrared spectrum. The principal greenhouse gases (GHGs) are carbon dioxide, methane, nitrous oxide, ozone, and water vapor. For purposes of planning and regulation, Section 15364.5 of the California Code of Regulations defines GHGs to include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride. Fossil fuel consumption in the transportation sector (on-road motor vehicles, off-highway mobile sources, and aircraft) is the single largest source of GHG emissions, accounting for approximately half of GHG emissions globally. Industrial and commercial sources are the second largest contributors of GHG emissions with about one-fourth of total emissions.

California has passed several bills and the Governor has signed at least three executive orders regarding greenhouse gases. GHG statues and executive orders (EO) include AB 32, SB 1368, EO S-03-05, EO S-20-06 and EO S-01-07.

AB 32 is one of the most significant pieces of environmental legislation that California has adopted. Among other things, it is designed to maintain California's reputation as a "national and international leader on energy conservation and environmental stewardship." It will have wide-ranging effects on California businesses and lifestyles as well as far reaching effects on other states and countries. A unique aspect of AB 32, beyond its broad and wide-ranging mandatory provisions and dramatic GHG reductions are the short time frames within which it must be implemented. Major components of the AB 32 include:

- Require the monitoring and reporting of GHG emissions beginning with sources or categories of sources that contribute the most to statewide emissions.
- Requires immediate "early action" control programs on the most readily controlled GHG sources.
- Mandates that by 2020, California's GHG emissions be reduced to 1990 levels.
- Forces an overall reduction of GHG gases in California by 25-40%, from business as usual, to be achieved by 2020.
- Must complement efforts to achieve and maintain federal and state ambient air quality standards and to reduce toxic air contaminants.

Statewide, the framework for developing the implementing regulations for AB 32 is under way. Maximum GHG reductions are expected to derive from increased vehicle fuel efficiency, from greater use of renewable energy and from increased structural energy efficiency. Additionally, through the California Climate Action Registry (CCAR now called the Climate Action Reserve), general and industry-specific protocols for assessing and reporting GHG emissions have been

developed. GHG sources are categorized into direct sources (i.e. company owned) and indirect sources (i.e. not company owned). Direct sources include combustion emissions from on-and off-road mobile sources, and fugitive emissions. Indirect sources include off-site electricity generation and non-company owned mobile sources.

THRESHOLDS OF SIGNIFICANCE

In response to the requirements of SB97, the State Resources Agency developed guidelines for the treatment of GHG emissions under CEQA. These new guidelines became state laws as part of Title 14 of the California Code of Regulations in March, 2010. The CEQA Appendix G guidelines were modified to include GHG as a required analysis element. A project would have a potentially significant impact if it:

- Generates GHG emissions, directly or indirectly, that may have a significant impact on the environment, or,

- Conflicts with an applicable plan, policy or regulation adopted to reduce GHG emissions.

Section 15064.4 of the Code specifies how significance of GHG emissions is to be evaluated. The process is broken down into quantification of project-related GHG emissions, making a determination of significance, and specification of any appropriate mitigation if impacts are found to be potentially significant. At each of these steps, the new GHG guidelines afford the lead agency with substantial flexibility.

Emissions identification may be quantitative, qualitative or based on performance standards. CEQA guidelines allow the lead agency to "select the model or methodology it considers most appropriate." The most common practice for transportation/combustion GHG emissions quantification is to use a computer model such as CalEEMod, as was used in the ensuing analysis.

The significance of those emissions then must be evaluated; the selection of a threshold of significance must take into consideration what level of GHG emissions would be cumulatively considerable. The guidelines are clear that they do not support a zero net emissions threshold. If the lead agency does not have sufficient expertise in evaluating GHG impacts, it may rely on thresholds adopted by an agency with greater expertise.

On December 5, 2008 the SCAQMD Governing Board adopted an Interim quantitative GHG Significance Threshold for industrial projects where the SCAQMD is the lead agency (e.g., stationary source permit projects, rules, plans, etc.) of 10,000 Metric Tons (MT) CO_2 equivalent/year. In September 2010, the SCAQMD CEQA Significance Thresholds GHG Working Group released revisions which recommended a threshold of 3,500 MT CO_2e for residential use projects. This 3,500 MT/year recommendation has been used as a guideline for this analysis. In the absence of an adopted numerical threshold of significance, project related GHG emissions in excess of the guideline level are presumed to trigger a requirement for enhanced GHG reduction at the project level.

PROJECT RELATED GHG EMISSIONS GENERATION

Construction Activity GHG Emissions

The project is assumed to be built in approximately one year. During project construction, the CalEEMod2013.2.2 computer model predicts that the construction activities will generate the annual CO_2e emissions identified in Table 11.

Table 11
Construction Emissions (Metric Tons CO_2e)

	CO_2e
Year 2017	264.4
Amortized	**8.8**

CalEEMod Output provided in appendix

SCAQMD GHG emissions policy from construction activities is to amortize emissions over a 30-year lifetime. The amortized level is also provided. GHG impacts from construction are considered individually less-than-significant.

Project Operational GHG Emissions

The input assumptions for operational GHG emissions calculations, and the GHG conversion from consumption to annual regional CO_2e emissions are summarized in the CalEEMod2013.2.2 output files found in the appendix of this report.

The total operational and annualized construction emissions for the proposed project are identified in Table 12.

Table 12
Proposed Uses Operational Emissions

Consumption Source	MT CO_2e
Area Sources	16.8
Energy Utilization	81.3
Mobile Source	449.6
Solid Waste Generation	10.5
Water Consumption	22.8
Construction	8.8
Total	**589.7**
Guideline Threshold	3,500
Exceeds Threshold?	No

Total project GHG emissions are substantially below the proposed significance threshold of 3,500 MT suggested by the SCAQMD. Hence, the project will not result in generation of a significant level of greenhouse gases.

CONSISTENCY WITH GHG PLANS, PROGRAMS AND POLICIES

The City of Westminster has not yet developed a Greenhouse Gas Reduction Plan. The applicable GHG planning document is AB-32. As discussed above, the project is not expected to result in a significant increase in GHG emissions. As a result, the project results in GHG emissions well below the recommended SCAQMD 3,500 ton threshold. Therefore, the project would not conflict with any applicable plan, policy, or regulation to reduce GHG emissions.

CALEEMOD2013.2.2 COMPUTER MODEL OUTPUT

- **DAILY EMISISONS**
- **ANNUAL EMISSIONS**

Greenfield Apts

Orange County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	50.00	Dwelling Unit	1.80	50,000.00	143

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	8			**Operational Year**	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - actual size lot

Construction Phase - Demo: 20 days, Grading: 4 days, Construction: 200 days, Paving: 10 days

Off-road Equipment - Demo: concrete saw, dozer, 3 backhoes

Off-road Equipment - Grading: grader, dozer, loader/backhoe

Off-road Equipment - Construction, crane, forklift, gen set, loader/backhoe, 3 welders

Off-road Equipment - Paving: mixer, paver, paving equipment, roller loader/backhoe

Demolition - 2000 sf demo

Vehicle Trips - used trip gen provided by traffic consultant 6.65 trips/unit

Construction Off-road Equipment Mitigation -

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	PhaseEndDate	2/2/2017	2/6/2017
tblConstructionPhase	PhaseStartDate	1/28/2017	2/1/2017
tblLandUse	LotAcreage	3.13	1.80
tblProjectCharacteristics	OperationalYear	2014	2017
tblVehicleTrips	ST_TR	7.16	6.65
tblVehicleTrips	SU_TR	6.07	6.65
tblVehicleTrips	WD_TR	6.59	6.65

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	39.4622	26.7521	21.6081	0.0279	5.0037	1.6089	6.0704	2.5493	1.5047	3.5307	0.0000	2,632.0728	2,632.0728	0.6302	0.0000	2,645.3067
Total	**39.4622**	**26.7521**	**21.6081**	**0.0279**	**5.0037**	**1.6089**	**6.0704**	**2.5493**	**1.5047**	**3.5307**	**0.0000**	**2,632.0728**	**2,632.0728**	**0.6302**	**0.0000**	**2,645.3067**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	39.4622	26.7521	21.6081	0.0279	2.3008	1.6089	3.3676	1.1602	1.5047	2.1416	0.0000	2,632.0728	2,632.0728	0.6302	0.0000	2,645.3067
Total	**39.4622**	**26.7521**	**21.6081**	**0.0279**	**2.3008**	**1.6089**	**3.3676**	**1.1602**	**1.5047**	**2.1416**	**0.0000**	**2,632.0728**	**2,632.0728**	**0.6302**	**0.0000**	**2,645.3067**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**54.02**	**0.00**	**44.52**	**54.49**	**0.00**	**39.34**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	14.3287	0.3810	29.2987	0.0402		3.8420	3.8420		3.8414	3.8414	468.3459	907.4276	1,375.7735	1.4042	0.0318	1,415.1150
Energy	0.0163	0.1391	0.0592	8.9000e-004		0.0112	0.0112		0.0112	0.0112		177.5401	177.5401	3.4000e-003	3.2500e-003	178.6205
Mobile	1.0259	2.5238	12.1154	0.0334	2.4006	0.0363	2.4368	0.6405	0.0334	0.6739		2,813.1052	2,813.1052	0.1060		2,815.3301
Total	**15.3708**	**3.0438**	**41.4733**	**0.0745**	**2.4006**	**3.8896**	**6.2901**	**0.6405**	**3.8861**	**4.5266**	**468.3459**	**3,898.0729**	**4,366.4188**	**1.5135**	**0.0350**	**4,409.0657**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.3142	0.0486	4.1714	2.2000e-004		0.0830	0.0830		0.0823	0.0823	0.0000	960.3688	960.3688	0.0257	0.0175	966.3248
Energy	0.0163	0.1391	0.0592	8.9000e-004		0.0112	0.0112		0.0112	0.0112		177.5401	177.5401	3.4000e-003	3.2500e-003	178.6205
Mobile	1.0259	2.5238	12.1154	0.0334	2.4006	0.0363	2.4368	0.6405	0.0334	0.6739		2,813.1052	2,813.1052	0.1060		2,815.3301
Total	**2.3564**	**2.7114**	**16.3459**	**0.0346**	**2.4006**	**0.1305**	**2.5311**	**0.6405**	**0.1270**	**0.7675**	**0.0000**	**3,951.0140**	**3,951.0140**	**0.1351**	**0.0207**	**3,960.2755**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**84.67**	**10.92**	**60.59**	**53.64**	**0.00**	**96.65**	**59.76**	**0.00**	**96.73**	**83.04**	**100.00**	**-1.36**	**9.51**	**91.08**	**40.87**	**10.18**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2017	1/27/2017	5	20	
2	Grading	Grading	2/1/2017	2/6/2017	5	4	
3	Building Construction	Building Construction	2/7/2017	11/13/2017	5	200	
4	Paving	Paving	11/14/2017	11/27/2017	5	10	
5	Architectural Coating	Architectural Coating	11/28/2017	12/11/2017	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 101,250; Residential Outdoor: 33,750; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	6.00	226	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Paving	Pavers	1	6.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Rubber Tired Dozers	1	6.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	174	0.41
Paving	Paving Equipment	1	8.00	130	0.36
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	9.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	36.00	5.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	7.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0984	0.0000	0.0984	0.0149	0.0000	0.0149			0.0000			0.0000
Off-Road	2.7216	26.5855	20.8712	0.0245		1.6062	1.6062		1.5022	1.5022		2,457.4682	2,457.4682	0.6235		2,470.5620
Total	**2.7216**	**26.5855**	**20.8712**	**0.0245**	**0.0984**	**1.6062**	**1.7046**	**0.0149**	**1.5022**	**1.5171**		**2,457.4682**	**2,457.4682**	**0.6235**		**2,470.5620**

3.2 Demolition - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.7600e-003	0.1137	0.0859	3.3000e-004	7.8400e-003	1.7100e-003	9.5500e-003	2.1500e-003	1.5700e-003	3.7200e-003		32.8098	32.8098	2.3000e-004		32.8147
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0411	0.0529	0.6510	1.7600e-003	0.1453	9.9000e-004	0.1463	0.0385	9.2000e-004	0.0395		141.7948	141.7948	6.4400e-003		141.9300
Total	**0.0488**	**0.1666**	**0.7369**	**2.0900e-003**	**0.1532**	**2.7000e-003**	**0.1559**	**0.0407**	**2.4900e-003**	**0.0432**		**174.6046**	**174.6046**	**6.6700e-003**		**174.7447**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0443	0.0000	0.0443	6.7100e-003	0.0000	6.7100e-003			0.0000			0.0000
Off-Road	2.7216	26.5855	20.8712	0.0245		1.6062	1.6062		1.5022	1.5022	0.0000	2,457.4682	2,457.4682	0.6235		2,470.5620
Total	**2.7216**	**26.5855**	**20.8712**	**0.0245**	**0.0443**	**1.6062**	**1.6505**	**6.7100e-003**	**1.5022**	**1.5090**	**0.0000**	**2,457.4682**	**2,457.4682**	**0.6235**		**2,470.5620**

3.2 Demolition - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.7600e-003	0.1137	0.0859	3.3000e-004	7.8400e-003	1.7100e-003	9.5500e-003	2.1500e-003	1.5700e-003	3.7200e-003		32.8098	32.8098	2.3000e-004		32.8147
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0411	0.0529	0.6510	1.7600e-003	0.1453	9.9000e-004	0.1463	0.0385	9.2000e-004	0.0395		141.7948	141.7948	6.4400e-003		141.9300
Total	**0.0488**	**0.1666**	**0.7369**	**2.0900e-003**	**0.1532**	**2.7000e-003**	**0.1559**	**0.0407**	**2.4900e-003**	**0.0432**		**174.6046**	**174.6046**	**6.6700e-003**		**174.7447**

3.3 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.9143	0.0000	4.9143	2.5256	0.0000	2.5256			0.0000			0.0000
Off-Road	1.8844	19.7889	13.1786	0.0141		1.0661	1.0661		0.9808	0.9808		1,439.1894	1,439.1894	0.4410		1,448.4496
Total	**1.8844**	**19.7889**	**13.1786**	**0.0141**	**4.9143**	**1.0661**	**5.9804**	**2.5256**	**0.9808**	**3.5064**		**1,439.1894**	**1,439.1894**	**0.4410**		**1,448.4496**

3.3 Grading - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0253	0.0326	0.4006	1.0900e-003	0.0894	6.1000e-004	0.0900	0.0237	5.6000e-004	0.0243		87.2583	87.2583	3.9600e-003		87.3415
Total	**0.0253**	**0.0326**	**0.4006**	**1.0900e-003**	**0.0894**	**6.1000e-004**	**0.0900**	**0.0237**	**5.6000e-004**	**0.0243**		**87.2583**	**87.2583**	**3.9600e-003**		**87.3415**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.2114	0.0000	2.2114	1.1365	0.0000	1.1365			0.0000			0.0000
Off-Road	1.8844	19.7889	13.1786	0.0141		1.0661	1.0661		0.9808	0.9808	0.0000	1,439.1894	1,439.1894	0.4410		1,448.4496
Total	**1.8844**	**19.7889**	**13.1786**	**0.0141**	**2.2114**	**1.0661**	**3.2775**	**1.1365**	**0.9808**	**2.1174**	**0.0000**	**1,439.1894**	**1,439.1894**	**0.4410**		**1,448.4496**

3.3 Grading - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0253	0.0326	0.4006	1.0900e-003	0.0894	6.1000e-004	0.0900	0.0237	5.6000e-004	0.0243		87.2583	87.2583	3.9600e-003		87.3415
Total	**0.0253**	**0.0326**	**0.4006**	**1.0900e-003**	**0.0894**	**6.1000e-004**	**0.0900**	**0.0237**	**5.6000e-004**	**0.0243**		**87.2583**	**87.2583**	**3.9600e-003**		**87.3415**

3.4 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.9546	19.1088	14.3110	0.0220		1.2257	1.2257		1.1823	1.1823		2,034.2860	2,034.2860	0.4268		2,043.2497
Total	**2.9546**	**19.1088**	**14.3110**	**0.0220**		**1.2257**	**1.2257**		**1.1823**	**1.1823**		**2,034.2860**	**2,034.2860**	**0.4268**		**2,043.2497**

3.4 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0403	0.3935	0.4808	1.0800e-003	0.0313	6.1200e-003	0.0374	8.9000e-003	5.6300e-003	0.0145		106.6646	106.6646	7.5000e-004		106.6803
Worker	0.1137	0.1465	1.8027	4.8800e-003	0.4024	2.7500e-003	0.4051	0.1067	2.5400e-003	0.1093		392.6625	392.6625	0.0178		393.0368
Total	**0.1540**	**0.5400**	**2.2835**	**5.9600e-003**	**0.4337**	**8.8700e-003**	**0.4425**	**0.1156**	**8.1700e-003**	**0.1238**		**499.3271**	**499.3271**	**0.0186**		**499.7171**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.9546	19.1088	14.3110	0.0220		1.2257	1.2257		1.1823	1.1823	0.0000	2,034.2860	2,034.2860	0.4268		2,043.2497
Total	**2.9546**	**19.1088**	**14.3110**	**0.0220**		**1.2257**	**1.2257**		**1.1823**	**1.1823**	**0.0000**	**2,034.2860**	**2,034.2860**	**0.4268**		**2,043.2497**

3.4 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0403	0.3935	0.4808	1.0800e-003	0.0313	6.1200e-003	0.0374	8.9000e-003	5.6300e-003	0.0145		106.6646	106.6646	7.5000e-004		106.6803
Worker	0.1137	0.1465	1.8027	4.8800e-003	0.4024	2.7500e-003	0.4051	0.1067	2.5400e-003	0.1093		392.6625	392.6625	0.0178		393.0368
Total	**0.1540**	**0.5400**	**2.2835**	**5.9600e-003**	**0.4337**	**8.8700e-003**	**0.4425**	**0.1156**	**8.1700e-003**	**0.1238**		**499.3271**	**499.3271**	**0.0186**		**499.7171**

3.5 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1857	12.0981	9.0308	0.0133		0.7333	0.7333		0.6755	0.6755		1,347.6575	1,347.6575	0.4052		1,356.1677
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1857**	**12.0981**	**9.0308**	**0.0133**		**0.7333**	**0.7333**		**0.6755**	**0.6755**		**1,347.6575**	**1,347.6575**	**0.4052**		**1,356.1677**

3.5 Paving - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0411	0.0529	0.6510	1.7600e-003	0.1453	9.9000e-004	0.1463	0.0385	9.2000e-004	0.0395		141.7948	141.7948	6.4400e-003		141.9300
Total	**0.0411**	**0.0529**	**0.6510**	**1.7600e-003**	**0.1453**	**9.9000e-004**	**0.1463**	**0.0385**	**9.2000e-004**	**0.0395**		**141.7948**	**141.7948**	**6.4400e-003**		**141.9300**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1857	12.0981	9.0308	0.0133		0.7333	0.7333		0.6755	0.6755	0.0000	1,347.6575	1,347.6575	0.4052		1,356.1677
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1857**	**12.0981**	**9.0308**	**0.0133**		**0.7333**	**0.7333**		**0.6755**	**0.6755**	**0.0000**	**1,347.6575**	**1,347.6575**	**0.4052**		**1,356.1677**

3.5 Paving - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0411	0.0529	0.6510	1.7600e-003	0.1453	9.9000e-004	0.1463	0.0385	9.2000e-004	0.0395		141.7948	141.7948	6.4400e-003		141.9300
Total	**0.0411**	**0.0529**	**0.6510**	**1.7600e-003**	**0.1453**	**9.9000e-004**	**0.1463**	**0.0385**	**9.2000e-004**	**0.0395**		**141.7948**	**141.7948**	**6.4400e-003**		**141.9300**

3.6 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	39.1078					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721
Total	**39.4401**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**		**281.4481**	**281.4481**	**0.0297**		**282.0721**

3.6 Architectural Coating - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0221	0.0285	0.3505	9.5000e-004	0.0782	5.3000e-004	0.0788	0.0208	4.9000e-004	0.0212		76.3510	76.3510	3.4700e-003		76.4238
Total	**0.0221**	**0.0285**	**0.3505**	**9.5000e-004**	**0.0782**	**5.3000e-004**	**0.0788**	**0.0208**	**4.9000e-004**	**0.0212**		**76.3510**	**76.3510**	**3.4700e-003**		**76.4238**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	39.1078					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733	0.0000	281.4481	281.4481	0.0297		282.0721
Total	**39.4401**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**	**0.0000**	**281.4481**	**281.4481**	**0.0297**		**282.0721**

3.6 Architectural Coating - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0221	0.0285	0.3505	9.5000e-004	0.0782	5.3000e-004	0.0788	0.0208	4.9000e-004	0.0212		76.3510	76.3510	3.4700e-003		76.4238
Total	**0.0221**	**0.0285**	**0.3505**	**9.5000e-004**	**0.0782**	**5.3000e-004**	**0.0788**	**0.0208**	**4.9000e-004**	**0.0212**		**76.3510**	**76.3510**	**3.4700e-003**		**76.4238**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0259	2.5238	12.1154	0.0334	2.4006	0.0363	2.4368	0.6405	0.0334	0.6739		2,813.1052	2,813.1052	0.1060		2,815.3301
Unmitigated	1.0259	2.5238	12.1154	0.0334	2.4006	0.0363	2.4368	0.6405	0.0334	0.6739		2,813.1052	2,813.1052	0.1060		2,815.3301

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	332.50	332.50	332.50	1,136,203	1,136,203
Total	332.50	332.50	332.50	1,136,203	1,136,203

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.510449	0.057012	0.191854	0.151889	0.041459	0.005887	0.015572	0.014818	0.001440	0.002145	0.004716	0.000509	0.002251

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0163	0.1391	0.0592	8.9000e-004		0.0112	0.0112		0.0112	0.0112		177.5401	177.5401	3.4000e-003	3.2500e-003	178.6205
NaturalGas Unmitigated	0.0163	0.1391	0.0592	8.9000e-004		0.0112	0.0112		0.0112	0.0112		177.5401	177.5401	3.4000e-003	3.2500e-003	178.6205

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	1509.09	0.0163	0.1391	0.0592	8.9000e-004		0.0112	0.0112		0.0112	0.0112		177.5401	177.5401	3.4000e-003	3.2500e-003	178.6205
Total		**0.0163**	**0.1391**	**0.0592**	**8.9000e-004**		**0.0112**	**0.0112**		**0.0112**	**0.0112**		**177.5401**	**177.5401**	**3.4000e-003**	**3.2500e-003**	**178.6205**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	1.50909	0.0163	0.1391	0.0592	8.9000e-004		0.0112	0.0112		0.0112	0.0112		177.5401	177.5401	3.4000e-003	3.2500e-003	178.6205
Total		**0.0163**	**0.1391**	**0.0592**	**8.9000e-004**		**0.0112**	**0.0112**		**0.0112**	**0.0112**		**177.5401**	**177.5401**	**3.4000e-003**	**3.2500e-003**	**178.6205**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.3142	0.0486	4.1714	2.2000e-004		0.0830	0.0830		0.0823	0.0823	0.0000	960.3688	960.3688	0.0257	0.0175	966.3248
Unmitigated	14.3287	0.3810	29.2987	0.0402		3.8420	3.8420		3.8414	3.8414	468.3459	907.4276	1,375.7735	1.4042	0.0318	1,415.1150

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1071					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9900					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	13.1018	0.3324	25.1321	0.0400		3.8194	3.8194		3.8188	3.8188	468.3459	900.0000	1,368.3459	1.3967	0.0318	1,407.5309
Landscaping	0.1297	0.0486	4.1666	2.2000e-004		0.0226	0.0226		0.0226	0.0226		7.4276	7.4276	7.4500e-003		7.5842
Total	**14.3287**	**0.3810**	**29.2987**	**0.0402**		**3.8420**	**3.8420**		**3.8414**	**3.8414**	**468.3459**	**907.4276**	**1,375.7735**	**1.4042**	**0.0318**	**1,415.1150**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1071					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9900					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0874	0.0000	4.7600e-003	0.0000		0.0604	0.0604		0.0597	0.0597	0.0000	952.9412	952.9412	0.0183	0.0175	958.7406
Landscaping	0.1297	0.0486	4.1666	2.2000e-004		0.0226	0.0226		0.0226	0.0226		7.4276	7.4276	7.4500e-003		7.5842
Total	**1.3142**	**0.0486**	**4.1714**	**2.2000e-004**		**0.0830**	**0.0830**		**0.0823**	**0.0823**	**0.0000**	**960.3688**	**960.3688**	**0.0257**	**0.0175**	**966.3248**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Greenfield Apts

Orange County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	50.00	Dwelling Unit	1.80	50,000.00	143

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	8			**Operational Year**	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - actual size lot

Construction Phase - Demo: 20 days, Grading: 4 days, Construction: 200 days, Paving: 10 days

Off-road Equipment - Demo: concrete saw, dozer, 3 backhoes

Off-road Equipment - Grading: grader, dozer, loader/backhoe

Off-road Equipment - Construction, crane, forklift, gen set, loader/backhoe, 3 welders

Off-road Equipment - Paving: mixer, paver, paving equipment, roller loader/backhoe

Demolition - 2000 sf demo

Vehicle Trips - used trip gen provided by traffic consultant 6.65 trips/unit

Construction Off-road Equipment Mitigation -

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	PhaseEndDate	2/2/2017	2/6/2017
tblConstructionPhase	PhaseStartDate	1/28/2017	2/1/2017
tblLandUse	LotAcreage	3.13	1.80
tblProjectCharacteristics	OperationalYear	2014	2017
tblVehicleTrips	ST_TR	7.16	6.65
tblVehicleTrips	SU_TR	6.07	6.65
tblVehicleTrips	WD_TR	6.59	6.65

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.5459	2.3477	1.9622	3.1600e-003	0.0562	0.1462	0.2024	0.0173	0.1403	0.1576	0.0000	263.3652	263.3652	0.0490	0.0000	264.3932
Total	**0.5459**	**2.3477**	**1.9622**	**3.1600e-003**	**0.0562**	**0.1462**	**0.2024**	**0.0173**	**0.1403**	**0.1576**	**0.0000**	**263.3652**	**263.3652**	**0.0490**	**0.0000**	**264.3932**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.5459	2.3476	1.9622	3.1600e-003	0.0502	0.1462	0.1965	0.0145	0.1403	0.1548	0.0000	263.3650	263.3650	0.0490	0.0000	264.3929
Total	**0.5459**	**2.3476**	**1.9622**	**3.1600e-003**	**0.0502**	**0.1462**	**0.1965**	**0.0145**	**0.1403**	**0.1548**	**0.0000**	**263.3650**	**263.3650**	**0.0490**	**0.0000**	**264.3929**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**10.59**	**0.00**	**2.94**	**16.52**	**0.00**	**1.81**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3802	0.0102	0.8350	5.3000e-004		0.0506	0.0506		0.0506	0.0506	5.3110	11.0481	16.3591	0.0167	3.6000e-004	16.8212
Energy	2.9700e-003	0.0254	0.0108	1.6000e-004		2.0500e-003	2.0500e-003		2.0500e-003	2.0500e-003	0.0000	80.9168	80.9168	2.9300e-003	1.0300e-003	81.2973
Mobile	0.1863	0.4947	2.1937	5.8800e-003	0.4292	6.6000e-003	0.4358	0.1147	6.0800e-003	0.1208	0.0000	449.2114	449.2114	0.0175	0.0000	449.5784
Waste						0.0000	0.0000		0.0000	0.0000	4.6688	0.0000	4.6688	0.2759	0.0000	10.4631
Water						0.0000	0.0000		0.0000	0.0000	1.0335	18.6684	19.7019	0.1070	2.6800e-003	22.7811
Total	**0.5695**	**0.5303**	**3.0395**	**6.5700e-003**	**0.4292**	**0.0592**	**0.4884**	**0.1147**	**0.0587**	**0.1734**	**11.0133**	**559.8447**	**570.8579**	**0.4200**	**4.0700e-003**	**580.9411**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2175	6.0700e-003	0.5209	3.0000e-005		3.5800e-003	3.5800e-003		3.5700e-003	3.5700e-003	0.0000	11.6485	11.6485	1.0500e-003	2.0000e-004	11.7320
Energy	2.9700e-003	0.0254	0.0108	1.6000e-004		2.0500e-003	2.0500e-003		2.0500e-003	2.0500e-003	0.0000	80.9168	80.9168	2.9300e-003	1.0300e-003	81.2973
Mobile	0.1863	0.4947	2.1937	5.8800e-003	0.4292	6.6000e-003	0.4358	0.1147	6.0800e-003	0.1208	0.0000	449.2114	449.2114	0.0175	0.0000	449.5784
Waste						0.0000	0.0000		0.0000	0.0000	4.6688	0.0000	4.6688	0.2759	0.0000	10.4631
Water						0.0000	0.0000		0.0000	0.0000	1.0335	18.6684	19.7019	0.1070	2.6800e-003	22.7795
Total	**0.4069**	**0.5261**	**2.7254**	**6.0700e-003**	**0.4292**	**0.0122**	**0.4414**	**0.1147**	**0.0117**	**0.1264**	**5.7023**	**560.4450**	**566.1473**	**0.4044**	**3.9100e-003**	**575.8502**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**28.56**	**0.78**	**10.33**	**7.61**	**0.00**	**79.35**	**9.62**	**0.00**	**80.06**	**27.10**	**48.22**	**-0.11**	**0.83**	**3.73**	**3.93**	**0.88**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2017	1/27/2017	5	20	
2	Grading	Grading	2/1/2017	2/6/2017	5	4	
3	Building Construction	Building Construction	2/7/2017	11/13/2017	5	200	
4	Paving	Paving	11/14/2017	11/27/2017	5	10	
5	Architectural Coating	Architectural Coating	11/28/2017	12/11/2017	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 101,250; Residential Outdoor: 33,750; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	6.00	226	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Paving	Pavers	1	6.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Rubber Tired Dozers	1	6.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	174	0.41
Paving	Paving Equipment	1	8.00	130	0.36
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	9.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	36.00	5.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	7.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.8000e-004	0.0000	9.8000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0272	0.2659	0.2087	2.4000e-004		0.0161	0.0161		0.0150	0.0150	0.0000	22.2938	22.2938	5.6600e-003	0.0000	22.4126
Total	**0.0272**	**0.2659**	**0.2087**	**2.4000e-004**	**9.8000e-004**	**0.0161**	**0.0170**	**1.5000e-004**	**0.0150**	**0.0152**	**0.0000**	**22.2938**	**22.2938**	**5.6600e-003**	**0.0000**	**22.4126**

3.2 Demolition - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.0000e-005	1.2000e-003	9.6000e-004	0.0000	8.0000e-005	2.0000e-005	9.0000e-005	2.0000e-005	2.0000e-005	4.0000e-005	0.0000	0.2974	0.2974	0.0000	0.0000	0.2974
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	6.0000e-004	6.2400e-003	2.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.2366	1.2366	6.0000e-005	0.0000	1.2378
Total	**4.8000e-004**	**1.8000e-003**	**7.2000e-003**	**2.0000e-005**	**1.5100e-003**	**3.0000e-005**	**1.5300e-003**	**4.0000e-004**	**3.0000e-005**	**4.3000e-004**	**0.0000**	**1.5339**	**1.5339**	**6.0000e-005**	**0.0000**	**1.5352**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.4000e-004	0.0000	4.4000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0272	0.2659	0.2087	2.4000e-004		0.0161	0.0161		0.0150	0.0150	0.0000	22.2938	22.2938	5.6600e-003	0.0000	22.4125
Total	**0.0272**	**0.2659**	**0.2087**	**2.4000e-004**	**4.4000e-004**	**0.0161**	**0.0165**	**7.0000e-005**	**0.0150**	**0.0151**	**0.0000**	**22.2938**	**22.2938**	**5.6600e-003**	**0.0000**	**22.4125**

3.2 Demolition - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.0000e-005	1.2000e-003	9.6000e-004	0.0000	8.0000e-005	2.0000e-005	9.0000e-005	2.0000e-005	2.0000e-005	4.0000e-005	0.0000	0.2974	0.2974	0.0000	0.0000	0.2974
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	6.0000e-004	6.2400e-003	2.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.2366	1.2366	6.0000e-005	0.0000	1.2378
Total	**4.8000e-004**	**1.8000e-003**	**7.2000e-003**	**2.0000e-005**	**1.5100e-003**	**3.0000e-005**	**1.5300e-003**	**4.0000e-004**	**3.0000e-005**	**4.3000e-004**	**0.0000**	**1.5339**	**1.5339**	**6.0000e-005**	**0.0000**	**1.5352**

3.3 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.8300e-003	0.0000	9.8300e-003	5.0500e-003	0.0000	5.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7700e-003	0.0396	0.0264	3.0000e-005		2.1300e-003	2.1300e-003		1.9600e-003	1.9600e-003	0.0000	2.6112	2.6112	8.0000e-004	0.0000	2.6280
Total	**3.7700e-003**	**0.0396**	**0.0264**	**3.0000e-005**	**9.8300e-003**	**2.1300e-003**	**0.0120**	**5.0500e-003**	**1.9600e-003**	**7.0100e-003**	**0.0000**	**2.6112**	**2.6112**	**8.0000e-004**	**0.0000**	**2.6280**

3.3 Grading - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	7.0000e-005	7.7000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1522	0.1522	1.0000e-005	0.0000	0.1524
Total	**5.0000e-005**	**7.0000e-005**	**7.7000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1522**	**0.1522**	**1.0000e-005**	**0.0000**	**0.1524**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.4200e-003	0.0000	4.4200e-003	2.2700e-003	0.0000	2.2700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7700e-003	0.0396	0.0264	3.0000e-005		2.1300e-003	2.1300e-003		1.9600e-003	1.9600e-003	0.0000	2.6112	2.6112	8.0000e-004	0.0000	2.6280
Total	**3.7700e-003**	**0.0396**	**0.0264**	**3.0000e-005**	**4.4200e-003**	**2.1300e-003**	**6.5500e-003**	**2.2700e-003**	**1.9600e-003**	**4.2300e-003**	**0.0000**	**2.6112**	**2.6112**	**8.0000e-004**	**0.0000**	**2.6280**

3.3 Grading - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	7.0000e-005	7.7000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1522	0.1522	1.0000e-005	0.0000	0.1524
Total	**5.0000e-005**	**7.0000e-005**	**7.7000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1522**	**0.1522**	**1.0000e-005**	**0.0000**	**0.1524**

3.4 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2955	1.9109	1.4311	2.2000e-003		0.1226	0.1226		0.1182	0.1182	0.0000	184.5473	184.5473	0.0387	0.0000	185.3605
Total	**0.2955**	**1.9109**	**1.4311**	**2.2000e-003**		**0.1226**	**0.1226**		**0.1182**	**0.1182**	**0.0000**	**184.5473**	**184.5473**	**0.0387**	**0.0000**	**185.3605**

3.4 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.3000e-003	0.0410	0.0558	1.1000e-004	3.0800e-003	6.1000e-004	3.6900e-003	8.8000e-004	5.7000e-004	1.4400e-003	0.0000	9.6421	9.6421	7.0000e-005	0.0000	9.6435
Worker	0.0112	0.0165	0.1729	4.7000e-004	0.0395	2.7000e-004	0.0398	0.0105	2.5000e-004	0.0108	0.0000	34.2440	34.2440	1.6200e-003	0.0000	34.2779
Total	**0.0155**	**0.0576**	**0.2287**	**5.8000e-004**	**0.0426**	**8.8000e-004**	**0.0435**	**0.0114**	**8.2000e-004**	**0.0122**	**0.0000**	**43.8861**	**43.8861**	**1.6900e-003**	**0.0000**	**43.9215**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2955	1.9109	1.4311	2.2000e-003		0.1226	0.1226		0.1182	0.1182	0.0000	184.5471	184.5471	0.0387	0.0000	185.3603
Total	**0.2955**	**1.9109**	**1.4311**	**2.2000e-003**		**0.1226**	**0.1226**		**0.1182**	**0.1182**	**0.0000**	**184.5471**	**184.5471**	**0.0387**	**0.0000**	**185.3603**

3.4 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.3000e-003	0.0410	0.0558	1.1000e-004	3.0800e-003	6.1000e-004	3.6900e-003	8.8000e-004	5.7000e-004	1.4400e-003	0.0000	9.6421	9.6421	7.0000e-005	0.0000	9.6435
Worker	0.0112	0.0165	0.1729	4.7000e-004	0.0395	2.7000e-004	0.0398	0.0105	2.5000e-004	0.0108	0.0000	34.2440	34.2440	1.6200e-003	0.0000	34.2779
Total	**0.0155**	**0.0576**	**0.2287**	**5.8000e-004**	**0.0426**	**8.8000e-004**	**0.0435**	**0.0114**	**8.2000e-004**	**0.0122**	**0.0000**	**43.8861**	**43.8861**	**1.6900e-003**	**0.0000**	**43.9215**

3.5 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.9300e-003	0.0605	0.0452	7.0000e-005		3.6700e-003	3.6700e-003		3.3800e-003	3.3800e-003	0.0000	6.1129	6.1129	1.8400e-003	0.0000	6.1515
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.9300e-003**	**0.0605**	**0.0452**	**7.0000e-005**		**3.6700e-003**	**3.6700e-003**		**3.3800e-003**	**3.3800e-003**	**0.0000**	**6.1129**	**6.1129**	**1.8400e-003**	**0.0000**	**6.1515**

3.5 Paving - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	3.0000e-004	3.1200e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6183	0.6183	3.0000e-005	0.0000	0.6189
Total	**2.0000e-004**	**3.0000e-004**	**3.1200e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6183**	**0.6183**	**3.0000e-005**	**0.0000**	**0.6189**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.9300e-003	0.0605	0.0452	7.0000e-005		3.6700e-003	3.6700e-003		3.3800e-003	3.3800e-003	0.0000	6.1129	6.1129	1.8400e-003	0.0000	6.1515
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.9300e-003**	**0.0605**	**0.0452**	**7.0000e-005**		**3.6700e-003**	**3.6700e-003**		**3.3800e-003**	**3.3800e-003**	**0.0000**	**6.1129**	**6.1129**	**1.8400e-003**	**0.0000**	**6.1515**

3.5 Paving - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	3.0000e-004	3.1200e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6183	0.6183	3.0000e-005	0.0000	0.6189
Total	**2.0000e-004**	**3.0000e-004**	**3.1200e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6183**	**0.6183**	**3.0000e-005**	**0.0000**	**0.6189**

3.6 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1955					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6600e-003	0.0109	9.3400e-003	1.0000e-005		8.7000e-004	8.7000e-004		8.7000e-004	8.7000e-004	0.0000	1.2766	1.2766	1.3000e-004	0.0000	1.2795
Total	**0.1972**	**0.0109**	**9.3400e-003**	**1.0000e-005**		**8.7000e-004**	**8.7000e-004**		**8.7000e-004**	**8.7000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.3000e-004**	**0.0000**	**1.2795**

3.6 Architectural Coating - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	1.6000e-004	1.6800e-003	0.0000	3.8000e-004	0.0000	3.9000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3329	0.3329	2.0000e-005	0.0000	0.3333
Total	**1.1000e-004**	**1.6000e-004**	**1.6800e-003**	**0.0000**	**3.8000e-004**	**0.0000**	**3.9000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3329**	**0.3329**	**2.0000e-005**	**0.0000**	**0.3333**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1955					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6600e-003	0.0109	9.3400e-003	1.0000e-005		8.7000e-004	8.7000e-004		8.7000e-004	8.7000e-004	0.0000	1.2766	1.2766	1.3000e-004	0.0000	1.2795
Total	**0.1972**	**0.0109**	**9.3400e-003**	**1.0000e-005**		**8.7000e-004**	**8.7000e-004**		**8.7000e-004**	**8.7000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.3000e-004**	**0.0000**	**1.2795**

3.6 Architectural Coating - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	1.6000e-004	1.6800e-003	0.0000	3.8000e-004	0.0000	3.9000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3329	0.3329	2.0000e-005	0.0000	0.3333
Total	**1.1000e-004**	**1.6000e-004**	**1.6800e-003**	**0.0000**	**3.8000e-004**	**0.0000**	**3.9000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3329**	**0.3329**	**2.0000e-005**	**0.0000**	**0.3333**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1863	0.4947	2.1937	5.8800e-003	0.4292	6.6000e-003	0.4358	0.1147	6.0800e-003	0.1208	0.0000	449.2114	449.2114	0.0175	0.0000	449.5784
Unmitigated	0.1863	0.4947	2.1937	5.8800e-003	0.4292	6.6000e-003	0.4358	0.1147	6.0800e-003	0.1208	0.0000	449.2114	449.2114	0.0175	0.0000	449.5784

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	332.50	332.50	332.50	1,136,203	1,136,203
Total	332.50	332.50	332.50	1,136,203	1,136,203

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.510449	0.057012	0.191854	0.151889	0.041459	0.005887	0.015572	0.014818	0.001440	0.002145	0.004716	0.000509	0.002251

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	51.5231	51.5231	2.3700e-003	4.9000e-004	51.7247
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	51.5231	51.5231	2.3700e-003	4.9000e-004	51.7247
NaturalGas Mitigated	2.9700e-003	0.0254	0.0108	1.6000e-004		2.0500e-003	2.0500e-003		2.0500e-003	2.0500e-003	0.0000	29.3938	29.3938	5.6000e-004	5.4000e-004	29.5726
NaturalGas Unmitigated	2.9700e-003	0.0254	0.0108	1.6000e-004		2.0500e-003	2.0500e-003		2.0500e-003	2.0500e-003	0.0000	29.3938	29.3938	5.6000e-004	5.4000e-004	29.5726

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	550818	2.9700e-003	0.0254	0.0108	1.6000e-004		2.0500e-003	2.0500e-003		2.0500e-003	2.0500e-003	0.0000	29.3938	29.3938	5.6000e-004	5.4000e-004	29.5726
Total		**2.9700e-003**	**0.0254**	**0.0108**	**1.6000e-004**		**2.0500e-003**	**2.0500e-003**		**2.0500e-003**	**2.0500e-003**	**0.0000**	**29.3938**	**29.3938**	**5.6000e-004**	**5.4000e-004**	**29.5726**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	550818	2.9700e-003	0.0254	0.0108	1.6000e-004		2.0500e-003	2.0500e-003		2.0500e-003	2.0500e-003	0.0000	29.3938	29.3938	5.6000e-004	5.4000e-004	29.5726
Total		**2.9700e-003**	**0.0254**	**0.0108**	**1.6000e-004**		**2.0500e-003**	**2.0500e-003**		**2.0500e-003**	**2.0500e-003**	**0.0000**	**29.3938**	**29.3938**	**5.6000e-004**	**5.4000e-004**	**29.5726**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	180046	51.5231	2.3700e-003	4.9000e-004	51.7247
Total		**51.5231**	**2.3700e-003**	**4.9000e-004**	**51.7247**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	180046	51.5231	2.3700e-003	4.9000e-004	51.7247
Total		**51.5231**	**2.3700e-003**	**4.9000e-004**	**51.7247**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2175	6.0700e-003	0.5209	3.0000e-005		3.5800e-003	3.5800e-003		3.5700e-003	3.5700e-003	0.0000	11.6485	11.6485	1.0500e-003	2.0000e-004	11.7320
Unmitigated	0.3802	0.0102	0.8350	5.3000e-004		0.0506	0.0506		0.0506	0.0506	5.3110	11.0481	16.3591	0.0167	3.6000e-004	16.8212

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0196					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1807					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1638	4.1600e-003	0.3142	5.0000e-004		0.0477	0.0477		0.0477	0.0477	5.3110	10.2058	15.5168	0.0158	3.6000e-004	15.9611
Landscaping	0.0162	6.0700e-003	0.5208	3.0000e-005		2.8300e-003	2.8300e-003		2.8300e-003	2.8300e-003	0.0000	0.8423	0.8423	8.5000e-004	0.0000	0.8600
Total	**0.3802**	**0.0102**	**0.8350**	**5.3000e-004**		**0.0506**	**0.0506**		**0.0506**	**0.0506**	**5.3110**	**11.0481**	**16.3591**	**0.0167**	**3.6000e-004**	**16.8212**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0196					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1807					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.0900e-003	0.0000	6.0000e-005	0.0000		7.5000e-004	7.5000e-004		7.5000e-004	7.5000e-004	0.0000	10.8062	10.8062	2.1000e-004	2.0000e-004	10.8719
Landscaping	0.0162	6.0700e-003	0.5208	3.0000e-005		2.8300e-003	2.8300e-003		2.8300e-003	2.8300e-003	0.0000	0.8423	0.8423	8.5000e-004	0.0000	0.8600
Total	**0.2175**	**6.0700e-003**	**0.5209**	**3.0000e-005**		**3.5800e-003**	**3.5800e-003**		**3.5800e-003**	**3.5800e-003**	**0.0000**	**11.6485**	**11.6485**	**1.0600e-003**	**2.0000e-004**	**11.7320**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	19.7019	0.1070	2.6800e-003	22.7795
Unmitigated	19.7019	0.1070	2.6800e-003	22.7811

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	3.2577 / 2.05377	19.7019	0.1070	2.6800e-003	22.7811
Total		**19.7019**	**0.1070**	**2.6800e-003**	**22.7811**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	3.2577 / 2.05377	19.7019	0.1070	2.6800e-003	22.7795
Total		**19.7019**	**0.1070**	**2.6800e-003**	**22.7795**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	4.6688	0.2759	0.0000	10.4631
Unmitigated	4.6688	0.2759	0.0000	10.4631

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	23	4.6688	0.2759	0.0000	10.4631
Total		**4.6688**	**0.2759**	**0.0000**	**10.4631**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	23	4.6688	0.2759	0.0000	10.4631
Total		**4.6688**	**0.2759**	**0.0000**	**10.4631**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Appendix C –
Noise Impact Analysis

NOISE IMPACT ANALYSIS

GREENFIELD APARTMENTS

CITY OF WESTMINSTER, CALIFORNIA

Prepared for:

Hodge & Associates
Attn: Bill Hodge
P. O. Box 2842
Palm Desert, CA 92261

Date:

May 10, 2016

Project No.: P16-018 N

NOISE SETTING

Sound is mechanical energy transmitted by pressure waves in a compressible medium such as air. Noise is generally considered to be unwanted sound. Sound is characterized by various parameters that describe the rate of oscillation of sound waves, the distance between successive troughs or crests, the speed of propagation, and the pressure level or energy content of a given sound. In particular, the sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound level.

The decibel (dB) scale is used to quantify sound pressure levels. Although decibels are most commonly associated with sound, "dB" is a generic descriptor that is equal to ten times the logarithmic ratio of any physical parameter versus some reference quantity. For sound, the reference level is the faintest sound detectable by a young person with good auditory acuity.

Since the human ear is not equally sensitive to all sound frequencies within the entire auditory spectrum, human response is factored into sound descriptions by weighting sounds within the range of maximum human sensitivity more heavily in a process called "A-weighting," written as dB(A). Any further reference in this discussion to decibels written as "dB" should be understood to be A-weighted.

Time variations in noise exposure are typically expressed in terms of a steady-state energy level equal to the energy content of the time varying period (called LEQ), or alternately, as a statistical description of the sound pressure level that is exceeded over some fraction of a given observation period. Finally, because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law requires that, for planning purposes, an artificial dB increment be added to quiet time noise levels in a 24-hour noise descriptor called the Ldn (day-night) or the Community Noise Equivalent Level (CNEL). The CNEL metric has gradually replaced the Ldn factor, but the two descriptors are essentially identical.

CNEL-based standards are generally applied to transportation-related sources because local jurisdictions are pre-empted from exercising direct noise control over vehicles on public streets, aircraft, trains, etc. The City of Westminster therefore regulates the noise exposure of the receiving property through land use controls.

For "stationary" noise sources on private property, the City has established noise performance standards designed to not adversely impact adjoining uses. These standards are articulated in the jurisdictional Municipal Code. These standards recognize the varying noise sensitivity of both transmitting and receiving land uses. The property line noise performance standards are normally structured according to land use and time-of-day.

CITY OF WESTMINSTER NOISE STANDARDS

The Noise Element of the City of Westminster General Plan establishes noise quality standards for land use categories based on the State of California Office of Noise Control land use compatibility recommendations. Community noise exposures are recommended as normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable for various classes of land use sensitivity. As shown in Table 1, the City of Westminster guidelines recommend an exterior noise exposure of up to 60 dB CNEL as "normally acceptable" for residential uses and noise levels up to 65 dB CNEL are considered to be "conditionally acceptable". Conditionally acceptable requires that new development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features in the design are determined. Typically, conventional construction with closed windows and a fresh air supply system or air conditioning will suffice.

CNEL-based standards generally apply to usable exterior outdoor space. Interior exposures of noise-sensitive uses are controlled through adequate structural attenuation. Structural noise reduction in modern buildings is typically 25-30 dB. The interior noise standard for residential uses is typically 45 dB CNEL. With only moderate structural noise attenuation features, building exterior levels of 75 dB CNEL could be accommodated while still achieving an acceptable interior level.

The Noise Element in the City's municipal code also limits the noise level generated on a property that may cross to a neighboring residential property. The City's noise ordinance limits are stated in terms of a 30-minute limit with allowable deviations from this 50th percentile standard. This noise level describes the noise that is exceeded during a certain percentage of the measurement period. For example, the L_{50} is the level exceeded 50% of the measurement period of thirty minutes in an hour. The larger the deviation, the shorter the allowed duration up to a never-to-exceed 20 dB increase above the 50th percentile standard.

Section 8.28.060E of the City's Noise Ordinance also exempts noise generated by construction from Noise Ordinance standards if construction is restricted to the hours of 7 a.m. and 8 p.m. on weekdays and Saturdays. Construction is not permitted on Sundays or federal holidays.

Table 1

City of Westminster Land Use Compatibility Guidelines for Exterior Community Noise

Land Use	Normally Acceptable	Community Noise Exposure CNEL, dB		Clearly Unacceptable
		Conditionally Acceptable	Normally Unacceptable	
Residential Land Uses	50-60	60-65	65-75	Above 75
Schools, Libraries, Churches, Hospitals, Nursing Homes	50-60	60-70	70-80	Above 80
Transient Lodging: Motels, Hotels	50-60	60-75	75-80	Above 80
Auditoriums, Concert Halls, Amphitheaters	-	50-70	-	Above 70
Sports Arena, Outdoor Spectator Sports	50-60	50-75	-	Above 75
Playgrounds, Neighborhood Parks	50-70	60-70	70-75	Above 70
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50-75	-	70-80	Above 80
Office Buildings, Business and Professional Commercial	50-65	-	65-77	Above 75
Industrial, Manufacturing, Utilities, Agriculture	50-75	-	70-80	Above 75

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 generally 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.

Table 2
City of Westminster Noise Ordinance Standards

EXTERIOR NOISE STANDARDS

Noise Zone	Noise Level	Time Period
1	55 dB(A)	7:00 a.m.-10:00 p.m.
	50 dB(A)	10:00 p.m.- 7:00 a.m.
2	60 dB(A)	7:00 a.m.-10:00 p.m.
	55 dB(A)	10:00 p.m.- 7:00 a.m.

It is unlawful for any person at any location within the incorporated area of the city to create any noise, or to allow the creation of any noise, on property owned, leased, occupied, or otherwise controlled by such person, when the foregoing causes the noise level, when measured on any other residential property, to exceed:

1. The noise standard for a cumulative period of more than thirty minutes in any hour; or

2. The noise standard plus 5dB(A) for a cumulative period of more than fifteen minutes in any hour; or

3. The noise standard plus 10dB(A) for a cumulative period of more than five minutes in any hour; or

4. The noise standard plus 15dB(A) for a cumulative period of more than one minute in any hour; or

5. The noise standard plus 20dB(A) for any period of time.

6. In the event the ambient noise level exceeds any of the first four noise limit categories above, the cumulative period applicable to said category shall be increased to reflect the ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

BASELINE NOISE LEVELS

A noise measurement was made in order to document existing baseline levels on the project site as shown in Figure 1. The noise measurement was conducted on Monday, March 28, 2016, between the hours of 2:30 p.m. and 2:45 p.m. The measurement results are shown below and the monitoring location is shown on Figure 1.

Short-Term Noise Measurements (dB[A])

Leq	Lmax	Lmin	L_{10}	L_{33}	L_{50}	L_{90}
58	70	51	61	57	55	53

.
The noise meter was located in the middle of the eastern site perimeter, about 45 feet from the Locust Street centerline. The observed existing noise level was 58 dB Leq. Monitoring experience shows that 24-hour weighted CNEL's are approximately equal to mid-day Leq plus 2-3 dB (Caltrans Technical Noise Supplement, 2009). This would equate to an existing CNEL of 60-61 dB.

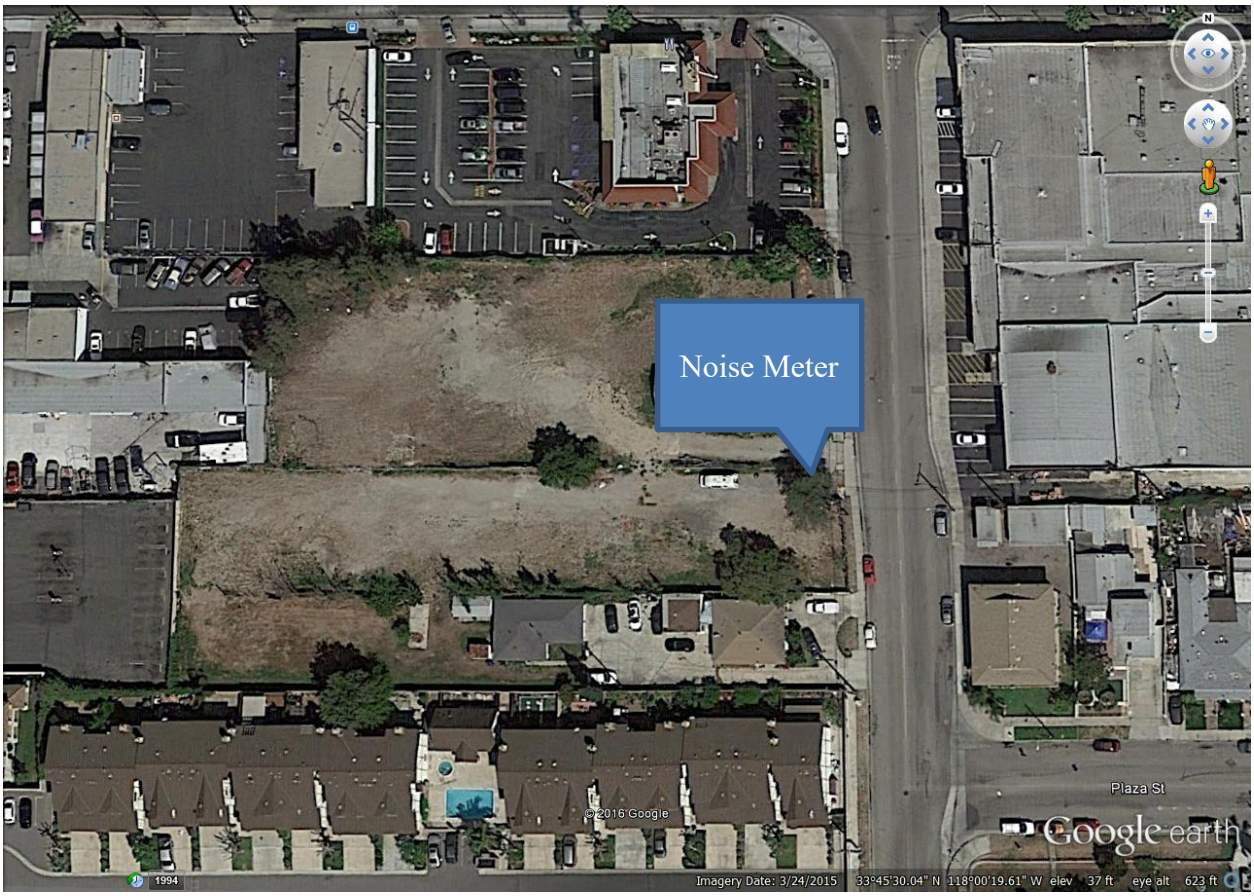
Noise measurements were also made on Monday, May 10, 2016, adjacent to the northern site boundary close to the McDonalds drive-through order board. Measurements were made from 9:30-10:00 p.m. assuming that future project residents would become progressively noise-sensitive during that time period. One set of readings was made at the property line directly across from the order board speaker and a second set of readings was made at the property line 50 feet west of the speaker unaffected by drive-through activities. The decibel difference between the two data sets would represent the noise contribution from the restaurant. The measured data, compared to the City's Noise Ordinance standards, were as follows (dB):

Time Period				City Standard	
	Order Board	Background	Board Only	Day	Night
30-minute	52	51	45	55	50
15-minute	55	53	51	60	55
5-minute	58	57	55	65	60
0-minute	68	63	66	75	70

To the extent that the drive-through activity level was "normal" from 9:30-10:00 p.m. (sometimes one car at the board, two waiting, and sometimes nobody at the board for 20-30 seconds), the City's noise standards are met at the shared property line with a reasonable margin of safety for all four exposure periods studied. The speaker volume was low with none of the "Welcome to ___ how can I help you?" sometimes heard all over the neighborhood at some drive-throughs. The existing speaker configuration and ordering procedure is not seen as a significant noise impediment to the proposed Greenfield Apartments.

Figure 1

Noise Monitor Location



NOISE SIGNIFICANCE CRITERIA

Noise impacts are considered significant if they result in:

a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

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

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

"Substantially" is not defined in any guidelines. The accuracy of sound level meters and of sound propagation computer models is no better than ±1 dB. This is also the human loudness difference discrimination level under ideal laboratory conditions. Most people cannot distinguish a change in the noise environment that differs by less than 3 dB between the pre- and post-project exposure if the change occurs under ambient conditions. For the purposes of this analysis, a traffic noise increase of more than +3 dB that creates or worsens an area of noise/land use incompatibility would be considered a significant degradation of noise quality if it also would expose sensitive residential land uses to exterior noise levels greater than 65 dB CNEL.

SOURCES OF IMPACT

Two characteristic noise sources are typically identified with general development such as the proposed residential development. Construction activities, especially heavy equipment, will create short-term noise increases near the project site. Upon completion, vehicular traffic on streets around the proposed project area may create a higher noise exposure. Traffic noise impacts are generally analyzed both to insure that the project does not adversely impact the acoustic environment of the surrounding community, as well as to insure that the project site is not exposed to an unacceptable level of noise resulting from the ambient noise environment acting on the project. In already-developed areas, the added land use intensity associated with a single project only increases traffic incrementally on existing roadways. These noise impacts are often masked by the baseline, and often preclude perception of any substantial noise level increase.

CONSTRUCTION NOISE IMPACTS

The proposed project would entail construction of 50 apartments. The project site is situated on the west side of Locust Street, south of Westminster Boulevard in the City of Westminster.

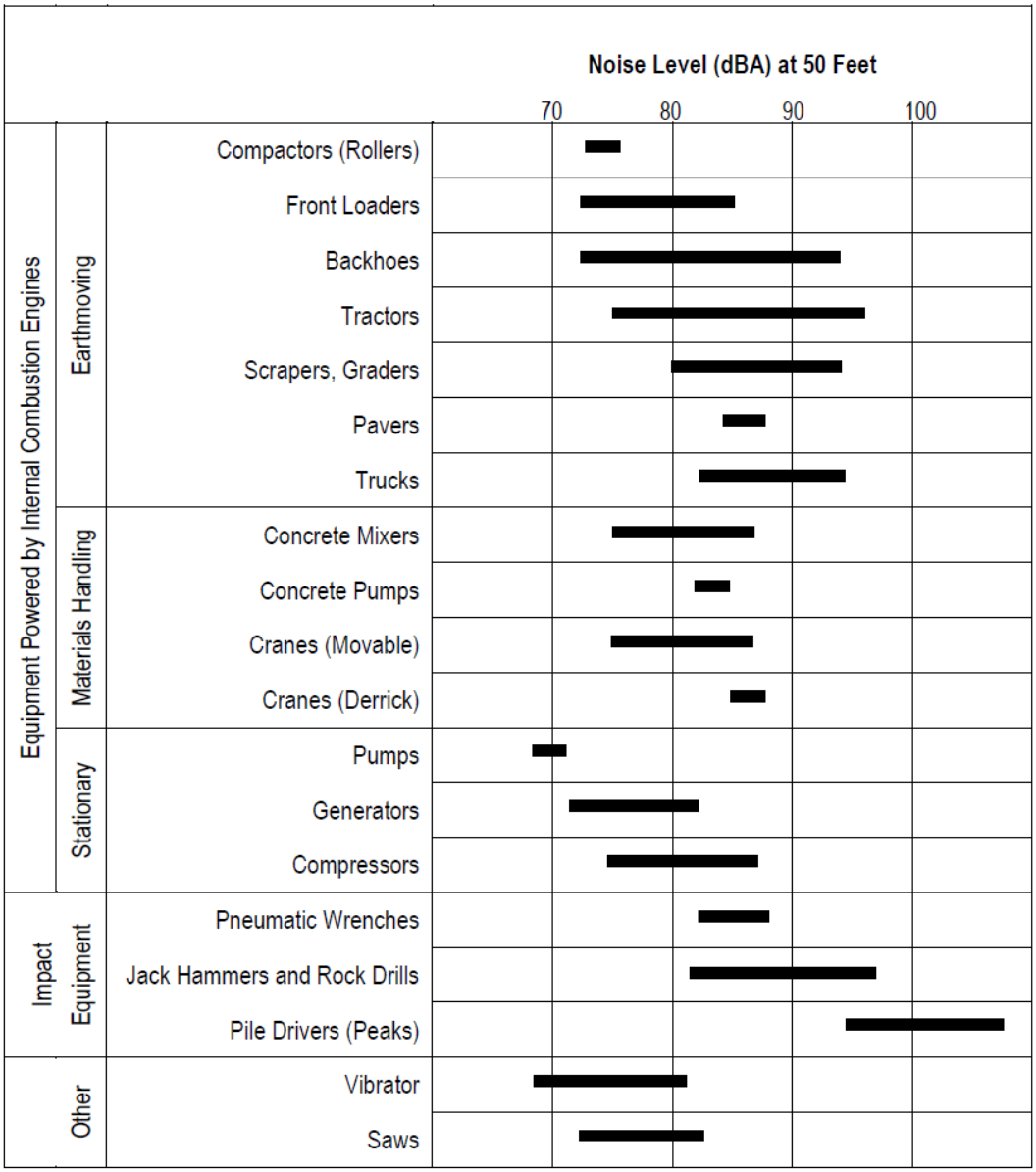
Temporary construction noise impacts will vary markedly because the noise strength of construction equipment ranges widely as a function of the equipment used and its activity level. Short-term construction noise impacts tend to occur in discrete phases dominated initially by demolition of existing structures and large earth-moving sources, then by foundation and parking facilities, and finally for finish construction. The demolition and earth-moving sources are the noisiest, with equipment noise typically ranging from 75 to 90 dB at 50 feet from the source.

The new building will be built on a level site. No major grading will be performed and there is minimal demolition. Utility connections and foundation preparation will require use of equipment such as backhoes, trenchers and dozers. Peak noise levels from such equipment is seen in Figure 2 to be 85 dB at 50 feet. The closest homes are approximately 50 feet south of the site. Construction noise could be disturbing if windows facing the construction activity were open. Temporary window closure would help minimize disturbance to quiet activities such as taking a nap, reading a book, talking on the phone, etc., but noise levels will still be noticeable. However, many people are away from home during the hours from 7 a.m. to 3 p.m. when temporary construction disturbance would be greatest.

Construction activities are exempt from numerical noise regulations if they occur during the hours allowed by the Municipal Code. However, as noted above, heavy equipment noise may be a nuisance even if generated during allowable hours. Compliance with these hours (7 a.m. to 8 p.m. Monday-Saturday) will maintain construction activity noise impacts at less-than-significant levels.

Figure 2

Typical Construction Equipment Noise Generation Levels



Source: EPA PB 206717, Environmental Protection Agency, December 31, 1971, "Noise from Construction Equipment and Operations."

CONSTRUCTION ACTIVITY VIBRATION

Construction activities generate ground-borne vibration when heavy equipment travels over unpaved surfaces or when it is engaged in soil movement. The effects of ground-borne vibration include discernable movement of building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. Within the "soft" sedimentary surfaces of much of Southern California, ground vibration is quickly damped out. Because vibration is typically not an issue, very few jurisdictions have adopted vibration significance thresholds. Vibration thresholds have been adopted for major public works construction projects, but these relate mostly to structural protection (cracking foundations or stucco) rather than to human annoyance.

Possible vibration nuisance is most commonly expressed in terms of the root mean square (RMS) velocity of a vibrating object. RMS velocities are expressed in units of vibration decibels relative to a reference velocity of 1.0 micro-inch per second. The range of vibration decibels (VdB) is as follows:

65 VdB	-	threshold of human perception
72 VdB	-	annoyance due to frequent events
80 VdB	-	annoyance due to infrequent events
100 VdB	-	minor cosmetic damage

To determine potential impacts of the project's construction activities, estimates of vibration levels induced by the construction equipment at various distances are presented below:

	Approximate Vibration Levels (VdB)*			
Equipment	**25 feet**	**50 feet**	**100 feet**	**200 feet**
Large Bulldozer	87	81	75	69
Loaded Truck	86	80	74	68
Jackhammer	79	73	67	61
Small Bulldozer	58	52	46	40

* (FTA Transit Noise & Vibration Assessment, Chapter 12, Construction, 1995)

The on-site construction equipment that will create the maximum potential vibration is a large bulldozer. The stated vibration source level in the FTA Handbook for such equipment is 81 VdBA at 50 feet from the source. With typical vibrational energy spreading loss, the vibration annoyance standard is met at 56 feet. Effects of vibration perception such as rattling windows could only occur at the nearest residential structures, though vibration resulting from project construction would not exceed cosmetic damage thresholds.

Regardless, large bulldozers will not likely operate directly at the shared southern property line with the perimeter homes. Any fine grading at the property line should be performed with small bulldozers which are seen above to have 30 VdB less vibration potential. Therefore, to ensure adequate vibration annoyance protection the following mitigation measure is recommended:

- Only small bulldozers shall be permitted to operate within 56 feet of the nearest residential structures.

Construction activity vibration impacts are judged as less-than-significant.

VEHICULAR NOISE IMPACTS

Long-term noise concerns associated with development of the proposed project center primarily on mobile source emissions on project area roadways. These concerns were addressed using the California specific vehicle noise curves (CALVENO) in the federal roadway noise model (the FHWA Highway Traffic Noise Prediction Model, FHWA-RD-77-108). The model calculates the Leq noise level for a particular reference set of input conditions, and then makes a series of adjustments for site-specific traffic volumes, distances, roadway speeds, or noise barriers.

The project is expected to generate 333 daily trips. Project impact would result from the additional trips on existing traffic volumes. Unfortunately, Locust Street is not a major roadway and therefore the City of Westminster does not provide traffic counts. Therefore, as a conservative analysis, a daily traffic volume of 2,000 average daily traffic vehicles (ADT) was used as an estimate. The increase in traffic noise from 2,000 vehicles to 2,333 vehicles would be as follows:

Locust Street

	Traffic Count (ADT)	Noise Level
Traffic Noise Level No Project	2,000	55.3 dB CNEL
Traffic Noise Level With Project	2,333	56.0 dB CNEL
	Increase Change	**0.7 dB CNEL**

Project impact is minimal. The above analysis is very conservative as not all project traffic will travel in a single direction entering or leaving the site. Vehicles may turn left or right onto Locust Street thereby diluting the noise impact at any single receptor. Project related traffic impacts are less-than-significant.

SITE NOISE

Residential uses are considered passive and not substantial noise generators. The only source of noise impact that the existing residences to the south might experience are those associated with parking.

SITE COMPATIBILITY

An existing McDonalds restaurant is located just north of the project site. The order board is on the south side of the restaurant building directly facing the project site. Noise monitoring at the property line during late evening drive-through operations found that daytime and/or nighttime City of Westminster noise ordinance standards were met with a substantial margin of safety.

SUMMARY

There would be no significant new or changed noise impact associated addition of 50 apartment units.

Traffic noise resulting from project implementation on area roadways will be less-than-significant.

Short-term construction noise intrusion and vibration impacts will be limited by standard conditions on construction permits imposed by with the City of Westminster. The following construction noise control conditions are recommended:

- All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers and other state required noise attenuation devices.
- During construction, stationary construction equipment such as air compressors shall be placed such that emitted noise is directed away from sensitive noise receivers as much as possible.
- Construction activities shall not take place outside of the allowable hours specified by the City's Municipal Code Section 8.28.060E, *Exemptions* (7:00 a.m. and 8:00 p.m. on weekdays and Saturdays; construction activities are not permitted on Sundays or federal holidays).

Vibration levels from heavy equipment may be noticeable at times at the nearest residence, but will not cause any structural damage. Nevertheless, to ensure adequate vibration protection the following mitigation measure is recommended:

- Only small bulldozers shall be permitted to operate within 56 feet of the nearest residences.

Appendix D –
Trip Generation Worksheet

FEHR PEERS

TECHNICAL MEMORANDUM

Date: Wednesday, April 20, 2016

To: Steve Jones, Olympia Capital Corporation

Cc: Bill Hodge, Hodge & Associates

From: Elliot Huang, Fehr & Peers
Jason Pack, Fehr & Peers

Subject: 14041 - 14061 Locust Apartments Trip Generation

OC16-0439

Fehr & Peers is pleased to submit this technical memorandum documenting estimated trip generation for the proposed Greenfield Apartments located at 14041, 14051, and 14061 Locust Street in Westminster, California. The information in this memorandum was developed after consultation with the City of Westminster and the City's environmental consultant regarding data needs in order to proceed with transportation, air quality, noise, and greenhouse gas emissions analyses for this project.

The proposed Greenfield Apartments will consist of a 50-unit multifamily rental community. Traffic volumes expected to be generated by the proposed project during the AM peak hour, PM peak hour, and daily were estimated using rates provided in the Trip Generation Manual, 9th Edition, published by the Institute of Transportation Engineers (ITE). Table 1 summarizes the ITE trip generation rates for Apartments. Table 2 summarizes the estimated trip generation for the proposed project using the ITE rates. Note, the daily ITE trip generation rate for apartments assumes 50% inbound and 50% outbound trips.

Table 1: ITE Trip Generation Rates

Land Use	ITE Code	Unit	Daily Rate	AM			PM		
				Rate	In	Out	Rate	In	Out
Apartment	220	Dwelling Units	6.65	0.55	29%	71%	0.67	61%	39%

Source: Trip Generation Manual, 9th Edition (Institute of Transportation Engineers, 2012)

Table 2: Greenfield Apartments Project Trip Generation										
Land Use	ITE Code	Size	Unit	Daily Trips	AM Peak Hour			PM Peak Hour		
					Total	In	Out	Total	In	Out
Apartment	220	50	Dwelling Units	333	28	17	11	34	21	13

Source: Fehr & Peers (2016)
Notes: Average rates used, peak hour of adjacent street traffic.

We hope you find this information helpful. If you have any questions, comments, or require additional information, please contact Elliot Huang at E.Huang@fehrandpeers.com or 714-941-8783.