

4.6 Greenhouse Gas Emissions

This section addresses the potential global climate change impacts that would occur from construction and operation of the proposed Koll Center Residences Project (Project). The Greenhouse Gas (GHG) emissions analysis is summarized from *The Koll Center Residences Greenhouse Gas Assessment* prepared by Michael Baker International (Michael Baker International, 2017b) which is included as Appendix F of this EIR.

4.6.1 REGULATORY SETTING

Federal

Federal Clean Air Act

The U.S. Environmental Protection Agency (USEPA) is charged with implementing national air quality programs. USEPA's air quality mandates are drawn primarily from the Federal Clean Air Act (FCAA). The FCAA was passed in 1963 by the U.S. Congress and has been amended several times. In 1977, Congress added several provisions, including nonattainment requirements for areas not meeting National Ambient Air Quality Standards as well as the Prevention of Significant Deterioration program. The 1990 FCAA amendments represent a series of federal efforts to regulate the protection of air quality in the United States. The FCAA allows states to adopt more stringent standards or to include other pollution species.

The U.S. Supreme Court in *Massachusetts et al. v. Environmental Protection Agency*, 549 U.S. 497 (2007), held that the USEPA has the authority to regulate motor-vehicle GHG emissions under the FCAA. The Supreme Court held that the USEPA Administrator must determine whether emissions of GHGs from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision.

The USEPA publishes an annual GHG inventory (Inventory of U.S. Greenhouse Gas Emissions and Sinks),¹ which tracks the national trend in GHG emissions and removals back to 1990. The report contains total national emissions by source, economic sector, and GHG. The USEPA uses national energy data, data on national agricultural activities, and other national statistics to provide a comprehensive accounting of total GHG emissions for all man-made sources in the country. It also collects GHG emissions data from individual facilities and suppliers of certain fossil fuels and industrial gases through the Greenhouse Gas Reporting Program.

In May 2010, the USEPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) published the final rule-making for a national program that would reduce GHG emissions and improve fuel economy for new cars and trucks sold in the United States. The standards for the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide (CO₂) per mile, equivalent to 35.5 miles per gallon (mpg), if the automobile industry were to meet this CO₂ level solely through fuel economy improvements. Together, these standards are projected to cut GHG emissions by an estimated

¹ A greenhouse gas "sink" is a process, activity, or mechanism that absorbs more greenhouse gases than it releases.

960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016).

In October 2012, USEPA and NHTSA published the final rule-making for the second phase of the national program, which covers model years 2017 through 2025. The final standards are projected to result in an average industry fleetwide level of 163 grams of CO₂ per mile, equivalent to 54.5 MPG, if the automobile industry were to meet this CO₂ level solely through fuel economy improvements. The USEPA does not regulate residential sources of GHG emissions.

Executive Order 13963

Executive Order (EO) 13693, Planning for Federal Sustainability in the Next Decade, signed in 2015, seeks to maintain federal leadership in sustainability and greenhouse gas emission reductions. Its goal is to reduce agency Scope 1 and 2 GHG emissions² by at least 40 percent by 2025, foster innovation, reduce spending, and strengthen communities through increased efficiency and improved environmental performance. Sustainability goals are set for building efficiency and management, energy portfolio, water use efficiency, fleet efficiency, sustainable acquisition and supply chain greenhouse gas management, pollution prevention, and electronic stewardship.

State of California

The California Air Resources Board (CARB) is responsible for the coordination and oversight of State and local air pollution control programs in California. Various statewide and local initiatives to reduce California's contribution to GHG emissions have raised awareness about climate change and its potential for severe long-term adverse environmental, social, and economic effects. California is a significant emitter of carbon dioxide equivalents (CO₂e) in the world and produced 459 million gross metric tons of CO₂e in 2013. In the State, the transportation sector is the largest emitter of GHGs, followed by industrial operations such as manufacturing and oil and gas extraction.

California Global Warming Solutions Act (Assembly Bill 32)

The California Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32) (Health and Safety Code Sections 38500, 38501, 38510, 38530, 38550, 38560, 38561–38565, 38570, 38571, 38574, 38580, 38590, 38592–38599) instructs the CARB to develop and enforce regulations for the reporting and verification of statewide GHG emissions. AB 32 directed CARB to set a GHG emissions limit based on 1990 levels, to be achieved by 2020. It set a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner.

CARB Scoping Plan. CARB adopted the Scoping Plan to achieve the goals of AB 32. The Scoping Plan establishes an overall framework for the measures that would be adopted to reduce California's GHG emissions. CARB determined that achieving the 1990 emissions level would require a reduction of GHG emissions of approximately 29 percent below what would otherwise occur in 2020 in the absence of new

² In GHG inventories, direct emissions are Scope 1; indirect emissions from consumption of purchased electricity, heat or steam are Scope 2; and other indirect emissions (such as extraction and production of purchased materials and fuels, transport in vehicles not controlled by the reporting entity, outsourced activities) are Scope 3.

laws and regulations (referred to as “business-as-usual”)³. The Scoping Plan evaluates opportunities for sector-specific reductions; integrates early actions by CARB and the State’s Climate Action Team and additional GHG reduction measures by both entities; identifies additional measures to be pursued as regulations; and outlines the adopted role of a cap-and-trade program.⁴ Additional development of these measures and adoption of the appropriate regulations occurred through the end of 2013. Key elements of the Scoping Plan include:

- Expanding and strengthening existing energy efficiency programs, as well as building and appliance standards.
- Achieving a statewide renewables energy mix of 33 percent by 2020.
- Developing a California cap-and-trade program that links with other programs to create a regional market system and caps sources contributing 85 percent of California’s GHG emissions (adopted in 2011).
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets (several Sustainable Communities Strategies have been adopted).
- Adopting and implementing measures pursuant to existing State laws and policies, including California’s clean car standards, heavy-duty truck measures, the Low Carbon Fuel Standard (amendments to the Pavley Standard adopted 2009; Advanced Clean Car standard adopted 2012), goods movement measures, and the Low Carbon Fuel Standard (adopted 2009).
- Creating targeted fees, including a public goods charge on water use, fees on gasses with high global warming potential, and a fee to fund the administrative costs of the State of California’s long-term commitment to AB 32 implementation (CARB 2008).

In 2012, CARB released revised estimates of the expected 2020 emissions reductions. The revised analysis relied on emissions projections updated in light of current economic forecasts that accounted for the economic downturn since 2008, reduction measures already approved and put in place relating to future fuel and energy demand, and other factors. This update reduced the projected 2020 emissions from 596 million metric tons of CO₂e (MMTCO₂e) to 545 MMTCO₂e. The reduction in forecasted 2020 emissions means that the revised business-as-usual reduction necessary to achieve AB 32’s goal of reaching 1990 levels by 2020 is now 21.7 percent, down from 29 percent. CARB also provided a lower 2020 inventory forecast that incorporated State-led GHG emissions reduction measures already in place. When this lower forecast is considered, the necessary reduction from business-as-usual needed to achieve the goals of AB 32 is approximately 16 percent.

³ CARB defines business-as-usual (BAU) in its Scoping Plan as emissions levels that would occur if California continued to grow and add new GHG emissions but did not adopt any measures to reduce emissions. Projections for each emission-generating sector were compiled and used to estimate emissions for 2020 based on 2002–2004 emissions intensities. Under CARB’s definition of BAU, new growth is assumed to have the same carbon intensities as was typical from 2002 through 2004.

⁴ The Climate Action Team, led by the secretary of the California Environmental Protection Agency, is a group of State agency secretaries and heads of agencies, boards, and departments. Team members work to coordinate statewide efforts to implement global warming emissions reduction programs and the State’s Climate Adaptation Strategy.

CARB adopted the first major update to the Scoping Plan on May 22, 2014. The updated Scoping Plan summarizes the most recent science related to climate change, including anticipated impacts to California and the levels of GHG emissions reductions necessary to likely avoid risking irreparable damage. It identifies the actions California has already taken to reduce GHG emissions and focuses on areas where further reductions could be achieved to help meet the 2020 target established by AB 32. The Scoping Plan update also looks beyond 2020 toward the 2050 goal established in Executive Order (EO) S-3-05, although not yet adopted as State law, and observes that “a mid-term statewide emission limit will ensure that the State stays on course to meet our long-term goal.”⁵ The Scoping Plan update does not establish or propose any specific post-2020 goals, but identifies such goals adopted by other governments or recommended by various scientific and policy organizations. EO B-30-15 (signed April 29, 2015) endorses the effort to set interim GHG reduction targets for 2030 (40 percent below 1990 levels).⁶

Amendments to California Global Warming Solutions Act of 2006: Emission Limit (Senate Bill 32)

Signed into law in September 2016, Senate Bill (SB) 32 codifies the 2030 target in EO B-30-15. SB 32 authorizes the State board to adopt an interim GHG emissions level target to be achieved by 2030. The bill states that the intent is for the legislature and appropriate agencies to adopt complementary policies which ensure that the long-term emissions reductions advance specified criteria. CARB is directed to update the Scoping Plan to provide guidance for compliance with SB 32. The next updated Scoping Plan is expected to be adopted in 2017.

Table 4.6-1 provides a brief overview of other California legislation relating to climate change that may affect emissions associated with the Proposed Project.

⁵ Executive Order S-3-05 set forth a series of GHG emissions reduction targets that consist of reducing GHG emissions to 2000 levels by 2010; reducing GHG emissions to 1990 levels by 2020; and reducing GHG emissions to 80 percent below 1990 levels by 2050.

⁶ Executive Order B-30-15, which was issued in April 2015, requires statewide GHG emissions to be reduced 40 percent below 1990 levels by 2030. Senate Bill 32 (SB 32), signed into law in September 2016, codifies the 2030 GHG reduction target in Executive Order B-30-15. The bill authorizes CARB to adopt an interim GHG emissions level target to be achieved by 2030. CARB also must adopt rules and regulations in an open public process to achieve the maximum, technologically feasible, and cost-effective GHG reductions.

Table 4.6-1. California State Climate Change Legislation	
Legislation	Description
Assembly Bill 1493 and Advanced Clean Cars Program	Assembly Bill 1493 (“the Pavley Standard”) (Health and Safety Code §§ 42823 and 43018.5) aims to reduce GHG emissions from noncommercial passenger vehicles and light-duty trucks with one set of emission standards for model years 2009–2016 and a second set of emissions standards for model years 2017 to 2025. By 2025, when all rules will be fully implemented, new automobiles will emit 34 percent fewer CO _{2e} emissions and 75 percent fewer smog-forming emissions.
Low Carbon Fuel Standard	Executive Order S-01-07 (2007) requires a 10 percent or greater reduction in the average fuel carbon intensity for transportation fuels in California. The regulation took effect in 2010 and is codified at Title 17, California Code of Regulations, Sections 95480–95490. The Low Carbon Fuel Standard will reduce GHG emissions by reducing the carbon intensity of transportation fuels used in California by at least 10 percent by 2020.
Renewables Portfolio Standard (Senate Bill X1-2 & Senate Bill 350)	California’s Renewables Portfolio Standard (RPS) requires retail sellers of electric services to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020. The 33 percent standard is consistent with the RPS goal established in the Scoping Plan. The passage of SB 350 in 2015 updates the RPS to require the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources to be increased to 50 percent by December 31, 2030. The bill will make other revisions to the RPS program and to certain other requirements on public utilities and publicly owned electric utilities.
Senate Bill 375 ^a	SB 375 took effect in 2008 and provides a new planning process to coordinate land use planning, regional transportation plans, and funding priorities to help California meet the GHG reduction goals established in AB 32. SB 375 requires metropolitan planning organizations (MPO) to incorporate a Sustainable Communities Strategy (SCS) in their regional transportation plans that will achieve GHG emissions reduction targets by reducing vehicle miles traveled (VMT) from light-duty vehicles through the development of more compact, complete, and efficient communities. CARB adopted per capita reduction targets for each MPO rather than a total magnitude reduction target. The Southern California Association of Government’s (SCAG) targets are an 8 percent per capita reduction from 2005 GHG emission levels by 2020 and a 13 percent per capita reduction from 2005 GHG emission levels by 2035. SB 375 requires CARB to periodically update the targets, no later than every 8 years. CARB is in the process of updating targets, with the intent to make them effective in 2018. SCSs adopted in 2018 would be subject to the updated targets.
California Building Energy Efficiency Standards	In general, the California Building Energy Efficiency Standards require the design of building shells and building components to conserve energy. The California Energy Commission adopted changes to the 2016 Building Energy Efficiency Standards contained in the California Code of Regulations, Title 24, Part 6 (also known as the California Energy Code) and associated administrative regulations in Part 1. The amended standards took effect on July 1, 2017. Under the 2016 Standards, residential buildings are 28 percent more energy efficient than the 2013 Standards, and nonresidential buildings are 5 percent more energy efficient than the 2013 Standards. The 2016 standards will not achieve zero net energy. However, they get very close to the State’s goal and make important steps toward changing residential building practices in California. The 2019 standards are intended to achieve zero net energy for newly constructed residential buildings throughout California.

Legislation	Description
California Green Building Standards	The California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), commonly referred to as the CALGreen Code, is a statewide mandatory construction code developed and adopted by the California Building Standards Commission and the Department of Housing and Community Development. The CALGreen standards require new residential and commercial buildings to comply with mandatory measures under the topics of planning and design, energy efficiency, water efficiency/conservation, material conservation and resource efficiency, and environmental quality. CALGreen also provides voluntary tiers and measures that local governments may adopt that encourage or require additional measures in the five green building topics. The most recent update to the CALGreen Code went into effect January 1, 2017.
a. Senate Bill 375 is codified at Government Code Sections 65080, 65400, 65583, 65584.01, 65584.02, 65584.04, 65587, 65588, 14522.1, 14522.2, and 65080.01, as well as at Public Resources Code Sections 21061.3 and 21159.28 and Chapter 4.2.	Source: Michael Baker International, 2017b.

Regional and Local

Southern California Association of Governments Regional Transportation Plan/ Sustainable Communities Strategy

SB 375 requires the metropolitan planning organizations (MPO) to prepare a Sustainable Communities Strategy (SCS) in their regional transportation plan. On April 7, 2016, the SCAG Regional Council adopted the *2016-2040 Regional Transportation Plan/ Sustainable Communities Strategy (2016 RTP/SCS)*. The 2016 RTP/SCS outlines how to closely integrate land use and transportation so that the region can grow smartly and sustainably. The 2016 RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental and public health goals. The SCAG region must achieve specific federal air quality standards and is required by State law to lower regional GHG emissions. Pursuant to the 2016-2040 RTP/SCS, SCAG anticipates lowering GHG emissions below 2005 levels by 8 percent by 2020, 18 percent by 2035, and 21 percent by 2040. Land use strategies to achieve the region’s targets include planning for new growth around High Quality Transit Areas, Livable Corridors, and creating Neighborhood Mobility Areas to integrate land use and transportation and plan for more active lifestyles.

City of Newport Beach Energy Action Plan (2013)

The City of Newport Beach is aiming to reduce its energy consumption and GHG emissions to become a more sustainable community. The main goal of the Energy Action Plan (EAP) is to provide a roadmap for the City to reduce GHG through reductions in energy used in facility buildings and operations. The EAP identifies past energy measures that have been implemented and present measures that currently are in that process, all of which will contribute to the energy reduction goal. In addition, the EAP identifies other potential energy reduction measures that the City will consider for future implementation.

4.6.2 ENVIRONMENTAL SETTING

Certain gases in the earth’s atmosphere, classified as greenhouse gases (GHGs), play a critical role in determining the earth’s surface temperature. Solar radiation enters the earth’s atmosphere from space. A portion of the radiation is absorbed by the earth’s surface and a smaller portion of this radiation is

reflected back toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. Because the earth has a much lower temperature than the sun, it emits lower-frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead “trapped,” resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth.

The primary GHGs contributing to the greenhouse effect are carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). Fluorinated gases also make up a small fraction of the GHGs that contribute to climate change. Fluorinated gases include chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride; however, it is noted that these gases are not associated with typical land use development. Human-caused emissions of these GHGs in excess of natural ambient concentrations are believed to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth’s climate, known as global climate change or global warming.

GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, more CO₂ is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, or other forms of carbon sequestration. Of the total annual human-caused CO₂ emissions, approximately 55 percent is sequestered through ocean and land uptakes every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO₂ emissions remains stored in the atmosphere (IPCC 2013). **Table 4.6-2** describes the primary GHGs attributed to global climate change, including their physical properties.

The California Climate Change Center (2012) identifies that global warming in California is anticipated to impact resources. The California Climate Change Center states that climate changes could affect the resources described below.

Water Resources

By late-century, all projections show drying, and half of the projections suggest 30-year average precipitation will decline by more than 10 percent below the historical average. This drying trend is caused by an apparent decline in the frequency of rain and snowfall. Even in projections with relatively small or no declines in precipitation, central and southern parts of the State can be expected to be drier from the warming effects alone—the spring snowpack will melt sooner, and the moisture contained in soils will evaporate during long, dry summer months.

Wildfire Risks

Earlier snowmelt, higher temperatures and longer dry periods over a longer fire season will directly increase wildfire risk. Indirectly, wildfire risk will also be influenced by potential climate-related changes in vegetation and ignition potential from lightning. Human activities will continue to be the biggest factor in ignition risk. The number of large fires statewide are estimated to increase from 58 percent to 128

percent above historical levels by 2085. Under the same emissions scenario, estimated burned area will increase by 57 percent to 169 percent, depending on location.

Greenhouse Gas	Description
Carbon Dioxide (CO ₂)	Carbon dioxide is a colorless, odorless gas. CO ₂ is emitted naturally and through human activities. The largest source of CO ₂ emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, and industrial facilities. Specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can lead to CO ₂ emissions. The atmospheric lifetime of CO ₂ is variable because it is readily exchanged in the atmosphere.
Methane (CH ₄)	Methane, a highly potent GHG, primarily results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. Methane is a colorless, odorless gas and is the major component of natural gas, about 87 percent by volume. Human-related sources include fossil fuel production, animal husbandry, rice cultivation, biomass burning, and waste management. Natural sources of CH ₄ include wetlands, gas hydrates, termites, oceans, freshwater bodies, non-wetland soils, and wildfires. The atmospheric lifetime of CH ₄ is about 12 years.
Nitrous Oxide (N ₂ O)	Nitrous oxide is a colorless gas with a slightly sweet odor. N ₂ O is largely attributable to agricultural practices and soil management. Primary human-related sources of N ₂ O include agricultural soil management, sewage treatment, combustion of fossil fuels, and adipic and nitric acid production. N ₂ O is produced from biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N ₂ O is approximately 120 years.

Sources: Michael Baker International, 2017b.

Health Impacts

Many of the gravest threats to public health in California stem from the increase of extreme conditions, principally more frequent, more intense, and longer heat waves. Particular concern centers on the increasing tendency for multiple hot days in succession and heat waves occurring simultaneously in several regions throughout the State. Public health could also be affected by climate change impacts on air quality, food production, the amount and quality of water supplies, energy pricing and availability, and the spread of infectious diseases. Higher temperatures also increase ground-level ozone levels. Furthermore, wildfires can increase particulate air pollution in the major air basins of California.

Increased Energy Demand

Increases in average temperature and higher frequency of extreme heat events combined with new residential development across the State will drive up the demand for cooling in the increasingly hot and longer summer season and decrease demand for heating in the cooler season. Warmer, drier summers also increase system losses at natural gas plants (reduced efficiency in the electricity generation process at higher temperatures) and hydropower plants (lower reservoir levels). Transmission of electricity will also be affected by climate change. Transmission lines lose seven percent to eight percent of transmitting capacity in high temperatures while needing to transport greater loads. This means that more electricity needs to be produced to make up for the loss in capacity and the growing demand.

4.6.3 THRESHOLDS OF SIGNIFICANCE

The following significance criteria are from the City of Newport Beach Environmental Checklist. The Project would result in a significant impact related to climate change if it would:

Threshold 4.6-1 Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

Threshold 4.6-2 Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The State of California has adopted various administrative initiatives and legislation relating to climate change, much of which set aggressive goals for GHG emissions reductions statewide. Although lead agencies must evaluate climate change and GHG emissions of projects subject to CEQA, the CEQA Guidelines do not require or suggest specific methodologies for performing an assessment or specific thresholds of significance and do not specify GHG reduction mitigation measures. Instead, the guidelines allow lead agencies to choose methodologies and make significance determinations based on substantial evidence, as discussed in further detail below. No State agency has promulgated binding regulations for analyzing GHG emissions, determining their significance, or mitigating significant effects in CEQA documents. Thus, lead agencies exercise their discretion in determining how to analyze GHGs.

Addressing GHG emissions generation impacts requires an agency to make a determination as to what constitutes a significant impact. The amendments to the CEQA Guidelines specifically allow lead agencies to determine thresholds of significance that illustrate the extent of an impact and are a basis from which to apply mitigation measures. This means that each agency is left to determine whether a project's GHG emissions would have a "significant" impact on the environment. The guidelines direct that agencies are to use "careful judgment" and "make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" the project's GHG emissions (14 California Code of Regulations § 15064.4(a)).

A number of expert agencies throughout the State have drafted or adopted varying threshold approaches and guidelines for analyzing 2020 operational GHG emissions in CEQA documents. The different thresholds include (1) compliance with a qualified GHG reduction strategy, (2) performance-based reductions, (3) numeric bright-line thresholds, and (4) efficiency-based thresholds. The California Supreme Court decision in the Centers for Biological Diversity et al. v. California Department of Fish and Wildlife (CDFW), the Newhall Land and Farming Company (November 30, 2015, Case No. S217763) (hereafter Newhall Ranch) (AEP 2016) confirmed that when an "agency chooses to rely completely on a single quantitative method to justify a no-significance finding, CEQA demands the agency research and document the quantitative parameters essential to that method."

The Supreme Court also opined in a footnote to its decision that an agency needs to "consider the project's effects on meeting longer term emissions reduction targets" (i.e., post-2020). The topic of whether a GHG emissions analysis must conform to the 2050 reduction target (40 percent of 1990 emissions by 2030 and 80 percent of 1990 emissions by 2050) expressed in Governor Brown's EO B-30-15 and Governor Schwarzenegger's EO S-03-05 is currently before the Supreme Court in the *Cleveland National Forest Foundation v. San Diego Association of Governments* (hereafter SANDAG) case. On July 13, 2017, the

California Supreme Court rendered a 6-1 decision holding that SANDAG's EIR did not violate CEQA "by declining to explicitly engage in an analysis of the consistency of projected 2050 greenhouse gas emissions with the goals in [a 2005] executive order [the 2005 EO]."

As noted earlier, AB 32 is a legal mandate requiring that statewide GHG emissions be reduced to 1990 levels by 2020 and efficiency-based thresholds represent the rate of emission reductions needed to achieve a fair share of California's GHG emissions reduction target established under AB 32. In adopting AB 32, the legislature determined the necessary GHG reductions for the State to make in order to sufficiently offset its contribution to the cumulative climate change problem to reach 1990 levels. AB 32 is the only legally mandated requirement for the reduction of greenhouse gases. As such, compliance with AB 32 is the current adopted basis upon which an agency can base its significance threshold for evaluating a project's GHG impacts. However, it is acknowledged that EOs 5-03-05 and B-30-15, SB 375, and proposed legislation will ultimately result in GHG emissions reduction targets for 2030, 2040, and 2050.

On September 28, 2010, the South Coast Air Quality Management District (SCAQMD) recommended an interim screening level numeric bright-line threshold of 3,000 metric tons of CO₂e annually and an efficiency-based threshold of 4.8 metric tons of CO₂e per service population (residents plus employees) per year in 2020 and 3.0 metric tons of CO₂e per service population per year in 2035. These efficiency-based thresholds were developed as part of the SCAQMD GHG CEQA Significance Threshold Working Group. The working group was formed to assist the SCAQMD's efforts to develop a GHG significance threshold and is composed of a wide variety of stakeholders. The numeric bright line and efficiency-based thresholds were developed to be consistent with CEQA requirements for developing significance thresholds; are supported by substantial evidence; and provide guidance to CEQA practitioners and lead agencies with regard to determining whether GHG emissions from a project are significant.

For the purposes of this evaluation, the Proposed Project is first compared to the SCAQMD interim screening level numeric bright-line threshold of 3,000 metric tons of CO₂e annually. If it is determined that the Proposed Project is estimated to exceed this screening threshold, it is then compared to the SCAQMD-recommended efficiency-based threshold of 4.8 metric tons of CO₂e per service population per year in 2020. In addition, the SCAQMD-recommended threshold of 3.0 metric tons of CO₂e per service population per year in 2035 is used to assess a project's impacts to the post-2020 GHG reduction goals in California, identified in Governor's EO B-30-15 (2015), which seeks to achieve a reduction of GHG emissions of 40 percent below 1990 levels by 2030, and EO 5-03-05 (2005), which seeks to achieve a reduction of GHG emissions of 80 percent below 1990 levels by 2050. Compliance with the SCAQMD's 2035 significance threshold is an appropriate indicator as to whether a project would inhibit post-2020 GHG emissions reduction targets set by the State of California. Existing emissions modeling software cannot project emissions beyond 2035. Potential impacts were assessed in accordance with methodologies recommended by the SCAQMD. Where quantification was required, emissions were modeled using the California Emissions Estimator Model (CalEEMod). CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects.

4.6.4 ENVIRONMENTAL IMPACTS

Threshold 4.6-1: Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Because of the global nature of climate change, it is generally the case that an individual project is of insufficient magnitude by itself to influence climate change or result in a substantial contribution to the global GHG inventory. GHG impacts are recognized as cumulative impacts. Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO₂e), which weight each gas by its global warming potential. Expressing GHG emissions in CO₂e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO₂ were being emitted.

Construction GHG Emissions

The Proposed Project would result in direct emissions of GHGs from construction activities. The approximate quantity of daily GHG emissions generated by construction equipment associated with the Project is identified in *Table 4.6-3*. As shown in the table, Project construction would result in the generation of approximately 8,553 metric tons of CO₂e over the course of construction. Once construction is complete, the generation of these GHG emissions would cease. The SCAQMD recommends that construction emissions be amortized over a 30-year project lifetime. Therefore, projected GHGs from construction have been quantified and amortized over 30 years. The amortized construction emissions are added to the annual average operational emissions.

Construction Year	CO ₂ e
2018	1,142
2019	2,058
2020	1,555
2021	2,872
2022	926
Total Construction	8,553

Source: Michael Baker International, 2017b.

Operational GHG Emissions

Table 4.6-4 summarizes the GHG emissions associated with Proposed Project operations. As shown, the Project would generate approximately 1,938 metric tons of CO₂e annually.

Table 4.6-4. Greenhouse Gas Emissions – Project Operation – Metric Tons per Year	
Emissions Source	CO₂e
Construction Amortized over 30 Years	285
Area Source	61
Energy	163
Mobile	1,282
Waste	31
Water and Wastewater	116
Total	1,938
SCAQMD Bright-line threshold	3,000
Exceeds threshold?	No
Source: Michael Baker International, 2017b.	

As identified in Table 4.6-4, the SCAQMD’s interim screening level numeric bright-line threshold of 3,000 metric tons of CO₂e annually would not be exceeded. The Proposed Project’s cumulative contribution to GHG emissions is less than significant. In addition, Project Design Feature (PDF) 1 identifies that the Applicant will pursue a Leadership in Energy and Environmental Design (LEED) Silver Certification for the Project. Additional efficiency features include the use of landscape irrigation systems with weather sensors, timers, and low-flow irrigation devices to further reduce the overall water use in the community. Non-potable water would be used for all site irrigation. Electrical vehicle charging stations would be provided in each parking structure. No mitigation measures are required.

Impact Summary: **Less Than Significant Impact.** Development of the Proposed Project would not result in a substantial increase of GHG emissions that would exceed the SCAQMD’s significance criteria.

Threshold 4.6-2: **Would the Project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?**

City of Newport Beach Energy Action Plan

The City’s objective is to reduce its energy consumption and GHG emissions to become a more sustainable community and to meet the goals of AB 32. The EAP outlines various measures and strategizes numerous methods on how the City’s long term vision can be achieved. Key goals of this EAP are highlighted in the following list.

- Meet and exceed AB 32 energy reduction goals;
- Be an example for energy efficiency and sustainability at City facilities;
- Continue interacting, educating, and informing the community about energy efficiency and greenhouse gas emissions;
- Explore the newest "green" technologies and methods to decrease future energy dependency;
- Explore renewable energy recourses (not limited to solar) and possible financing based on available grants/rebates;

- Enhance energy efficiency and operations in existing buildings through systematic commissioning strategies or independent energy efficiency studies;
- Evaluate all the suggested energy efficiency action measures presented in this EAP, establish a priority for implementation, and determine possible funding sources.

The Proposed Project would be consistent with the City's EAP. Therefore, the Project is consistent with AB 32, which aims to decrease emissions statewide to 1990 levels by the year 2020. Potential impacts are considered less than significant.

SCAG's 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy

SCAG's 2016–2040 RTP/SCS establishes GHG emissions goals for automobiles and light-duty trucks for 2020 and 2035 as well as an overall GHG target for the project region consistent with both the target date of AB 32 and the post-2020 GHG reduction goals of EOs 5-03-05 and B-30-15. The 2016 RTP/SCS contains over 4,000 transportation projects, ranging from highway improvements, railroad grade separations, bicycle lanes, new transit hubs and replacement bridges. These future investments were included in the six county plans (Orange, Imperial, Los Angeles, Riverside, San Bernardino, and Ventura) and seek to reduce traffic bottlenecks, improve the efficiency of the region's network, and expand mobility choices. The RTP/SCS is an important planning document for the region, allowing project sponsors to qualify for federal funding. The plan takes into account operations and maintenance costs to ensure reliability, longevity, and cost effectiveness.

In addition, the RTP/SCS is supported by a combination of transportation and land use strategies that help the region achieve State GHG emissions reduction goals and FCAA requirements, preserve open space areas, improve public health and roadway safety, support our vital goods movement industry, and use resources more efficiently. GHG emissions resulting from development-related mobile sources are the most potent source of emissions (Table 4.6-5), and therefore comparison to the RTP/SCS is an appropriate indicator of whether the Proposed Project would inhibit the post-2020 GHG reduction goals promulgated by the State. The Project is consistent with the General Plan land use designations for the site and is therefore consistent with the RTP/SCS. In addition, the Project is consistent with regional strategies to reduce passenger vehicle miles traveled (VMT). The Proposed Project is within a major employment center and is proximate to several major employers within Orange County (e.g., University of California, Irvine, Allergan, Pacific Life, Ingram Micro). Orange County is traditionally jobs-rich. A major transit stop along Jamboree Avenue connects the project site to major employment within the Irvine Business Complex and the City of Irvine's iShuttle. Increasing residential land uses near major employment centers is a key strategy to reducing regional VMT. Therefore, in addition to generating a net reduction in GHG emissions, the project would be consistent with regional goals to reduce trips and VMT.

The Proposed Project's consistency with the RTP/SCS goals is analyzed in *Table 4.6-5*. The Project would not conflict with the stated goals of the RTP/SCS. For these reasons, the Project would not interfere with SCAG's ability to achieve the region's post-2020 mobile source GHG reduction targets outlined in the 2016 RTP/SCS. Potential impacts are considered less than significant and no mitigation is required.

Impact Summary: ***Less Than Significant Impact.*** The Project would not interfere with the implementation of the City's Energy Action Plan, SCAG's 2016-2040 RTP/SCS, or CARB's Scoping Plan consistent with AB 32.

4.6.5 CUMULATIVE IMPACTS

Because of the global nature of climate change, most projects will not result in GHG emissions that are individually significant. Therefore, it is accepted as very unlikely that any individual development project or General Plan would have GHG emissions of a magnitude to directly impact global climate change and the impact of the Proposed Project is considered on a cumulative basis. Please refer to Threshold 4.6-1. The Project’s cumulative contribution of GHG emissions would be less than significant and the Project’s cumulative GHG impacts would also be less than cumulatively considerable and potential impacts are considered less than significant.

Table 4.6-5. Regional Transportation Plan/Sustainable Communities Strategy Consistency	
SCAG Goals	Compliance with Goal
GOAL 1: Align the plan investments and policies with improving regional economic development and competitiveness.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
GOAL 2: Maximize mobility and accessibility for all people and goods in the region.	Not Applicable: This is not a transportation improvement project and is therefore not applicable.
GOAL 3: Ensure travel safety and reliability for all people and goods in the region.	Not Applicable: This is not a transportation improvement project and is therefore not applicable.
GOAL 4: Preserve and ensure a sustainable regional transportation system.	Not Applicable: This is not a transportation improvement project and is therefore not applicable.
GOAL 5: Maximize the productivity of our transportation system.	Not Applicable: This is not a transportation improvement project and is therefore not applicable.
GOAL 6: Protect the environment and health of our residents by improving air quality and encouraging active transportation (e.g., bicycling and walking).	Consistent: The reduction of energy use, improvement of air quality, and promotion of more environmentally sustainable development are encouraged through the development of alternative transportation methods, green design techniques for buildings, and other energy-reducing techniques. This development project is required to comply with the provisions of the California Building Energy Efficiency Standards and the Green Building Standards Code (CALGreen). Additionally, the project is located approximately 650 feet from a bus stop, which will encourage alternative forms of transportation.
GOAL 7: Actively encourage and create incentives for energy efficiency, where possible.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
GOAL 8: Encourage land use and growth patterns that facilitate transit and non-motorized transportation.	Consistent: See response to RTP/SCS Goal 6.
GOAL 9: Maximize the security of our transportation system through improved system monitoring, rapid recovery planning, and coordination with other security agencies.	Not Applicable: This is not a transportation improvement project and is therefore not applicable.
Source: Michael Baker International, 2017b.	

4.6.6 MITIGATION PROGRAM

Project Design Features

The following Project Design Features (PDFs) are applicable to the reduction of greenhouse gas emissions.

PDF 1 **Building Design.** The Applicant will pursue a Leadership in Energy and Environmental Design (LEED) Silver Certification for the Project. Project features may include the following.

- Bicycle storage and maintenance facility
- Electric vehicle charging stations
- Indoor water use reduction
- Optimized energy performance
- Low emitting materials
- Day lighting
- Enhanced indoor air quality features
- Earth day functions for residents

PDF 3 **Incorporate Efficient Irrigation Design Strategies along with the use of Reclaimed Water.** Reclaimed water will be used for all Project landscaping including the plazas, public park, and podium outdoor spaces for each of the residential buildings. Reclaimed water would be installed to irrigate the existing Koll Center Newport landscape areas within the project site boundaries. While complying with the Model Water Efficient Landscape Ordinance in effect at the time of final design, the irrigation design will include the use of efficient irrigation systems. Those may include smart controllers, soil moisture and rain sensors, and source control strategies, all designed to minimize the use of water.

Standard Conditions

SC 4.6-1 **Energy Efficiency Standards.** The Project shall be built in accordance with the current California Building Energy Efficiency Standards for residential and nonresidential in effect at the time of building permit application submittal to the City of Newport Beach.

Mitigation Measures

No mitigation is required.

4.6.7 LEVEL OF SIGNIFICANCE AFTER MITIGATION

All potential impacts are less than significant.

This page intentionally left blank