

2.3 Greenhouse Gas Emissions

This greenhouse gas (GHG) emissions section includes a discussion of applicable plans, policies, and regulations, existing conditions, significance thresholds, and a determination of whether the project would result in significant impacts relating to GHG emissions. The GHG section is based on the *Lake Jennings Market Place Greenhouse Gas Report*, prepared by OB-1 Air Analyses, Inc. (OB-1 Air Analyses, Inc., 20172016). The complete GHG study can be found in Appendix E of the Technical Appendices.

2.3.1 Existing Conditions

Background

Constituent gases that trap heat in the Earth's atmosphere are called greenhouse gases (GHGs), analogous to the way a greenhouse retains heat. GHGs play a critical role in the Earth's radiation budget by trapping infrared radiation emitted from the Earth's surface, which would otherwise have escaped into space. Prominent GHGs contributing to this process include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and chlorofluorocarbons (CFCs). Without the natural heat-trapping effect of GHG, the earth's surface would be about 34° cooler. This is a natural phenomenon known as the "Greenhouse Effect," which is responsible for maintaining a habitable climate. However, anthropogenic emissions of these GHGs in excess of natural ambient concentrations are responsible for the enhancement of the "Greenhouse Effect," and have led to a trend of unnatural warming of the Earth's natural climate known as global warming or climate change, or more accurately Global Climate Disruption. Emissions of these gases that induce global climate disruption are attributable to human activities associated with industrial/manufacturing/commercial, utilities, transportation, residential and agricultural sectors.

The global warming potential (GWP) is the potential of gas or aerosol to trap heat in the atmosphere. Individual GHG compounds have varying GWP and atmospheric lifetimes. The reference gas for the GWP is CO₂; CO₂ has a GWP of one. The calculation of the CO₂ equivalent (CO₂e) is a consistent methodology for comparing GHG emissions since it normalizes various GHG emissions to a consistent metric. CH₄'s warming potential of 25 indicates that CH₄ has a 25 times greater warming effect than CO₂ on a molecular basis. The larger the GWP, the more that a given gas warms the Earth compared to CO₂ over that period. The period usually used for GWPs is 100 years. A CO₂e is the mass emissions of an individual GHG multiplied by its GWP. GHGs are often presented in units called metric tons of CO₂e (MTCO₂e).

State law defines GHGs as any of the following compounds CO₂, CH₄, N₂O, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF₆) (California Health and Safety, Code Section 38505(g)).

Carbon Dioxide (CO₂) is a colorless, odorless gas consisting of molecules made up of two oxygen atoms and one carbon atom. CO₂ is produced when an organic carbon compound (such as wood) or fossilized organic matter (such as coal, oil, or natural gas), is burned in the presence of oxygen. CO₂ is removed from the atmosphere by CO₂ "sinks", such as absorption by seawater and photosynthesis by ocean-dwelling plankton and land plants, including forests and grasslands. However, seawater is also a source of CO₂ to the atmosphere, along with land plants, animals, and soils, when CO₂ is released during respiration. Whereas the natural production and absorption of CO₂ is achieved through the terrestrial biosphere and the ocean, humankind has altered the natural carbon cycle by burning coal, oil, natural gas, and wood. Since the industrial revolution began in the

mid-1700s, each of these activities has increased in scale and distribution. Prior to the industrial revolution, concentrations of CO₂ were stable at a range of 275 to 285 ppm. The National Oceanic and Atmospheric Administration Earth System Research Laboratory indicates that global concentration of CO₂ were 396.72 ppm in April 2013. In addition, the CO₂ levels at Mauna Loa averaged over 400 ppm for the first time during the week of May 26, 2013¹. These concentrations of CO₂ exceed by far the natural range over the last 650,000 years (180 to 300 ppm) as determined from ice cores.

Methane (CH₄) is a colorless, odorless non-toxic gas consisting of molecules made up of four hydrogen atoms and one carbon atom. CH₄ is combustible, and it is the main constituent of natural gas—a fossil fuel. CH₄ is released when organic matter decomposes in low oxygen environments. Natural sources include wetlands, swamps and marshes, termites, and oceans. Human sources include the mining of fossil fuels and transportation of natural gas, digestive processes in ruminant animals such as cattle, rice paddies and the buried waste in landfills. Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of CH₄. Other anthropogenic sources include fossil-fuel combustion and biomass burning.

Nitrous Oxide (N₂O) is a colorless, non-flammable gas with a sweetish odor, commonly known as "laughing gas", and sometimes used as an anesthetic. N₂O is naturally produced in the oceans and in rainforests. Man-made sources of N₂O include the use of fertilizers in agriculture, nylon and nitric acid production, cars with catalytic converters and the burning of organic matter. Concentrations of N₂O also began to rise at the beginning of the industrial revolution.

Chlorofluorocarbons (CFCs) are gases formed synthetically by replacing all hydrogen atoms in CH₄ or ethane with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically un-reactive in the troposphere (the level of air at the Earth's surface). CFCs have no natural source but were first synthesized in 1928. It was used for refrigerants, aerosol propellants, and cleaning solvents. Because of the discovery that they are able to destroy stratospheric ozone, an ongoing global effort to halt their production was undertaken and has been extremely successful, so much so that levels of the major CFCs are now remaining steady or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years.

Hydrofluorocarbons (HFCs) are synthesized chemicals that are used as a substitute for CFCs. Out of all of the GHGs; HFCs are one of three groups with the highest GWP. HFCs are synthesized for applications such as automobile air conditioners and refrigerants.

Perfluorocarbons (PFCs) have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface are able to destroy the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. The two main sources of PFCs are primary aluminum production and semiconductor manufacture.

Sulfur Hexafluoride (SF₆) is an extremely potent greenhouse gas. SF₆ is very persistent, with an atmospheric lifetime of more than a thousand years. Thus, a relatively small amount of SF₆ can have a significant long-term impact on global climate change. SF₆ is human-made, and the primary user of SF₆ is the electric power industry. Because of its inertness and dielectric properties, it is the industry's preferred gas for electrical insulation, current interruption, and arc quenching (to prevent fires) in the

¹ "Trends in Atmospheric Carbon Dioxide. Earth System Research Laboratory. National Oceanic and Atmospheric Administration. <http://www.esrl.noaa.gov/gmd/ccgg/trends/global.html>. Accessed June 2013."

transmission and distribution of electricity. SF₆ is used extensively in high voltage circuit breakers and switchgear, and in the magnesium metal casting industry.

Main sources of on-site GHG emissions for the project are associated with vehicle use and fixed onsite sources (landscaping, heating, etc.).

2.3.1.1 Regulatory Setting

Federal

In June of 2013, the President enacted a national Climate Action Plan that consisted of a wide variety of executive actions and had three pillars: 1) cut carbon in America, 2) prepare the U.S. for impacts of climate change, and 3) lead international efforts to combat global climate change and prepare for its impacts. The Climate Action Plan outlines 75 goals within the three main pillars.

Cut Carbon in America. The Climate Action Plan consists of actions to help cut carbon by deploying clean energy such as cutting carbon from power plants, promoting renewable energy, and unlocking long-term investment in clean energy innovation. In addition, the Plan includes actions designed to help build a 21st century transportation sector; cut energy waste in homes, businesses, and factories; and reducing other GHG emissions, such as HFCs and methane. The Plan commits to lead in clean energy and energy efficiency at a federal level.

Prepare the U.S. for Impacts of Climate Change. The Climate Action Plan consists of actions to help prepare for the impacts through building stronger and safer communities and infrastructure by supporting climate resilient investments, supporting communities and tribal areas as they prepare for impacts, and boosting resilience of building and infrastructure; protecting the economy and natural resources by identifying vulnerabilities, promoting insurance leadership, conserving land and water resources, managing drought, reducing wildfire risks, and preparing for future floods; and using sound science to manage climate impacts.

Lead International Efforts. The Climate Action Plan consists of actions to help the U.S. lead international efforts through working with other countries to take action by enhancing multilateral engagements with major economies, expanding bilateral cooperation with major emerging economies, combating short-lived climate pollutants, reducing deforestation and degradation, expanding clean energy use and cutting energy waste, global free trade in environmental goods and services, and phasing out subsidies that encourage wasteful use of fossil fuels and by leading efforts to address climate change through international negotiations.

In June of 2014, the Center for Climate and Energy Solutions (C2ES) published a one-year review of progress in implementation of the Plan. The C2ES found that the administration had made marked progress in its initial implementation. The administration made at least some progress on most of the Plan's 75 goals; many of the specific tasks outlined had been completed. Notable areas of progress included steps to limit carbon pollution from power plants; improve energy efficiency; reduce CH₄ and HFC emissions; help communities and industry become more resilient to climate change impacts; and end U.S. lending for coal-fired power plants overseas.

State

Executive Order S-3-05 – Statewide GHG Emission Targets

On June 1, 2005, the Governor issued Executive Order (EO) S-3-05 which set the following GHG mission reduction targets:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels;
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

This EO also directed the secretary of the California Environmental Protection Agency (Cal EPA) to oversee the efforts made to reach these targets, and to prepare ~~biannual~~ biennial reports on the progress made toward meeting the targets and on the impacts to California related to global warming. The first such Climate Action Team Assessment Report was produced in March 2006 and has been updated every two years thereafter.

California Global Warming Solutions Act (Assembly Bill 32)

In 2006, the California State Legislature enacted the California Global Warming Solutions Act of 2006, also known as Assembly Bill (AB) 32. AB 32 focuses on reducing GHG emissions in California. GHGs, as defined under AB 32, include CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆. AB 32 requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. CARB is the state agency charged with monitoring and regulating sources of emissions of GHGs that cause global warming in order to reduce emissions of GHGs. AB 32 also requires that by January 1, 2008, the CARB must determine what the statewide GHG emissions level was in 1990, and it must approve a statewide GHG emissions limit so it may be applied to the 2020 benchmark. CARB approved a 1990 GHG emissions level of 427 MTCO_{2e}, on December 6, 2007 in its Staff Report. Therefore, in 2020, emissions in California are required to be at or below 427 MTCO_{2e}.

Under the “business as usual or (BAU)” scenario established in 2008, statewide emissions were increasing at a rate of approximately 1 percent per year as noted below. It was estimated that the 2020 estimated BAU of 596 MTCO_{2e} would have required a 28 percent reduction to reach the 1990 level of 427 MTCO_{2e}.

Executive Order B-30-15

On April 20, 2015 Governor Edmund G. Brown Jr. signed Executive Order B-30-15 to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The Governor’s executive order aligns California’s GHG reduction targets with those of leading international governments such as the 28-nation European Union which adopted the same target in October 2014. California is on track to meet or exceed its legislated target of reducing GHG emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (AB 32, summarized above). California’s new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal of reducing emissions 80 percent below 1990 levels by 2050. This is in line with the scientifically established levels needed in the U.S. to limit global warming below 2°C, the warming threshold at which there will likely be major climate disruptions such as super droughts and rising sea levels. The targets stated in Executive Order B-30-15 have not been adopted by the state legislature.

Climate Change Scoping Plan

The Scoping Plan released by CARB in 2008 outlined the State's strategy to achieve the AB32 goals. This Scoping Plan, developed by CARB in coordination with the CAT, proposed a comprehensive set of actions designed to reduce overall GHG emissions in California, improve the environment, reduce dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health. It was adopted by CARB at its meeting in December 2008. According to the Scoping Plan, the 2020 target of 427 MTCO₂e requires the reduction of 169 MTCO₂e, or approximately 28.3 percent, from the State's projected 2020 BAU emissions level of 596 MTCO₂e.

However, in August 2011, the Scoping Plan was re-approved by the Board and includes the Final Supplement to the Scoping Plan Functional Equivalent Document. This document includes expanded analysis of project alternatives as well as updates the 2020 emission projections in light of the current economic forecasts. Considering the updated 2020 BAU estimate of 507 MTCO₂e, only a 16 percent reduction below the estimated new BAU levels would be necessary to return to 1990 levels by 2020. The 2011 Scoping Plan expands the list of nine Early Action Measures into a list of 39 Recommended Actions.

~~However,~~ In May 2014, CARB developed; in collaboration with the CAT, the First Update to California's Climate Change Scoping Plan (Update), which shows that California is on track to meet the near-term 2020 greenhouse gas limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB32. In accordance with the United Nations Framework Convention on Climate Change (UNFCCC), CARB is beginning to transition to the use of the AR4's 100-year GWPs in its climate change programs. CARB has recalculated the 1990 GHG emissions level with the AR4 GWPs to be 431 MTCO₂e, therefore the 2020 GHG emissions limit established in response to AB32 is now slightly higher than the 427 MTCO₂e in the initial Scoping Plan.

GHG Reduction Strategies. The majority of the Scoping Plan's GHG reduction strategies are directed at the two sectors with the largest GHG emissions contributions: transportation and electricity generation. The GHG reduction strategies for these sectors involve statutory mandates affecting vehicle or fuel manufacture, public transit, and public utilities. The reduction strategies employed by CARB are designed to reduce emissions from existing sources as well as future sources. The most relevant are outlined in the following sections.

AB 1493 – Light-duty Vehicle GHG Emissions Standards. AB 1493 (Pavley) requires the CARB to develop and adopt regulations that achieve “the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty truck and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the State.” On September 24, 2009, CARB adopted amendments to the Pavley regulations that intend to reduce GHG emissions in new passenger vehicles from 2009 through 2016. The amendments bind California's enforcement of AB 1493 (starting in 2009), while providing vehicle manufacturers with new compliance flexibility. The amendments also prepare California to merge its rules with the federal CAFE rules for passenger vehicles. In January 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single packet of standards called Advanced Clean Cars.

Executive Order S-01-07. This EO, signed by Governor Schwarzenegger on January 18, 2007, directs that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by the year 2020. It orders that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established for California and directs the CARB to determine whether a LCFS can be adopted as a discrete early action measure pursuant to AB 32. The

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CARB approved the LCFS as a discrete early action item with a regulation adopted and implemented in April 2010. On December 29, 2011, District Judge Lawrence O’Neill in the Eastern District of California issued a preliminary injunction blocking the CARB from implementing LCFS for the remainder of the *Rocky Mountain Farmers Union* litigation. The injunction was lifted in April 2012 so that CARB can continue enforcing the LCFS pending CARB’s appeal of the federal district court ruling.

Renewable Portfolio Standard. The Renewable Portfolio Standard (RPS) promotes diversification of the state’s electricity supply and decreased reliance on fossil fuel energy sources. Originally adopted in 2002 with a goal to achieve a 20 percent renewable energy mix by 2020 (referred to as the “initial RPS”), the goals have been accelerated and increased by EOs S-14-08 and S-21-09 to a goal of 33 percent by 2020. In April 2011, the Governor signed SB 2 (1X) codifying California’s 33 percent RPS goal; Section 399.19 requires the California Public Utilities Commission (CPUC), in consultation with the California Energy Commission (CEC), to report to the Legislature on the progress and status of RPS procurement and other benchmarks. The purpose of the RPS upon full implementation is to provide 33 percent of the state’s electricity needs through renewable energy sources. Renewable energy includes (but is not limited to) wind, solar, geothermal, small hydroelectric, biomass, anaerobic digestion, and landfill gas.

The RPS is included in CARB’s Scoping Plan list of GHG reduction measures to reduce energy sector emissions. It is designed to accelerate the transformation of the electricity sector through such means as investment in the energy transmission infrastructure and systems to allow integration of large quantities of intermittent wind and solar generation. Increased use of renewables would decrease California’s reliance on fossil fuels, thus reducing emissions of GHGs from the electricity sector. In 2008, as part of the Scoping Plan original estimates, CARB estimated that full achievement of the RPS would decrease statewide GHG emissions by 21.3 million metric tons of CO₂e (MMTCO₂e). In 2010, CARB revised this number upwards to 24.0 MMTCO₂e.

SB 375 – Regional Emissions Targets

SB 375 was signed into law in September 2008 and requires CARB to set regional targets for reducing passenger vehicle GHG emissions in accordance with the Scoping Plan. The purpose of SB 375 is to align regional transportation planning efforts, regional GHG reduction targets, and fair-share housing allocations under state housing law. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy to address GHG reduction targets from cars and light-duty trucks in the context of that MPO’s Regional Transportation Plan (RTP).

The San Diego Association of Governments (SANDAG) is the San Diego region’s MPO. SANDAG completed and adopted its 2050 RTP in October 2011, the first such plan in the state that included a SCS. The CARB targets for SANDAG call for a 7 percent reduction in GHG emissions per capita from automobiles and light duty trucks compared to 2005 levels by 2020, and a 13 percent reduction by 2035. The reduction targets are to be updated every eight years, but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets.

After the plan was adopted, a lawsuit was filed by the Cleveland National Forest Foundation and the Center for Biological Diversity (later joined by the state’s Attorney General’s office). In December 2012, the San Diego Superior Court set aside the EIR for the RTP/SCS. The decision has been appealed by SANDAG and a decision from the court of appeal has yet to be rendered.

Title 24 – California Building Code

The California Code of Regulations (CCR), Title 24, is referred to as the California Building Code, or CBC. It consists of a compilation of several distinct standards and codes related to building construction including, plumbing, electrical, interior acoustics, energy efficiency, handicap accessibility, and so on. Of particular relevance to GHG reductions are the CBC's energy efficiency and green building standards as outlined in the following sections.

Title 24, Part 6 – Energy Efficiency Standards. The CCR, Title 24, Part 6 is the Energy Efficiency Standards of California Energy Code. This code, originally enacted in 1978, establishes energy-efficiency standards for residential and non-residential buildings in order to reduce California's energy consumption. The Energy Code is updated periodically to incorporate and consider new energy-efficiency technologies and methodologies as they become available and incentives in the form of rebates and tax breaks are provided on a sliding scale for buildings achieving energy efficiency above the minimum standards.

The Title 24 Energy Code governs energy consumed by major building envelope systems such as space heating and cooling, ventilation, water heating, and some aspects of the fixed lighting system. Non-building energy use, "plug-in" energy use (such as appliances, equipment, electronics, and plugin lighting), are independent of building design and not subject to Title 24.

New construction and major renovations must demonstrate their compliance with the current Energy Code through submission and approval of a Title 24 Compliance Report to the local building permit review authority and the CEC. The compliance reports must demonstrate a building's energy performance through use of CEC-approved energy performance software that shows iterative increases in energy efficiency given the selection of various heating, ventilation, and air conditioning; sealing; glazing; insulation; and other components related to the building envelope.

The Scoping Plan includes an Energy Efficiency GHG reduction measure that, among other things, calls for increased building and appliance energy efficiency through new standards and programs. In the Scoping Plan, CARB projects that approximately 26.3 MMTCO_{2e} of GHGs could be reduced statewide through expanded energy efficiency programs, including updates to Title 24's energy efficiency standards.

Title 24, Part 11 – California Green Building Standards. The California Green Building Standards Code, referred to as CALGreen, was added to Title 24 as Part 11 first in 2009 as a voluntary code, which then became mandatory effective January 1, 2011 (as part of the 2010 CBC). The 2013 CALGreen went into effect on January 1, 2014. CALGreen institutes mandatory minimum environmental performance standards for all ground-up new construction of commercial and low-rise residential buildings, state-owned buildings, schools, and hospitals. It also includes voluntary tiers (I and II) with stricter environmental performance standards for these same categories of residential and non-residential buildings. Local jurisdictions must enforce the minimum mandatory requirements and may also adopt the Green Building Standards with amendments for stricter requirements.

The mandatory standards require:

- 20 percent mandatory reduction in indoor water use relative to specified baseline levels;
- 50 percent construction/demolition waste diverted from landfills;
- Mandatory inspections of energy systems to ensure optimal working efficiency; and
- Requirements for low-pollutant emitting exterior and interior finish materials such as paints, carpets, vinyl flooring, and particleboards.

The voluntary standards require:

- Tier I – 30 percent water reduction, 65 percent reduction in construction waste, 10 percent recycled content, cool/solar reflective roof; and
- Tier II – 35 percent water reduction, 80 percent reduction in construction waste, 15 percent recycled content, cool/solar reflective roof.

Similar to the compliance reporting procedure described above for demonstrating energy code compliance in new buildings and major renovations, compliance with the CALGreen water reduction requirements must be demonstrated through completion of water use reporting forms for new low-rise residential and non-residential buildings. The water use compliance form must demonstrate a 20 percent reduction in indoor water use by either showing a 20 percent reduction in the overall baseline water use as identified in CalGreen or a reduced per-plumbing-fixture water use rate.

The Scoping Plan also includes a Green Building Strategy with the goal of expanding the use of green building practices to reduce the carbon footprint of new and existing buildings. Consistent with CALGreen, the Scoping Plan recognized that GHG reductions would be achieved through buildings that exceed minimum energy-efficiency standards, decrease consumption of potable water, reduce solid waste during construction and operation, and incorporate sustainable materials. Green building is thus a vehicle to achieve the Scoping Plan’s statewide electricity and natural gas efficiency targets, and lower GHG emissions from waste and water transport sectors.

In the Scoping Plan, CARB projects that an additional 26 MMTCO₂e could be reduced through expanded green building. However, this reduction is not counted toward the BAU 2020 reduction goal to avoid any double counting, as most of these reductions are accounted for in the electricity, waste, and water sectors. Because of this, CARB has assigned all emissions reductions that occur because of green building strategies to other sectors for meeting AB 32 requirements, but will continue to evaluate and refine the emissions from this sector.

Senate Bill 97 – CEQA GHG Amendments

Senate Bill 97 acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. The California Natural Resources Agency adopted amendments to the CEQA Guidelines to address GHG emissions, consistent with the Legislature’s directive in Public Resources Code section 21083.05.

State CEQA Guidelines

CEQA Guidelines Section 15064.4 discusses the significance evaluation for GHG emissions. Section 15064.4(a) recognizes that the determination of the significance “calls for a careful judgment” by the lead agency that is coupled with lead agency discretion to determine whether to (1) use a model or methodology, and/or (2) rely on a qualitative analysis or performance based standards. Section 15064.4(b) further states a lead agency should consider the following non-exclusive list of factors when assessing the significance of GHG emissions.

1. The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting;
2. The extent to which project emissions exceed a threshold of significance that the lead agency determines applies to the project; and

3. The extent to which the project complies with regulations or requirements adopted to implement statewide, regional, or local plans for the reduction or mitigation for GHG emissions.

Local

County of San Diego General Plan

The County's General Plan (2011) includes smart growth and land use planning principles designed to reduce vehicle miles traveled (VMT) and result in a reduction in GHG emissions. As discussed in the General Plan, climate change and GHG reduction policies are addressed in plans and programs in multiple elements of the General Plan. The strategies for reduction of GHG emissions in the General Plan are as follows:

- Strategy A-1: Reduce vehicle trips generated, gasoline/energy consumption, and greenhouse gas emissions.
- Strategy A-2: Reduce non-renewable electrical and natural gas energy consumption and generation (energy efficiency).
- Strategy A-3: Increase generation and use of renewable energy sources.
- Strategy A-4: Reduce water consumption.
- Strategy A-5: Reduce and maximize reuse of solid wastes.
- Strategy A-6: Promote carbon dioxide consuming landscapes.
- Strategy A-7: Maximize preservation of open spaces, natural areas, and agricultural lands.

The General Plan also includes climate adaptation strategies to deal with potential adverse effects of climate change. The climate adaptation strategies include the following:

- Strategy B-1: Reduce risk from wildfire, flooding, and other hazards resulting from climate change.
- Strategy B-2: Conserve and improve water supply due to shortages from climate change.
- Strategy B-3: Promote agricultural lands for local food production.
- Strategy B-4: Provide education and leadership.

The County has also implemented a number of outreach programs such as the Green Building Program, lawn mower trade-in program, and reduction of solid waste by recycling to reduce air quality impacts as well as GHG emissions.

Conservation and Open Space Element. The General Plan includes a Conservation and Open Space Element which sets policies pertaining to greenhouse gas emissions, including:

- COS-14.3 Sustainable Development. Require design of residential subdivisions and nonresidential development through “green” and sustainable land development practices to conserve energy, water, open space, and natural resources.
- COS-14.9 Significant Producers of Air Pollutants. Require projects that generate potentially significant levels of air pollutants and/or GHGs such as quarries, landfill operations, or large land development projects to incorporate renewable energy, and the best available control technologies and practices into the project design.

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- COS-14.10 Low-Emission Construction Vehicles and Equipment. Require County contractors and encourage other developers to use low-emission construction vehicles and equipment to improve air quality and reduce GHG emissions.
- COS-15.1 Design and Construction of New Buildings. Require that new buildings be designed and constructed in accordance with “green building” programs that incorporate techniques and materials that maximize energy efficiency, incorporate the use of sustainable resources and recycled materials, and reduce emissions of GHGs and toxic air contaminants.
- COS-15.4 Title 24 Energy Standards. Require development to minimize energy impacts from new buildings in accordance with or exceeding Title 24 energy standards.
- COS-17.1 Reduction of Solid Waste Materials. Reduce GHG emissions and future landfill capacity needs through reduction, reuse, or recycling of all types of solid waste that is generated. Divert solid waste from landfills in compliance with state law.
- COS-17.2 Construction and Demolition Waste. Require recycling, reduction and reuse of construction and demolition debris.
- COS-17.6 Recycling Containers. Require that all new land development projects include space for recycling containers.

County of San Diego Climate Action Plan

The County is currently preparing a Climate Action Plan (CAP). The CAP will be a comprehensive plan outlining the specific activities that the County will undertake to reduce GHG emissions in its unincorporated communities. The CAP will also help the County meet state-recommended GHG reduction targets. The CAP will focus on activities that can achieve the greatest GHG emission reductions in the most technologically feasible and cost-effective manner. The CAP is expected to be presented to the decision-makers in the fall of 2017.

California Air Pollution Control Officers Association (CAPCOA) Screening Thresholds

CAPCOA has recommended screening thresholds based on various land use densities and project types.² Using CAPCOA guidance, projects that meet or fall below the screening thresholds are expected to result in 900 MTCO₂e per year of GHG emissions or less and would not require additional analysis and the climate change impacts would be considered less than significant. For projects that exceed the 900 MTCO₂e per year screening level, further analysis is warranted.

County of San Diego Climate Change Analysis Criteria

~~In coordination with County staff, an Efficiency Metric, which assesses the GHG efficiency of a project on a “service population” (SP) basis (Efficiency Metric = project emissions divided by the sum of the number of jobs and the number of residents provided by a project) is being applied to the project³. The Metric represents the rate of emissions needed to achieve a fair share of the State’s emissions mandate embodied in AB 32. The use of “fair share” in this instance indicates the GHG~~

² California Air Pollution Control Officers Association. 2008 (January). *CEQA & Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act*. Available at <http://www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA-White-Paper.pdf>.

³ ~~In the “Newhall Ranch” case (Center for Biological Diversity v. California Department of Fish and Wildlife and Newhall Land and Farming (2015) 224 Cal. App. 4th 1105), the Supreme Court offered to CEQA Lead Agencies “potential pathways to compliance” in evaluating GHG and climate change impacts in environmental documents. Among these approaches, the Supreme Court identified a “service population” GHG ratio threshold for land use projects as the preferable approach over mass emissions based thresholds.~~

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efficiency level that, if applied Statewide, would meet the AB 32 emissions target and support efforts to reduce emissions beyond 2020. With a reduced rate of emissions per service population, California may be able to accommodate expected population growth and achieve economic development objectives, while also abiding by AB 32's emissions target and supporting efforts to reduce emissions beyond 2020.

The Efficiency Metric is based on the AB 32 GHG reduction target and GHG emissions inventory prepared for ARB's 2008 Scoping Plan. To develop the efficiency metric for 2020, land use driven sectors in ARB's 1990 GHG inventory were identified and separated to tailor the inventory to land use projects. This process removes emission sources not applicable to land use projects. The land use driven sector inventory for 1990 was divided by the service population projections for California in 2020. The Efficiency Metric allows the threshold to be applied evenly to most project types (residential, commercial/retail and mixed use) and employs an emissions inventory comprised only of emission sources from land use related sectors. The Efficiency Metric allows lead agencies to assess whether any given project or plan would accommodate population and employment growth in a way that is consistent with the emissions limit established under AB 32. For the purpose of this analysis, project generated GHG emissions are assessed using a 4.9 MTCO₂e per service population, where service population is defined as residents plus full time employees (see Appendix E of this EIR). The anticipated buildout year for the proposed project is 2018, therefore the 2020 target is relevant to the proposed project.

2.3.1.2 Environmental Setting

The project site is currently vacant and devoid of physical structures or buildings, as the prior two residences that occupied the site have been removed. There are no existing uses on the project site that generate GHG emissions.

State and Local GHG Inventories

Statewide GHG Emissions

The GHG emissions inventory provides estimates of the amount of GHGs emitted within the state of California. The CARB is responsible for maintaining and updating California's GHG Inventory per Health and Safety Code §39607.4 and in support of AB 32. The inventory is divided into nine broad sectors of economic activity: agriculture, commercial, electricity generation, forestry, high GWP emitters, industrial, recycling and waste, residential, and transportation. Emissions are quantified in million metric tons of CO₂ equivalent (MMTCO₂e). Table 2.3-1 shows the estimated statewide GHG emissions for the years 1990, 2008, and 2012.

As shown in Table 2.3-1, statewide GHG source emissions totaled approximately 426.60 MMTCO₂e in 1990, 487.10 MMTCO₂e in 2008, and 458.68 MMTCO₂e in 2012. Many factors affect year-to-year changes in GHG emissions, including economic activity, demographic influences, environmental conditions such as drought, and the impact of regulatory efforts to control GHG emissions. Transportation-related emissions consistently contribute the most GHG emissions, followed by electricity generation and industrial emissions.

San Diego Countywide GHG Emissions

A San Diego regional emissions inventory was prepared by the University of San Diego School of Law, Energy Policy Initiative Center (EPIC) that took into account the unique characteristics of the region. Their 2010 emissions inventory for San Diego is shown in Table 2.3-2. The sectors included in this inventory are somewhat different from those in the statewide inventory.

Similar to the statewide emissions, transportation-related GHG emissions contributed the most countywide, followed by emissions associated with energy use.

2.3.2 Analysis of Project Effects and Determination as to Significance

For the purposes of this EIR, the basis for the determination of significance for greenhouse gas emissions is CEQA Guidelines, Appendix G. As indicated in CEQA Guidelines, Appendix G, project impacts to greenhouse gas emissions would be considered significant if the project was determined to:

- a) Generate GHG 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 purposes of reducing the emissions of GHGs.

2.3.2.1 Issue 1: Generate Significant Levels of GHG

Guidelines for Determination of Significance

~~Based on Appendix G of the CEQA Guidelines, the project would have a significant impact if it would generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.~~

~~Neither CARB nor the SDAPCD has adopted significance criteria applicable to land use development projects for the evaluation of GHG emissions under CEQA. OPR's Technical Advisory titled CEQA and Climate Change: Addressing Climate Change through CEQA Review states, "public agencies are encouraged, but not required to adopt thresholds of significance for environmental impacts. Even in the absence of clearly defined thresholds for GHG emissions, the law requires that such emissions from CEQA projects must be disclosed and mitigated to the extent feasible whenever the lead agency determines that the project contributes to a significant, cumulative climate change impact." Furthermore, the advisory document indicates, "in the absence of regulatory standards for GHG emissions or other scientific data to clearly define what constitutes a 'significant impact,' individual lead agencies may undertake a project by project analysis, consistent with available guidance and current CEQA practice." Pursuant to Section 15064.4(b) of the State CEQA Guidelines, when addressing the significance of impacts from GHG emissions on the environment, the following factors were considered:~~

- ~~(1) The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting;~~
- ~~(2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and~~
- ~~(3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.~~

(1) CEQA Guideline 15064.4(b)(1) – The extent to which the project may increase or reduce GHG emissions as compared to existing environmental setting.

~~For projects that exceed the 900 MTCO₂e per year screening level, further analysis is warranted. As discussed previously, an Efficiency Metric, which assesses the GHG efficiency of a project on a SP basis (Efficiency Metric = project emissions divided by the sum of the number of jobs and the number of residents provided by a project) has been applied to the project. The Metric represents the~~

2.3 Greenhouse Gas Emissions

~~rate of emissions needed to achieve a fair share of the State's emissions mandate embodied in AB 32. For the purpose of this analysis, project generated GHG emissions are assessed using a 4.9 MTCO₂e per service population, where service population is defined as residents plus full-time employees.~~

Impact Analysis

GHG impacts associated with the proposed project are related to emissions from short-term construction and long-term operations. Construction may generate GHG emissions because of construction equipment emissions and emissions from vehicles driven to/from the project site by construction workers and material and water delivery trucks. Construction emissions may be amortized over the expected (long-term) operational life of a project, which can conservatively be estimated at 20 years. It should be noted that the County requires payment of carbon off-sets over the project life, which is considered to be 30 years per the South Coast Air Quality Management District (SCAMD) (2008). The calculation using a 20-year amortization instead of 30 years provides a conservative (higher) estimate of construction emissions which is carried through as part of the total GHG emissions associated with the project and corresponding mitigation requirements., unless evidence is provided demonstrating a longer or shorter project life.

Operational emissions would result primarily from both direct and indirect sources. Direct emissions refer to emissions produced from onsite combustion of energy, such as natural gas used in furnaces and boilers, emissions from industrial processes, and fuel combustion from mobile sources. Indirect emissions are emissions produced offsite from energy production and water conveyance due to a project's energy use and water consumption. Operational GHG emissions should include energy use (including electricity, natural gas and water and wastewater), transportation VMT, area sources, and solid waste. The project will involve removal of 16 oak trees and other non-native trees. However, the project landscape plan requires the planting of 176 new trees, and therefore, is expected to have a benefit with respect to the potential loss of sequestered carbon as a result from vegetation removal. However, the GHG emissions have been conservatively estimated for the proposed project, and do not include any benefit or GHG reductions associated with the planting of new trees.

Significance of Impacts Prior to Mitigation

Short-Term Construction

Construction of the proposed project would result in temporary emissions associated with construction worker trips, diesel engine combustion from mass grading, and site preparation construction equipment will be assumed to occur for engines running at the correct fuel-to-air ratios (the ratio whereby complete combustion of the diesel fuel occurs). Construction-related GHG emissions also include site preparation and associated construction for the SDG&E lines and poles. Of principal interest are the emission factors for CO₂ and NO_x. For a four-stroke diesel-cycle engine, the combustion byproducts are approximately 1.5-percent-by-volume (PPV) O₂, 0.5 PPV CO, and 13.5 PPV CO₂.

The County Department of Planning & Development Services recommends that the construction emissions be amortized over 20 years and added to operational emissions, as appropriate.

The project site would be cleared and graded over the course of approximately eight months (240 days). In order to estimate GHG emissions from off-road equipment, the project's Greenhouse Gas Report used formulas that derive CO₂ emissions by multiplying the CO emissions estimated in

2.3 Greenhouse Gas Emissions

the project's air quality study (Appendix K of this EIR) by 27⁴. In addition, NO_x emissions are composed of roughly 30 percent N₂O, and 70 percent nitric oxide. Therefore, N₂O emissions were estimated by multiplying the estimated NO_x emissions by 0.3. On-road vehicular emissions related to construction activity would come from employee commute and vendor activity. On-road emissions for these activities were estimated using the recognized methodologies established by the EPA and CARB⁵ based on the off-road construction activity. Table 2.3-3 quantifies the expected GHG emissions from off-road and on-road construction activities. The final equivalent CO₂-GHG load projected is shown in Table 2.3-3 as 2,708.5 2,654.7-MTCO₂e.

In accordance with CAPCOA's screening thresholds, the proposed project is analyzed under a 900₄ MTCO₂e per year screening threshold. As previously indicated, construction emissions may be distributed over the expected (long-term) operational life of a project, which have been ~~can~~ conservatively be estimated at 20 years, unless evidence is provided demonstrating a longer or shorter project life, for the purposes of determining a cumulatively considerable contribution. Thus, the yearly contribution to GHG from the aggregate of short-term construction activities at the project site would be 135.4 132.7 MTCO₂e per year. This conservative estimate results in a higher calculated annual GHG estimate associated with the proposed project, however, a longer project life (30 years) is assumed for carbon off-set purchases. In other words, as discussed later in this section, the applicant will be required to purchase the required amount of carbon off-sets for 30 years, using the more conservative annual GHG emissions estimate associated with project construction.

Long-Term Operations

Whereas construction emissions are short-term, operation of the project would also emit GHG emissions from operation of motor vehicles, energy consumption, solid waste disposal, water and wastewater energy use, and from various area sources over the long-term.

a. Motor Vehicles

Motor vehicles are the primary source of long-term ~~greenhouse gas~~GHG emissions associated with the proposed project. To calculate emissions associated with vehicle trips generated by the proposed project, trip generation rates from the project's air quality study (Appendix K of this EIR) were used. To evaluate project trips, the total trip generation rate of 4,683 ADT for buildout conditions was used. The average vehicle trip length would be 3.5 miles, with a median running speed of 45 MPH (Appendix K of this EIR). For this analysis, the EMFAC 2011 was run using input conditions specific to the San Diego air basin to predict operational vehicle emissions from the project, based upon a project completion scenario year of 2020⁶. Of principal interest are the emission factors for CO₂ and NO_x. N₂O emissions were estimated by multiplying the estimated NO_x emissions by 0.3. Table 2.3-4 quantifies the expected GHG emissions from motor vehicles. As shown in Table 2.3-4, the yearly contribution to GHG from motor vehicles is 2,168.1 MTCO₂e per year.

b. Energy Consumption

⁴ For a four-stroke diesel-cycle engine, the combustion byproducts are approximately 1.5-percent-by-volume (PPV) O₂, 0.5 PPV CO, and 13.5 PPV CO₂. Thus, the ratio of CO₂ to CO production in a properly mixed diesel stroke would be 13.5/0.5, or 27:1 (Appendix J).

⁵ California Emissions Estimator Model (CalEEMod) User's Guide. Available online at <http://www.aqmd.gov/caleemod/user%27s-guide>

⁶ This is a worst-case assumption, since implementation of cleaner vehicle controls ultimately reduces emissions under future year conditions. By applying near-term emissions factors to the complete project, an upper bound on project-related emissions is obtained.

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The project site would require a maximum load demand of 1.000 ~~megawatt~~kilowatt-hours (MWhkWh) to account for peak usage, startup transients, and a requisite margin of safety. Since that is the maximum, the overall average energy usage ~~The steady state average continuous load~~ would be roughly 40 percent of this value or 400 ~~kilowatt-hours (KkWh)~~. At 8,760 hours per year, this would equate to a yearly energy consumption of 3,504,000 kWh/year, or approximately 46 kWh/ft²/year for the proposed project. Using SDG&E's intensity factor of 641.86 lbs CO₂/MWh, which was derived by scaling the SDG&E 2009 CO₂ intensity factor to account for a State required 20 percent RPS would give an annual CO₂e GHG emission rate for the project site due to electrical usage of 1,020.2 MTCO₂e per year.

Natural gas combustion is another source of energy-related emissions. Different from the electricity energy sources, natural gas sources are direct emissions, taking place onsite. Natural gas consumption (typically due to usage of water heaters, stoves, and central heating units for this type of proposed use) would produce CO₂ and N₂O emissions. Retail spaces typically have a natural gas usage rate of 2.9 cubic feet (ft³) of natural gas per ft² of retail space per month. Using CO₂ and N₂O emission factors of 116,765 and 26.2 pounds per million ft², respectively, the Annual CO₂e emissions from natural gas combustion is 151.7 MTCO₂e per year.

c. Solid Waste Disposal

The disposal of solid waste produces GHG emissions from anaerobic decomposition in landfills, incineration, transportation of waste, and disposal. The project would have an onsite solid trash waste storage capacity of 33 cubic yards (yd³), with an average weight of 200 pounds per yd³. Assuming three trash pickups per week in accordance with commercial site requirements, the aggregate total solid waste removed from the project site would be 1,029,600 pounds per year.

According to the Intergovernmental Panel on Climate Change (IPCC), landfill CO₂ generation due to trash is approximately 0.1450 kilograms (or 0.3196 pounds) per pound of trash per year. Thus, with the estimated 1,029,600 pounds of trash per year generated by the project, the landfill CO₂e contribution level would be 149.3 MTCO₂e per year.

d. Water and Wastewater GHG Emissions

The amount of water used and wastewater generated by a project has indirect GHG emissions associated with it. These emissions are a result of the energy used to supply, distribute, and treat the water and wastewater. ~~It will often be the case that the~~ In general, water treatment and wastewater treatment occur outside of the project area. In this case, it is still important to quantify the energy and associated GHG emissions attributable to the water use. In addition to the indirect GHG emissions associated with energy use, wastewater treatment can directly emit both methane and nitrous oxide.

Calculation of Water and wastewater electrical intensity is presented in the CalEEMod User Guide. In San Diego County, it is estimated that electricity needed to supply water to the County is 9,727 kWh/10⁶ gallons. An additional 1,272 kWh/10⁶ gallons is required for the distribution of water and 1,911 kWh/10⁶ gallons is used for wastewater treatment. An additional 111 kWh/10⁶ gallons is used to treat the water. The combined energy intensity for the system of water and wastewater is 13,021 kWh/10⁶ gallons.

Water use rates for commercial and industrial land uses are presented in Table 9.1 of CalEEMod User Guide, Appendix D. These use rates were mostly obtained from Appendices E and F of the Pacific Institute's "Waste Not Want Not" report. Total gallons of water used per day per metric

2.3 Greenhouse Gas Emissions

were reported but the total daily water use was converted to annual water use based on the number of days of operation for that land use.

The water use rates for the individual components of the project are presented in Table 2.3-5, along with CO₂e estimate based on the intensity factor for SDG&E of 641.9 lbs of CO₂e/MWh. As shown in Table 2.3-5, annual CO₂e emissions from the supply, distribution, and treatment of water and wastewater is 37.8 MTCO₂e per year.

e. Area Sources

Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, rototillers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers, as well as air compressors, generators, and pumps. Landscaping equipment utilized in the course of maintenance of the project site typically would consist of five-horsepower, four-stroke lawnmowers, and small weed trimmers having two-stroke engines with an approximate 30 to 50 cubic-centimeter displacement. For the purposes of this assessment, it is assumed that the ultimate user purchases cleaner burning engines new from the store. The project site will be treated as a CARB-classified commercial area consisting of an aggregate of 15 retail business spaces. The emission factors for commercial land uses are 33.99111 lbs of CO₂/unit/day and 0.00150 lbs of N₂O/unit/day. Therefore, the retail use of landscaping operations would generate 42.8 MTCO₂e per year.

Other area sources associated with the project either do not emit GHG emissions (e.g., consumer products and architectural coatings) or is not appropriate for a commercial project (e.g., hearths).

Reductions from State Regulatory Measures

The proposed project would be eligible to take credit for the State of California implementation of adopted standards: Pavley II Clean Car Standards (AB 1493 et. seq); the Low Carbon Fuel Standard, pursuant to AB 32 and the Governor's Executive Order S-01-07; the 33 percent RPS, mandated by the State of California for the year 2020; and 2013 CCR Title 24. The estimated amounts of credit for the proposed project are described below.

a. Pavley II + LCFS Implementation (CO₂ Running Emissions)

Since the Air Quality Report used EMFAC2011 emission factors for on-road sources, and EMFAC2011 factors did not include the effects of Pavley and LCFS in future years, the project would be eligible⁷ to take credit for the State of California implementation of the Pavley II Clean Car Standards (AB 1493 et. seq.). These standards, also known as the LEV III standards, are applied only to automobile and light truck classes for model years 2017 through 2025, would reduce overall vehicle emissions by an additional 3.0 percent above the 2009 Pavley I standards. Additionally, the project would also be eligible for credit, due to the CARB proposed Low Carbon Fuel Standard (LCFS), pursuant to AB 32 and the Governor's Executive Order S-01-07. Table 2.3-6 presents estimated percent reductions that can be expected with the implementation of Pavley II and LCFS. Table 2.3-7 shows the effect of Pavley II and LCFS implementation on the proposed vehicular emissions. The total vehicular CO₂e levels can be reduced by 542.5 MTCO₂e per year (or roughly 25 percent).

b. Energy Sector 33 Percent RPS Standard

⁷ Quantification of Greenhouse Gas Emissions for Transportation Activities, Sacramento Metropolitan Air Quality Management District, Revised November 2014.

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Since the calculations used in the Air Quality Report were based on the current renewable fuels energy requirements of 20% and the project will mainly be in the post-2020 RPS level of 33%, the proposed project would be eligible to take credit for the ultimate 33 percent RPS mandated by the State of California for the year 2020. As previously stated, the proposed project would have a yearly energy consumption of 3,504,000 KWh/year; thus, using the 33 percent RPS brings the effective CO₂ reduction to 83.8 percent of unmitigated levels, or an annual equivalent CO₂e GHG load for the proposed project, due to electrical usage, of 683.5 MTCO₂e per year, a reduction of 336.7 MTCO₂e per year.

Electricity-related emissions associated with water demand and wastewater treatment would be reduced to 25.4 MTCO₂e per year, a reduction of 12.5 MTCO₂e per year.

c. 2013 CCR Title 24 Efficiency

Finally, since the calculations in the document used existing energy standards, However, the fact that when the proposed project is built, it will be constructed under 2013 Title 24 efficiency standards. Therefore, the proposed project would be eligible to take credit for utilizing the latest efficiency reductions available through implementation of the 2013 CCR Title 24 standards. These reductions are in addition to previously mentioned RPS reductions, as they would be implemented by the applicant at the project level. Currently, the 2013 CCR Title 24 provides improved electrical energy reductions of 21.8 percent, and an improved natural gas efficiency of 16.8 percent.⁸ Given this, the final mitigated CO₂e for electrical consumption at the project site under 2013 CCR Title 24 standards would be reduced by 149.0 MTCO₂e per year, while the mitigated natural gas consumption would be reduced by 25.5 MTCO₂e per year.

d. Summary of GHG Emissions

The project's total GHG emissions would be the summation of the individual sources previously identified and credits applied due to applying adopted State regulations as summarized in Table 2.3-8. As shown in Table 2.3-8, with implementation of adopted State regulations, the project's total GHG emissions would be reduced to 2,631 2,628.2 MTCO₂e per year. Pursuant to Section 15064.4(b)(1) of the State CEQA Guidelines, this is considered a significant impact because the proposed project increases GHG emissions as compared to the existing environmental setting.

Efficiency Threshold

The efficiency threshold of 4.9 MTCO₂e per service population is calculated by taking the total estimated MTCO₂e from the project, divided by the sum of estimated number of residents from the project plus the number of full time employees. Since the proposed project only involves retail shopping and does not include any residential component, the only "service population" will be number of full time employees.

Based on information supplied by the project applicant, the rough industry averages would yield an estimated total of 117 to 138 employees for the types of retail establishments proposed for the proposed project. Using 2,628 MTCO₂e per year divided by an average of 127.5 employees, the proposed project demonstrates an efficiency of 20.6 MTCO₂e per service population. The proposed project would exceed the efficiency threshold of 4.9 MTCO₂e per service population.

Mitigation Measures and Design Considerations s Investigation

⁸ Impact Analysis Report, California 2013 Building Energy Efficiency Standards, California Energy Commission, 2013.

2.3 Greenhouse Gas Emissions

~~As indicated above, even with inclusion of regulatory reduction strategies (Pavley, LFCS, RPS, and 2013 CCR Title 24 Efficiency), the proposed project would still exceed the 4.9 MTCO_{2e} efficiency threshold.~~

~~CEQA Statutes Pursuant to Public Resources Code Section 21002, says “public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects.” Because the proposed project increases GHG emissions as compared to the existing environmental setting, has the potential to result in a significant GHG emissions impact during operation, a thorough investigation analysis of available mitigation measures and design considerations was performed and detailed below.~~

Mitigations/Design Considerations Proposed

In 2010, the California Air Pollution Control Officers Association (CAPCOA) with the Northeast States for Coordinated Air Use Management and the National Association of Clean Air Agencies prepared the report, *Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures* (herein referred to as the CAPCOA Report) (CAPCOA, 2010⁹). This report is primarily focused on the quantification of project-level mitigation of GHG emissions associated with land use, transportation, energy use, and other related project emission sources. The following measures, as detailed in the CAPCOA Report, have been found to be feasible for the proposed project and therefore would be required. Section 2.3.5 ~~Mitigation~~, provides the details regarding implementation (i.e., enforcement mechanisms) of these mitigation measures.

M-GHG-1 Building Energy Use (Measure BE-1 of the CAPCOA Report)

Range of Effectiveness:

- Non-residential: 0.2-5.5 percent of GHG emissions from electricity use and 0.7-10 percent of GHG emissions from natural gas use.

Measure Applicability:

- Electricity and natural gas use in commercial buildings subject to California’s Title 24 building requirements.
- This measure is part of a grouped measure.

GHG Reduction Measure Description: New California buildings must be designed to meet the building energy efficiency standards of Title 24, also known as the California Building Standards Code. Title 24 Part 6 regulates energy uses including space heating and cooling, hot water heating, and ventilation. By committing to a percent improvement over Title 24, a development reduces its energy use and resulting GHG emissions.

The project applicant is ground-leasing the majority of the property, which will result in individual construction to be completed by separate entities, the lessees. However, the project applicant will require all buildings to go beyond Title 24 building envelope energy efficiency standards by 20 percent as a condition on their Covenants, Conditions, and Restrictions (CC&Rs) and lease documentation.

⁹ *Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures*. August 2010. Available on-line at <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>

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Compliance with Title 24 is determined from the total daily valuation (TDV) of energy use in the built environment (on a per square foot per year basis) and TDV energy use is a parameter that reflects the burden that a building imposes on an electricity supply system. Since a TDV analysis requires significant knowledge about the actual building which is not typically available during the CEQA process, this requirement allows the lessees flexibility in choosing which specific measures it will pursue to achieve the percent reductions (for example, installing higher quality building insulation, or installing a more efficient water heating system), while still making the mitigation commitment at the time of CEQA analysis.

Applicability to project: The proposed project is estimated to use 3,504 MWh/yr for buildings. The U.S. Energy Information Administration surveyed both building owners and energy suppliers in a two-phase process over at least four years and presented the results in their Commercial Buildings Energy Consumption Survey (CBECS). Data included consumption and expenditure data for electricity, natural gas, fuel oil, and district heat consumption disaggregated by end uses (heating, cooling, lighting, etc.). Since the CBECS data incorporates energy end-uses that are not included in the State's Title 24 regulations, the percentage of total usage that would relate to Title 24 for each data aggregation was developed and a weighted-average Title 24 percentage based on principle building activity was generated, yielding 41 percent of the total power for the proposed project is related to Title 24.

The Title 24 portion of energy for the proposed project would be 1,436 MWh/yr and a 20 percent reduction in this energy demand would yield 287 MWh/yr. Using SDG&E's 33 percent RPS carbon intensity of 537.6 lbs CO₂e/MWh, this mitigation would produce a reduction of 70.0 MTCO₂e per year.

This measure could include combinations of several individual measures such as install programmable thermostat timers; obtain third-party HVAC commissioning and verification of energy savings; install energy efficient boilers; install low-flow water fixtures; adopt a water conservation strategy; design water-efficient landscapes; use water-efficient landscape irrigation systems; reduce turf in landscapes and lawns; and plant native or drought-resistant trees and vegetation.

M-GHG-2 Install Energy Efficient Appliances (Measure BE-4 of the CAPCOA Report)

Range of Effectiveness:

- Grocery Stores: 17-22 percent of GHG emissions from electricity use.

Measure Applicability:

- Electricity use in commercial grocery stores.
- This measure applies only when appliance installation can be specified as part of the project.

GHG Reduction Measure Description: Using energy-efficient appliances reduces a building's energy consumption as well as the associated GHG emissions from natural gas combustion and electricity production. To take credit for this measure, the project applicant (or contracted builder) would need to ensure that energy efficient appliances are installed. For commercial land uses, energy-efficient refrigerators have been evaluated for grocery stores.

Applicability to project: The California Commercial End-Use Survey lists the electric energy intensity for refrigeration in food stores is 22.42 kWh/ft²/yr. Since the grocery store component of the proposed project is 43,000 ft², refrigeration would expect to use

2.3 Greenhouse Gas Emissions

964,060 kWh/yr, or 964 MWh/yr. The CAPCOA Report states that the reduction associated with the use of ENERGY STAR refrigeration in grocery stores in Climate Zone 10 would be 18 percent, yielding a savings of 173.5 MWh/yr. Using SDG&E's 33 percent RPS carbon intensity of 537.6 lbs CO₂e/MWh, the usage of ENERGY STAR refrigeration would produce a reduction of 42.3 MTCO₂e per year.

M-GHG-3 Limit Outdoor Lighting Requirements (Measure LE-2 of the CAPCOA Report)

Range of Effectiveness: Best Management Practice, but may be quantified.

Measure Applicability:

- Outdoor lighting.
- Best Management Practice unless project applicant supplies substantial evidence.

GHG Reduction Measure Description: Strategies for reducing the operational hours of lights include programming lights in public facilities to turn off after-hours, or installing motion sensors on pedestrian pathways. Limiting the hours of operation of outdoor lights in turn limits the indirect GHG emissions associated with their electricity usage.

Applicability to project: The proposed project would have 29 outdoor light emitting diodes (LED) lights that have the capability of dimming to 12 percent of the lumens (brightness). Each light uses 180 watts of electricity for a total of 5.22 kW necessary. If running at full capacity for all hours of darkness, which the CAPCOA Report estimated to be 4,280 hours per year, the outdoor lighting would use 22.34 MW/yr. At full brightness, the lights emit roughly 17,000 lumens and can be dimmed to only 2,080 lumens, for an 88 percent reduction. Applying that reduction to one half of the 22.34 MW/yr electricity demand would result in an overall reduction of 9.83 MW/yr of electrical demand. Using SDG&E's 33 percent RPS carbon intensity of 537.6 lbs CO₂e/MWh, the dimming of the outdoor lights for one half the hours of darkness would produce a reduction of 2.4 MTCO₂e per year.

M-GHG-4 Establish Onsite Renewable Energy Systems – Solar Power (Measure AE-2 of the CAPCOA Report)

Range of Effectiveness: 0-100 percent of GHG emissions associated with electricity use.

Measure Applicability: Electricity use.

GHG Reduction Measure Description: Using electricity generated from photovoltaic (PV) systems displaces electricity demand which would ordinarily be supplied by the local utility. Since zero GHG emissions are associated with electricity generation from PV systems, the GHG emissions reductions from this mitigation measure are equivalent to the emissions that would have been produced had electricity been supplied by the local utility.

Applicability to project: The project architect has identified the potential of PV panels as the percentage of roof area available for solar panel installation. Assuming 45 percent of roof dedicated to panels on the grocery store and 5 percent each on the other five buildings, the usable roof space would be 21,005 ft². (Note, the 5 percent commitment on the five smaller commercial buildings could occur through any combination of use of portions of one, or all of the five smaller commercial buildings, to allow for flexibility in placement of the panels around other required rooftop equipment and structures). The number of 3-foot by 5-foot panels that could be placed on the roofs of the six buildings would be approximately 1,400. The average solar panel is rated for 0.19 kW per panel, which would yield a total of 268.8 kW from all panels. San Diego's solar efficiency is rated 2,000 kWh/kW-yr, so the collection

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of panels is rated to be able to generate 531.6 MWh/yr. However, since there is an expected capture rate of 78 percent that accounts for inverter efficiency, panel performance, and losses from wiring, the effective power generated would be 414.7 MWh/yr, which would represent 11.8 percent of their power needs. Using SDG&E's 33 percent RPS carbon intensity of 537.6 lbs CO₂e/MWh, the PV solar power would produce a reduction of 101.1 MTCO₂e per year.

M-GHG-5 Provide Pedestrian Network Improvements (Measure SDT-1 of CAPCOA Report)

Range of Effectiveness: 0-2 percent reduction in GHG emissions.

Measure Applicability:

- Urban, suburban, rural context.
- Appropriate for residential, retail, office, industrial, and mixed-use projects.
- Reduction benefit only occurs if the project has both pedestrian network improvements on site and connections to the larger off-site network.

GHG Reduction Measure Description: Providing a pedestrian access network to link areas of the project site encourages people to walk instead of drive. This mode-shift results in people driving less and thus a reduction in VMT. The project will provide a pedestrian access network that internally links all uses and connects to all existing or planned external streets and pedestrian facilities contiguous with the project site. The project will minimize barriers to pedestrian access and interconnectivity. Physical barriers such as walls, landscaping, and slopes that impede pedestrian circulation will be eliminated.

Applicability to project: The proposed project includes enhanced pedestrian access from Ridge Hill Road and Rios Canyon Road and a combination equestrian/pedestrian trail along the southern border of the site. Literature for this measure does not speak directly to a rural context, but an assumption was made that the benefits will likely be lower than a suburban/urban context. Quantification is not necessary per this measure because less than 1 percent reduction in VMT is assumed.

M-GHG-6 Provide Traffic Calming Measures (Measure SDT-2 of CAPCOA Report)

Range of Effectiveness: 0.25-1.0 percent reduction in GHG emissions.

Measure Applicability:

- Urban, suburban, and rural context.
- Appropriate for residential, retail, office, industrial and mixed-use projects.

GHG Reduction Measure Description: Providing traffic calming measures encourages people to walk or bike instead of using a vehicle. This mode shift will result in a decrease in VMT. Traffic calming features may include: marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, roundabouts or mini-circles, on-street parking, planter strips with street trees, chicanes/chokers, and others.

Applicability to project: Even though general traffic calming methods are not usually appropriate for a single retail site, a roundabout is planned at the main off-ramp of Interstate 8 and Lake Jennings Road, Ridge Hill Road and Olde Highway 80. Quantification is not attempted because specific information regarding the effectiveness of this roundabout on traffic calming is limited and calming methods work best as a component of methods of calming that take place in the neighborhood, for which data is not readily available. It should

be noted that other project features, such as the construction of new sidewalks and a trail will be provided as part of the project, consistent with Traffic Calming Measures.

M-GHG-7 Incorporate Bike Lane Street Design (on-site) (Measure SDT-5 of CAPCOA Report)

Range of Effectiveness: Grouped strategy.

Measure Applicability:

- Urban and rural context.
- Appropriate for residential, retail, office, industrial and mixed-use projects.

GHG Reduction Measure Description: On-street bike accommodations provide a continuous network of routes, facilitated with markings and signage. These improvements can help reduce peak-hour vehicle trips by making commuting by bike easier and more convenient for more people. In addition, improved bicycle facilities can increase access to and from transit hubs, thereby expanding the “catchment area” of the transit stop or station and increasing ridership. The benefits of Bike Lane Street Design are small and should be grouped with the Improve Design of Development strategy to strengthen street network characteristics and enhance multi-modal environments.

Applicability to project: All trails and bike paths will have numerous ingress/egress access to the project site, to enhance bicycle accessibility. Quantification was not attempted since this measure determines that benefits of Bike Lane Street Design are small and should be grouped with the Improve Design of Development strategy to strengthen street network characteristics and enhance multi-modal environments.

M-GHG-8 Provide Bike Parking in Non-Residential Projects (Measure SDT-6 of CAPCOA Report) and Provide Bike Parking Near Transit (Measure TST-5 of CAPCOA Report)

Provide Bike Parking in Non-Residential Projects (Measure SDT-6 of CAPCOA Report)

Range of Effectiveness: Grouped strategy.

Measure Applicability:

- Urban, suburban, and rural context.
- Appropriate for residential, retail, office, industrial and mixed-use projects.

GHG Reduction Measure Description: Provide short-term and long-term bicycle parking facilities to meet peak season maximum demand. Bike Parking in Non-Residential Projects has minimal impacts as a standalone strategy and should be grouped with the Improve Design of Development strategy to encourage bicycling by providing strengthened street network characteristics and bicycle facilities.

Applicability to project: There are 40 bicycle stalls planned for the entire site and there is a new transit stop planned for Olde Highway 80 at Rios Canyon Road. Quantification was not attempted since Bike Parking in Non-Residential Projects has minimal impacts as a standalone strategy and should be grouped with the Improve Design of Development strategy to encourage bicycling by providing strengthened street network characteristics and bicycle facilities.

Provide Bike Parking Near Transit (Measure TST-5 of CAPCOA Report)

Range of Effectiveness: Grouped strategy.

Measure Applicability:

- Urban or suburban context.
- Appropriate for residential, retail, office, industrial and mixed-use projects.

GHG Reduction Measure Description: Provide short-term and long-term bicycle parking near rail stations, transit stops, and freeway access points.

Applicability to project: There are 40 bicycle stalls planned for the entire site and there is a new transit stop planned for Olde Highway 80 at Rios Canyon Road. No literature was identified that specifically looks at the quantitative impact of including transit station bike parking.

M-GHG-9 Provide Electric Vehicle Parking (Measure SDT-8 of CAPCOA Report)

Range of Effectiveness: Grouped strategy.

Measure Applicability:

- Urban or suburban context.
- Appropriate for residential, retail, office, industrial and mixed-use projects.

GHG Reduction Measure Description: Implement accessible electric vehicle parking. Provide conductive/inductive electric vehicle charging stations and signage prohibiting parking for non-electric vehicles.

Applicability to project: The project is proposing ~~16~~24 parking stalls that would be designated for low-emitting, fuel efficient, and carpool/van pools. EV charging stations would be installed. No literature was identified that specifically looks at the quantitative impact of implementing electric vehicle parking.

M-GHG-10 Dedicate Land for Bike Trails (Measure SDT-9 of CAPCOA Report)

Range of Effectiveness: Grouped strategy.

Measure Applicability:

- Urban, suburban, and rural context.
- Appropriate for residential, retail, office, industrial and mixed-use projects.

GHG Reduction Measure Description: Larger projects may be required to provide for, contribute to, or dedicate land for the provision of off-site bicycle trails linking the project to designated bicycle commuting routes. The benefits of Land Dedication for Bike Trails have not been quantified and should be grouped with the Improve Design of Development strategy to strengthen street network characteristics and improve connectivity to off-site bicycle networks.

Applicability to project: In addition to bike paths planned for Lake Jennings Road and Olde Highway 80, the proposed project has extensive trails and walkways, including 10-foot-wide pedestrian walkways on east and west boundaries and a 10-foot-wide equestrian trail on the southern border separating designated open space/wetlands. All these trails are proposed to be of sufficient width to be multi-use compatible. No literature was identified that specifically looks at the quantitative impact of implementing land dedication for bike trails.

M-GHG-11 Implement Transit Access Improvements (Measure TST-2 of CAPCOA Report)

Range of Effectiveness: Grouped strategy.

Measure Applicability:

- Urban or suburban context.
- Appropriate for residential, retail, office, industrial and mixed-use projects.

GHG Reduction Measure Description: Improve access to transit facilities through sidewalk/crosswalk safety enhancements and bus shelter improvements.

Applicability to project: The proposed project plans to remove an existing transit station and build a new one with transit site amenities. No literature was identified that specifically looks at the quantitative impact of improving transit facilities as a standalone strategy.

~~M-GHG~~ ~~Provide Bike Parking Near Transit (Measure TST 5 of CAPCOA Report)~~

~~*Range of Effectiveness:* Grouped strategy.~~

~~*Measure Applicability:*~~

- ~~• Urban or suburban context.~~
- ~~• Appropriate for residential, retail, office, industrial and mixed-use projects.~~

~~*GHG Reduction Measure Description:* Provide short term and long term bicycle parking near rail stations, transit stops, and freeway access points.~~

~~*Applicability to project:* There are 40 bicycle stalls planned for the entire site and there is a new transit stop planned for Olde Highway 80 at Rios Canyon Road. No literature was identified that specifically looks at the quantitative impact of including transit station bike parking.~~

M-GHG-12 Use Locally Sourced Water Supply (Measure WSW-3 of CAPCOA Report)

Range of Effectiveness: 11-75 percent for Southern California.

Measure Applicability: Indoor (potable) and outdoor (non-potable) water use.

GHG Reduction Measure Description: This measure describes GHG reductions from using local or less energy intensive water sources instead of water from the typical mix of Southern California sources. According to the 2006 CEC report, water imported from the State Water Project is Southern California's dominant water source. The electricity required to supply, treat, and distribute water (and for indoor uses, the electricity required to treat the resulting wastewater) are an average 13,022 kWh/million gallons for indoor use and 11,111 kWh/million gallons for outdoor use.

Applicability to project: The proposed project would obtain water service from the Padre Dam Municipal Water District (PDMWD). PDMWD imports 100 percent of their potable water supply from the San Diego County Water Authority (SDCWA). According to the SDCWA website, the estimated supply diversity for water acquisition in San Diego in 2020 is 26 percent from the Metropolitan Water District (MWD); 32 percent from the Imperial Irrigation District; 14 percent from the All American & Coachella Canal Lining; 7 percent from recycled water; 8 percent from seawater desalination; 5 percent from groundwater; and 8 percent local surface water.

The primary portion of the water-energy intensity formula that affects the change due to local sourcing is the amount of energy necessary to supply and convey. Since the primary source of State water is located in the northern area, where conveyance and supply can be largely due to gravitational flow, Southern California locations have to spend a larger energy budget to transport the water from its source. Since the SDCWA has achieved a strong proportion of water sources located much closer, the relative energy needs to transport are greatly reduced. SDCWA's diverse local sourcing reduces the water-energy intensity for indoor use by 39 percent and for outdoor use by 46 percent.

2.3 Greenhouse Gas Emissions

Water use for the proposed project was presented in Table 2.3-5 with approximately 8.5 MG of indoor use and 1.5 MG of outdoor use for a total of 10 MG/yr for the entire project. Using the San Diego County Water Authority's water-energy intensity, the energy needed for water use would be 75.88 MW/yr. Using SDG&E's 33 percent RPS carbon intensity of 537.6 lbs CO₂e/MWh, the GHG emissions associated with water usage would be 18.5 MTCO₂e per year instead of the estimated 37.9 MTCO₂e per year (Table 2.3-5), which would result in a reduction of 19.4 MTCO₂e per year.

M-GHG-13 Design Water-Efficient Landscapes (Measure WUW-3 of CAPCOA Report)

Range of Effectiveness: 0-70 percent reduction in GHG emissions from outdoor water use.

Measure Applicability: Outdoor water use.

GHG Reduction Measure Description: Water use contributes to GHG emissions indirectly, via the production of the electricity that is used to pump, treat, and distribute the water. Designing water-efficient landscapes for a project site reduces water consumption and the associated indirect GHG emissions. Examples of measures which a project applicant should consider when designing landscapes are reducing lawn sizes, planting vegetation with minimal water needs such as California native species, choosing vegetation appropriate for the climate of the project site, and choosing complimentary plants with similar water needs or which can provide each other with shade and/or water.

Applicability to project: According to the proposed project's landscape architects, the preliminary landscape plan is designed as water efficient, with drought tolerant plants, smart evapotranspiration irrigation systems, and no turf. Changes in water usage, which will result in reduced energy demand, would be included in Measure BE-1 (Beyond Title 24) and not individually quantified here.

M-GHG-14 Use Water-Efficient Landscape Irrigation Systems (Measure WUW-4 of CAPCOA Report)

Range of Effectiveness: 6.1 percent reduction in GHG emissions from outdoor water use.

Measure Applicability: Outdoor water use.

GHG Reduction Measure Description: Water use contributes to GHG emissions indirectly, via the production of the electricity that is used to pump, treat, and distribute the water. Using water-efficient landscape irrigation techniques such as "smart" irrigation technology reduces outdoor water demand, energy demand, and the associated GHG emissions. "Smart" irrigation control systems use weather, climate, and/or soil moisture data to automatically adjust watering schedules in response to environmental and climate changes, such as changes in temperature or precipitation levels. Many companies which design and install smart irrigation systems, such as Calsense, ET Water, and EPA-certified WaterSense Irrigation Partners, may be able to provide a site-specific estimate of the percent reduction in outdoor water use that can be expected from installing a smart irrigation system.

Applicability to project: According to the proposed project's landscape architects, the preliminary landscape plan is designed as water efficient, with drought tolerant plants, smart evapotranspiration irrigation systems, and limited turf. Changes in water usage, which will result in reduced energy demand, would be included in Measure BE-1 (Beyond Title 24) and not individually quantified here.

M-GHG-15 Reduce Turf in Landscapes and Lawns (Measure WUW-5 of CAPCOA Report)

Range of Effectiveness: Varies and is equal to the percent commitment to turf reduction, assuming no other outdoor water uses.

Measure Applicability: Outdoor water use.

GHG Reduction Measure Description: Water use contributes to GHG emissions indirectly, via the production of the electricity that is used to pump, treat, and distribute the water. Turf grass (i.e., lawn grass) has relatively high--water needs compared to most other types of vegetation. Reducing the turf size of landscapes and lawns reduces water consumption and the associated indirect GHG emissions.

Applicability to project: According to the proposed project's landscape architects, the preliminary landscape plan is designed as water efficient, with drought tolerant plants, smart evapotranspiration irrigation systems, and limited turf. Changes in water usage, which will result in reduced energy demand, would be included in Measure BE-1 (Beyond Title 24) and not individually quantified here.

M-GHG-16 Plant Native or Drought-Resistant Trees and Vegetation (Measure WUW-6 of CAPCOA Report)

Range of Effectiveness: Best Management Practice; may be quantified if substantial evidence is available.

Measure Applicability: Outdoor water use.

GHG Reduction Measure Description: Water use contributes to GHG emissions indirectly, via the production of the electricity that is used to pump, treat, and distribute the water. Turf grass (i.e., lawn grass) has relatively high--water needs compared to most other types of vegetation. Reducing the turf size of landscapes and lawns reduces water consumption and the associated indirect GHG emissions.

Applicability to project: According to the proposed project's landscape architects, the preliminary landscape plan is designed as water efficient, with drought tolerant plants, smart evapotranspiration irrigation systems, and limited turf. Changes in water usage, which will result in reduced energy demand, would be included in Measure BE-1 (Beyond Title 24) and not individually quantified here.

M-GHG-17 Use Local and Sustainable Building Materials (Measure Misc-3 of CAPCOA Report)

Range of Effectiveness: Varies depending on project applicant and strategies selected. Best Management Practice.

Measure Applicability: Life cycle emissions from building materials.

GHG Reduction Measure Description: Using building materials which are sourced and processed locally (i.e., close to the project site, as opposed to in another state or country) reduces transportation distances and therefore reduces GHG emissions from fuel combustion. Using sustainable building materials, such as recycled concrete or sustainably harvested wood, also contributes to GHG emissions reductions due to the less carbon-intensive nature of the production and harvesting of these materials. Unlike measures which reduce GHG emissions during the operational lifetime of a project, such as reducing building electricity and water usage, these mitigation efforts are realized prior to the actual operational lifetime of a project.

2.3 Greenhouse Gas Emissions

Applicability to project: Whereas the project applicant will require the use of sustainable building materials where available and feasible to obtain, CEQA does not require further analysis of a mitigation or impact if methods of quantification are speculative. In support, the CAPCOA Report states that the “long chain of economic production resulting in materials manufacture, for example, involves numerous parties, each of which in turn is responsible for the GHG emissions associated with their particular activity.”

GHG reductions resulting from the applicable CAPCOA measures would reduce the project’s GHG emissions by 235 MTCO₂e per year, yielding an onsite total GHG emissions of 2,396 MTCO₂e per year.

Mitigation Determined to be Infeasible, Not Applicable, or Not the Responsibility of the Applicant

Table 2.3-11 lists the CAPCOA mitigations that were determined to be infeasible, not applicable to the proposed project, or not the responsibility of the applicant.

Supplemental Mitigation Proposed

The CAPCOA *Quantifying Greenhouse Gas Mitigation Measures* document¹⁰ suggests that if a project cannot mitigate to the level of less than significant under CEQA with project-specific measures, other avenues are available to accomplish GHG mitigations off-site. While not having local concurrent projects that could be funded by the proposed project to achieve the project’s needed reductions, purchasing existing excess emission credits from emission trading exchanges remains as a feasible option. To be acceptable for credit under the AB 32 program, the reductions must be “in addition to any greenhouse gas emission reduction otherwise required by law or regulation, and any other greenhouse gas emission reduction that might otherwise occur.”¹¹ Additionally, Section 15126.4(c)(3) of the State CEQA Guidelines expressly authorizes the use of off-site measures, including offsets that are not otherwise required, to mitigate a project’s emissions. As indicated above and in Table 2.3-8, the project’s total construction emissions are 2,708 MTCO₂e. The total emissions from operation of the project are 2,396 MTCO₂e per year for the 30-year project life¹², for a total offset of 71,880 MTCO₂e.

Therefore, the project Applicant proposes the following mitigation in order to achieve carbon neutrality (i.e., net zero emissions):

M-GHG-18 Prior to issuance of the first grading permit, the project applicant shall purchase 2,708 MTCO₂e of carbon offset credits sufficient to offset all project construction emissions. The carbon offset credits shall be purchased by a California Air Resources Board-approved registry, such as Climate Action Reserve, American Carbon Registry, and Verified Carbon Standard. If no registry is in existence, then the applicant shall purchase carbon offset credits from any other reputable registry or entity that issues carbon offsets to the satisfaction of the Director of Planning & Development Services.

¹⁰ *Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures*, August 2010. Available on-line at <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>

¹¹ California Health & Safety Code Division 25.54, Part 4, Section 35862(d)(2)

¹² The “project life” is 30 years. This methodology is consistent with the 30-year project life time frame used by the SCAQMD’s GHG guidance (SCAQMD 2008).

2.3 Greenhouse Gas Emissions

Prior to issuance of the first certificate of occupancy, the project applicant shall purchase 71,880 MTCO₂e of carbon offset credits sufficient to offset all project operation emissions over the 30-year project life.

The carbon offset credits shall be purchased by a California Air Resources Board approved registry, such as Climate Action Reserve, American Carbon Registry, and Verified Carbon Standard. If no registry is in existence, then the applicant shall purchase carbon offset credits from any other reputable registry or entity that issues carbon offsets to the satisfaction of the Director of Planning & Development Services.

The County of San Diego will consider, to the satisfaction of the Director of Planning & Development Services, the following geographic priorities for GHG reduction features, including the purchase of carbon offset credits: 1) project design features/on-site reduction measures; 2) off-site within the unincorporated areas of the County of San Diego; 3) off-site within the County of San Diego; 4) off-site within the State of California; 5) off-site within the United States; and 6) off-site internationally.

Post-Mitigation Significance Evaluation

With application of all quantifiable mitigations identified above, the proposed project's GHG emissions would be reduced from 2,631~~2,628.2~~ MTCO₂e per year to ~~2,393 MTCO₂e per year~~ zero net GHG emissions. This is a reduction of 235.2~~2,631~~ MTCO₂e per year from solar power, efficient refrigeration, ~~and~~ limiting outdoor lighting, and the purchase of carbon off-set credits. The resultant mitigated project emissions are presented in Table 2.3-9. In sum, the project will not result in a net increase in GHG emissions as compared to the existing project setting.

(2) CEQA Guideline 15064.4(b)(2) - Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

Neither the Lead Agency, CARB, nor the SDAPCD have adopted significance criteria applicable to land use development projects for the evaluation of GHG emissions under CEQA. OPR's Technical Advisory titled CEQA and Climate Change: Addressing Climate Change through CEQA Review states, "public agencies are encouraged, but not required to adopt thresholds of significance for environmental impacts. Even in the absence of clearly defined thresholds for GHG emissions, the law requires that such emissions from CEQA projects must be disclosed and mitigated to the extent feasible whenever the lead agency determines that the project contributes to a significant, cumulative climate change impact." Furthermore, the advisory document indicates, "in the absence of regulatory standards for GHG emissions or other scientific data to clearly define what constitutes a 'significant impact,' individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice."

(3) CEQA Guideline 15064.4(b)(3) - The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

The Scoping Plan represents the most applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. AB 32 codified the State's GHG emissions reduction targets for 2020 and identified the acceptable level of GHG emissions in California, with reductions coming in the form of changes to vehicle emissions and mileage standards, sources of electricity, and energy efficiency. The Scoping Plan details specific GHG emissions-reduction measures that target specific

2.3 Greenhouse Gas Emissions

GHG emissions sources. The Scoping Plan considers a range of actions, including direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms (e.g., a cap-and-trade system). Also included are mobile-source emissions reduction measures (Pavley, Low Carbon Fuel Standard vehicle efficiency measures), energy production-related emissions-reduction measures (natural gas transmission and distribution efficiency measures, natural gas extraction efficiency measures), and the RPS (electricity). In January, 2017, CARB released its 2017 Climate Change Scoping Plan Update. CARB recommends that lead agencies prioritize GHG reductions on-site and in the vicinity of the project. CARB also recognizes that where further project design or regional investments are infeasible or not effective, it may be appropriate to mitigate a project's emissions through purchasing and retiring carbon credits issued by a recognized and reputable accredited carbon registry. Currently, no regional investments have been determined to be feasible as related to the proposed project. As a result of implementing the specific GHG emissions-reduction measures identified by CARB's scoping plans, the project's net GHG emissions would be reduced to zero, as shown in Table 2.3-8.

The County's General Plan lays out the long-term land use planning framework for future growth and development patterns within the unincorporated areas of the County. The proposed project's consistency with adopted General Plan goals and policies that will help reduce GHG emissions are provided in Table 2.3-10. As shown in Table 2.3-10, the proposed project would be consistent with the General Plan goals and policies addressing climate change and reducing GHG emissions.

Therefore, the project complies with regulations or requirements adopted to implement statewide, regional, or local plans for the reduction or mitigation of GHG emissions.

Using the mitigated 2,393 MTCO₂e per year divided by an average of 127.5 employees, the proposed project demonstrates an efficiency of 18.8 MTCO₂e per service population. Even after applying feasible mitigation measures, the proposed project's mitigated GHG emissions would still exceed the efficiency threshold (4.9 MTCO₂e per service population). Therefore, the proposed project would result in a significant GHG impact (**Impact GHG-1**).

2.3.2.2 Issue 2: Conflict with Plans Adopted for the Purpose of Reducing GHG Emissions

Guidelines for Determination of Significance

Based on Section 15064.4(b)(3) of the State CEQA Guidelines and Appendix G of the CEQA Guidelines, the project would have a significant impact if it would conflict with an applicable plan, policy, or regulation adopted for the purposes of reducing the emissions of GHGs.

Impact Analysis

As discussed above, the Scoping Plan represents the most applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. AB 32 codified the State's GHG emissions reduction targets for 2020 and identified the acceptable level of GHG emissions in California, with reductions coming in the form of changes to vehicle emissions and mileage standards, sources of electricity, and energy efficiency. The Scoping Plan details specific GHG emissions-reduction measures that target specific GHG emissions sources. The Scoping Plan considers a range of actions, including direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms (e.g., a cap-and-trade system). Also included are mobile-source emissions reduction measures (Pavley, Low Carbon Fuel Standard vehicle efficiency measures), energy production-related emissions-reduction measures (natural gas transmission and distribution efficiency measures, natural gas extraction efficiency measures), and the RPS (electricity). As a result of implementing the specific GHG emissions-reduction measures

~~identified in the Scoping Plan, the project's net GHG emissions would be reduced to zero, as shown in Table 2.3-8. , project related GHG emissions would be reduced through several of the AB 32 Scoping Plan measures. As shown in Table 2.3 8, the project's total GHG emissions would be reduced with application of Pavley II, LCFS, RPS and Title 24.~~

At the local level, the County is ~~currently preparing~~released a draft CAP for public review on August 10, 2017, that ~~will intends to~~ provide a framework for meeting state-mandated GHG reduction targets. Adoption of the CAP is expected in the ~~fall of 2017~~spring of 2018. ~~Until then~~the CAP is formally adopted by the County's Board of Supervisors, the most relevant local plan is the County's General Plan, which lays out the long-term land use planning framework for future growth and development patterns within the unincorporated areas of the County. The proposed project's consistency with pertinent General Plan goals and policies that will help reduce GHG emissions are provided in Table 2.3-10. As shown in Table 2.3-10, the proposed project would be consistent with the General Plan goals and policies addressing climate change and reducing GHG emissions.

~~As discussed above, EO B 30 15 established an interim GHG reduction target of 40 percent below 1990 levels by 2030, and EO S 03 05 established a long-term goal of reducing statewide GHG emissions to 80 percent below 1990 levels by 2050. Achieving these long term GHG reduction policies will require systemic changes in how energy is produced and used. These deep reductions are to be achieved only with significant changes in electricity production, transportation fuels, and industrial processes, such as increasing energy efficiency, avoiding waste emissions, and replacing high global warming potential gases. The changes necessitated to achieve these targets will require additional policy and regulatory changes, which are unknown at this time. Moreover, there is currently no statewide plan that lays out the framework as to exactly how the state plans on achieving these targets and to what extent action is required at the local and project level in order to achieve these targets. Therefore, the extent to which the project's emissions and resulting impacts would be mitigated through implementation of such changes is not known and would thus be inconsistent with plans, policies, or regulations adopted for the purposes of reducing GHG emissions in the long term. The project does not conflict with any plans, policies or regulations adopted for the purposes of reducing GHG impacts. Therefore, any impacts related to a conflict with an applicable plan, policy, or regulation would be potentially less than significant (Impact GHG-2).~~

2.3.3 Cumulative Impact Analysis

2.3.3.1 Issue 1: Generate Significant Levels of GHG

Climate change is a global problem, and GHGs are global pollutants, unlike criteria air pollutants (such as ozone precursors), which are primarily pollutants of regional and local concern. Given their long atmospheric lifetimes, GHGs emitted by countless sources worldwide accumulate in the atmosphere. No single emitter of GHGs is large enough to trigger global climate change on its own. Rather, climate change is the result of the individual contributions of countless past, present, and future sources. Therefore, GHG impacts are inherently cumulative, and the GHG analysis presented in Section 2.3.2.1 is a cumulative impact analysis. As described above, ~~even after by~~ applying all feasible mitigation measures on-site and further reducing GHG emissions through the purchase of carbon off-set credits, the proposed project's ~~mitigated net~~ GHG emissions would be zero. ~~still exceed the efficiency threshold~~. Accordingly, the project would not contribute to a cumulatively considerable impact on GHG emissions (**Impact GHG-3**).

2.3.3.2 Issue 2: Conflict with Plans Adopted for the Purpose of Reducing GHG Emissions

As discussed in Section 2.3.2.2 above, the proposed project would be consistent with both AB 32 and the County's General Plan. However, as there is no framework for achieving post- 2020 targets in 2030 and 2050, it is unknown exactly how the state plans on achieving these targets and to what extent action is required at the local and project level in order to achieve these targets. Because the project would implement GHG emissions reducing measures identified in both AB 32 and the County General Plan, the project's net GHG emissions would be zero and Accordingly, the project would not contribute to a cumulatively considerable impact on long-term GHG reduction planning efforts (Impact GHG-4).

2.3.4 Significance of Impacts Prior to Mitigation

Impact GHG-1: ~~Even a~~After applying all quantifiable mitigations above, the proposed project's mitigated GHG emissions would not be considered significant. ~~still exceed the efficiency threshold.~~

Impact GHG-2: There is currently no statewide plan that lays out the framework as to exactly how the state plans on achieving these targets and to what extent action is required at the local and project level in order to achieve these targets. Therefore, the extent to which the project's emissions and resulting impacts would be mitigated through implementation of such changes is not known. However, implementation of the on-site mitigation measures and the purchase of carbon off-set credits would result in the project having "net zero" GHG emissions, and would thus be considered consistent with plans, policies, and regulations adopted for the purposed of reducing GHG emissions in the long-term. Therefore, impacts related to a conflict with an applicable plan, policy, or regulation would be less than significant, and would thus be inconsistent with plans, policies, or regulations adopted for the purposed of reducing GHG emissions in the long-term.

Impact GHG-3: The proposed project would not contribute to a cumulatively considerable impact on GHG emissions.

Impact GHG-4: The proposed project would not contribute to a cumulatively considerable impact on long-term GHG reduction planning efforts.

2.3.5 Mitigation

M-GHG-1 The project applicant shall demonstrate that the design of the proposed buildings or structures exceeds Title 24 requirements by a minimum of 20 percent (Measure BE-1 of CAPCOA Report). The proposed building plans shall be submitted with supporting documentation prepared and signed by a California licensed architect demonstrating compliance with this measure. Compliance with this measure shall be verified by the County, prior to issuance of a building permit for any structure.

M-GHG-2 The project applicant shall demonstrate that the grocery store incorporates Energy-star-rated refrigeration equipment (Measure BE-4 of CAPCOA Report). Compliance with this measure shall be verified by the County, prior to issuance of a certificate of occupancy for the grocery store. Compliance can be verified through a site inspection by a certified third-party energy systems rater, or by documentation from the operator of the grocery store indicating types of equipment installed.

M-GHG-3 The project applicant shall demonstrate that the operation hours of outdoor lights will be limited and that the buildings support the use of LED lights (Measure LE-2 of

CAPCOA Report). A lighting plan shall be prepared that specifies the locations where LED lighting will be used in outdoor areas. Electrical plans for all buildings shall specify location and types of LED lighting systems, or where electrical systems would support LED lights. The County shall review and approve the lighting plan and building plans prior to issuance of a building permit.

M-GHG-4 The project applicant shall demonstrate that the project incorporates onsite renewable energy production, including installation of PV panels on the grocery store and five other buildings on the project site (Measure AE-2 of CAPCOA Report). Prior to issuance of a certificate of occupancy for each building (the grocery store, and a minimum of five other buildings), the project applicant shall provide the PV installation plan for each building. This plan shall specify the minimum rooftop coverage of PV panels of 45 percent of roof dedicated to panels on the grocery store and 5 percent each on the other five buildings. (Note, the 5 percent commitment on the five smaller commercial buildings could occur through any combination of use of portions of one, or all of the five smaller commercial buildings, to allow for flexibility in placement of the panels around other required rooftop equipment and structures). Compliance with this measure shall be verified by the County.

M-GHG-5 The project applicant shall demonstrate that the project incorporates enhanced pedestrian access from Ridge Hill Road and Rios Canyon Road and a combination equestrian/pedestrian trail along the southern border of the project site (Measure SDT-1 of CAPCOA Report).

Prior to recordation of the Final Map, the applicant shall dedicate the trail easement to the County of San Diego. The applicant shall show the easement on the Final Map with the appropriate granting language on the title sheet concurrent with Final Map Review. The location of the equestrian/pedestrian trail shall be indicated on the Final Map.

Improvement plans for enhanced pedestrian access shall be shown on the Public Road Improvements plan, and shall be approved by the County prior to the approval of the Final Map.

M-GHG-6 The project applicant shall demonstrate that the project incorporates traffic calming measures, such as the roundabout planned at the main off-ramp of Interstate 8 and Lake Jennings Road, Ridge Hill Road, and Olde Highway 80 (Measure SDT-2 of CAPCOA Report), and the construction of new sidewalks and trails.

Improvement plans that indicate the traffic calming measures shall be shown on the Public Road Improvements plan, and shall be approved by the County prior to the approval of the Final Map.

M-GHG-7 The project applicant shall demonstrate that all trails and bike paths will have numerous ingress/egress access to the project site, to enhance bicycle accessibility (Measure SDT-5 of CAPCOA Report).

2.3 Greenhouse Gas Emissions

Prior to recordation of the Final Map, the applicant shall dedicate the trail easement to the County of San Diego. The applicant shall show the easement on the Final Map with the appropriate granting language on the title sheet concurrent with Final Map Review. The location of the equestrian/pedestrian trail shall be indicated on the Final Map.

- M-GHG-8** The project applicant shall demonstrate that the project incorporates 40 bicycle stalls on the project site (Measures SDT-6 and TST-5 of CAPCOA Report).

Location of bicycle stalls shall be indicated on the site plan and verified by the County prior to issuance of a building permit.

- M-GHG-9** The project applicant shall demonstrate that the project incorporates ~~16~~24 parking stalls designated for low-emitting, fuel efficient, and carpool/van pool. Also, EV charging stations shall be installed (Measure SDT-8 of CAPCOA Report).

Location of the ~~16~~24 parking facilities and EV charging stations shall be indicated on the site plan and verified by the County prior to issuance of a building permit.

- M-GHG-10** The project applicant shall demonstrate that the project incorporates 10-foot-wide pedestrian walkways on the east and west boundaries of the project site and a 10-foot-wide combination equestrian/pedestrian trail on the southern border of the project site (Measure SDT-9 of CAPCOA Report).

Prior to recordation of the Final Map, the applicant shall dedicate the trail easement to the County of San Diego. The applicant shall show the easement on the Final Map with the appropriate granting language on the title sheet concurrent with Final Map Review. The location of the equestrian/pedestrian trail shall be indicated on the Final Map.

- M-GHG-11** The project applicant shall demonstrate that the project incorporates a new transit station with site amenities on Olde Highway 80 at Rios Canyon Road (Measure TST-2 of CAPCOA Report).

Improvement plans that depict the new transit stop shall be shown on the Public Road Improvements plan, and shall be approved by the County prior to the approval of the Final Map.

- M-GHG-12** The project applicant shall demonstrate that the project uses locally sourced water supply (Measure WSW-3 of CAPCOA Report). Prior to issuance of building permits, the applicant shall submit to the County a water service letter from the Padre Dam Municipal Water District (PDMWD) indicating that water would be provided to serve the project. Compliance with this measure shall be verified by the County prior to issuance of building permits.

- M-GHG-13** The project applicant shall demonstrate that the landscape plan for the project incorporates water-efficient landscapes (Measure WUW-3 of CAPCOA Report).

2.3 Greenhouse Gas Emissions

The applicant shall prepare the Landscape Plans using the Landscape Documentation Package Checklist (PDS Form #404), which will indicate the types of plant materials proposed, including water-efficient landscaping. The Landscape Documentation Package Checklist shall be submitted to the County for review and approval. The landscape plan shall be prepared and approved prior to recordation of the Final Map.

- M-GHG-14** The project applicant shall demonstrate that the landscape plan for the project incorporates water-efficient landscape irrigation systems (Measure WUW-4 of CAPCOA Report).

The applicant shall prepare the Landscape Plans using the Landscape Documentation Package Checklist (PDS Form #404) indicating the type and location of proposed water-efficient landscape irrigation systems. The Landscape Documentation Package Checklist shall be submitted to the County for review and approval. The landscape plan shall be prepared and approved prior to recordation of the Final Map.

- M-GHG-15** The project applicant shall demonstrate that the landscape plan for the project does not include the use of turn in landscapes and lawns (Measure WUW-5 of CAPCOA Report).

The applicant shall prepare the Landscape Plans using the Landscape Documentation Package Checklist (PDS Form #404). The proposed Landscape Plan shall not include the use of turn in landscapes and lawns. The Landscape Documentation Package Checklist shall be submitted to the County for review and approval. The landscape plan shall be prepared and approved prior to recordation of the Final Map.

- M-GHG-16** The project applicant shall demonstrate that the landscape plan for the project incorporates native plants or drought-resistant trees and vegetation (Measure WUW-6 of CAPCOA Report).

The applicant shall prepare the Landscape Plans using the Landscape Documentation Package Checklist (PDS Form #404), which will indicate the types of plant materials proposed. The proposed Landscape Plan shall utilize native plants and drought-resistant trees and vegetation. The Landscape Documentation Package Checklist shall be submitted to the County for review and approval. The landscape plan shall be prepared and approved prior to recordation of the Final Map.

- M-GHG-17** The project applicant shall demonstrate the use of local and sustainable building materials where available and feasible to obtain (Measure Misc-3 of CAPCOA Report).

Prior to issuance of a building permit for any building, the applicant shall provide evidence, such as written correspondence, as to the source of building materials planned to be utilized for project construction.

- M-GHG-18** Prior to issuance of the first grading permit, the project applicant shall purchase 2,708 MTCO₂e of carbon offset credits sufficient to offset all project construction emissions. The carbon offset credits shall be purchased by a California Air Resources

2.3 Greenhouse Gas Emissions

Board-approved registry, such as Climate Action Reserve, American Carbon Registry, and Verified Carbon Standard. If no registry is in existence, then the applicant shall purchase carbon offset credits from any other reputable registry or entity that issues carbon offsets to the satisfaction of the Director of Planning & Development Services.

Prior to issuance of the first certificate of occupancy, the project applicant shall purchase 71,880 MTCO_{2e} of carbon offset credits sufficient to offset all project operation emissions over the 30-year project life.

The carbon offset credits shall be purchased by a California Air Resources Board approved registry, such as Climate Action Reserve, American Carbon Registry, and Verified Carbon Standard. If no registry is in existence, then the applicant shall purchase carbon offset credits from any other reputable registry or entity that issues carbon offsets to the satisfaction of the Director of Planning & Development Services.

The County of San Diego will consider, to the satisfaction of the Director of Planning & Development Services, the following geographic priorities for GHG reduction features, including the purchase of carbon offset credits: 1) project design features/on-site reduction measures; 2) off-site within the unincorporated areas of the County of San Diego; 3) off-site within the County of San Diego; 4) off-site within the State of California; 5) off-site within the United States; and 6) off-site internationally.

2.3.6 Conclusion

Implementation of the proposed project would result in potentially significant impacts to GHG emissions. As described above, ~~even after applying with implementation of all feasible mitigation measures (see M-GHG-1 through M-GHG-187), the proposed project's mitigated net GHG emissions would be zero. would still exceed the efficiency threshold.~~ Accordingly, the project would not contribute to a direct or cumulatively considerable impact on GHG emissions. These are considered significant and unmitigable impacts.

2.3 Greenhouse Gas Emissions

**Table 2.3-1.
California GHG Emissions by Sector in 1990, 2008, and 2012**

Sector	1990 Emissions in MMTCO ₂ e	2008 Emissions in MMTCO ₂ e	2012 Emissions in MMTCO ₂ e
<i>Sources</i>			
Agriculture	16.93	37.99	37.86
Commercial	14.43	13.37	14.20
Electricity Generation	110.63	120.15	95.09
High GWP	--	12.87	18.41
Industrial	103.03	87.54	89.16
Recycling and Waste	--	8.09	8.49
Residential	29.66	29.07	28.09
Transportation	150.67	178.02	167.38
Forestry (Net CO ₂ flux)	-6.69	--	--
Not Specified	1.27	--	--
TOTAL	426.60	487.10	458.68

Source: CARB 2007, 2014

**Table 2.3-2.
San Diego County GHG Emissions by Sector in 2010**

Sector	2010 Emissions in MMTCO ₂ e
Agriculture/Forestry/Land Use	0.05
Waste	0.6
Electricity	8.3
Natural Gas Consumption	2.9
Industrial Processes and Products	1.8
On-Road Transportation	14.4
Off-Road Equipment and Vehicles	1.4
Civil Aviation	1.9
Rail	0.32
Water-Borne Navigation	0.1
Other Fuels/Other	1.58
Land Use Wildfires	0.28
Development (Loss of Vegetation)	0.18
Sequestration from Land Cover	(0.66)
TOTAL	33

Source: EPIC 2013

2.3 Greenhouse Gas Emissions

**Table 2.3-3.
Construction Equipment GHG Emissions**

Equipment Type	EPA Tier Level	Daily CO (pounds)	Daily NOx (pounds)	Duration (Days)	Total Pounds		Direct Stoichiometric GHG Emissions (MTCO _{2e})		
					CO	NOx	CO ₂	N ₂ O	CO _{2e}
Push Dozer D11T w/ Breaker	3	23.4	62.1	240	5,613	14,896	68.7	2.027	672.8
Push Dozer D10T	3	10.6	28.2	240	2,553	6,776	31.3	0.922	306.0
Dozer D9R	3	9.4	24.9	240	2,256	5,987	27.6	0.815	270.4
Dozer D6T LGP	3	3.7	9.7	240	880	2,337	10.8	0.318	105.5
Scraper – 657G Tractor	3	14.4	38.3	240	3,467	9,200	42.5	1.252	415.5
Motor Grader 120K	3	8.2	15.2	240	1,958	3,651	24.0	0.497	172.0
Water Truck	3	3.7	9.7	240	880	2,337	10.8	0.318	105.5
Hydraulic Excavator 349EL	3	11.0	29.2	240	2,641	7,010	32.3	0.954	316.6
ECM 590 Rock Drill	3	10.1	26.8	240	2,421	6,426	29.7	0.874	290.2
OFF-ROAD TOTAL		94.5	244.2	--	22,670	58,619	277.6	7.977	2,654.7
ON-ROAD TOTAL									53.7
TOTALS									2,708.5
Amortized over 20 years									135.4132.7

Source: OB-1 Air Analyses, Inc., ~~2017~~2016

**Table 2.3-4.
Operational Vehicle GHG Emissions**

Vehicle Classification	Trip ADT	Annual VMT	Pounds per Year		GHG Emissions (MTCO _{2e})		
			Direct CO ₂	Calc N ₂ O	Direct CO ₂	Calc N ₂ O	CO _{2e}
Light Duty Auto	3,231	4,127,603	2,577,521	239.8	1,169.1	0.109	1,201.6
Light Duty Truck	909	1,161,248	838,624	117.2	380.4	0.053	396.2
Medium Duty Truck	300	383,250	381,571	99.6	173.1	0.045	186.5
Heavy Duty Truck – Gasoline	56	71,540	71,540	26.3	32.4	0.012	36.0
Heavy Duty Truck – Diesel	169	215,898	508,372	823.4	230.6	0.374	341.9
Motorcycle	19	24,273	7,337	18.6	3.3	0.008	5.8
TOTAL	4,683	5,983,810	4,384,964	1,325.0	1,989.0	0.601	2,168.1

Source: OB-1 Air Analyses, Inc., ~~2017~~2016

**Table 2.3-5.
Water and Wastewater GHG Emissions**

Proposed Use	Size	Metric	Use Rate Factor (gal/metric)		Water Use (gal/year)			CO ₂ e (MTCO ₂ e /year)
			Indoor	Outdoor	Indoor	Outdoor	Total	
Bank w/ drive thru	4.5	10 ³ ft ²	39,622.92	24,285.01	178,303.1	109,282.5	287,586	1.09
Convenience market w/ pumps	3.0	10 ³ ft ²	74,072.52	45,399.29	222,217.6	136,197.9	358,415	1.36
Fast food restaurant w/ drive thru	3.5	10 ³ ft ²	303,533.71	19,374.49	1,062,338.0	67,810.7	1,130,179	4.28
Strip Mall	22.1	10 ³ ft ²	74,072.52	45,399.29	1,637,002.7	1,003,324.3	2,640,327	10.01
Supermarket	43.0	10 ³ ft ²	123,268.21	3,812.42	5,300,533.0	163,934.1	5,464,467	20.72
Drive thru car wash	102,200	gal/year	--	--	102,200	0	102,200	0.39
TOTAL					8,502,624	1,480,549	9,983,174	37.8

Source: OB-1 Air Analyses, Inc., ~~2017~~2016

**Table 2.3-6.
Percent Reduction from Pavley II & LCFS Implementation**

Vehicle Classification	Standard Year 2020 Emission Rates (grams/mile)	Pavley II + LCFS Year 2020 Emission Rates (grams/mile)	Percentage Reduction (Standard vs. Pavley II + LCFS)
Light Duty Auto	283.23	194.62	31.3%
Light Duty Truck	327.75	237.41	27.6%
Medium Duty Trucks	452.06	406.85	10%
Heavy Duty Trucks	452.06	406.85	10%
Buses	1070.66	963.60	10%
Motorcycle	138.86	124.97	10%

Source: OB-1 Air Analyses, Inc., ~~2017~~2016

**Table 2.3-7.
Pavley II + LCFS Vehicular Emissions**

Vehicle Classification	Annual VMT	CO ₂ e Reduction (MTCO ₂ e /year)
Light Duty Auto	4,127,603	376.1
Light Duty Truck	1,161,248	109.4
Medium Duty Truck	383,250	18.7
Heavy Duty Truck Gasoline	71,540	3.6
Heavy Duty Truck Diesel	215,898	34.2
Motorcycle	24,273	0.6
TOTAL	5,983,810	542.5

Source: OB-1 Air Analyses, Inc., ~~2017~~2016

**Table 2.3-8.
Estimated Project GHG Emissions**

Sector	CO ₂ e Emissions (MTCO ₂ e /year)
Amortized Construction	<u>135,413.7</u>
Motor Vehicles	2,168.1
Electricity	1,020.2
Natural Gas	151.7
Solid Waste	149.3
Water & Wastewater	37.9
Area Sources	42.8
Pavley II + LCFS	-542.5
33% RPS	-349.2
2013 CCR Title 24 Efficiency	-182.8
TOTAL	<u>2,631,628.2</u>

Source: OB-1 Air Analyses, Inc., 2017~~2016~~

**Table 2.3-9.
Mitigated Project GHG Emissions**

Sector	CO ₂ e Emissions (MTCO ₂ e /year)
Total Unmitigated Project	<u>2,631,628.2</u>
On-site GHG Reduction Measures	
20% Better than Title 24	-70.0
Refrigeration	-42.3
Limit Outdoor Lighting	-2.4
Solar Power	-101.1
Locally Sourced Water	-19.4
Purchase of Carbon Off-set Credits	<u>-2,396</u>
MITIGATED TOTAL	<u>02,393</u>

Source: OB-1 Air Analyses, Inc., 2017~~2016~~

**Table 2.3-10.
General Plan Consistency Determination Summary**

General Plan Element	Goal/Policy	Proposed Project Compatibility
Land Use Element	Policy LU-11.1: Location and Connectivity – Locate commercial, office, and industrial development in Village areas with high connectivity and accessibility from surrounding residential neighborhoods, whenever feasible.	The proposed project is consistent with this policy. The implementation of the proposed commercial project would enhance and expand an existing concentration of commercial land uses. The proposed project includes a Site Plan which has been prepared to be consistent with the unique commercial siting and design objectives of the Lakeside Community Design Guidelines. The project would provide additional commercial services for residents in the adjacent neighborhoods and would reduce the overall number of trips currently required to meet the commercial needs of the area.
Land Use Element	Policy LU-11.3: Pedestrian- Oriented Commercial Centers – Encourage the development of commercial centers in compact, walkable configurations in Village centers that locate parking in the rear or on the side of the parcel, use transparent storefronts with active retail street-fronting uses, minimize setbacks, and discourage “strip” commercial development. “Strip” commercial development consists of automobile-oriented commercial development with the buildings set back from the street to accommodate parking between the building and street.	The proposed project is consistent with this policy. This policy has clear applications in areas of the Village Regional Category where there are basic levels of urban scaled development. The segment of Olde Highway 80 within the project area, however, is unlikely now or in the future to experience the volume of foot traffic assumed in the policy desired for compact and walkable development. Still, out of the approximate 1,050 linear feet of frontage on Olde Highway 80, only about 140 linear feet are proposed for onsite parking with the balance including buildings, project entrances and landscaping. The project design internalizes virtually all of the parking and the commercial buildings all front to the internal parking and circulation system. The larger buildings all include enhanced and covered walkways which allows for a ‘compact and walkable’ commercial development once the public has arrived on site. Since the parking areas are all internal to the development and there are buildings along the street frontage, the project does not meet the definition of ‘strip commercial’ as defined by the policy.
Mobility Element	Policy M-10.2: Parking for Pedestrian Activity – Require the design and placement of on-site automobile, motorcycle, and bicycle parking in Villages and Rural Villages that encourages pedestrian activity by providing a clear separation between vehicle and pedestrian areas and prohibit parking areas from restricting pedestrian circulation patterns.	The proposed project is consistent with this policy. The Site Plan design for the proposed project locates the parking areas in the middle of the project and provides clear and appropriately sized walkways for the public to transition from the parking areas to the commercial areas. The larger buildings include large, enhanced walkways, many of which are covered to facilitate pedestrian activity within the project site.

2.3 Greenhouse Gas Emissions

General Plan Element	Goal/Policy	Proposed Project Compatibility
Mobility Element	Policy M-11.2: Bicycle and Pedestrian Facilities in Development – Require development and Town Center plans in Villages and Rural Villages to incorporate site design and on-site amenities for alternate modes of transportation, such as comprehensive bicycle and pedestrian networks and facilities, including both on-street facilities as well as off-street bikeways, to safely serve the full range of intended users, along with areas for transit facilities, where appropriate and coordinated with the transit service provider.	<p>The proposed project is consistent with this policy. The project would construct a multi-use trail suitable for pedestrians and equestrian users. The trail would be 10 feet wide. The trail segments adjacent to the two public streets would be standard trail pathways per the County's Community Trails Master Plan. The trail segment within the open space lot would run along the southern edge of the development area (immediately north of the proposed open space area) within a 20-foot wide trail easement and would include a 10-foot wide treadway.</p> <p>Transit service in the study area is offered by the San Diego County Metropolitan Transit System (MTS). The proposed project would include a new (relocated) bus stop on Olde Highway 80 at Rios Canyon Road.</p>
Mobility Element	Policy M-11.7: Bicycle and Pedestrian Facility Design – Promote pedestrian and bicycle facility standards for facility design that is tailored to a variety of urban and rural contexts according to their location within or outside a Village or Rural Village.	<p>The proposed project is consistent with this policy. The project applicant would provide for a standard 8-foot shoulder serving a bicycle lane with the frontage improvements. All project trails and bike paths will have numerous ingress/egress access to the site, to enhance bicycle accessibility. The proposed project would provide 40 bicycle stalls on the project site.</p>
Conservation and Open Space Element	Policy COS-4.1: Water Conservation – Require development to reduce the waste of potable water through use of efficient technologies and conservation efforts that minimize the County's dependence on imported water and conserve groundwater resources.	<p>The proposed project is consistent with this policy. The proposed project will be required to implement and comply with PDMWD's mandatory water use efficiency measures, and Level 2 Drought Alert conservation measures to ensure that potable water use is reduced by 20 percent.</p>
Conservation and Open Space Element	Policy COS-4.2: Drought-Efficient Landscaping - Require efficient irrigation systems and in new development encourage the use of native plant species and non-invasive drought tolerant/low water use plants in landscaping.	<p>The proposed project is consistent with this policy. The Conceptual Landscape Plan would incorporate requirements for drought tolerant landscaping and state of the art irrigation systems to reduce the landscaping that must be maintained using potable water. Recycled water would not be used. However, all irrigated areas would receive uniform coverage by means of an automatically controlled, electrically activated underground piped irrigation system for water conservation and to minimize erosion. Remote control valves would be utilized with low precipitation heads for reduced water consumption. An automatic, water efficient irrigation system would be provided to establish and maintain landscaping. All irrigation would be designed per the County of San Diego water conservation ordinance.</p> <p>The plant palette reflects a selection of native plant material which can naturally be found in riparian zones of Southern California.</p>

2.3 Greenhouse Gas Emissions

General Plan Element	Goal/Policy	Proposed Project Compatibility
Conservation and Open Space Element	Policy COS-14.1: Land Use Development Form – Require that development be located and designed to reduce vehicular trips (and associated air pollution) by utilizing compact regional and community-level development patterns while maintain community character.	The proposed project is consistent with this policy. The implementation of the proposed project would enhance and expand an existing concentration of commercial land uses. The proposed project includes a Site Plan which has been prepared to be consistent with the unique commercial siting and design objectives of the Lakeside Community Design Guidelines. The project would provide additional commercial services for residents in the adjacent neighborhoods and would over time reduce the overall number of trips currently required to meet the commercial needs of the area.
Conservation and Open Space Element	Policy COS-14.3: Sustainable Development – Require design of residential subdivisions and nonresidential development through “green” and sustainable land development practices to conserve energy, water, open space, and natural resources.	The proposed project is consistent with this policy. The Conceptual Landscape Plan would incorporate requirements for drought tolerant landscaping and state of the art irrigation systems to reduce the landscaping that must be maintained using potable water. Recycled water would not be used. However, all irrigated areas would receive uniform coverage by means of an automatically controlled, electrically activated underground piped irrigation system for water conservation and to minimize erosion. Remote control valves would be utilized with low precipitation heads for reduced water consumption. An automatic, water efficient irrigation system would be provided to establish and maintain landscaping. All irrigation would be designed per the County of San Diego water conservation ordinance. PV systems will be installed on the rooftop of the grocery store and <u>between one and five other buildings on the project site (total of 5% of the combined rooftop area of the five buildings)</u> . The collection of PV panels is rated to be able to generate 531.6 MWh per year. The proposed project would preserve biological resources in a dedicated open space easement.
Conservation and Open Space Element	Policy COS-14.7: Alternative Energy Sources for Development Projects – Encourage development projects that use energy recovery, photovoltaic, and wind energy.	The proposed project is consistent with this policy. As detailed in Mitigation Measure M-GHG-4, the proposed project will install PV systems on the rooftop of the grocery store and <u>between one and five other buildings on the project site (total of 5% of the combined rooftop area of the five buildings)</u> . five other buildings on the project site.

2.3 Greenhouse Gas Emissions

General Plan Element	Goal/Policy	Proposed Project Compatibility
Conservation and Open Space Element	Policy COS-14.9: Significant Producers of Air Pollutants – Require projects that generate potentially significant levels of air pollutants and/or GHGs such as quarries, landfill operations, or large land development projects to incorporate renewable energy, and the best available control technologies and practices into the project design.	<p>The proposed project is consistent with this policy. As discussed in detailed in Section 3.1.2, the project would utilize various types of construction equipment for grading and site preparation. The construction equipment is summarized in Table 3.1-3. Tier III, or higher, construction equipment would be used. Tier III equipment uses clean-fuel technologies or electric-based engines.</p> <p>PV systems will be installed on the rooftop of the grocery store and <u>between one and five other buildings on the project site (total of 5% of the combined rooftop area of the five buildings). five other buildings on the project site.</u> The collection of PV panels is rated to be able to generate 531.6 MWh per year.</p>
Conservation and Open Space Element	Policy COS-14.10: Low-Emission Construction Vehicles and Equipment – Require County contractors and encourage other developers to use low-emission construction vehicles and equipment to improve air quality and reduce GHG emissions.	<p>The proposed project is consistent with this policy. As discussed in detailed in Section 3.1.2, the project would utilize various types of construction equipment for grading and site preparation. Tier III, or higher, construction equipment would be used. Tier III equipment uses clean-fuel technologies or electric-based engines.</p>
Conservation and Open Space Element	Policy COS-15.1: Design and Construction of New Buildings – Require that new buildings be designed and constructed in accordance with “green building” programs that incorporate techniques and materials that maximize energy efficiency, incorporate the use of sustainable resources and recycled materials, and reduce emissions of GHGs and toxic air contaminants.	<p>The proposed project is consistent with this policy. As described in Section 2.3.2.1, the proposed project would apply mitigation intended to reduce energy consumption through building designs that increase energy efficiency, water conservation, and the use of energy efficient appliances. These include:</p> <ul style="list-style-type: none"> • Installation of energy efficient appliances • Installation of PV systems on the rooftop of the grocery store and five other buildings on the project site • Installation of smart evapotranspiration irrigation systems and use of drought-tolerant landscaping
Conservation and Open Space Element	Policy COS-15.4: Title 24 Energy Standards – Require development to minimize energy impacts from new buildings in accordance with or exceeding Title 24 energy standards.	<p>The proposed project is consistent with this policy. The Lake Jennings Market Place building plans would be prepared to be consistent with Green Building standards as they are developed and implemented by local and State codes. All buildings would meet all applicable energy standards, including Title 24.</p>
Conservation and Open Space Element	Policy COS-16.3: Low-Emissions Vehicles and Equipment – Require County operations and encourage private development to provide incentives (such as priority parking) for the use of low- and zero-emission vehicles and equipment to improve air quality and reduce GHG emissions.	<p>The proposed project is consistent with this policy. The project is proposing 16-24 parking stalls that would be designated for low-emitting, fuel efficient, and carpool/van pool, EV charging stations.</p>

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General Plan Element	Goal/Policy	Proposed Project Compatibility
Conservation and Open Space Element	Policy COS-17.1: Reduction of Solid Waste Materials – Reduce GHG emissions and future landfill capacity needs through reduction, reuse, or recycling of all types of solid waste that is generated. Divert solid waste from landfills in compliance with state law.	<p>The proposed project is consistent with this policy. Pursuant to Assembly Bill 341 and the County of San Diego's Solid Waste Ordinance, businesses that have trash levels of four cubic yards or greater shall arrange for recycling service.</p> <p>The proposed project would be required to comply with the County's construction and demolition debris ordinance. This ordinance applies to construction, demolition, or renovation projects, 40,000 square feet or greater in the unincorporated county of San Diego. As a condition of approval for a building permit, a Construction and Demolition Debris Management Plan would be submitted to identify the types and quantities of materials that would be generated by the proposed project and determine the appropriate recycling facilities and services. The project applicant must also pay a performance guarantee, which is a fully refundable deposit based on the square footage of the permitted project. A refund would be issued when the Final Debris Management Plan has been submitted and the Recycling staff has determined that at least 90 percent of inerts and 70 percent of other materials were sufficiently recycled, reused, or salvaged. To date, the demolition of two on-site residences occurred in the spring and summer of 2015.</p>
Conservation and Open Space Element	Policy COS-17.2: Construction and Demolition Waste – Require recycling, reduction and reuse of construction and demolition debris.	<p>The proposed project is consistent with this policy. The proposed project would be required to comply with the County's construction and demolition debris ordinance. This ordinance applies to construction, demolition, or renovation projects, 40,000 square feet or greater in the unincorporated county of San Diego. As a condition of approval for a building permit, a Construction and Demolition Debris Management Plan would be submitted to identify the types and quantities of materials that would be generated by the proposed project and determine the appropriate recycling facilities and services. The project applicant must also pay a performance guarantee, which is a fully refundable deposit based on the square footage of the permitted project. A refund would be issued when the Final Debris Management Plan has been submitted and the Recycling staff has determined that at least 90 percent of inerts and 70 percent of other materials were sufficiently recycled, reused, or salvaged. To date, the demolition of two on-site residences occurred in the spring and summer of 2015.</p>
Conservation and Open Space Element	Policy COS-17.6: Recycling Containers – Require that all new land development projects include space for recycling containers.	<p>The proposed project is consistent with this policy. The proposed project would include space for recycling containers within appropriate areas of the project.</p>

**Table 2.3-11.
Mitigation Determined to be Infeasible, Not Applicable, or
Not the Responsibility of the Project Applicant**

Mitigation (from CAPCOA Report ¹)	Reason Why Not Included as Mitigation
Measure A-1: Prohibit gas powered landscape equipment.	<p>Off-road gasoline powered equipment (landscaping equipment) that might be used by a tenant or operator on the project site typically consists of lawnmowers (riding and push type), blowers, chippers, tillers, and other similar off-road equipment with small engines generating less than 25 horsepower. Emissions from these engines are regulated by CARB's small off-road engine (SORE) regulations, which have been in effect since 1998. The requirements of the SORE regulations are similar to those affecting other off-road equipment used in the construction industry (e.g. tiered emission standards), but are required at the manufacturer level (not the individual operator level). Thus, any new equipment purchased by future tenants or operators would by law comply with the SORE regulations.</p> <p>Electric powered landscape equipment will be used, where feasible. However, the County does not have a mechanism or the staffing resources to monitor and enforce the power supply requirement of every piece of equipment used during the project's operation, especially given the cyclical nature of equipment used by owners and building tenants. Therefore, exclusively prohibiting gas powered landscape equipment is infeasible.</p>
Measure AE-4: Utilize a combined heat and power system.	The project applicant does not consider the construction of heat and power technologies feasible for the buildings on the project site.
Measure AE-6: Establish methane recovery in landfills or wastewater treatment plants.	The establishment of methane recovery in landfills or wastewater treatment plants is not the responsibility of the project applicant.
Measure LE-1: Install higher efficacy public street and area lighting.	The installation of higher efficacy public street and area lighting is not the responsibility of the project applicant.
Measure LE-3: Replace traffic lights with LED traffic lights.	The replacement of traffic lights with LED traffic lights is not the responsibility of the project applicant.
Measure LUT-3: Increase density, location efficiency, diversity of urban and suburban developments (mixed use).	Increasing density, location efficiency, diversity of urban and suburban developments (mixed use) is not the responsibility of the project applicant, and a mixed use development does not meet the basic objectives of the project.
Measure LUT-6: Integrate affordable and below market rate housing.	The integration of affordable and below market rate housing is not applicable to the project; the proposed project is a commercial project.
Measure PDT-1: Limit parking supply.	Parking standards are established by the County of San Diego Zoning Ordinance. The Zoning Ordinance requires a total of 389 parking spaces to be provided by the proposed project. Therefore, limiting or reducing the total amount of parking spaces on the project site is infeasible.
Measure PDT-3: Implement market price public parking (on-street).	Implementation of market price public parking (on-street) is not feasible for the proposed project. On-street parking is not permitted along the project frontage on Olde Highway 80.
Measure PDT-4: Require residential area parking permits.	Requiring residential area parking permits is not applicable to the project; the proposed project is a commercial project.
Measures RPT-1 through RPT-3: Road pricing/management.	Road pricing/management is not the responsibility of the project applicant.

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Mitigation (from CAPCOA Report ¹)	Reason Why Not Included as Mitigation
Measure SDT-3: Implement a neighborhood electric vehicle network or urban non-motorized zones.	Implementing a neighborhood electric vehicle network or urban non-motorized zones is not the responsibility of the project applicant.
Measure SDT-7: Provide bike parking with multi-unit residential projects.	Providing bike parking with multi-unit residential projects is not applicable to the project; the proposed project is a commercial project.
Measure TRT-1: Implement commute trip reduction program.	It is anticipated that the proposed project would draw in employees and shoppers from a three-mile radius. However, it is not feasible to restrict employment to only those residing within a three-mile radius of the project site. There may not be a sufficient employment base within three miles of the project site. The proposed project would encourage the use of alternative transportation such as biking and public transportation by providing on-site amenities.
Measure TRT-3: Provide ride-sharing programs.	Providing ride-sharing programs is infeasible. However, the proposed project would encourage the use of alternative transportation such as biking and public transportation by providing on-site amenities. In addition, the proposed project would include parking stalls designated for carpool/van pool.
Measure TRT-4: Implement subsidized or discounted transit program.	Implementing a subsidized or discounted transit program is not feasible because the commercial operator can not subsidize public transit fares.
Measure TRT-6: Encourage telecommuting and alternative work schedules.	The proposed project is a commercial project and would require employees to be present on the site to perform their duties. Therefore, telecommuting is not feasible.
Measure TRT-7: Implement commute trip reduction marketing.	The proposed project would encourage the use of alternative transportation such as biking and public transportation by providing on-site amenities. In addition, the proposed project would include parking stalls designated for carpool/van pool.
Measure TRT-9: Implement car-sharing program.	The proposed project would encourage the use of alternative transportation such as biking and public transportation by providing on-site amenities. In addition, the proposed project would include parking stalls designated for carpool/van pool.
Measure TRT-10: Implement a school pool program.	The proposed project is a commercial project and does not include a residential component. Therefore, the proposed project would not generate students. Implementing a school pool program is not applicable to the proposed project.
Measure TRT-11: Provide employer-sponsored vanpool/shuttle or local shuttles.	The applicant will consider the provision of a local shuttle to serve the surrounding neighborhoods and the entire commercial development; however, it is not feasible to place this requirement at this time because future tenants of the commercial center are currently not known.

Note: 1. CAPCOA, 2010. Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures.