This section discusses regional greenhouse gas (GHG) emissions and climate change impacts that could result from implementation of the proposed project. This section provides a background discussion of greenhouse gases and climate change linkages and effects of global climate change. This section is organized with an existing setting, regulatory setting, approach/methodology, and impact analysis.

The analysis and discussion of the GHG and climate change impacts in this section focuses on the proposed project's consistency with local, regional, and statewide climate change planning efforts and discusses the context of these planning efforts as they relate to the proposed project.

As described in greater detail below, emissions of greenhouse gases (GHGs) have the potential to adversely affect the environment in a cumulative context. The emissions from a single project will not cause global climate change, however, GHG emissions from multiple projects throughout the world could result in a cumulative impact with respect to global climate change. Therefore, the analysis of GHGs and climate change presented in this section is presented in terms of the proposed project's contribution to cumulative impacts and potential to result in cumulatively considerable impacts related to GHGs and climate change.

Cumulative impacts are the collective impacts of one or more past, present, and future projects that, when combined, result in adverse changes to the environment. In determining the significance of a proposed project's contribution to anticipated adverse future conditions, a lead agency should generally undertake a two-step analysis. The first question is whether the *combined* effects from *both* the proposed project *and* other projects would be cumulatively significant. If the agency answers this inquiry in the affirmative, the second question is whether "the proposed project's *incremental* effects are cumulatively considerable" and thus significant in and of themselves. The cumulative project list for this issue (climate change) comprises anthropogenic (i.e., human-made) GHG emissions sources across the globe and no project alone would reasonably be expected to contribute to a noticeable incremental change to the global climate. However, legislation and executive orders on the subject of climate change in California have established a statewide context and process for developing an enforceable statewide cap on GHG emissions. Given the nature of environmental consequences from GHGs and global climate change, CEQA requires that lead agencies consider evaluating the cumulative impacts of GHGs. Small contributions to this cumulative impact (from which significant effects are occurring and are expected to worsen over time) may be potentially considerable and, therefore, significant.

3.7.1 ENVIRONMENTAL SETTING

GREENHOUSE GASES AND CLIMATE CHANGE LINKAGES

Various gases in the Earth's atmosphere, classified as atmospheric greenhouse gases (GHGs), play a critical role in determining the Earth's surface temperature. Solar radiation enters Earth's atmosphere from space, and a portion of the radiation is absorbed by the Earth's surface. The Earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation.

Naturally occurring greenhouse gases include water vapor (H_2O), carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and ozone (O_3). Several classes of halogenated substances that contain fluorine, chlorine, or bromine are also greenhouse gases, but they are, for the most part, solely a product of industrial activities. Although the direct greenhouse gases CO_2, CH_4, and N_2O occur naturally in the atmosphere, human activities have changed their atmospheric concentrations. From the pre-industrial era (i.e., ending about 1750) to 2005, concentrations of these three greenhouse gases have increased globally by 36, 148, and 18 percent, respectively (IPCC 2007)[1].

Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), ozone (O_3), water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs).

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, commercial, and agricultural sectors (California Air Resources Board, 2012)[2]. In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation (California Air Resources Board, 2012).

As the name implies, global climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern, respectively. California produced 492 million gross metric tons of carbon dioxide equivalents ($MMTCO_2e$) in 2004 (California Energy Commission 2006a) [3]. By 2020, California is projected to produce 507 $MMTCO_2e$ per year.[4]

Carbon dioxide equivalents are a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. This potential, known as the global warming potential of a GHG, is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the

1 Intergovernmental Panel on Climate Change. 2007. "Climate Change 2007: The Physical Science Basis, Summary for Policymakers."
http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_wg1_report_the_physical_science_basis.htm

2 California Air Resources Board. 2012. "Greenhouse Gas Inventory Data, 2000-2009.
http://www.arb.ca.gov/cc/inventory/data/data.htm

3 California Energy Commission. 2006a. Inventory of California Greenhouse Gas Emissions and Sinks 1990 to 2004. http://www.arb.ca.gov/cc/inventory/archive/archive.htm

4 California Air Resources Board. 2010. "Functional Equivalent Document prepared for the California Cap on GHG Emissions and Market-Based Compliance Mechanisms."

greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

Consumption of fossil fuels in the transportation sector was the single largest source of California's GHG emissions in 2008, accounting for 36.9% of total GHG emissions in the state (California Air Resources Board, 2012). This category was followed by the electric power sector (including both in-state and out of-state sources) (24.8%) and the industrial sector (21.1%) (California Air Resources Board, 2012).

EFFECTS OF GLOBAL CLIMATE CHANGE

The effects of increasing global temperature are far-reaching and extremely difficult to quantify. The scientific community continues to study the effects of global climate change. In general, increases in the ambient global temperature as a result of increased GHGs are anticipated to result in rising sea levels, which could threaten coastal areas through accelerated coastal erosion, threats to levees and inland water systems and disruption to coastal wetlands and habitat.

If the temperature of the ocean warms, it is anticipated that the winter snow season would be shortened. Snowpack in the Sierra Nevada provides both water supply (runoff) and storage (within the snowpack before melting), which is a major source of supply for the state. The snowpack portion of the supply could potentially decline by 70% to 90% by the end of the 21st century (Cal EPA 2006)[5]. This phenomenon could lead to significant challenges securing an adequate water supply for a growing state population. Further, the increased ocean temperature could result in increased moisture flux into the state; however, since this would likely increasingly come in the form of rain rather than snow in the high elevations, increased precipitation could lead to increased potential and severity of flood events, placing more pressure on California's levee/flood control system.

Sea level has risen approximately seven inches during the last century and it is predicted to rise an additional 22 to 35 inches by 2100, depending on the future GHG emissions levels (Cal EPA 2006). If this occurs, resultant effects could include increased coastal flooding, saltwater intrusion and disruption of wetlands (Cal EPA 2006). As the existing climate throughout California changes over time, mass migration of species, or failure of species to migrate in time to adapt to the perturbations in climate, could also result. Under the emissions scenarios of the Climate Scenarios report (Cal EPA 2006), the impacts of global warming in California are anticipated to include, but are not limited to, the following.

PUBLIC HEALTH

Higher temperatures are expected to increase the frequency, duration, and intensity of conditions conducive to air pollution formation. For example, days with weather conducive to ozone

5 California Environmental Protection Agency, Climate Action Team. 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature.
http://www.climatechange.ca.gov/climate_action_team/reports/

formation are projected to increase from 25% to 35% under the lower warming range and to 75% to 85% under the medium warming range. In addition, if global background ozone levels increase as predicted in some scenarios, it may become impossible to meet local air quality standards. Air quality could be further compromised by increases in wildfires, which emit fine particulate matter that can travel long distances depending on wind conditions. The Climate Scenarios report indicates that large wildfires could become up to 55% more frequent if GHG emissions are not significantly reduced.

In addition, under the higher warming scenario, there could be up to 100 more days per year with temperatures above 90°F in Los Angeles and 95°F in Sacramento by 2100. This is a large increase over historical patterns and approximately twice the increase projected if temperatures remain within or below the lower warming range. Rising temperatures will increase the risk of death from dehydration, heat stroke/exhaustion, heart attack, stroke, and respiratory distress caused by extreme heat.

WATER RESOURCES

A vast network of man-made reservoirs and aqueducts capture and transport water throughout the state from northern California rivers and the Colorado River. The current distribution system relies on Sierra Nevada snow pack to supply water during the dry spring and summer months. Rising temperatures, potentially compounded by decreases in precipitation, could severely reduce spring snow pack, increasing the risk of summer water shortages.

The state's water supplies are also at risk from rising sea levels. An influx of saltwater would degrade California's estuaries, wetlands, and groundwater aquifers. Saltwater intrusion caused by rising sea levels is a major threat to the quality and reliability of water within the southern edge of the Sacramento/San Joaquin River Delta, a major state fresh water supply. Global warming is also projected to seriously affect agricultural areas, with California farmers projected to lose as much as 25% of the water supply they need; decrease the potential for hydropower production within the state (although the effects on hydropower are uncertain); and seriously harm winter tourism. Under the lower warming range, the snow dependent winter recreational season at lower elevations could be reduced by as much as one month. If temperatures reach the higher warming range and precipitation declines, there might be many years with insufficient snow for skiing, snowboarding, and other snow dependent recreational activities.

If GHG emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snow pack by as much as 70% to 90%. Under the lower warming scenario, snow pack losses are expected to be only half as large as those expected if temperatures were to rise to the higher warming range. How much snow pack will be lost depends in part on future precipitation patterns, the projections for which remain uncertain. However, even under the wetter climate projections, the loss of snow pack would pose challenges to water managers, hamper hydropower generation, and nearly eliminate all skiing and other snow-related recreational activities.

AGRICULTURE

Increased GHG emissions are expected to cause widespread changes to the agriculture industry reducing the quantity and quality of agricultural products statewide. Although higher carbon dioxide levels can stimulate plant production and increase plant water-use efficiency, California's farmers will face greater water demand for crops and a less reliable water supply as temperatures rise.

Plant growth tends to be slow at low temperatures, increasing with rising temperatures up to a threshold. However, faster growth can result in less-than-optimal development for many crops, so rising temperatures are likely to worsen the quantity and quality of yield for a number of California's agricultural products. Products likely to be most affected include wine grapes, fruits and nuts, and milk.

Crop growth and development will be affected, as will the intensity and frequency of pest and disease outbreaks. Rising temperatures will likely aggravate ozone pollution, which makes plants more susceptible to disease and pests and interferes with plant growth.

In addition, continued global warming will likely shift the ranges of existing invasive plants and weeds and alter competition patterns with native plants. Range expansion is expected in many species while range contractions are less likely in rapidly evolving species with significant populations already established. Should range contractions occur, it is likely that new or different weed species will fill the emerging gaps. Continued global warming is also likely to alter the abundance and types of many pests, lengthen pests' breeding season, and increase pathogen growth rates.

FORESTS AND LANDSCAPES

Global warming is expected to alter the distribution and character of natural vegetation thereby resulting in a possible increased risk of large of wildfires. If temperatures rise into the medium warming range, the risk of large wildfires in California could increase by as much as 55%, which is almost twice the increase expected if temperatures stay in the lower warming range. However, since wildfire risk is determined by a combination of factors, including precipitation, winds, temperature, and landscape and vegetation conditions, future risks will not be uniform throughout the state. For example, if precipitation increases as temperatures rise, wildfires in southern California are expected to increase by approximately 30% toward the end of the century. In contrast, precipitation decreases could increase wildfires in northern California by up to 90%.

Moreover, continued global warming will alter natural ecosystems and biological diversity within the state. For example, alpine and sub-alpine ecosystems are expected to decline by as much as 60% to 80% by the end of the century as a result of increasing temperatures. The productivity of the state's forests is also expected to decrease as a result of global warming.

RISING SEA LEVELS

Rising sea levels, more intense coastal storms, and warmer water temperatures will increasingly threaten the state's coastal regions. Under the higher warming scenario, sea level is anticipated to rise 22 to 35 inches by 2100. Elevations of this magnitude would inundate coastal areas with saltwater, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats.

ENERGY CONSUMPTION

The consumption of nonrenewable energy (primarily gasoline and diesel fuel) associated with the operation of passenger, public transit, and commercial vehicles results in GHG emissions that ultimately result in global climate change. Alternative fuels such as natural gas, ethanol, and electricity (unless derived from solar, wind, nuclear, or other energy sources that do not produce carbon emissions) also result in GHG emissions and contribute to global climate change.

Electricity Consumption

California relies on a regional power system composed of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. Approximately 71 percent of the electrical power needed to meet California's demand is produced in the state. Approximately 29 percent of its electricity demand is imported from the Pacific Northwest and the Southwest (California Energy Commission, 2012)[6]. In 2010, California's in-state generated electricity was derived from natural gas (53.4 percent), large hydroelectric resources (14.6 percent), coal (1.7 percent), nuclear sources (15.7 percent), and renewable resources that include geothermal, biomass, small hydroelectric resources, wind, and solar (14.6 percent) (California Energy Commission, 2012).

According to the California Energy Commission (CEC), total statewide electricity consumption increased from 166,979 gigawatt-hours (GWh) in 1980 to 228,038 GWh in 1990, which is an estimated annual growth rate of 3.66 percent. The statewide electricity consumption in 1997 was 246,225 GWh, reflecting an annual growth rate of 1.14 percent between 1990 and 1997 (California Energy Commission Energy Almanac, 2012). Statewide consumption was 274,985 GWh in 2010, an annual growth rate of 0.9 percent between 1997 and 2010. The Sacramento Area Council of Governments (SACOG) region consumed 18,398 GWh in 2010 (SACOG MTP/SCS 2035 Draft EIR, 2011), roughly 6.7 percent of the state total. The SACOG region includes the counties of El Dorado, Placer, Sacramento, Sutter, Yolo and Yuba as well as the 22 cities within these six counties.

Oil

The primary energy source for the United States is oil, which is refined to produce fuels like gasoline, diesel, and jet fuel. Oil is a finite, nonrenewable energy source. World consumption of petroleum products has grown steadily in the last several decades. As of 2009, world consumption

6 California Energy Commission (2012). Energy Almanac. Retrieved August 2012, from http://energyalmanac.ca.gov/overview/index.html

of oil had reached 96 million barrels per day. The United States, with approximately five percent of the world's population, accounts for approximately 19 percent of world oil consumption, or approximately 18.6 million barrels per day (The World Factbook 2009, Washington, DC: Central Intelligence Agency, 2009). The transportation sector relies heavily on oil. In California, petroleum based fuels currently provide approximately 96 percent of the state's transportation energy needs (California Energy Commission, 2012).

Natural Gas

In 2010, the SACOG region consumed 529.5 million therms of natural gas. Natural gas supplies are derived from underground sources and brought to the surface at gas wells. Once it is extracted, gas is purified and the odorant that allows gas leaks to be detected is added to the normally odorless gas. Natural gas suppliers, such as PG&E, then send the gas into transmission pipelines, which are usually buried underground. Compressors propel the gas through the pipeline system, which delivers it to homes and businesses.

The state produces approximately 12 percent of its natural gas, while obtaining 22 percent from Canada and 65 percent from the Rockies and the Southwest (California Energy Commission, 2012). In 2006, California produced 325.6 billion cubic feet of natural gas (California Energy Commission, 2012). PG&E is the largest publicly-owned utility in California and provides natural gas for residential, industrial, and agency consumers within the SACOG area, including the City of Davis.

3.7.2 REGULATORY SETTING

FEDERAL

Clean Air Act

The Federal Clean Air Act (FCAA) was first signed into law in 1970. In 1977, and again in 1990, the law was substantially amended. The FCAA is the foundation for a national air pollution control effort, and it is composed of the following basic elements: National ambient air quality standards (NAAQS) for criteria air pollutants, hazardous air pollutant standards, state attainment plans, motor vehicle emissions standards, stationary source emissions standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions.

The EPA is responsible for administering the FCAA. The FCAA requires the EPA to set NAAQS for several problem air pollutants based on human health and welfare criteria. Two types of NAAQS were established: primary standards, which protect public health, and secondary standards, which protect the public welfare from non-health-related adverse effects such as visibility reduction.

Federal Climate Change Policy

According to the EPA, "the United States government has established a comprehensive policy to address climate change" that includes slowing the growth of emissions; strengthening science, technology, and institutions; and enhancing international cooperation. To implement this policy, "the Federal government is using voluntary and incentive-based programs to reduce emissions and

has established programs to promote climate technology and science." The federal government's goal is to reduce the greenhouse gas (GHG) intensity (a measurement of GHG emissions per unit of economic activity) of the American economy by 18 percent over the 10-year period from 2002 to 2012. In addition, the EPA administers multiple programs that encourage voluntary GHG reductions, including "ENERGY STAR", "Climate Leaders", and Methane Voluntary Programs. However, as of this writing, there are no adopted federal plans, policies, regulations, or laws directly regulating GHG emissions.

STATE

Assembly Bill 1493

In response to AB 1493, CARB approved amendments to the California Code of Regulations (CCR) adding GHG emission standards to California's existing motor vehicle emission standards. Amendments to CCR Title 13 Sections 1900 (CCR 13 1900) and 1961 (CCR 13 1961), and adoption of Section 1961.1 (CCR 13 1961.1) require automobile manufacturers to meet fleet average GHG emission limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty passenger vehicle weight classes beginning with the 2009 model year. Emission limits are further reduced each model year through 2016. For passenger cars and light-duty trucks 3,750 pounds or less loaded vehicle weight (LVW), the 2016 GHG emission limits are approximately 37 percent lower than during the first year of the regulations in 2009. For medium-duty passenger vehicles and light-duty trucks 3,751 LVW to 8,500 pounds gross vehicle weight (GVW), GHG emissions are reduced approximately 24 percent between 2009 and 2016.

CARB requested a waiver of federal preemption of California's Greenhouse Gas Emissions Standards. The intent of the waiver is to allow California to enact emissions standards to reduce carbon dioxide and other greenhouse gas emissions from automobiles in accordance with the regulation amendments to the CCRs that fulfill the requirements of AB 1493. The EPA granted a waiver to California to implement its greenhouse gas emissions standards for cars.

Assembly Bill 1007

Assembly Bill 1007, (Pavley, Chapter 371, Statutes of 2005) directed the CEC to prepare a plan to increase the use of alternative fuels in California. As a result, the CEC prepared the State Alternative Fuels Plan in consultation with the state, federal, and local agencies. The plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes costs to California and maximizes the economic benefits of in-state production. The Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce greenhouse gas emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

California Executive Orders S-3-05 and S-20-06, and Assembly Bill 32

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this Executive Order is to reduce California's GHG emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020 and 3) 80% below the 1990 levels by the year 2050.

In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that CARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

Assembly Bill 32- Climate Change Scoping Plan

On December 11, 2008 ARB adopted its *Climate Change Scoping Plan* (Scoping Plan), which functions as a roadmap of ARB's plans to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. The Scoping Plan contains the main strategies California will implement to reduce CO_2e emissions by 169 million metric tons (MMT), or approximately 30 percent, from the state's projected 2020 emissions level of 596 MMT of CO_2e under a business-as-usual scenario. (This is a reduction of 42 MMT CO_2e, or almost 10 percent, from 2002–2004 average emissions, but requires the reductions in the face of population and economic growth through 2020.) The Scoping Plan also breaks down the amount of GHG emissions reductions ARB recommends for each emissions sector of the state's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO_2e),
- the Low-Carbon Fuel Standard (15.0 MMT CO_2e),
- energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO_2e), and
- a renewable portfolio standard for electricity production (21.3 MMT CO_2e).

California Strategy to Reduce Petroleum Dependence (AB 2076)

In response to the requirements of AB 2076 (Chapter 936, Statutes of 2000), the CEC and the CARB developed a strategy to reduce petroleum dependence in California. The strategy, *Reducing California's Petroleum Dependence*, was adopted by the CEC and CARB in 2003. The strategy recommends that California reduce on-road gasoline and diesel fuel demand to 15 percent below 2003 demand levels by 2020 and maintain that level for the foreseeable future; the Governor and Legislature work to establish national fuel economy standards that double the fuel efficiency of new cars, light trucks, and sport utility vehicles (SUVs); and increase the use of non- petroleum fuels to 20 percent of on-road fuel consumption by 2020 and 30 percent by 2030.

Governor's Low Carbon Fuel Standard (Executive Order #S-01-07)

Executive Order #S-01-07 establishes a statewide goal to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 through establishment of a Low Carbon Fuel Standard. The Low Carbon Fuel Standard is incorporated into the State Alternative Fuels Plan and is one of the proposed discrete early action GHG reduction measures identified by CARB pursuant to AB 32.

Senate Bill 97 (SB 97)

Senate Bill 97 (Chapter 185, 2007) required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the State CEQA Guidelines for addressing greenhouse gas emissions. OPR prepared its recommended amendments to the State CEQA Guidelines to provide guidance to public agencies regarding the analysis and mitigation of greenhouse gas emissions and the effects of greenhouse gas emissions in draft CEQA documents. The Amendments became effective on March 18, 2010.

Senate Bill 375

Sen. Bill No. 375 (Stats. 2008, ch. 728) (SB 375) was built on AB 32 (California's 2006 climate change law). SB 375's core provision is a requirement for regional transportation agencies to develop a Sustainable Communities Strategy (SCS) in order to reduce GHG emissions from passenger vehicles. The SCS is one component of the existing Regional Transportation Plan (RTP).

The SCS outlines the region's plan for combining transportation resources, such as roads and mass transit, with a realistic land use pattern, in order to meet a state target for reducing GHG emissions. The strategy must take into account the region's housing needs, transportation demands, and protection of resource and farmlands.

Additionally, SB 375 modified the state's Housing Element Law to achieve consistency between the land use pattern outlined in the SCS and the Regional Housing Needs Assessment allocation. The legislation also substantially improved cities' and counties' accountability for carrying out their housing element plans.

Finally, SB 375 amended the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.) to ease the environmental review of developments that help reduce the growth of GHG emissions.

The SACOG Board, which is the local metropolitan planning organization that covers the six-county area in the Sacramento region, including the City of Davis, adopted the MTP/SCS in April 2012. A program-level EIR addressing the environmental impacts of the MTP/SCS was also prepared and certified.

LOCAL

Davis Climate Action and Adaptation Plan

The Davis Climate Action and Adaption Plan (D-CAAP), is designed to place the community on a path to achieve the greenhouse gas emission reduction targets adopted by the City Council in November 2008. The targets were based on a range that uses the State of California targets as a minimum goal and deeper reductions as the desired outcome. The City adopted this range in recognition that emission reductions are not precise and that many scientists believe that a reduction of 80 percent below 1990 levels by 2050 may not be adequate. The City's GHG reduction targets for community and City operations are shown in Table 3.7-1 below.

TABLE 3.7-1: DAVIS GHG REDUCTION TARGETS: COMMUNITY AND CITY OPERATIONS

YEAR	TARGET RANGE*		NOTES
	STATE	DAVIS**	
2010	2000 levels	1990 levels	Minimum: State target Desired: Provides baseline for subsequent average annual reductions
2012	1998 levels	7% below 1990 levels	Minimum: State does not establish a target for this year; linear interpolation from 2010 target. Desired: Consistent with Kyoto- Mayors Climate Protection Agreement Pledge- City of Davis Reso. 2006.
2015	1995 levels	15% below 1990 levels	Minimum: State does not establish a target for this year; linear interpolation from 2010 target. Desired: Consistent with initial ICLEI modeling conducted by the City.
2015 to 2020	Average annual reduction	Avg. of 2.6% reduction/yr to achieve 80% below 1990 levels by 2040	Minimum: State does not establish a target for these years. Desired: Average reduction encourages monitoring of progress and some flexibility in implementation.
2020	1990 levels	28% below 1990 levels	Minimum: State target Desired: Average reduction encourages monitoring of progress and some flexibility in implementation.
2020 to 2040	No formal target, but must reduce an	Avg. of 2.6% reduction/yr to achieve 80%	Minimum: State does not establish a target for these years.

YEAR	TARGET RANGE*		NOTES
	STATE	DAVIS**	
	avg. of 2.66%/yr to achieve 80% below 1990 levels by 2050	below 1990 levels by 2040	Desired: Reduction level adopted by the state based on climate stabilization levels of 3-5.5 degree increase in temp. Average reduction encourages monitoring of progress and some flexibility in implementation.
2050	80% below 1990 levels	Carbon neutral	Minimum: State target. Reduction level adopted by the state based on climate stabilization levels of 3.5.5 degree increase in temp. Average reduction encourages monitoring of progress and some flexibility in implementation. Desired: Combination of actions at the local, regional, national, and international levels and carbon offsets. Similar target set by the UC system, City of Berkeley, and Norway.

** IT IS ANTICIPATED THAT DAVIS WILL ACHIEVE REDUCTIONS WITHIN THE RANGE OF THE STATE TARGETS (MINIMUM) AND LOCAL TARGETS (DESIRED)*

*** DUE TO RESIDENCY TIME OF GHG GASES IN THE ATMOSPHERE, EARLY GHG REDUCTION IS GENERALLY MORE BENEFICIAL FOR MITIGATION OF THE MOST SEVERE IMPACTS OF CLIMATE CHANGE.*

The D-CAAP responds to the challenge of these ambitious goals by setting out a framework for actions that Davis will take to reduce local GHG emissions and contribute to the effort to achieve a stable climate.

The D-CAAP preparation was guided by a community based public input process executed by the Davis Climate Action Team, the Natural Resources Commission, and staff. Based on community input, analysis of best practices adopted by other communities, and contributions from subject matter experts, the plan utilizes a systems based approach to address local GHG emissions. The plan identifies objectives and actions in the next five years that will reverse local GHG emission growth and establish a foundation for deeper, longer term reductions beyond 2015. The plan includes objectives and actions in nine sectors:

1. Mobility
2. Energy
3. Land use and buildings
4. Consumption and waste
5. Food and agriculture
6. Community engagement
7. Government operations
8. Advocacy
9. Climate change preparation (adaptation)

Adaptive management principles are integrated into the plan to guide action assessment and plan updates.

Davis GHG Thresholds and Standards for New Residential Development

In 2009 the City of Davis adopted a resolution establishing greenhouse gas emission thresholds, standards, and mitigation guidelines for new residential development projects. These thresholds and standards are used by the City to determine a project's GHG emissions impacts, and for negotiating development agreements.

The standards are designed to achieve critical long-term GHG reductions while maintaining the economic viability of new residential development. The general objective is to offer clear standards based on the best available information and allow flexibility in how those standards are met. To this end, the framework establishes multiple paths for meeting the overall requirements and includes suggested mitigation measures to help guide the development community's challenging work of achieving meaningful GHG reductions. The general rationale behind the standards is that housing built today will be here beyond 2050; the target year for when society will need to be effectively carbon neutral to minimize the effects of global warming.

The standards for new residential development vary by the number of units in the project. Projects with more than 26 units are required to reduce GHG emissions to 1990 levels, as shown in Table 3.7-2.

TABLE 3.7-2: DAVIS GHG REDUCTION THRESHOLDS: NEW RESIDENTIAL PROJECTS

NEW RESIDENTIAL UNITS	STANDARD	MITIGATION
Up to 12 units (less than 5% of total units in given year)	De minimis	No direct mitigation required – required to meet green building ordinance
13 to 25 units (up to 10% of total units in given year)	Reduce to 1990 levels (2.4 Metric Tons of CO2e reduction per unit)	In lieu fee option, LEED NDGold standard or Individualized program
Greater than 26 units (greater than 10% of total units in given year)	Reduce to 1990 levels (2.4 Metric Tons of CO2e reduction per unit)	LEED ND Gold standard or Individualized program

SOURCE: CITY OF DAVIS, 2009

The general GHG emissions mitigation for new residential development projects is a phased approach that provides meaningful GHG reductions and rewards creative design that takes advantage of existing community form. The general standard includes two paths: the first is a package approach that the City would recognize as sufficient to satisfy GHG emission standards. The second would be a project specific calculation of GHG emissions and customized mitigation

program to reduce project GHG emissions to target year levels. For projects of 26 units or more, the projects may achieve the reduction through meeting the LEED ND Gold standard or through developing an individualized program.

Projects may receive credit for GHG reductions based on project density and proximity to transit, as shown in Table 3.7-3.

TABLE 3.7-3: NEW RESIDENTIAL PROJECTS – GHG REDUCTIONS CREDIT CALCULATION

FACTOR	GHG CREDIT
Overall Project Density (General Plan density) – incorporates proximity to employment opportunities	
High	5%
Medium	2%
Low	No credit
Proximity to Transit	
Less than ¼ mile	5%
¼ mile to ½ mile	2%
over ½ mile to ¾ mile	1%
Over ¾ mile	No credit

The City has developed a list of accepted GHG mitigation measures that must be implemented by new residential development projects in order to comply with the City's adopted GHG thresholds and standards. These measures include, but are not limited to, energy efficiency upgrades to new units above 2005 Title 24 standards, household photovoltaic systems, neighborhood electric vehicle incentives for homeowners, and local employee designated housing.

Green Building Standards

As of January 1, 2011, the City of Davis repealed its local Green Building Ordinance (previously Article 8.2 of the Davis Municipal Code) and replaced it with the 2010 California Green Building Standards Code (CCR, Title 24, Part11), including mandatory compliance with Tier 1 standards. The purpose of this code is to improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices in the following categories:

1. Planning and design
2. Energy efficiency
3. Water efficiency and conservation
4. Material conservation and resource efficiency

5. Environmental quality

3.7.3 IMPACTS AND MITIGATION MEASURES

GHG THRESHOLDS OF SIGNIFICANCE AND METHODOLOGY

Analysis Approach

The California Office of Planning and Research (OPR) recommends that lead agencies under CEQA make a good-faith effort, based on available information, to estimate the quantity of GHG emissions that would be generated by a proposed project, including the emissions associated with construction activities, stationary sources, vehicular traffic, and energy consumption: to determine whether the impacts have the potential to result in a significant project or cumulative environmental impact; and, where feasible mitigation is available, to mitigate any project or cumulative impact determined to be potentially significant. More recently, OPR prepared amendments to the State CEQA Guidelines, pursuant to SB 97 (Statutes of 2007) for adoption by the California Natural Resources Agency. The amendments added several provisions reinforcing the requirements to assess a project's GHG emissions as a contribution to the cumulative impact of climate change. The amendments went into effect on March 18, 2010.

Specifically, CEQA Guidelines Section 15064.4, as amended March 18, 2010, state:

(a) The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

> *(1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model or methodology it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; and/or*
>
> *(2) Rely on a qualitative analysis or performance based standards.*

(b) A lead agency should consider the following factors, among others, when assessing the significance of impacts from greenhouse gas emissions on the environment:

> *(1) The extent to which the project may increase or reduce greenhouse gas 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.*
>
> *(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*

greenhouse gas emissions. Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

THRESHOLDS OF SIGNIFICANCE

Per Appendix G of the CEQA Guidelines, climate change-related impacts are considered significant if implementation of the proposed project under consideration would do any of the following:

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

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

In order to determine whether or not the proposed project would generate GHG emissions that may have a significant impact on the environment, this EIR relies on the project's compliance with the City's established and adopted greenhouse gas emission thresholds, standards, and mitigation guidelines for new residential development projects, as well as thresholds established for this EIR to addresses GHG emissions from the non-residential project components. These thresholds and standards are used by the City to determine a project's GHG emissions impacts.

Residential GHG Emissions Budget Threshold

Baseline and 1990 target GHG emission levels were based on the April 21, 2009 Staff Report on greenhouse gas emission thresholds and standards for new residential development. To achieve 1990 levels of GHG emissions, each residential unit is required to reduce from a baseline of 5.5 MT CO_2 to 3.1 MT CO_2e (a 2.4 MT or 44% reduction per unit). At 551 residential units, a reduction of 1,322 MT CO_2e is required.

Non-Residential GHG Emissions Budget Threshold

1990 target GHG emission levels were based on the Carbon Development Allowances report (September 2008) by Deb Niemeier, Ph.D., P.E. prepared for the City of Davis, the City's allocation of the state estimates for 1990 GHG emissions of 357,401 MT CO_2e. This value includes transportation sources as well as building operations effects.

Non-residential 1990 emission levels were approximately 29,477 MT CO_2e, and are based on Table 3 of the City of Davis Greenhouse Gas Inventory and Forecast Report (May 2008) for commercial/industrial energy use and do not include transportation-related emissions. Under Senate Bill 375, it is appropriate to separate transportation-related source emissions from this segment of the analysis, because The Cannery is consistent with the Sustainable Communities Strategy adopted by the Sacramento Area Council of Governments (SACOG). This value of 29,477

MT CO_2e is approximately 8.2% of the City's total GHG emissions budget for 1990 for non-residential development (which, as indicated above, includes related transportation).

Data from the 1993 State of the City Report was used to estimate the amount of non-residential square footage existing within the city in 1990.

- Retail: 1,836,300 square feet
- Office: 584,900 square feet
- Industrial: 30.1 acres = 1,311,156 square feet. FAR of 0.3 assumed to estimate building square footage of 393,347 square feet.
- Light Industrial: 36.8 acres = 1,603,008 square feet. FAR of 0.3 assumed to estimate building square footage of 480,902 square feet.
- Total Square Footage = 3,295,449 square feet of non-residential square footage in 1990.

Non-Residential CO_2 Target

A target allocation of CO_2e emissions for non-residential development was calculated based on 1990 emission levels, for purposes of establishing a baseline from which to assess GHG reduction in compliance with City of Davis goals.

- 29,477 MT CO_2e for non-residential land uses in 1990.
- 3,295,449 square feet of non-residential land uses in 1990.
- 29,477 MT CO_2e/3,295,449 square feet = 0.00894 or **8.94 MT CO_2e per 1,000 square feet** of non-residential development at 1990 levels.

In order to determine whether or not the proposed project would conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs, the proposed project is analyzed for consistency with the City's D-CAAP, which is implemented through the City's adopted greenhouse gas emission thresholds, standards, and mitigation guidelines, as described above. The D-CAAP was developed by the City in order for future development projects and City actions to be consistent with – or better than - the statewide GHG reductions goals outlined in AB 32. If the project would generate GHG emissions below the residential and non-residential thresholds identified above, then the project would be consistent with the D-CAAP.

The project is also reviewed for consistency with the recently adopted SACOG MTP/SCS, which provides a framework for regional land use planning in an effort to reduce GHGs throughout the six-county MPO region. If the proposed project is found to be consistent with these two plans, it would also be found to be consistent with AB 32. Consistency with the D-CAAP and the SCS would result in a less than significant impact.

Methodology

Greenhouse gases attributable to the proposed project would be generated from two primary sources: 1) energy usage from the proposed project (both the residential and non-residential

components), and 2) emissions from vehicle trips and vehicle miles travelled generated by the proposed project.

This EIR includes a quantitative assessment of the energy usage from the residential and non-residential components of the proposed project, and compares those emissions levels to 1990 emissions levels, as described above. If the project is shown to meet the 1990 emissions thresholds for residential and non-residential uses listed above, then the project would have a less than significant impact.

GHG emissions associated with vehicle trips and vehicle miles travelled attributable to the proposed project are not addressed in this EIR, as explained below.

On April 19, 2012, the Sacramento Area Council of Governments (SACOG) adopted its Sustainable Communities Strategy (SCS), as required by Senate Bill (SB) 375 as part of the concurrent update of the Metropolitan Transportation Plan (MTP). As required by SB 375, the adopted SCS promotes and encourages development in areas defined by SACOG as Transit Priority Areas (TPAs). TPAs are areas of the region within one-half mile of a major transit stop (existing or planned light rail, street car, or train station) or an existing or planned high-quality transit corridor included in the MTP/SCS.

SB 375 establishes CEQA streamlining incentives to assist and encourage residential and mixed-use housing projects consistent with the SCS, and in particular, projects within TPAs. The CEQA streamlining benefits available under SB 375 are for residential and residential mixed-use projects that are consistent with the general land use designation, density, building intensity, and applicable policies specified for the project area in the SCS. Under SB 375, an EIR prepared for a project that is consistent with the SCS is not required to reference, describe, or discuss (1) growth-inducing impacts; or (2) project specific or cumulative impacts from cars and light-duty truck trips on global climate change or the regional transportation network if the project incorporates the mitigation measures required by an applicable prior environmental document. In addition, an EIR prepared for an SCS-consistent project is not required to reference, describe, or discuss a reduced residential density alternative to address the effects of car and light-duty truck trips generated by the project, as described under Public Resources Code Section 21159.28.

As described in greater detail under Impact 3.7-2 below, the proposed project is consistent with SACOG's SCS, and as such, this EIR does not include an analysis of potential impacts from cars and light-duty trucks on global climate change.

GHG IMPACTS AND MITIGATION MEASURES

Impact 3.7-1: The residential components of the proposed project may generate GHGs, either directly or indirectly, that may have a significant effect on the environment (Less than Significant with Mitigation)

In order to determine if the proposed project would generate GHGs that may have a significant effect on the environment, the City of Davis has relied on the proposed project's consistency with previously adopted plans and programs aimed at reducing GHG levels both locally and regionally.

Residential GHG Emissions Analysis

As described under the Thresholds of Significance above, to achieve 1990 levels of GHG emissions, each residential unit is required to reduce from a baseline of 5.5 MT CO_2e to 3.1 MT CO_2e (a 2.4 MT or 44% reduction per unit). At 551 residential units, a reduction of 1,322 MT CO_2e is required.

Table 3.7-4 shows the base level of GHG emissions that would be generated from each residential unit, prior to the implementation of any mitigation measures to reduce GHG emissions, shows the 1990 per unit targets for GHG emissions (the threshold of significance per unit), and provides the carbon reduction (GHG emissions reduction) required for each residential unit in order to comply with the City's adopted residential unit standard.

TABLE 3.7-4: BASE EMISSIONS, 1990 EMISSIONS TARGETS, AND CARBON REDUCTIONS REQUIRED

	METRIC TONS/UNIT	# OF UNITS	CO_2 (METRIC TONS)	LB CO_2E
Baseline	5.5	551	3,031	6,681,131
Target 1990	3.1	551	1,708	3,765,729
Carbon Reduction Required	2.4	551	1,322	2,915,403

SOURCE: DAVIS ENERGY GROUP, DECEMBER 2012

As described in the Davis GHG Thresholds and Standards for New Residential Development, projects may receive credit for GHG reductions based on project density and proximity to transit, as shown in Table 3.7-3. Table 3.7-5 shows the credits that the project would receive towards meeting the GHG reduction requirements, based on the project density and proximity to transit.

TABLE 3.7-5: GHG CREDITS BASED ON DENSITY AND PROXIMITY TO TRANSIT

		% REDUCTION	UNIT REDUCTION	# OF UNITS	CO_2 (METRIC TONS)	LB CO_2E
Project Density	High	5%	0.275	284	78	172,182
	Medium	2%	0.11	267	29	64,750
Proximity to Transit	Less than ¼ mile	5%	0.275	301	83	182,488
	¼ to ½ mile	2%	0.11	250	28	60,627
	½ to ¾ mile	1%	0.055	0	0	0
Total Credits					218	480,047

SOURCE: DAVIS ENERGY GROUP, DECEMBER 2012

As shown in Table 3.7-4, the project must demonstrate a total reduction of 1,322 metric tons of CO_2e to meet the 1990 threshold of significance. As shown in Table 3.7-5, the project receives a credit of 218 metric tons of CO_2e towards this reduction requirement, as a result of the project's density and proximity to transit. Therefore, in order to comply with the City's residential GHG emissions levels, the project must demonstrate a total reduction of 1,105 metric tons of CO_2e for the 551 proposed residential units. Implementation of Mitigation Measure 3.7-1 would reduce this impact to **a less than significant level**.

Table 3.7-6 provides an analysis of the preliminary mitigation plan to reduce GHG emissions levels from the residential component of the proposed project to a level that is below the 1990 GHG emissions threshold used in this analysis.

As shown in the table below, the implementation of the preliminary GHG mitigation measures would reduce total residential GHG emissions throughout the project by 1,107 metric tons of CO_2e, which exceeds the required reduction of 1,105 metric tons of CO_2e.

TABLE 3.7-6: PRELIMINARY GHG MITIGATION MEASURES[1]

MITIGATION MEASURES	% REDUCTION	METRIC TONS PER UNIT	# OF UNITS	CO_2 (METRIC TONS)	LB CO_2E
40% Better than Title 24	--	(1.55)	551	(855)	(1,884,282)
LED BiLevel Street and Path Lighting	--	--	--	(21.53)	(47,465)
45 kW PV for Street and Path Lighting	--	--	--	(21.24)	(46,824)
Package A Update Option[2]	10%	(1.85)	27	(50)	(109,892)
Package B Upgrade Option[2]	10%	(2.18)	27	(59)	(129,597)
Zero Net Electric Option[2, 3]	10%	(3.75)	27	(101)	(223,428)
Total Reduction Due to Mitigation				**(1,107)**	**(2,441,488)**

SOURCE: DAVIS ENERGY GROUP, DECEMBER 2012

Notes:

1: Measures listed to meet 1990 GHG reduction goals are preliminary and subject to change

2: Upgrade packages assume additional efficiency measures offered on single family homes. Assumes each package has 10% of homes taking the option.

3: Zero Net Electric Option includes PV installed to offset typical household electricity use over the year.

The assumptions used in the GHG reduction calculations shown in Table 3.7-6 are described below.

Residential Building Performance

The proposed homes would be built to a level that is 40% better than the 2008 Title 24 California building energy code. Based on modeling of a 1,900 ft^2 home and using the BEopt software[7] to model energy use, estimated savings for the 40% package were estimated to be 1,710 kWh and 186 therms per year.

To estimate operational emissions from electrical consumption, the applicant's estimate for demand was used and converted to CO_2 per year based on data from the U.S. EPA for the amount of CO_2 in pounds per kWh. Using EPA's eGRID2007 GHG annual output emissions rate for California electric power at:

http://www.epa.gov/cleanenergy/documents/egridzips/eGRID2007V1_1_year05_GHGOutputRates.pdf

[7] BEopt software is an hourly simulation tool developed by the National Renewable Energy Laboratory (NREL) and uses the DOE-2 simulation engine. BEopt is the tool used for Department of Energy's Building America program.

- 1,710 kWh/year for electricity savings per unit estimate.
- 0.724 lbs CO_2 per kWh per U.S. EPA for California's annual emission rates.
- 1,710 x 0.724 = 1,238 lbs of CO_2 per unit per year.
- 1 MT = 2,204.623 lbs (to convert to metric tons)
- 1,238 lbs CO_2 per year/2204.6 lbs per MT = **0.56 MT of CO_2/year per unit** from electricity usage.

To estimate operational emissions from natural gas consumption, the applicant's estimate for consumption was used and converted to CO_2 per year based on the amount of CO_2 in pounds per therm as reported by the U.S. Energy Information Administration for the emissions rate for natural gas combustion (11.7 lb CO_2/therm) (EIA 2011).

- 186 therms/year for natural gas savings per unit estimate.
- 11.7 lbs CO_2 per therm per EIA.
- 186 Therms x 11.7 lbs CO_2/Therm = 2,182 lbs CO_2/year.
- 2,182 lbs CO_2 per year/2204.6 lbs per MT = **0.99 MT of CO_2/year** from natural gas usage.

Total GHG mitigation due to building performance is:

- 0.56 (electricity) + 0.99 (natural gas) = 1.55 MT of CO_2/year per unit or
- 1.55 MT of CO_2/year x 551 units = **855 MT of CO_2/year** total.

LED Bi-Level Street and Path Lighting

The project is being proposed to include LED lighting with bi-level controls for all common area street and path lighting. Based on the lighting design which includes 279 fixtures, the savings are projected to be 65,559 kWh/year.

- 65,559 kWh/yr saved x 0.724 = 47,464 lbs of CO_2 per unit per year.
- 47,464 lbs CO_2 per year/2204.6 lbs per MT = **21.53 MT of CO_2/year**.

45 kW PV System for Street and Path Lighting

A PV system would be installed to offset the electrical energy consumption of all street and path lighting. The 45 kW system would generate an estimated 64,674 kWh/year.

- 64,674 kWh/yr saved x 0.724 = 46,824 lbs of CO_2 per unit per year.
- 46,824 lbs CO_2 per year/2204.6 lbs per MT = **21.24 MT of CO_2/year**.

Energy Upgrade Packages

The applicant is proposing to work with the City of Davis and Davis Energy Group to offer upgrade options on all single-family homes. These options would result in further energy reductions beyond the performance of the base homes. These packages have not been developed, but work to

development of these packages is included in a Public Interest Energy Research PIER proposal that includes the City of Davis and the New Home Company (project applicant). Current calculations assume three upgrade packages, including a zero net electric option, which would have rooftop PV to offset the projected electrical use of the home. The current assumptions conservatively project that 10% of single family detached homes would be built with each upgrade package, resulting in a total GHG credit of 210 MT CO_2e.

MITIGATION MEASURES

Mitigation Measure 3.7-1: *Prior to the issuance of building permits, the project applicant shall finalize the residential GHG emissions reduction plan and submit the plan to the Department of Community Development and Sustainability for review and approval. The residential GHG reduction plan should include the measures identified in Table 3.7-6. If alternative measures are selected for implementation, the applicant must verify, to the satisfaction of the Department of Community Development and Sustainability, that the residential GHG reduction plan will result in a total reduction of 1,105 metric tons of CO_2e, or greater, when compared to the baseline level of 3,031 metric tons.*

Impact 3.7-2: The non-residential components of the proposed project may generate GHGs, either directly or indirectly, that may have a significant effect on the environment (Less than Significant)

In order to determine if the proposed project would generate GHGs that may have a significant effect on the environment, the City of Davis has relied on the proposed project's consistency with previously adopted plans and programs aimed at reducing GHG levels both locally and regionally.

Non-Residential GHG Emissions Analysis

As described under the Thresholds of Significance above, to achieve 1990 levels of GHG emissions, a target allocation of CO_2e emissions for non-residential development was calculated based on 1990 emission levels, for purposes of establishing a baseline from which to assess GHG reduction in compliance with City of Davis goals.

- 29,477 MT CO_2e for non-residential land uses in 1990.[8]
- 3,295,449 square feet of non-residential land uses in 1990.[9]
- 29,477 MT CO_2e/3,295,449 square feet = 0.00894 or **8.94 MT CO_2e per 1,000 square feet** of non-residential development at 1990 levels.

Table 3.7-7 shows the total GHG emissions that would be generated from the non-residential mixed-use components of the proposed project.

[8] From Table 3 of the City of Davis Greenhouse Gas Inventory and Forecast Report (May 2008) by Christa Clark Jones. Estimates do not include transportation related effects and assume building related GHG emissions.
[9] Data from the 1993 State of the City Report

TABLE 3.7-7: CANNERY PARK MIXED-USE CURRENT ENERGY AND GHG USE INTENSITIES [1, 2]

USE TYPE	FLOOR AREA (SQUARE FEET)	KWH/FT^2	THERMS/ FT^2	CO_2 (METRIC TONS)	CO_2 (METRIC TONS PER 1000 FT^2)
Residential, Live/Work [3]	49,480	n/a	n/a		
Retail	48,440	14.06	0.05	236	4.86
Restaurant	12,050	40.20	2.10	293	24.35
Office	55,600	13.10	0.11	270	4.86
Daycare/Preschool	3,300	7.46	0.16	11	3.30
Clubhouse	3,000	12.13	0.42	19	6.21
Total [3]	171,870				
Total Non-Residential [3]	**122,390**	**15.97**	**0.29**	**829**	**6.77**

SOURCE: DAVIS ENERGY GROUP, DECEMBER 2012

Notes:

1: Source for Energy Use Intensities (EUIs) for different nonresidential uses from "California Commercial End Use Survey", CEC-400-2006-05, Itron, Table E-1 (Page 8)

2: GHG emission rates for electricity based on US EPA 2007 emissions rates for California (0.724 lbs. CO2 per kWh). GHG emissions rates for natural gas are 11.7 GHG emissions for natural gas combustion is reported by U.S. Energy Information Administration as 11.7 lb CO2/therm (EIA 2011).

3; Residential portion of mixed use building not included. Covered under the residential portion of the GHG calculations.

Estimates for the non-residential portions of the project were made using energy use intensities from the California 2006 Commercial End Use Survey, CEC-400-2006-05, Table E-1.

http://www.energy.ca.gov/2006publications/CEC-400-2006-005/CEC-400-2006-005.PDF

Energy use intensities were taken for the different non-residential end uses included in the mixed use and clubhouse buildings to estimate overall energy use. As shown in the table above, the non-residential components of the project would generate a total of 829 metric tons of CO_2e per year. This equates to 6.77 metric tons per 1,000 square feet of non-residential floor area. This is below the 1990 level (the non-residential threshold) of 8.94 metric tons of CO2 per 1,000 square feet. Therefore, this is a **less than significant** impact.

The project applicant has proposed additional measures aimed at reducing the GHG emissions of the non-residential components of the project. Assuming a 25% reduction in HVAC, water heating and lighting energy use will further reduce the non-residential emissions level for The Cannery to 5.80 MT CO_2e per 1,000 square feet of building area, as shown in Table 3.7-8.

TABLE 3.7-8: CANNERY PARK MIXED-USE PROJECT REDUCTIONS

USE TYPE	% REDUCTION	KWH/FT^2	THERMS/ FT^2	CO_2 (METRIC TONS)	CO_2 (METRIC TONS PER 1000 FT^2)
Retail	19%	11.45	0.04	192	3.95
Restaurant	8%	36.26	1.96	269	22.30
Office	17%	11.06	0.08	225	4.06
Daycare/Preschool	19%	6.16	0.12	9	2.67
Clubhouse	19%	9.98	0.33	15	5.02
Total Non-Residential [1]				**710**	**5.80**

SOURCE: DAVIS ENERGY GROUP, DECEMBER 2012

Notes:

1: Assumes buildings are 25% better than 2008 Title 24. 25% reduction in HVAC, Lighting and Water Heating energy use only.

Impact 3.7-3: The proposed project may conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases (Less than Significant with Mitigation)

Consistency with City of Davis GHG Reduction Plans

The City's adopted GHG standard for new residential projects of 26 units or more is to reduce GHG emissions to 1990 levels (2.4 Metric Tons of CO_2e reduction per unit). At 551 residential units, a reduction of 1,322 MT CO_2e is required for the proposed project.

Based on the GHG reductions credits shown in Table 3.7-2, the proposed project receives a 218 metric ton credit in CO_2e, based on the project's density and proximity to transit, as shown in Table 3.7-5.

Projects may achieve the reduction requirement through developing a project to meet the LEED ND Gold standard or through an individualized program. The Cannery has developed an individualized program with a range of measures, described in detail previously under Impacts 3.7-1 and 3.7-2, and shown in Tables 3.7-6 and 3.7-8.

The analysis provided under Impact 3.7-1 demonstrates that the proposed project would comply with the applicable City of Davis standards for the generation of GHG emissions from the residential components of the proposed project, following implementation of the requirements of Mitigation Measure 3.7-1.

The analysis under Impact 3.7-2 demonstrates that the proposed project would comply with the non-residential GHG emissions standards established by the City. Therefore, the proposed project would not conflict with the City's adopted standards for the reduction of GHG emissions, and would not conflict with plans or programs adopted by the City of Davis to reduce community-wide GHG levels. This is a **less than significant** impact, following implementation of Mitigation Measure 3.7-1.

Consistency with the SACOG Sustainably Communities Strategy and Metropolitan Transportation Plan

Environmental sustainability is one of six MTP principles addressed in the 2012 SACOG MTP/SCS, which was adopted by SACOG on April 19, 2012. The desire to minimize negative transportation impacts on the environment for cleaner air and natural resource protection has always been an important consideration in each MTP. However, since the adoption of the 2008 MTP, two important changes have happened that affect the environmental sustainability analysis in the MTP/SCS.

First, California adopted SB 375 (Chapter 728, Statutes of 2008). The law focuses on aligning transportation, housing, and other land uses to achieve greenhouse gas (GHG) emission reduction targets established under the California Global Warming Solutions Act (AB 32). SB 375 requires California MPOs to develop a Sustainable Communities Strategy (SCS) as part of the MTP, with the purposes of identifying policies and strategies to reduce per capita passenger vehicle-generated GHG emissions. The SCS must identify the general location of land uses, residential densities, and building intensities within the region; identify areas within the region sufficient to house all the population of the region; identify areas within the region sufficient to house an eight-year projection of the regional housing need; identify a transportation network to serve the regional transportation needs; gather and consider the best practically available scientific information regarding resource areas and farmland in the region; consider the state housing goals; set forth a forecasted development pattern for the region; and allow the regional transportation plan to comply with the federal Clean Air Act.

Second, SACOG launched the Rural-Urban Connections Strategy (RUCS) at the conclusion of the 2008 MTP in an effort to provide policy and technical approaches to addressing or avoiding impacts to rural resources in the Sacramento region. The project was identified as a mitigation measure for impacts to agricultural lands from the 2008 MTP, as well as a Transportation Control Measure as part of the region's plan to meet federal air quality requirements. RUCS is also part of SACOG's effort to streamline the NEPA environmental review process for transportation projects.

The proposed Cannery Project is consistent with SACOG's adopted SCS, and is eligible for CEQA streamlining benefits as a qualifying "residential or mixed-use residential project" pursuant to SB 375, as described in greater detail below.

The Cannery is a "Residential or Mixed-Use Residential Project" as Defined by SB 375

Under SB 375's amendments to CEQA (Section 21159.28) a "residential or mixed-use residential project" can take advantage of streamlining provisions reducing the scope of environmental

analysis if "consistent with the use designation, density, building intensity, and applicable policies specified for the project area" in the adopted SCS. A project qualifies as a "residential or mixed-use project" where at least 75% of the project's building square footage is residential.

The level of residential development on the Cannery site is consistent with the guidance of the City's Housing Element Steering Committee, which recommended between 500-776 units for the site. The Cannery project identifies between 551 and 610 residential units, with a variety of product types and densities. In addition, The Cannery project proposes up to the 236,000 square feet of commercial space, which dictates a requirement of 708,000 square feet of residential building space in order to satisfy the 75% residential requirement on a square-footage basis. The Cannery would provide approximately 991,800 square feet of residential building space, at an average of 1,800 square feet per unit, assuming 551 residential units are constructed. This exceeds the amount of residential building space required to meet the definition of a "residential or mixed-use residential project."

The Cannery Is Consistent with Applicable Standards and Policies in the SCS

As described above, The Cannery meets the SB 375 definition of a "residential or mixed-use residential project." However, SB 375 further requires that such a project be "consistent with the use designation, density, building intensity, and applicable policies specified for the project area" by the SCS.

The SCS does not contain any specific policies related to the The Cannery site. However, SACOG describes in brief the SCS "consistency" process on page 3-36 of the SCS:

> Although this MTP/SCS has no regulatory authority over local land use decisions, it provides information about the SCS so that local jurisdictions can determine whether a project is consistent with the SCS, and therefore, eligible for the CEQA benefits based on consistency with the SCS. To determine a project's consistency with the SCS, a jurisdiction must find it consistent with the general land use, density, intensity, and any applicable land use policies of the SCS. Additional information by jurisdiction and community type is provided in Appendix E-3 (of the SCS). SACOG will provide assistance to a local jurisdiction in making this determination if the local jurisdiction requests such assistance.

Specifically to the City of Davis, Appendix E-3 to the SCS provides as follows:

> By 2035, the MTP/SCS forecast for Davis includes 4,183 new employees and 3,646 new housing units. The majority of this growth, 82 percent of the employment and 64 percent of the housing, is in Established Communities. The majority of this employment growth is in commercial, office, and industrial uses, primarily located along Highway 80. The new housing growth, ranging low and high density, is a result of small-scale infill throughout the city and one remaining large infill opportunity in the city, located along East Covell Boulevard and F Street. The remaining 764 new employees and 1,324 new housing units in Davis in the MTP/SCS forecast are in the Center and Corridor Community.

Appendix E-3 recognizes that the projected development in the City of Davis would be accommodated in part on The Cannery site, identified as the "one remaining large infill opportunity." Thus, the population growth and housing associated with The Cannery is assumed within the forecast projections of the SCS.

In reviewing the SCS and the proposed Cannery project, the City of Davis has determined that the project is consistent with the SCS. This independent conclusion was substantiated by SACOG, through consultation with the City of Davis.

The Cannery Satisfies Adopted "Performance Measures" in the SCS to Demonstrate Achievement of SB 375 Requirements

Appendix G of the SCS identifies a series of "performance measures" for the SCS, intended to assess the performance of the SCS as a whole. While these performance measures were not expressly intended to define "consistency" of a specific project within the SCS, it can also be said that a project that would implement many of SACOG's performance measures would assist in achieving attainment of SCS goals for the region as a whole.

Attributes of the Cannery project that advance attainment of SACOG's performance measures for the SCS include the following:

- Development of residential and employment uses within an Established Community (SCS p. 3-12).

The SCS promotes development in Established Communities as a means of reducing urban sprawl, maintaining compact development patters, and utilizing existing infrastructure assets. The site of the Cannery is located within the portion of the City of Davis identified as an Established Community, per Figure 3.2 in SACOG's SCS. The Cannery proposes the development of both residential and employment uses on the site, which is within the Davis city limit and will utilize existing infrastructure in most cases.

- Housing growth through reinvestment in vacant property (SCS p. 3-22).

The SCS recognizes that in urbanized areas, development on infill or vacant lands, intensification of the use of underutilized parcels (e.g., more development on the site of a low-density retail strip shopping center), or redevelopment (e.g., re-using existing vacant buildings or lots) often makes better use of existing public infrastructure. The project site is the former location of the Hunt-Wesson tomato canning facility. The canning facility was constructed in 1961 and operated for 38 years, before closing in 1999. In 2000, the Davis City Council rezoned the project site from Industrial to PD-1-00 (Planned Development- Industrial), to allow for the possible development of a business park. The obsolete canning facilities were demolished and a few building foundations remain in the southern portion of the site. The northern portion of the site, once intended for facilities plant expansion, remains undeveloped. The Cannery is a reinvestment of vacant property, turning an unutilized industrial site into a vibrant mixed-use community.

- Compact growth (SCS p. 3-23)

Development that is more compact encourages more walking, biking, transit use, and shorter auto trips. By focusing on providing more small-lot and attached housing and planning for a community with a mix of uses, The Cannery creates a relatively more compact land use pattern than traditional suburban neighborhoods. The Cannery represents a practical and responsible application of sustainable, low impact development and the SACOG Blueprint smart growth planning principles. Smart growth principles are demonstrated in the project's compact urban form, efficient use of land resources, livable neighborhoods, and extensive bicycle and pedestrian circulation and connections. The Cannery embodies compact growth concepts on both a regional and neighborhood level. By utilizing a former industrial site within the City of Davis, The Cannery accommodates growth demands without expansion of the urban boundary. Moreover, The Cannery's development density will accommodate a greater population of residents and workers than has been the case under traditional development concepts and patterns.

- Quality design (i.e., planning to increase walking and bicycle use) (SCS p. 3-23)

The Cannery creates new linkages to the City's existing bicycle and pedestrian network. The Cannery is designed a pedestrian scale with distances among uses short enough to walk or bike. All uses in the project are no more than a ten-minute walk or five-minute bicycle ride from on another.

- Mixed Use Development (SCS pgs. 3-26 to 3-28)

The principal of mixed-use development strives to improve both the jobs/housing balance, both regionally and locally, but also to reduce dependency on the motor vehicle. The 15-acre mixed use business component of The Cannery includes the 7.2-acre West Side and 7.8-acre East Side. Together, these sites include opportunities for integration of horizontal and vertical mixed use and residential uses. The Cannery's mixed-use districts could accommodate up to approximately 236,000 square feet of commercial and business uses and provide employment opportunities for 600 to 850 people. A stated goal of the SCS is to move communities closer to the regional ratio of 1.2 jobs per household growth between 2008 and 2035. As described in greater detail in Section 3.12, internally, The Cannery would provide a jobs-to-household ratio of 1.39 jobs per household within the project. The City of Davis currently has a jobs:housing balance of 0.70:1. The Cannery project would slightly increase the City's overall jobs:housing balance to 0.72:1, which is closer to SACOG's goal of 1.2:1.

- Jobs-Housing Balance within a four-mile radius of employment center (SCS pgs. 3-26 to 3-28)

The SCS designates the UC Davis campus as an "employment center." The Cannery site is located approximately 1 mile from the UC Davis campus, and thus will develop additional housing in close proximity to a major employment center in furtherance of SACOG's jobs-housing ratio toward the 1.2 standard identified by the SCS, while also reducing vehicle miles travelled (VMT) for project residents.

- Growth in dwelling units and employees within ½ mile of Transit Priority Areas (SCS pgs, 2-29 to 3-31)

Transit Priority Areas (TPAs) are areas within one-half mile of a major transit stop (existing or planned light rail, street car, or train station) or an existing or planned high-quality transit corridor included in the MTP/SCS. A high-quality transit corridor is a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours. The Cannery is within an area of the City of Davis designated as a TPA by the SCS. See SCS, Figure 3.2. The residential and commercial development proposed by The Cannery would advance the goals of the SCS to develop these uses within or near TPAs.

- New housing product mix in a Transit Priority Area (SCS p. 3-31)

As indicated above, The Cannery site is within a TPA designated by the SCS. The Cannery offers many sizes, types, densities and styles of housing including ownership and rental housing, detached and attached homes in low, medium, and high densities ranging from approximately 5 to 20 units per acre. Housing choices have been selected in response to demographic trends and market demands. Housing types within The Cannery will be suitable for a variety of residents including families, small households, working professionals, and seniors.

- Proximity to transit (SCS p. 5A-9)

Proximity to transit for purposes of the SCS refers to the distance from a residence to the nearest transit station or stop, with VMT declining, and both walking and transit use increasing, as distance to the nearest transit gets shorter. Unitrans and Yolobus will provide future transit services to The Cannery neighborhood. A new transit center, with a route map, shade structure and seating, will be constructed along the The Cannery frontage on East Covell Boulevard, immediately west of the J Street intersection. The transit center will be directly accessible from the mixed-use area of the project.

- Change in residential density by Community Type (SCS p. 5A-10)

For planning purposes, the SCS identifies a baseline residential density (year 2008) for Established Communities of 3.8 units per acre. The goal of the SCS is to increase the average density in Established Communities to 4.1 units per acre by the year 2035. See SCS Table 5A.2. The Cannery proposes residential development at an average density of approximately 9.5 units per acre, well above the long-range goal of the SCS for Established Community areas and closer to the SCS goal for Center/Corridor communities of 15 units/acre by 2035. The Cannery's high level of density in an Established Community and compact development plan is consistent with the infill focus of the SCS, in that it results in a smaller overall urban footprint that maximizes the land available for agricultural, open space and habitat uses, while still accommodating population growth and urban development.

The Cannery Will Achieve the Greenhouse Gas Emissions Reduction Targets of the SCS

SB 375 requires projects seeking to utilize the adopted CEQA streamlining benefits to achieve the greenhouse gas (GHG) reduction targets of the SCS, and to adopt the mitigation measures

identified in the EIR prepared for the SCS. The SCS does not establish a legal presumption that a project inconsistent with the SCS does not meet greenhouse gas emissions reduction targets or AB 32 goals. However, the SCS is a tool to address greenhouse gas compliance and it provides incentives for development projects that are consistent with the SCS. In 2011, the State Air Resources Board (ARB) adopted a Scoping Plan that set SB 375 GHG emission reduction targets for each of the state's 18 Metropolitan Planning Organizations (MPOs), including SACOG. For the 6-county SACOG region, the GHG reduction targets set are seven percent below 2005 per capita emissions levels by 2020 and 16 percent below 2005 per capita emissions levels by 2035. SACOG estimates that implementation of the SCS will result in GHG reductions that exceed the adopted ARB targets by 12%. See SCS, p. 7-36.

SACOG prepared and adopted an EIR in conjunction with the SCS, which contains a series of mitigation measures to address GHG reduction, both on a regional and project-level basis. As applied to specific future development projects, SACOG's SCS EIR contains the following Mitigation Measures, which are shown in Table 3.7-9 (located at the end of this chapter). Table 3.7-9 describes how the proposed project complies with the range of mitigation measures presented in the SCS EIR.

Conclusion

The Cannery's overarching sustainability objective is to reduce energy use and greenhouse gas emissions at least 30% beyond current Title 24 levels through project design and the practical and responsible application of building efficiency, low impact development and smart growth planning principles. This project-level reduction target will meet or exceed the adopted Scoping Plan or SCS reduction targets.

The City of Davis General Plan provides policy direction and support for natural resource conservation, compact community design and energy efficiency. The City has adopted standards and guidelines to address local, regional and global climate change impacts of future development. Moreover, The Cannery is designed in furtherance of the Davis Climate Action and Adaption Plan (D-CAAP), as described in greater detail previously in this chapter.

In addition, the long-range goals and objectives for sustainability and smart growth initiated by the Davis City Council address land use policy through implementation of mandatory Tier 1 of the 2010 California Green Building Standards Code (CalGreen) and the City's greenhouse gas emissions reduction targets in the D-CAAP. The City of Davis requires new construction to achieve the CalGreen Tier 1 standard, which requires achievement of energy efficiency at least 15% beyond the base requirements of Title 24. The Cannery's proposed energy efficiency gain of at least 30% over current Title 24 requirements would meet or exceed Calgreen Tier 2 requirements. As an infill and redevelopment project, The Cannery will advance the City's goals for efficient and sustainable reuse of a previously developed site.

The design strategy to reduce GHG emissions is proposed to include many of the design features and mitigation measures identified in the SCS EIR (Mitigation Measure AIR-1)

The Cannery intends to meet its stated GHG reduction and energy efficiency goals through a wide variety of building and design measures. Due to the continuing advances in technology, it is envisioned that The Cannery's reduction strategies will continue to evolve in order to improve efficiency and allow for innovation.

Based upon the above, The Cannery project is consistent with the SCS, and thus qualified to take advantage of the CEQA streamlining measures enacted under SB 375. The Cannery meets the definition of a "residential or mixed-use project" as defined by CEQA for streamlining purposes under SB 375. The Cannery is within the growth projections of the SCS, and would implement many of SACOG's performance measures over the life of the SCS. Finally, The Cannery will meet or exceed the GHG reduction targets established by the SCS, and therefore contribute to regional achievement of these targets as required by AB 32.

The Cannery Project is consistent with the D-CAAP, which lays the framework for the City of Davis to achieve its target reduction goals of GHG emissions, and is consistent with the City's GHG standards for new residential projects, which shall be demonstrated through the implementation of Mitigation Measure 3.7-1.

SACOG and the City of Davis have taken significant steps towards the reduction of GHGs in the region and within the City of Davis through the adoption of General Plan policies, the D-CAAP, and the SCS. As demonstrated in the analysis provided above, the proposed project is consistent with these adopted plans, and would assist the City and SACOG in achieving their adopted GHG reduction targets. Therefore, this is a **less than significant impact**.

TABLE 3.7-9: SACOG SCS EIR MITIGATION MEASURES

SACOG SCS EIR MITIGATION MEASURES	DISCUSSION OF APPLICABILITY TO THE CANNERY PROJECT
Mitigation Measure AES-1: Reduce sun glare resulting from implementation of new transportation projects.	Not applicable to the Cannery Project.
Mitigation Measure AES-2: Design structures to avoid or reduce impacts resulting from glare.	This is addressed by the requirements in Mitigation Measure 3.1-1 in The Cannery EIR.
Mitigation Measure AES-3: Design lighting to minimize light trespass and glare.	This is addressed by the requirements in Mitigation Measure 3.1-2 in The Cannery EIR.
Mitigation Measure AES-4: Protect panoramic views and views of significant landscape features or landforms.	Impact 3.1-1 addresses project impacts related to this environmental topic. The project would have a less than significant impact.
Mitigation Measure AES-5: Design river crossings to minimize aesthetic and visual impacts and to protect scenic and panoramic views of significant landscape features and landforms to the greatest feasible extent.	Not applicable to the Cannery Project.
Mitigation Measure AES-6: Design projects to be visually compatible with surrounding areas.	Impact 3.1-2 addresses project impacts related to this environmental topic. The project would have a less than significant impact.
Mitigation Measure AES-8: Reduce the visibility of construction-related activities	Project construction activities would be temporary and would not result in significant impacts.
Mitigation Measure AES-12: Minimize contrasts between the project and surrounding areas.	Impact 3.1-2 addresses project impacts related to this environmental topic. The project would have a less than significant impact.
Mitigation Measure AES-13: Replace and renew landscaping along roadway corridors and development sites.	Impact 3.1-2 addresses project impacts related to this environmental topic. The project would have a less than significant impact.
Mitigation Measure AG-1: Mitigate for loss of farmland.	Impact 3.2-1 addresses project impacts related to this environmental topic. The project would not result in the loss of farmland. An urban farm is proposed as part of the project.
Mitigation Measure AG-3: Mitigate for loss of forest land or timberland.	Impact 3.2-4 addresses project impacts related to this environmental topic. The project would have no impact.
Mitigation Measure AG-4: Inventory innovative ideas and best practices from the RUCS toolkit, USEPA and USDA Supporting Sustainable Rural	This is not directly applicable to the Cannery Project. The Davis General Plan and Municipal

SACOG SCS EIR MITIGATION MEASURES	DISCUSSION OF APPLICABILITY TO THE CANNERY PROJECT
Communities publication, and other sources and implement a locally appropriate strategy to manage growth issues at the rural-urban interface to support the long-term viability of agriculture in the SACOG region.	Code include policies and provisions to manage growth at the rural-urban interface within and surrounding the City, as described in greater detail in Chapter 3.2 of the EIR.
Mitigation Measure AG-6: Minimize construction-related impacts to agricultural and forestry resources.	Not applicable to the Cannery Project. There are no ag or forest resources on-site.
Mitigation Measure AIR – 1: Implementing agencies should require air quality modeling for individual land use and transportation projects to determine whether thresholds of significance for long-term operational criteria air pollutant emissions are exceeded and apply recommended applicable mitigation measures as defined by the applicable local air district.	Appendix C contains the air quality modeling results for the Cannery Project. The results of the modeling and a comparison of project emissions to the applicable thresholds of significance are provided under Impact 3.3-1. Mitigation Measures 3.3-1 and 3.3-2 would reduce air quality impacts to the greatest degree feasible. .
Mitigation Measure AIR – 2: Adhere to ARB Handbook siting guidance to the maximum extent possible. (related to TAC exposure)	Impact 3.3-4 addresses project impacts related to this environmental topic. The project would have a less than significant impact.
Mitigation Measure AIR-3: Implementing agencies should require assessment of new and existing odor sources for individual land use projects to determine whether sensitive receptors would be exposed to objectionable odors and apply recommended applicable mitigation measures as defined by the applicable local air district and best practices.	Impact 3.3-5 addresses project impacts related to this environmental topic. The project would have a less than significant impact.
Mitigation Measures AIR — 4: Implementing agencies should require project applicants to implement applicable, or equivalent, standard construction mitigation measures.	Impact 3.3-2 addresses project impacts related to this environmental topic. Construction emissions mitigation is required under Mitigation Measure 3.3-3.
Mitigation Measure BIO-1: Avoid, minimize, and mitigate impacts on special-status plant species.	Impact 3.4-6 addresses project impacts related to this environmental topic. The project would have a less than significant impact.
Mitigation Measure BIO-2: Avoid, minimize, and mitigate impacts on special-status wildlife species.	Impacts 3.4-1, 3.4-2, 3.4-4, and 3.4-5 address project impacts related to this environmental topic. The implementation of Mitigation Measures 3.4-1 through 3.4-6 would reduce this impact to a less than significant level.
Mitigation Measure BIO-3: Avoid, minimize, and mitigate impacts on special-status fish species.	Impact 3.4-3 addresses project impacts related to this environmental topic. The project would

SACOG SCS EIR MITIGATION MEASURES	DISCUSSION OF APPLICABILITY TO THE CANNERY PROJECT
	have a less than significant impact.
Mitigation Measure BIO-4: Avoid, minimize, and mitigate impacts to riparian habitats.	Impact 3.4-7 addresses project impacts related to this environmental topic. The implementation of Mitigation Measures 3.4-7 and 3.4-8 would reduce this impact to a less than significant level.
Mitigation Measure BIO-5: Avoid, minimize, and mitigate impacts to oak woodland habitats.	Impact 3.4-10 addresses project impacts related to this environmental topic. The implementation of Mitigation Measure 3.4-12 would reduce this impact to a less than significant level.
Mitigation Measure BIO-6: Avoid, minimize, and mitigate impacts to wetland and other waters.	Impact 3.4-8 addresses project impacts related to this environmental topic. The implementation of Mitigation Measures 3.4-9 through 3.4-11 would reduce this impact to a less than significant level.
Mitigation Measure BIO-7: Avoid, minimize, and mitigate impacts to wildlife corridors	Impacts 3.4-9 addresses project impacts related to this environmental topic. The project would have a less than significant impact.
Mitigation Measure BIO-8: Avoid, minimize, and mitigate for impacts on protected trees and other biological resources protected by local ordinances.	Impact 3.4-10 addresses project impacts related to this environmental topic. The implementation of Mitigation Measure 3.4-12 would reduce this impact to a less than significant level.
Mitigation Measure BIO-9: Avoid and minimize, and mitigate for construction-related impacts.	Impacts 3.4-1, 3.4-2, 3.4-4, 3.4-5, and 3.4-7 address project impacts related to this environmental topic. The implementation of Mitigation Measures 3.4-1 through 3.4-7 would reduce this impact to a less than significant level.
Mitigation Measure CR-1: Conduct historical resource studies and identify and implement project-specific mitigation.	Cultural resource studies for the Cannery project are included as Appendix D. Mitigation Measure 3.5-1 would ensure that project impacts are less than significant.
Mitigation Measure CR-2: Conduct Archaeological Resource Studies and Identify and Implement Project-Specific Mitigation.	Cultural resource studies for the Cannery project are included as Appendix D. Mitigation Measure 3.5-1 would ensure that project

SACOG SCS EIR MITIGATION MEASURES	DISCUSSION OF APPLICABILITY TO THE CANNERY PROJECT
	impacts are less than significant.
Mitigation Measure CR-3: Reduce Visibility or Accessibility of Archaeological Resources.	There are no known cultural or archaeological resources on the project site.
Mitigation Measure CR-4: Conduct project-specific paleontological resource studies and identify and implement mitigation	Cultural resource studies for the Cannery project are included as Appendix D. There are no known paleontological resources on the project site.
Mitigation Measure ENE-1: Require new development to comply with local GHG reduction plans that contain measures identified in the Scoping Plan.	Impacts 3.7-1 through 3.7-3 address project impacts related to this environmental topic. The implementation of Mitigation Measure 3.7-1 would reduce this impact to a less than significant level.
Mitigation Measure ENE-2: Local jurisdictions should work with other local, regional, and state agencies to implement GHG reduction and energy efficiency programs in rural areas.	Not directly applicable to the Cannery Project. The City of Davis has adopted the D-CAAP and GHG standards for new residential projects. The project has been reviewed for consistency with these plans.
Mitigation Measure GEO-1: Reduce soil erosion and loss of topsoil through erosion control mitigation and SWPPP.	Impact 3.6-2 addresses this environmental topic. A SWPPP is required by Mitigation Measure 3.6-1 and erosion BMPs are required by Mitigation Measure 3.6-2.
Mitigation Measure GEO-3: Reduce the loss of availability of a designated mineral resource.	Impact 3.6-5 addresses project impacts related to this environmental topic. The project would have no impact.
Mitigation Measure HAZ – 1: Implement dust mitigation plan applicable to activities with risk of disturbing areas known to contain NOA.	Impact 3.8-1 addresses project impacts related to this environmental topic. The implementation of Mitigation Measures 3.8-1 and 3.8-2 would reduce this impact to a less than significant level.
Mitigation Measure HAZ - 2: Determine if project sites are included on a government list of hazardous materials sites pursuant to Government Code Section 65962.5.	Impact 3.8-3 addresses project impacts related to this environmental topic. The implementation of Mitigation Measures 3.8-4 and 3.8-5 would reduce this impact to a less than significant level.
Mitigation Measure HAZ – 3: Ensure adequate public services, emergency response times, and emergency plans are in place.	Impact 3.8-6 addresses project impacts related to this environmental topic. The project would have a less than significant impact.

SACOG SCS EIR MITIGATION MEASURES	DISCUSSION OF APPLICABILITY TO THE CANNERY PROJECT
Mitigation Measure HYD-1: Manage stormwater runoff and other surface drainage.	The project includes a comprehensive on-site drainage and water retention plan. The Flood Control Master Plan for the project is included in Appendix L1.
Mitigation Measure HYD-2: Use best management practices to treat water quality.	Impacts 3.9-1 and 3.9-2 address project impacts related to this environmental topic. The implementation of Mitigation Measures 3.9-1 and 3.9-2 would reduce this impact to a less than significant level.
Mitigation Measure HYD-4: Conduct hydrology studies for projects in floodplains.	The Flood Control Master Plan for the project is included in Appendix L1.
Mitigation Measure HYD-6: In areas of existing or potential future land subsidence due to groundwater pumping, establish cooperative regional relationships to define and manage sustainable yield.	Impact 3.9-3 addresses project impacts related to this environmental topic. The project would have a less than significant impact.
Mitigation Measure NOI-1: Employ measures to reduce noise from new land uses and transportation projects.	Impacts 3.11-1, 3.11-4 and 3.11-5 address project impacts related to this environmental topic. The implementation of Mitigation Measures 3.11-1 through 3.11-3 would reduce this impact to the greatest degree feasible
Mitigation Measure NOI-2: Employ vibration-reducing measures on new and expanded rail systems.	This issue is not applicable to the Cannery Project.
Mitigation Measure NOI-3: Reduce noise, vibration, and groundborne noise generated by construction activities.	Impacts 3.11-2 and 3.11-3 addressproject impacts related to this environmental topic. The project would have a less than significant impact.
Mitigation Measure PS-1: Ensure adequate public services and utilities will be available to satisfy levels identified in local general plans or service master plans.	Public Services, including police, fire, emergency services, parks, schools and other public facilities are comprehensively addressed in Section 3.13. Utilities, including water, sewer, and solid waste collection are comprehensively addressed in Section 3.15. As demonstrated in the analysis in these sections, there are adequate public services and utilities available to serve the project.
Mitigation Measure TRN –1: Implement transportation demand management and investment strategies to reduce congested vehicle miles traveled (C-VMT).	This topic is not directly applicable to the Cannery Project. Section 3.14 includes a detailed analysis of transportation impacts

SACOG SCS EIR MITIGATION MEASURES	DISCUSSION OF APPLICABILITY TO THE CANNERY PROJECT
	related to the project. The project includes provisions to increase bicycle, pedestrian, and transit connectivity. The project is also a mixed-use project which provides opportunities for internal trip reductions and reduced VMT.
Mitigation Measure TRN – 2: Strategies to support the movement of agricultural products on rural roadways near growth areas.	This topic is not directly applicable to the Cannery Project.
Mitigation Measure TRN – 3: Apply best practice strategies to reduce the localized impact from construction activities on the transportation system.	Impact 3.14-6 addresses project impacts related to this environmental topic. The project would have a less than significant impact.
Mitigation Measure USS-3: Perform Project-Level Environmental Review for New Wastewater Treatment Plants, Landfills, and Similar Large Utility Facilities.	This topic is not directly applicable to the Cannery Project.