4.7 Greenhouse Gas Emissions

This section describes the existing conditions related to greenhouse gas (GHG) emissions and global climate change, identifies associated regulatory requirements, and evaluates potential impacts related to implementation of the San Diego State University (SDSU) Mission Valley Campus Master Plan Project (proposed project).

Methods for Analysis

This section summarizes the GHG emissions analysis for the proposed project that was prepared by Ramboll US Corporation (Ramboll) in May 2019. The complete technical report prepared on this subject is included as Appendix 4.7-1 of the environmental impact report (EIR). Additional technical information prepared by Ramboll for inclusion in the Final EIR that pertains to the proposed project's suite of sustainability commitments, as reflected by identified design features, is included in Appendix 4.7-3.

Summary of Notice of Preparation Comments

A Notice of Preparation (NOP) was circulated from January 19, 2019, to February 19, 2019. A total of 150 letters were received during this comment period. Comments on the NOP related to GHG emissions focused on use of the City of San Diego (City) Climate Action Plan (CAP) and its GHG emissions reduction goals to reduce project construction and operational GHG emissions, and the implementation of strategies and measures to reduce GHG emission impacts from transportation, building energy use, and water use. Please see Appendix 1-1, NOP Scoping Comments, for a complete compilation of comments received on the NOP.

4.7.1 Existing Conditions

Site Conditions

As described in Chapter 1, Introduction, and shown in Figure 1-3, Project Site and Surrounding Land Uses, the property comprising the project site includes four existing uses: (1) a multipurpose Stadium (San Diego County Credit Union [SDCCU] Stadium, formerly "Qualcomm Stadium"), with an existing capacity of approximately 71,500 seats for football and other events; (2) an associated surface parking lot with approximately 18,870 parking spaces; (3) the Metropolitan Transit System (MTS) existing Green Line transit station, which provides trolley service running toward downtown San Diego to the west and Santee to the east, and (4) Murphy Canyon Creek. The SDSU main campus is three trolley stops from the existing on-site trolley station.

Greenhouse Gases

There is a general scientific consensus that global climate change is occurring, caused in whole or in part by increased emissions of GHGs that keep the Earth's surface warm by trapping heat in the Earth's atmosphere, in much the same way as glass traps heat in a greenhouse. The Earth's climate is changing because human activities, primarily the combustion of fossil fuels, are altering the chemical composition of the atmosphere through the buildup of GHGs. Indeed, there is a strong scientific consensus that human activity has contributed significantly to global warming. As stated in the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), "The evidence for human influence on the climate system has grown since IPCC'S Fourth Assessment Report (AR4) ….it is extremely likely to have been the dominant cause of the observed warming since the mid-twentieth century" (IPCC 2014).

GHGs allow the Sun's radiation to penetrate the atmosphere and warm the Earth's surface, but do not let the infrared radiation emitted from the Earth escape back into outer space. As a result, global temperatures are predicted to increase over the century. In particular, if climate change remains unabated, surface temperatures in California are expected to increase anywhere from 4.1° to 8.6° Fahrenheit (°F) by the end of the century.

Not only would higher temperatures directly affect the health of individuals through greater risk of dehydration, heat stroke, and respiratory distress, the higher temperatures may increase ozone formation, thereby worsening air quality. Rising temperatures could also reduce the snowpack, which would increase the risk of water shortages. Higher temperatures along with reduced water supplies could reduce the quantity and quality of agricultural products. In addition, there could be an increase in wildfires and a shift in distribution of natural vegetation throughout the state. Global warming could also increase sea levels and coastal storms resulting in greater risk of flooding.

Emissions of carbon dioxide (CO_2) are the leading cause of global climate change, with other pollutants such as methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) also contributing. The magnitude of the impact on global warming differs among the GHGs. For example, HFCs, PFCs, and SF_6 have a greater "global warming potential" than CO_2. In other words, these other GHGs have a greater contribution to global warming than CO_2 on a per-mass basis. The effect each GHG has on climate change is measured as a combination of the volume of its emissions and its global warming potential (GWP), and is expressed as a function of how much warming would be caused by the same mass of CO_2. Thus, GHG emissions are typically measured in terms of metric tons of carbon dioxide equivalent (MT CO_2e). CO_2 has the greatest impact on global warming because of the relatively large quantities of CO_2 emitted into the atmosphere. GWPs of 25 and 298 were used for CH_4 and N_2O, respectively, for this analysis, consistent with the current version of the California Emissions Estimator Model (CalEEMod, version 2016.3.2). In certain components of this section, including the final summary sections, emissions are presented in units of CO_2e either because the GWPs of CH_4 and N_2O were accounted for explicitly, or the CH_4 and N_2O are assumed to contribute a negligible amount of GWP when compared to the CO_2 emissions from that particular emissions category.

In 2017, the United States emitted about 6.5 billion MT CO_2e or about 19.9 metric tons per person per year (MT/person/year), calculated by dividing the emissions total by the U.S. Census Bureau 2017 population estimate (EPA 2017; U.S. Census Bureau 2018). This represents a 12% reduction below 2005 total emission levels. Of the four major sectors nationwide— residential, commercial, industrial, and transportation—transportation accounts for the highest fraction of GHG emissions (approximately 57% of emissions from these four sectors). These emissions are entirely generated from direct fossil fuel combustion. Of these transportation emissions, 59% resulted from passenger car and light-duty truck use. The remaining emissions came from other transportation activities, including the combustion of diesel fuel in medium- and heavy-duty vehicles, and jet fuel in aircraft. According to the Inventory of U.S. Greenhouse Gas Emissions and Sinks, from 2005 to 2017, transportation emissions dropped by 3% due, in part, to increased fuel efficiency across the U.S. vehicle fleet, as well as higher fuel prices, and an associated decrease in the demand for passenger transportation (EPA 2019). However, from 1990 to 2017 as a whole, transportation emissions from fossil fuel combustion rose by 22%, due, in large part, to increased demand for travel (EPA 2019).

In 2016, California emitted approximately 429 million metric tons (MMT) of CO_2e, or about 7% of the U.S. emissions (CARB 2018). California's percentage contribution is due primarily to the sheer size of California, as compared to other states. For example, in 2014 (the most recent year of state rankings for GHG emissions per capita), California had the seventh lowest per-capita GHG emission rates in the country (including Washington, D.C.) (World Resources Institute 2019), due to the success of its energy-efficiency and renewable energy programs and commitments that have lowered the state's GHG emissions rate of emissions growth (Center for Resource Efficient Communities 2013). California's per-capita GHG emissions in 2016 were 10.8 MT per person (CARB 2018), while the U.S. per-capita GHG emissions in that same year were 20.1 MT per person (EPA 2019; U.S. Census Bureau 2019). Another factor that has reduced California's fuel use and GHG emissions is its mild climate compared to that of many other states.

The California Energy Commission (CEC) found that transportation is the source of approximately 41% of the state's GHG emissions, followed by industrial sources at 23%, and electricity generation (both in-state and out-of-state) at 16%. Residential and commercial activities comprised approximately 12% of the inventory. Agriculture and forestry is the source of approximately 8% of the state's GHG emissions (CARB 2018).

The construction and operation of land use developments cause GHG emissions. Operational phase GHG emissions result from energy use associated with heating, lighting and powering buildings (typically through natural gas and electricity consumption), pumping and processing water, fuel used for transportation, and decomposition of waste associated with building occupants. New development can also create GHG emissions in its construction and demolition phases, including the use of fuels in construction equipment, creation and decomposition of building materials, vegetation clearing, natural gas usage, electrical usage, and transportation.

New land use development does not necessarily create entirely new GHG emissions, since most of the persons who will visit or occupy new development will come from other locations where they were already causing such GHG emissions. Further, because climate change is occurring on a global scale, it is not meaningfully possible to quantify the scientific effect of new GHG emissions caused by a single project. It has not been demonstrated that new GHG emissions caused by a local development project can affect global climate change, or that a project's net increase in GHG emissions, if any, when coupled with other activities in the region, would be cumulatively considerable (CAPCOA 2008).

Potential Effects of Climate Change on Earth

Globally, climate change has the potential to impact numerous environmental resources through anticipated, though uncertain, impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the twenty-first century than were observed during the twentieth century. At the end of the twenty-first century, global surface temperature change is likely to exceed 1.5° Celsius (°C) (relative to 1850–1900 levels) in all four assessed climate model projections but one (IPCC 2014).

Acknowledging uncertainties regarding the rate at which anthropogenic GHG emissions would continue to increase (based upon various factors under human control, such as future population growth and the locations of that growth; the amount, type, and locations of economic development; the amount, type, and locations of technological advancement; adoption of alternative energy sources; legislative and public initiatives to curb emissions; and public awareness and acceptance of methods for reducing emissions), and the impact of such emissions on climate change, the IPCC devises emission scenarios which utilize various assumptions about the rates of economic development, population growth, and technological advancement over the course of the next century. For the Fifth Assessment Report, Representative Concentration Pathways (RCPs) were developed to describe four different twenty-first-century scenarios of GHG emissions, atmospheric concentrations, air pollutant emissions, and land use. RCPs are based on a combination of integrated assessment models, simple climate models, atmospheric chemistry, and global carbon cycle models. The four RCPs include a mitigation scenario, two stabilizing scenarios, and one scenario with very high GHG emissions. "The RCPs cover a wider range than the scenarios from the Special Report on Emissions Scenarios used in previous assessments, as they also represent scenarios with climate policy" (IPCC 2014).

The projected effects of global warming on weather and climate are likely to vary regionally, but are expected to include the following direct effects according to the IPCC (IPCC 2014).

- It is *very likely* that the Arctic sea ice cover will continue to shrink and thin and that Northern Hemisphere spring snow cover will decrease during the twenty-first century as global mean surface temperature rises. Global glacier volume will further decrease.
- It is virtually certain that there will be more frequent hot and fewer cold temperature extremes over most land areas on daily and seasonal timescales as global mean temperatures increase. It is very likely that heat waves will occur with a higher frequency and duration. Occasional cold winter extremes will continue to occur.
- Global surface temperature change for the end of the twenty-first century is likely to exceed 1.5°C relative to 1850 to 1900 for all RCP scenarios except the mitigation scenario. It is likely to exceed 2°C for the highest forcing scenario and one stabilizing scenario, and more likely than not to exceed 2°C for the remaining stabilizing scenario. Warming will continue beyond 2100 under all RCP scenarios except the mitigation scenario.
- The global ocean will continue to warm during the twenty-first century. Heat will penetrate from the surface to the deep ocean and affect ocean circulation.
- Climate change will affect carbon cycle processes in a way that will exacerbate the increase of CO_2 in the atmosphere (*high confidence*). Further uptake of carbon by the ocean will increase ocean acidification.
- Changes in the global water cycle in response to the warming over the twenty-first century will not be uniform. The contrast in precipitation between wet and dry regions and between wet and dry seasons will increase, although there may be regional exceptions. Global mean sea level will continue to rise during the twenty-first century.
- Cumulative emissions of CO_2 largely determine global mean surface warming by the late twenty-first century and beyond. Most aspects of climate change will persist for many centuries even if emissions of CO_2 are stopped.

Potential secondary effects from global warming include global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity.

Potential Effects of Climate Change on the State of California

According to the California Air Resources Board (CARB), some of the potential impacts in California of global warming may include loss in snowpack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years (CARB 2006). The California Climate Change Center has released four assessment reports on climate change in California, the most recent in 2018. Per California's Third Climate Change Assessment, by 2050, the state is projected to warm by approximately 2.7°F above 2000 averages, a threefold increase in the rate of warming over the last century (CCCC 2012). California's Fourth Climate Change Assessment projects an increase by 5.6°F to 8.8°F from 2070 to 2100 depending on GHG emission reductions (at a moderate rate or continuing at current rates) (CCCC 2018).

Below is a summary of some of the potential effects reported in an array of studies that could be experienced in California as a result of global warming and climate change.

Air Quality

Higher temperatures, conducive to air pollution formation, could worsen air quality in California. Climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. For other pollutants, the effects of climate change and/or weather are less well studied, and even less well understood.

If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which, in turn, would further worsen air quality. Studies have been conducted to evaluate the potential impacts of climate change on wildfire frequency based on lower and higher emissions scenarios. Per California's Third Climate Change Assessment, under a higher emissions scenario, increases in the number of large wildfires statewide could range from 58% to 128% above historic levels by 2085 (CCCC 2012). The estimated burned area is projected to increase between 57% and 169%, depending on location. However, if higher temperatures are accompanied by wetter, rather than drier, conditions, the rains would tend to temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thus ameliorating the pollution associated with wildfires.

Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state (CCCC 2006a). It is estimated that over the next decade, higher temperatures could increase the demand for electricity by 1 gigawatt during summer months, which would require purchase of costly peak power from external sources or the construction of one new large power plant in California (CCCC 2012). During periods of extreme heat, efficiency of electricity generation is reduced at natural gas plants, hydropower generation is reduced, and increased losses occur at substations, all while electricity demands are increased. These factors are projected to result in the need for more than 17 gigawatts, or 38% of additional capacity, needed by 2100. Additionally, transmission lines lose 7% to 8% of transmitting capacity in higher temperatures, which also results in a need for increased power generation (CCCC 2012).

Water Supply

Uncertainty remains with respect to the overall impact of global climate change on future water supplies in California. For example, models that predict drier conditions suggest decreased reservoir inflows and storage, and decreased river flows, relative to current conditions. By comparison, models that predict wetter conditions project increased reservoir inflows and storage, and increased river flows (Brekke et al. 2004).

A July 2006 technical report prepared by the California Department of Water Resources addresses the State Water Project, the Central Valley Project, and the Sacramento–San Joaquin Delta. Although the report projects that, "[c]limate change will likely have a significant effect on California's future water resources … [and] future water demand," it also reports that, "there is much uncertainty about future water demand, especially those aspects of future demand that will be directly affected by climate change and warming. While climate change is expected to continue through at least the end of this century, the magnitude and, in some cases, the nature of future changes is uncertain. This uncertainty serves to complicate the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood" (DWR 2006). The California Department of Water Resources adds that "[i]t is unlikely that this level of uncertainty will diminish significantly in the foreseeable future" (DWR 2006). Still, changes in water supply are expected to occur, and many regional studies have shown that large changes in the reliability of water yields from reservoirs could result from only small changes in inflows (CCCC 2006b).

California's Third Climate Change Assessment outlines the state's urgent water management challenges brought on as a result of climate change. These include increasing demand from a growing population as temperatures rise, earlier snowmelt and runoff, and faster-than-historical sea-level rise threatening aging coastal water infrastructure and levees in the Sacramento–San Joaquin Delta (CCCC 2012). Additionally, they predict that competition between urban and agriculture water users and environmental needs will increase due to effects on water supply and stream flows.

The City of San Diego is procuring an agreement for the preparation of a 2020 Long-Range Water Resources Plan and a 2020 Urban Water Management Plan to update demand forecasting projects that are based on modeled scenarios incorporating a variety of climate change impacts (OPR et al. 2018).

Hydrology

As discussed above, climate change could potentially affect the following: the amount of snowfall, rainfall, and snowpack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide, and high runoff events); sea level rise and coastal flooding; coastal erosion; and the potential for saltwater intrusion. Sea level rise can be a product of global warming through two main processes: expansion of sea water as the oceans warm and melting of ice over land. A rise in sea levels could result in coastal flooding and erosion, and could also jeopardize California's water supply. In particular, saltwater intrusion would threaten the quality and reliability of the state's major fresh water supply that is pumped from the southern portion of the Sacramento–San Joaquin Delta. Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events. Assuming the rate of sea level rise continues to follow global trends, sea level along California's coastline in 2050 could be 10 to 18 inches higher than in 2000, and 31 to 55 inches higher by the end of this century (OPR et al. 2018). Based on these current projections, the current 100-year storm could occur once every year. California's Third Climate Assessment projects that changes in stream flow in the Sacramento Valley and San Joaquin Valley would result in critically dry years occurring 8% more frequently in the Sacramento Valley and 32% more frequently in the San Joaquin Valley, compared to the historical period between 1951 and 2000 (CCCC 2012).

Agriculture

California has a $30 billion agricultural industry that produces half the country's fruits and vegetables. The CCCC notes that higher CO_2 levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, water demand could increase, crop-yield could be threatened by a less reliable water supply, and greater ozone pollution could render plants more susceptible to pest and disease outbreaks. In addition, temperature increases could change the time of year that certain crops, such as wine grapes, bloom or ripen, and thus affect their quality (CCCC 2006a).

Ecosystems and Wildfire

Increases in global temperatures and the potential resulting changes in weather patterns could have ecological effects on a global and local scale. In 2004, the Pew Center on Global Climate Change released a report examining the possible impacts of climate change on ecosystems and wildlife (Parmesan and Galbraith 2004). The report outlines four major ways in which it is thought that climate change could affect plants and animals: (1) timing of ecological events, (2) geographic range, (3) species' composition within communities, and (4) ecosystem processes such as carbon cycling and storage.

4.7.2 Relevant Plans, Policies, and Ordinances

Federal

Clean Air Act

In April 2007, in *Massachusetts v. EPA*, the U.S. Supreme Court directed the Administrator of the U.S. Environmental Protection Agency (EPA) to determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In making these decisions, the EPA Administrator was directed to follow the language of Section 202(a) of the Clean Air Act. In December 2009, the Administrator signed a final rule with two distinct findings regarding GHGs under Section 202(a) of the Clean Air Act:

- Elevated concentrations of GHGs—CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6—in the atmosphere threaten the public health and welfare of current and future generations. This is referred to as the "endangerment finding."
- The combined emissions of GHGs—CO_2, CH_4, N_2O, and HFCs—from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is referred to as the "cause or contribute finding."

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the Clean Air Act.

Federal Vehicle Standards

In response to the *Massachusetts v. EPA* decision discussed above, in 2007, President Bush directed the EPA, the Department of Transportation, and the Department of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, the National Highway Traffic Safety Administration (NHTSA) issued a final rule regulating fuel efficiency for and GHG emissions from cars and light-duty trucks for model year 2011; and in 2010, the EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016.

In 2010, President Obama issued a memorandum directing the same federal agencies to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, the EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model year 2017–2025 light-duty vehicles. The proposed standards are projected to achieve 163 grams per mile of CO_2 in model year 2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021.

In August 2017, the EPA asked for additional information and data relevant to assessing whether the GHG emissions standards for model years 2022–2025 remain appropriate. In early 2018, the EPA Administrator announced that the midterm evaluation for the GHG emissions standards for cars and light-duty trucks for model years 2022–2025 was completed and stated his determination that the current standards should be revised in light of recent data. Subsequently, in 2018, the EPA and NHTSA proposed to amend certain existing Corporate Average Fuel Economy (CAFE) standards and tailpipe carbon dioxide emissions standards for passenger cars and light trucks and establish new standards, covering model years 2021–2026. Compared to maintaining the post-2020 standards now in place, the pending proposal would increase U.S. fuel consumption. California and other

states have announced their intent to challenge federal actions that would delay or eliminate GHG reductions. Because the pending proposal is still in the rulemaking phase, and because legal challenges to any future adoption of the proposal is likely, the timing and consequences of the pending proposal are speculative at this time.

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO_2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles.

In August 2016, the EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans, and all types of sizes of buses and work trucks. The final standards are expected to lower carbon dioxide emissions by approximately 1.1 billion MT and reduce oil consumption by up to two billion barrels over the lifetime of the vehicles sold under the program (EPA and NHTSA 2016).

Energy Independence and Security Act

The Energy Independence and Security Act of 2007 facilitates the reduction of national GHG emissions by requiring the following:

- Increasing the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard that requires fuel producers to use at least 36 billion gallons of biofuel in 2022;
- Prescribing or revising standards affecting regional efficiency for heating and cooling products, procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances;
- Requiring approximately 25% greater efficiency for light bulbs by phasing out incandescent light bulbs between 2012 and 2014; requiring approximately 200% greater efficiency for light bulbs, or similar energy savings, by 2020; and
- While superseded by the EPA and NHTSA actions described above, (i) establishing miles per gallon targets for cars and light trucks and (ii) directing the NHTSA to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for trucks.

Additional provisions of the Energy Independence and Security Act address energy savings in government and public institutions, and promote research for alternative energy, additional research in carbon capture, international energy programs, and the creation of "green jobs."

State

The State of California considers GHG emissions and the impacts of climate change to be a serious threat to the public health, environment, economic well-being, and natural resources of California, and has taken an aggressive stance to mitigate the state's impact on climate change through the adoption of policies and legislation. CARB is responsible for the coordination and oversight of state and local air pollution control programs in California. California has numerous regulations aimed at reducing the state's GHG emissions. Some of the major initiatives are summarized below.

Executive Order S-3-05

In 2005, Governor Schwarzenegger issued Executive Order (EO) S-3-05, which identifies statewide GHG emission reduction targets to achieve long-term climate stabilization as follows:

- Reduce GHG emissions to 1990 levels by 2020; and
- Reduce GHG emissions to 80% below 1990 levels by 2050.

In response to EO S-3-05, California Environmental Protection Agency created the Climate Action Team (CAT), which in March 2006 published the Climate Action Team Report (2006 CAT Report; CalEPA 2006). The 2006 CAT Report identified a recommended list of strategies that the state could pursue to reduce GHG emissions. These are strategies that could be implemented by various state agencies to ensure that the emission reduction targets in EO S-3-05 are met and can be met with existing authority of the state agencies. The strategies include, but are not limited to, the reduction of passenger and light-duty truck emissions, the reduction of idling times for diesel trucks, an overhaul of shipping technology/infrastructure, increased use of alternative fuels, increased recycling, and landfill methane capture.

Assembly Bill 32

Assembly Bill (AB) 32 (Nunez, 2006), the California Global Warming Solutions Act of 2006, was enacted after considerable study and expert testimony before the Legislature. The heart of AB 32 is the requirement that statewide GHG emissions be reduced to 1990 levels by 2020. In order to achieve this reduction mandate, AB 32 requires CARB to adopt rules and regulations in an open public process that achieve the maximum technologically feasible and cost-effective GHG reductions.

In 2007, CARB approved a statewide limit on the GHG emissions level for year 2020 consistent with the determined 1990 baseline. CARB's adoption of this limit is in accordance with Health & Safety Code Section 38550, as codified through enactment of AB 32.

Per Health & Safety Code Section 38561(b), CARB also is required to prepare, approve, and amend a scoping plan that identifies and makes recommendations on "direct emission reduction measures, alternative compliance mechanisms, market-based compliance mechanisms, and potential monetary and nonmonetary incentives for sources and categories of sources that [CARB] finds are necessary or desirable to facilitate the achievement of the maximum feasible and cost-effective reductions of greenhouse gas emissions by 2020."

2008 Scoping Plan

In 2008, CARB adopted the Climate Change Scoping Plan: A Framework for Change (2008 Scoping Plan) in accordance with Health & Safety Code Section 38561. During the development of the 2008 Scoping Plan, CARB created a planning framework that is comprised of eight emissions sectors: (1) transportation, (2) electricity, (3) commercial and residential, (4) industry, (5) recycling and waste, (6) high GWP gases, (7) agriculture, and (8) forest net emissions.

The 2008 Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions from the eight emissions sectors to 1990 levels by 2020. In the Scoping Plan, CARB determined that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of approximately 28.5% from the otherwise projected 2020 emissions level; i.e., those emissions that would occur in

2020, absent GHG-reducing laws and regulations (referred to as "Business-As-Usual" [BAU]) (CARB 2008). For example, in further explaining CARB's BAU methodology, CARB assumed that all new electricity generation would be supplied by natural gas plants, no further regulatory action would impact vehicle fuel efficiency, and building energy efficiency codes would be held at 2005 standards.

To achieve the necessary GHG reductions to meet AB 32's 2020 target, CARB developed a series of reduction measures in the Scoping Plan covering a range of sectors and activities. Broadly, the reduction measures can be separated into capped sectors (i.e., covered by the Cap-and-Trade Program discussed below) and uncapped sectors.

Multiple Scoping Plan measures broadly cover emissions associated with new residential and commercial land use development, including, but not limited to, the following:

- **Energy Efficiency/Green Buildings**. The Scoping Plan highlights the importance of energy efficiency efforts in reducing GHG emissions from residential and commercial development and indicates that zero net energy should be the overarching and unifying concept for energy efficiency.
- **Regional Transportation-Related GHG Targets**. The Scoping Plan relies on Senate Bill (SB) 375, discussed below, as an important mechanism to reduce mobile GHG emissions by integrating land use planning and transportation planning at the regional and local level.
- **Vehicle Emissions**. The Scoping Plan relies on various engine, fuel, and other efficiency improvement programs and increasing electrification of the vehicle fleet.
- **Cap-and-Trade Program**. The Scoping Plan identifies the Cap-and-Trade Program as a lynchpin, overarching strategy for California to reduce GHG emissions. As explained in the Scoping Plan, the program's implementing regulations provide assurance that California's 2020 limit will be met because the regulation sets a firm limit on 85% of California's GHG emissions.

In the 2011 Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document (2011 Final Supplement; CARB 2011), CARB revised its estimates of the projected 2020 emissions level in light of the economic recession and the availability of updated information about GHG reduction regulations. Based on the new economic data, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of 21.7% (down from 28.5%) from the BAU conditions. When the 2020 emissions level projection also was updated to account for newly implemented regulatory measures, including Pavley I (model years 2009–2016) and the Renewables Portfolio Standard (12% to 20%), CARB determined that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of 16% (down from 28.5%) from the BAU conditions (CARB 2011).

2014 First Update to the Scoping Plan

In 2014, CARB adopted the First Update to the Climate Change Scoping Plan: Building on the Framework (2014 First Update).[1] The stated purpose of the 2014 First Update is to "highlight […] California's success to date in reducing its GHG emissions and lay […] the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80% below 1990 levels by 2050" (CARB 2014). The 2014 First Update found that California is on track to meet the 2020 emissions reduction mandate established by AB 32, and noted that California could reduce emissions further by 2030 to levels squarely in line with those needed to stay on track to reduce emissions to 80% below 1990 levels by 2050 if the state realizes the expected benefits of existing policy goals (CARB 2014).

[1] Health & Safety Code Section 38561(h) requires CARB to update the Scoping Plan every 5 years.

In conjunction with the 2014 First Update, CARB identified "six key focus areas comprising major components of the state's economy to evaluate and describe the larger transformative actions that will be needed to meet the state's more expansive emission reduction needs by 2050" (CARB 2014). Those six areas are: (1) energy; (2) transportation (vehicles/equipment, sustainable communities, housing, fuels, and infrastructure); (3) agriculture; (4) water; (5) waste management; and (6) natural and working lands. The 2014 First Update identifies key recommended actions for each sector that will facilitate achievement of the 2050 reduction target.

Based on CARB's research efforts, it has a "strong sense of the mix of technologies needed to reduce emissions through 2050" (CARB 2014). Those technologies include energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings, and industrial machinery; decarbonizing electricity and fuel supplies; and the rapid market penetration of efficient and clean energy technologies.

As part of the 2014 First Update, CARB recalculated the state's 1990 emissions level using more recent GWPs identified by the IPCC. Using the recalculated 1990 emissions level and the revised 2020 emissions level projection identified in the 2011 Final Supplement, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of approximately 15.3% (instead of 28.5% or 16%) from the BAU conditions.

2017 Scoping Plan

In November 2017, CARB published California's 2017 Climate Change Scoping Plan (2017 Scoping Plan), which was subsequently adopted by CARB's Board in December 2017 (CARB 2017a). The 2017 Scoping Plan identifies CARB's strategy for achieving the state's 2030 GHG target as established in SB 32 (discussed below). The strategy includes continuation of the Cap-and-Trade Program through 2030, and incorporates a Mobile Source Strategy that includes strategies targeted to increase zero emission vehicle (ZEV) fleet penetration and a more stringent target for the Low Carbon Fuel Standard by 2030. The 2017 Scoping Plan also incorporates approaches to cutting short-lived climate pollutants under the Short-Lived Climate Pollutant Reduction Strategy (a planning document that was adopted by CARB in March 2017), and acknowledges the need for reducing emissions in agriculture and highlights the work underway to ensure that California's natural and working lands increasingly sequester carbon.

The 2017 Scoping Plan (CARB 2017a) states the following about project-level GHG emissions reduction actions and thresholds:

> Project-Level Greenhouse Gas Emissions Reduction Actions and Thresholds
>
> Beyond plan-level goals and actions, local governments can also support climate action when considering discretionary approvals and entitlements of individual projects through CEQA [California Environmental Quality Act]. Absent conformity with an adequate geographically-specific GHG reduction plan …, CARB recommends that projects incorporate design features and GHG reduction measures, to the degree feasible, to minimize GHG emissions. Achieving no net additional increase in GHG emissions, resulting in no contribution to GHG impacts, is an appropriate overall objective for new development. …
>
> Achieving net zero increases in GHG emissions, resulting in no contribution to GHG impacts, may not be feasible or appropriate for every project, however, and the inability of a project to mitigate its GHG emissions to net zero does not imply the project results in a substantial contribution to the cumulatively significant environmental impact of climate change under CEQA. …

> California's future climate strategy will require increased focus on integrated land use planning to support livable, transit-connected communities, and conservation and other lands. Accommodating population and economic growth through travel- and energy-efficient land use provides GHG-efficient growth, reducing GHGs from both transportation and building energy use. GHGs can be further reduced at the project level through implementing energy-efficient construction and travel demand management approaches.

Cap-and-Trade Program

California's Cap-and-Trade Program (17 CCR 95800–96022) regulates the emissions of large electric power plants, large industrial plants, and fuel distributors (including transportation fuel and natural gas). These sources are responsible for about 85% of the state's total GHG emissions inventory (CARB 2015). As described by CARB (CARB 2019a):

> Cap-and-trade is a market based regulation that is designed to reduce [GHGs] from multiple sources. Cap-and-trade sets a firm limit or cap on GHGs and minimize[s] the compliance costs of achieving AB 32 goals. The cap will decline approximately 3% each year beginning in 2013. Trading creates incentives to reduce GHGs below allowable levels through investments in clean technologies. With a carbon market, a price on carbon is established for GHGs. Market forces spur technological innovation and investments in clean energy. Cap-and-trade is an environmentally effective and economically efficient response to climate change.

In the Cap-and-Trade Program, the state regulates the quantity of emissions by determining, in advance, how many allowances to issue—i.e., setting the "cap." Each allowance is essentially a permit issued by the state authorizing a certain quantity of GHG emissions. There are only a finite number of allowances, ensuring that covered entities may only lawfully emit a certain quantity of GHGs. If a covered entity wishes to emit carbon, it must obtain allowances to authorize those emissions.

Importantly, the Cap-and-Trade Program has been designed to provide a firm cap, ensuring that the 2020 statewide emissions limit identified by CARB in the 2008 Scoping Plan will not be exceeded (CARB 2008). Thus, for the emission sources covered by the Program, which are nearly all of the sources associated with land use development projects, compliance with AB 32's 2020 mandate is assured by the Cap-and-Trade Program.

AB 398 (2017) extended the statutorily defined horizon year of the Cap-and-Trade Program to December 31, 2030, thereby facilitating continued reliance on the Cap-and-Trade Program for purposes of achieving SB 32's 2030 statewide reduction target.

Executive Order B-30-15

In April 2015, Governor Brown signed EO B-30-15, which established the following GHG emission reduction goal for California: by 2030, reduce GHG emissions to 40% below 1990 levels. This EO also directed all state agencies with jurisdiction over GHG-emitting sources to implement measures designed to achieve the new interim 2030 goal, as well as the pre-existing, long-term 2050 goal identified in EO S-3-05 (see discussion above). Additionally, the EO directed CARB to update its Scoping Plan (see discussion above) to address the 2030 goal.

Senate Bill 32 and Assembly Bill 197

Enacted in 2016, SB 32 (Pavley, 2016) codifies the 2030 emissions reduction goal of EO B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40% below 1990 levels by 2030.

SB 32 was coupled with a companion bill: AB 197 (Garcia, 2016). Designed to improve the transparency of CARB's regulatory and policy-oriented processes, AB 197 created the Joint Legislative Committee on Climate Change Policies, a committee with the responsibility to ascertain facts and make recommendations to the Legislature concerning statewide programs, policies, and investments related to climate change. AB 197 also requires CARB to make certain GHG emissions inventory data publicly available on its web site; consider the social costs of GHG emissions when adopting rules and regulations designed to achieve GHG emission reductions; and, include specified information in all Scoping Plan updates for the emission reduction measures contained therein.

Executive Order B-55-18

In September 2018, Governor Brown signed EO B-55-18, which established a new statewide goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." This EO directs CARB to "work with relevant state agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal."

In January 2019, CARB held a workshop regarding carbon neutrality in California, during which CARB staff explained that the definitional parameters and meaning of the term—carbon neutrality—are still being explored (CARB 2019b). CARB intends to hold additional workshops to explore specific topics related to the pursuit of carbon neutrality, engage with other experts in the field and stakeholders, and conduct research to ensure that any path to carbon neutrality balances scientific, economic and social justice principles.

Energy Sources

Renewables Portfolio Standard

As most recently amended by SB 100 (2018), California's Renewables Portfolio Standard requires retail sellers of electric services and local publicly owned electric utilities to increase procurement from eligible renewable energy resources to 50% of total retail sales by 2026, and 60% of total retail sales by 2030. SB 100 also established a state policy goal to achieve 100% renewables by 2045.

Building Energy Efficiency Standards

Title 24, Part 6 of the California Code of Regulations regulates the design of building shells and building components. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods.

The CEC's 2016 Building Energy Efficiency Standards (2016 Building Standards), which become on effective January 1, 2017, are the currently applicable version of these standards. In general, single-family homes built to the 2016 standards are anticipated to use about 28% less energy for lighting, heating, cooling, ventilation, and water heating than those built to the 2013 standards, and nonresidential buildings built to the 2016 standards will use an estimated 5% less energy than those built to the 2013 standards (CEC 2015). The CEC also has developed and adopted the 2019 Building Standards, which will go into effect on January 1, 2020. The 2019 Building Standards are expected to result in further energy savings and efficiencies, as compared to the 2016 standards.

In addition to the CEC's efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11 of Title 24) is commonly referred to as CALGreen Building Standard (CALGreen), and establishes voluntary and mandatory standards pertaining to the planning and design of sustainable site development, energy efficiency, water conservation, material conservation, and interior air quality. Like Part 6 of Title 24, the CALGreen standards are periodically updated, with increasing energy savings and efficiencies associated with each code update.

Appliance Standards

The CEC periodically amends and enforces Appliance Efficiency Regulations contained in Title 20 of the California Code of Regulations. The regulations establish water and energy efficiency standards for both federally regulated appliances and non-federally regulated appliances. The regulations cover numerous categories of appliances (e.g., refrigerators; plumbing fixtures; dishwashers; clothes washer and dryers; televisions) and apply to appliances offered for sale in California (CEC 2019).

Mobile Sources

Sustainable Communities Strategy Plans

SB 375 (Steinberg, 2008), the Sustainable Communities and Climate Protection Act, coordinates land use planning, regional transportation plans, and funding priorities to reduce GHG emissions from passenger vehicles through better-integrated regional transportation, land use, and housing planning that provides easier access to jobs, services, public transit, and active transportation options. SB 375 specifically requires the Metropolitan Planning Organization (MPO) relevant to the project area (here, the San Diego Association of Governments [SANDAG]) to include a Sustainable Communities Strategy (SCS) in its Regional Transportation Plan (RTP) that, if implemented, will achieve GHG emission reduction targets set by CARB by reducing vehicle miles traveled (VMT) from light-duty vehicles through the development of more compact, complete, and efficient communities.

For the area under SANDAG's jurisdiction, including the project site, CARB originally adopted regional targets for reduction of mobile source-related GHG emissions of 7% for 2020 and 13% for 2035. The targets are expressed as a percentage change in per-capita passenger vehicle GHG emissions relative to 2005 emissions levels. These original targets were in place through September 30, 2018. In March 2018, CARB approved updated regional targets of 15% for 2020 and 19% for 2035 for SANDAG, which will apply to future RTP/SCS planning cycles beginning October 1, 2018.

Senate Bill 743

Public Resources Code Section 21099(c)(1), as codified through enactment of SB 743 (Steinberg, 2013), authorized the Office of Planning and Research (OPR) to establish "alternative metrics to the metrics used for traffic levels of service for transportation impacts outside transit priority areas." SB 743 reflects a legislative policy to balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of GHG emissions. As finalized in December 2018, amendments to the CEQA Guidelines adopted in furtherance of SB 743 establish VMT, in lieu of level of service, as the new metric for transportation analysis.

Pavley Regulations

AB 1493 (Pavley, 2002) required CARB to adopt regulations to reduce GHG emissions from non-commercial passenger vehicles and light-duty trucks for model years 2009–2016. CARB obtained a waiver from the EPA that allows for implementation of these regulations notwithstanding possible federal pre-emption concerns.

Low Carbon Fuel Standard

EO S-1-07, as issued by Governor Schwarzenegger, called for a 10% or greater reduction in the average fuel carbon intensity for transportation fuels in California regulated by CARB by 2020.[2] In response, CARB approved the Low Carbon Fuel Standard (LCFS) regulations in 2009, which became fully effective in April 2010. Thereafter, a lawsuit was filed challenging CARB's adoption of the regulations; and in 2013, a court order was issued compelling CARB to remedy substantive and procedural defects of the LCFS adoption process under CEQA (*POET, LLC v. CARB* [2013] 217 Cal.App.4th 1214). However, the court allowed implementation of the LCFS to continue pending correction of the identified defects. In September 2015, CARB re-adopted the LCFS regulations. The LCFS would reduce GHG emissions by reducing the carbon intensity of transportation fuels used in California by at least 10% by 2020 and, as most recently amended in 2018, by at least 20% by 2030.

Advanced Clean Cars Program

In 2012, CARB approved the Advanced Clean Cars Program, a new emissions-control program for noncommercial passenger vehicles and light-duty truck for model years 2017–2025. The program combines the control of smog, soot, and GHGs with requirements for greater numbers of ZEVs. By 2025, when the rules will be fully implemented, new automobiles will emit 34% fewer global warming gases and 75% fewer smog-forming emissions. Relatedly, in its 2014 First Update, CARB recognized that the light-duty vehicle fleet "will need to become largely electrified by 2050 in order to meet California's emission reduction goals" (CARB 2014). Accordingly, this program requires about 15% of new cars sold in California in 2025 to be a plug-in hybrid, battery electric, or fuel cell vehicle (CARB 2014).

Zero Emission Vehicles

(ZEVs include hydrogen fuel cell electric vehicles (EVs) and plug-in EVs, such as battery EVs and plug-in hybrid EVs.

In 2012, Governor Brown issued EO B-16-2012, which calls for the increased penetration of ZEVs into California's vehicle fleet in order to help California achieve a reduction of GHG emissions from the transportation sector equaling 80% less than 1990 levels by 2050. In furtherance of that statewide target for the transportation sector, the EO also calls upon CARB, the CEC, and the California Public Utilities Commission to establish benchmarks that will: (1) allow over 1.5 million ZEVs to be on California roadways by 2025, and (2) provide the state's residents with easy access to ZEV infrastructure. EO B-16-2012 specifically directed California to "encourage the development and success of zero-emission vehicles to protect the environment, stimulate economic growth, and improve the quality of life in the State."

In 2018, Governor Brown also issued EO B-48-18, which launched an 8-year initiative to accelerate the sales of ZEVs through a mix of rebate programs and infrastructure improvements. The EO also sets a new target of five

[2] Carbon intensity is a measure of the GHG emissions associated with the various production, distribution, and use steps in the "lifecycle" of a transportation fuel.

million ZEVs in California by 2030, and includes funding for multiple state agencies to increase EV charging infrastructure and provide purchase rebates/incentives.

In furtherance of the state's ZEV penetration goals, in February 2013, the Governor's Interagency Working Group on Zero-emission Vehicles issued the 2013 ZEV Action Plan: A roadmap toward 1.5 million zero-emission vehicles on California roadways by 2025 (Governor's Interagency Working Group 2013). The 2013 ZEV Action Plan identifies four broad goals for state government to advance ZEVs: (1) complete needed infrastructure and planning, (2) expand consumer awareness and demand, (3) Transform fleets, and (4) grow jobs and investment in the private sector. As part of these goals, some highlighted strategies and actions include: (1) supporting ZEV infrastructure planning and investment by private entities,(2) enabling universal access to ZEV infrastructure for California drivers, (3) reducing upfront purchase costs for ZEVs, (4) promoting consumer awareness of ZEVs, and (5) helping to expand ZEVs in bus fleets. The Action Plan discusses the challenges of ZEV expansion, which include the need to enable EV chargers in homes, increase consumer awareness, address up-front costs and operational limitations, and address that ZEVs are not commercially available for all categories of vehicles.

In October 2016, the Governor's Interagency Working Group on Zero-emission Vehicles issued the 2016 ZEV Action Plan: A roadmap toward 1.5 million zero-emission vehicles on California roadways by 2025 (Governor's Interagency Working Group 2016). This report provides an update on progress toward achieving the 2013 goals and highlights the following four top priorities for the upcoming years: (1) raise consumer awareness and education about ZEVs; (2) ensure ZEVs are accessible to a broad range of Californians; (3) Make ZEV technologies commercially viable in targeted applications in the medium-duty, heavy-duty, and freight sectors; and (4) aid ZEV market growth beyond California. The broad goals to advance ZEV adoption are: (1) achieve mainstream consumer awareness of ZEV options and benefits, (2) make ZEVs an affordable and attractive option for drivers, (3) ensure convenient charging and fueling infrastructure for greatly expanded use of ZEVs, (4) maximize economic and job opportunities from ZEV technologies, (5) bolster ZEV market growth outside of California, and (6) lead by example by integrating ZEVs into state government. The goals and strategies proposed in the 2013 Action Plan will continue to be implemented; however, additional strategies are proposed to help achieve the new goals, including setting targets to increase home charging stations in multi-unit dwellings and disadvantaged communities and for public transit and school bus electrification. The 2016 Action Plan describes challenges toward achieving the 2025 goal of 1.5 million ZEVs in California, such as that most consumers are still not aware of the benefits of passenger ZEVs and that over 1,000,000 charge points will be needed at homes, workplaces, and public locations but only 11,000 non-home charge points are installed as stated in the 2016 ZEV Action Plan.

In September 2018, the Governor's Interagency Working Group on Zero-Emission Vehicles published the 2018 ZEV Action Plan Priorities Update (Governor's Interagency Working Group 2018). This update is the result of Governor Brown's directive to update the 2016 Zero-Emission Vehicle Action Plan to help expand private investment in zero-emission vehicle infrastructure, particularly in low income and disadvantaged communities. The 2018 Priorities Update serves three fundamental purposes: (1) provide direction to state agencies on the most important actions to be executed in 2018 to enable progress toward the 2025 targets and 2030 Vision; (2) Give stakeholders transparency into the actions state agencies plan to take (or are taking) this year to further the ZEV market; and (3) Create a platform for stakeholder engagement, feedback, and collaboration. As of July 2018, over 410,000 ZEVs have been sold in California, which is approximately 150,000 additional ZEVs since the publication of the 2016 Action Plan in October 2016.

California is incentivizing the purchase of ZEVs through implementation of the Clean Vehicle Rebate Project, which is administered by the Center for Sustainable Energy, a nonprofit organization, for CARB and currently subsidizes the purchase of passenger near-zero emission vehicles and ZEVs as follows:

- Hydrogen Fuel Cell Electric Vehicles: $5,000
- Battery Electric Vehicles: $2,500
- Plug-In Hybrid Electric Vehicles: $1,500
- Neighborhood Electric Vehicles and Zero Emission Motorcycles: $900

In March 2017, CARB also received Volkswagen's (VW's) first 30-month ZEV Investment Plan (Plan; Volkswagen 2017). This Plan is required by California's partial settlement with VW resulting from VW's use of illegal devices in its 2.0-liter (2.0L) diesel cars sold in the state from model years 2009 to 2015. The Plan describes how VW is proposing to spend the first $200 million in California on ZEV charging infrastructure (including the development and maintenance of ZEV charging stations), public awareness, increasing ZEV access, and a green city demonstration. In June 2017, Electrify America (a subsidiary of VW) provided CARB with additional information on the Plan (Electrify America 2017). CARB approved the first of the four plans in July 2017 (CARB 2017b).

Other statewide and regional initiatives that spur ZEV uptake include the following:

- CARB provides access to high-occupancy vehicle (HOV) lanes to ZEV drivers.
- The CALGreen standards require new residential and nonresidential construction to be pre-wired to facilitate the future installation and use of EV chargers (see Section 4.106.4 and Section 5.106.5.3 of 2016 CALGreen standards for the residential and nonresidential pre-wiring requirements, respectively).

In January 2017, three of California's largest utilities submitted proposals to the California Public Utilities Commission to electrify the state's transportation sector through more than $1 billion in investments. Of relevance to the project vicinity, San Diego Gas & Electric (SDG&E) submitted an application to install tens of thousands of charging stations in its service area to boost the transition to ZEVs, trucks, shuttles and delivery fleets (SDG&E 2017).

Finally, as part of San Diego Forward: The Regional Plan, SANDAG also is focused on increasing the number of EV charging stations. In many instances, the additional chargers would create the opportunity to increase the electric range of plug-in EVs, thereby reducing VMT that produce tail-pipe emissions (SANDAG 2015). In 2014, SANDAG completed a regional readiness plan for plug-in EVs and charging stations. In February 2016, an expanded plan that addressed readiness for electricity alongside all alternative fuels, the San Diego Regional Alternative Fuel Readiness Plan, was completed. This plan highlighted barriers to alternative fuel development and recommendations for the future. SDG&E also established the Electric Vehicle Grid Integration Pilot Program (Power Your Drive Program) as a pilot program in January 2016 after approval by the CPUC. This Program was designed to increase adoption of EVs and integrates EV charging through an hourly rate. The program has a goal of installing up to 3,500 EV charging stations at apartments, condominiums, and places of work. The most recent report on the program's progress notes that 238 customers have signed Site Agreements equating to more than 2,746 charging ports (SDG&E 2019).

Water

In January 2014, Governor Brown signed EO B-29-15, which directed the State Water Resources Control Board to impose restrictions to reduce residential potable urban water usage; to implement water efficiency measures at commercial, industrial, and institutional properties; and to prohibit irrigation with potable water for certain uses. In addition, this directed the California Department of Water Resources to lead a statewide initiative to replace laws and ornamental turfs with drought-tolerant landscapes.

Pursuant to the EO B-29-15, water-related standards were adopted as amendments to the 2013 CALGreen Code and carried over into the 2016 code.

Solid Waste Diversion

The California Integrated Waste Management Act of 1989, as modified by AB 341 (Chesbro, 2011), requires each jurisdiction's source reduction and recycling element to include an implementation schedule that shows: (1) diversion of 25% of all solid waste by January 1, 1995, through source reduction, recycling, and composting activities; (2) diversion of 50% of all solid waste on and after January 1, 2000; and (3) source reduction, recycling, and composting of 75% of all solid waste on or after 2020, and annually thereafter. The California Department of Resources Recycling and Recovery (CalRecycle) is required to develop strategies, including source reduction, recycling, and composting activities, to achieve the 2020 goal.

CalRecycle published a discussion document, entitled California's New Goal: 75 Percent Recycling, which identified concepts that would assist the state in reaching the 75% goal by 2020. Subsequently, in August 2015, CalRecycle released the AB 341 Report to the Legislature, which identifies five priority strategies for achievement of the 75% goal: (1) moving organics out of landfills, (2) expanding recycling/manufacturing infrastructure, (3) exploring new approaches for state and local funding of sustainable waste management programs, (4) promoting state procurement of post-consumer recycled content products, and (5) promoting extended producer responsibility (CalRecycle 2015).

Local

As a state agency, California State University (CSU)/SDSU is not subject to local land use regulatory/planning documents, ordinances, regulations, policies, rules, fees, or exactions such as those described herein. However, CSU is willing to purchase the project site pursuant to the framework set forth in San Diego Municipal Code Section 22.0908, in order to implement the overriding purpose of the proposed project. In addition, CSU will evaluate the proposed project's consistency with adopted, applicable state and federal regulatory/planning documents; and, though not required by law, CSU also will consider the proposed project's consistency with adopted, applicable local regulatory/planning documents.

SANDAG's Regional Transportation Plan/Sustainable Communities Strategy

As previously discussed, SB 375 requires SANDAG to incorporate a SCS into its RTP that achieves the GHG emission reduction targets set by CARB. SANDAG's SCS was first included in the 2050 RTP/SCS, which was adopted by SANDAG in October 2011. The original plan has since been superseded by the RTP/SCS adopted by SANDAG's Board in 2015, San Diego Forward: The Regional Plan.

In general, the goals and policies of the SCS that reduce VMT (and result in corresponding GHG emission reductions) focus on transportation and land use planning that include locating residents closer to where they work and play, and designing communities so there is access to high-quality transit service and nonvehicular modes of transportation. The SCS adopted by SANDAG is expected to reduce per-capita transportation emissions by 15% by 2020 and by 21% by 2035, as compared to 2005 baseline levels.

In December 2015, CARB accepted SANDAG's determination that the SCS would meet the region's GHG reduction targets per Government Code Section 65080(b)(2)(J)(ii), as memorialized in CARB's EO G-15-075.

Pursuant to Government Code Section 65080(b)(2)(K), an ACA does not (1) regulate the use of land; (2) supersede the land use authority of cities and counties; or (3) require that a city's or county's land use policies and regulations, including those in a general plan, be consistent with it.

San Diego Air Pollution Control District

While CARB is responsible for the regulation of mobile emission sources within the state, local air quality management districts and air pollution control districts are responsible for enforcing standards and regulating stationary sources. The project area is located within the San Diego Air Basin and is subject to the San Diego Air Pollution Control District (SDAPCD) guidelines and regulations. The SDAPCD has not adopted rules focused on GHGs or emission-based thresholds for GHG under CEQA.

City of San Diego General Plan

Table CE-1, Issues Related to Climate Change Addressed in the General Plan, which is included in the Conservation Element of the City of San Diego's General Plan, identifies multiple City policies that address the reduction of GHG emissions, as well as climate change adaptation (City of San Diego 2008). Concepts identified in Table CE-1 of the City's General Plan include, but are not limited to, its overall City of Villages Strategy; creating walkable communities that utilize transit, bicycling and transportation demand management (TDM); the use of sustainable energy resources; and water resource and waste management.

City of San Diego Climate Action Plan

On January 29, 2002, the San Diego City Council unanimously approved the San Diego Sustainable Community Program. Actions identified include:

1. Participation in the Cities for Climate Protection program coordinated through the International Council of Local Environmental Initiatives;
2. Establishment of a 15% GHG reduction goal set for 2010, using 1990 as a baseline; and
3. Direction to use the recommendations of a scientific Ad Hoc Advisory Committee as a means to improve the GHG Emission Reduction Action Plan within the City organization and to identify additional community actions.

In 2005, the City released a Climate Protection Action Plan. In December 2015, the City adopted its final CAP (City of San Diego 2015). With implementation of the CAP, the City aims to reduce emissions 15% below the baseline to approximately 11.1 MMT CO_2e by 2020, 40% below the baseline to approximately 7.8 MMT CO_2e by 2030, and 50% below the baseline to approximately 6.5 MMT CO_2e by 2035. It is anticipated that the City would exceed its reduction target by 1.3 MMT CO_2e in 2020, 176,528 MT CO_2e in 2030, and 127,135 MT CO_2e in 2035 with implementation of the CAP.

As provided in CEQA Guidelines Section 15183.5, a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the proposed project complies with the requirements in a previously adopted plan or mitigation program under specified circumstances. The CAP meets the requirements set forth in CEQA Guidelines Section 15183.5, whereby a lead agency (e.g., the City of San Diego) may analyze and mitigate the significant effects of GHG emissions at a programmatic level, such as in a general plan, a long-range development plan, or a separate plan to reduce GHG emissions. The CAP quantifies existing GHG emissions as well as projected emissions for the years 2020, 2030, and 2035 resulting from activities within the City's jurisdiction. The CAP also identifies City target emissions levels, below which the citywide GHG impacts would be less than significant. The CAP and its accompanying certified Final Environmental Impact Report also identify and analyze the GHG emissions that would result from the BAU scenario for the years 2020, 2030, and 2035. The CAP includes a monitoring and reporting program to ensure its progress toward achieving the specified GHG emissions reductions, and specifies 17 actions that, if implemented, would achieve the specified GHG emissions reductions targets. The CAP was adopted in a public process following certification of the Final Environmental Impact Report. Subsequent to the adoption of the CAP, the City has also established additional specific measures that if implemented on a project-by-project basis, would further ensure that the City as a whole achieves the specified GHG emissions reduction targets in the CAP (City of San Diego 2016).

On July 12, 2016, the City amended the CAP to include a Consistency Review Checklist, which is intended to provide a streamlined review process for the GHG emissions analysis of proposed new development projects that are subject to discretionary review and trigger environmental review pursuant to CEQA.

- Under the City's CAP framework, the CAP Consistency Review Checklist is used to evaluate a project's consistency with the City's goals for the reduction of GHG emissions (City of San Diego 2015, 2017).The CAP Checklist identifies pertinent strategies from the CAP that need to be assessed and considered at the project level, as enumerated below.
- Strategy 1: Energy and Water Efficient Buildings
  - Cool/Green Roofs
  - Plumbing Fixtures and Fittings
- Strategy 3: Bicycling, Walking, Transit & Land Use
  - Electric Vehicle Charging
  - Bicycle Parking Spaces
  - Shower Facilities
  - Designated Parking Spaces
  - Transportation Demand Management Program

It is noted that SDSU also has a CAP, which was prepared by the university's Climate Action Planning Council and describes the university's commitment to achieving specified GHG reductions [SDSU 2017]. It contains goals and actions in various emission sectors; however, SDSU's CAP was developed for and is focused on issues specific to the already built-out SDSU main campus located in the College area. SDSU's CAP is not an applicable document for purposes of the proposed project, which proposes the establishment of an SDSU Mission Valley campus. The SDSU Mission Valley Campus ~~Master Plan Design~~ Guidelines/Implementation Plan ~~are being~~have been prepared in order to ensure that SDSU's leadership on sustainability and stewardship issues is carried forward to the proposed project.

Mission Valley Community Plan

The Mission Valley Community Plan (MVCP) Update is intended to be a blueprint for future development in Mission Valley, where the proposed project is located. The ~~Final Draft of the draft~~ MVCP Update was ~~released~~ adopted by the City of San Diego's City Council on ~~May 31~~September 10, 2019 (City of San Diego 2019a). The MVCP Update contains Design Guidelines and Policies for Development to implement the City's CAP, maximize transit ridership, and increase mobility options, among others. The MVCP Update permits a mix of uses on the project site, including the campus, residential, hotel, recreation, and commercial/retail land uses and intensities contemplated by the proposed project.

City of San Diego Green Building Regulations

In response to CALGreen, the City of San Diego adopted its Green Building Regulations (Municipal Code Chapter 14, Article 10), which adopt and incorporate by reference specified provisions of the 2016 CALGreen Code.

Other CEQA Guidance

CEQA & Climate Change White Paper

In January 2008, the California Air Pollution Control Officers Association (CAPCOA) published its CEQA & Climate Change white paper.[3] In the white paper, CAPCOA surveyed three options available to CEQA lead agencies for purposes of evaluating the significance of a project's GHG emissions, including identifying no significance thresholds for GHG emissions, setting a zero-emissions threshold, or setting a non-zero-emissions threshold. As to the non-zero thresholds, CAPCOA's white paper considered two approaches: one grounded in statute and executive order with four possible options, and one grounded in a tiered framework. As for the approach grounded in statute and executive order, CAPCOA identified four threshold concepts:

- Threshold 1.1: AB 32/S-3-05 Derived Uniform Percentage-Based Reduction
- Threshold 1.2: Uniform Percentage-Based (e.g., 50%) Reduction for New Development
- Threshold 1.3: Uniform Percentage-Based Reduction by Economic Sector
- Threshold 1.4: Uniform Percentage-Based Reduction by Region

For purposes of the tiered framework approach, a project's GHG emissions would result in a less-than-significant impact provided one of the following criteria were achieved: (1) compliance with a general or regional plan in alignment with AB 32, (2) application of a CEQA exemption, (3) inclusion on the "green list," (4) consistency with a qualified GHG reduction strategy, or (5) demonstration that quantified GHG emissions are less than significant. Tables 4 and 5 of the white paper identified advantages and disadvantages associated with all of the options presented for consideration (CAPCOA 2008).

CAPCOA 2010 Quantifying Greenhouse Gas Mitigation Measures

In August 2010, CAPCOA published its Quantifying Greenhouse Gas Mitigation Measures report, which presents information and analysis regarding the quantification of project-level mitigation of GHG emissions associated with land use, transportation, energy use, and other related project areas. CAPCOA and its contractors conducted an extensive literature review in order to provide reliable and substantiated evidentiary bases for the quantification

[3] CAPCOA is a non-profit association of the air pollution control officers from all 35 local air quality agencies throughout California.

protocols presented in the report; as such, individual GHG reduction measures are accompanied by "fact sheets" that set forth the relevant parameters for the quantification calculations (CAPCOA 2010).

Association of Environmental Professionals

Beyond 2020 White Paper

In March 2015, the Association of Environmental Professionals (AEP) released its draft Beyond 2020: The Challenge of Greenhouse Gas Reduction Planning by Local Governments in California (Beyond 2020) white paper.[4] In the white paper, AEP presented evidence showing that it is infeasible for a local jurisdiction to achieve EO S-3-05's 2050 reduction target (i.e., 80% below 1990 levels) absent a real post-2020 state plan of action. As such, AEP recommended assessing project significance in relation to the 2050 reduction target by asking whether a project would "impede substantial progress in local, regional, and state GHG emissions reductions over time toward long-term GHG reduction targets" (AEP 2015).

Beyond 2020 and Newhall White Paper

In April 2016, AEP released its draft Beyond 2020 and Newhall: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California (Beyond 2020 and Newhall) white paper. In the white paper, AEP surveyed the following significance threshold concepts for utilization in CEQA-oriented GHG emissions analysis, consistency with qualified GHG reduction plans, bright line values, efficiency metrics, hybrid metrics that separate transportation and non-transportation emissions, best management practices, regulatory compliance, and percent reductions from BAU. In doing so, AEP identified the present circumstances as a "transitional period" due to the absence of comprehensive state planning for post-2020, non-legislatively adopted, statewide targets.

4.7.3 Significance Criteria

CEQA Guidelines on GHG Emissions

In 2007, SB 97 was enacted and directed OPR and the California Natural Resources Agency to prepare amendments to the CEQA Guidelines addressing the analysis of GHG emissions under CEQA. Following formal rulemaking, a series of amendments to the CEQA Guidelines were adopted to provide the general framework for the analysis of GHG emissions, and became effective in 2010. The amendments do not provide a mandatory, quantitative rubric for GHG emissions analysis, but instead provide general guidance and recognize long-standing CEQA principles regarding the discretion afforded to lead agencies where supported by substantial evidence. More specifically, CEQA Guidelines Section 15064.4(a) recognizes that the "determination of the significance" of GHG emissions "calls for careful judgment by the lead agency" in accordance with the more general provisions of CEQA Guidelines Section 15064; each agency "shall have discretion to determine" whether to conduct quantitative or qualitative analysis, provided its determination is supported by substantial evidence. Section 15064.4 was most recently amended by OPR and the California Natural Resources Agency in December 2018.

[4] AEP is a non-profit association of public and private sector professionals with a common interest in serving the principles underlying CEQA.

The analysis provided in this report evaluates the significance of the proposed project's GHG emissions by reference to the following questions from Section VIII, Greenhouse Gases, of Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to GHG emissions would occur if the project would:

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
2. Conflict with ~~an~~ the City of San Diego's Climate Action Plan or another applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

Other Guidance

Neither the SDAPCD nor the City of San Diego has adopted numeric emission-based thresholds for GHG emissions under CEQA. The City's CEQA Significance Determination Thresholds (July 2016) state that project-level significance is determined through the CAP Checklist, as discussed above (City of San Diego 2016). OPR's CEQA and Climate Change Advisory discussion draft, published in December 2018, describes the latest updates to the CEQA Guidelines finalized in December 2018 (OPR 2018). This draft discusses the discretion of selecting and developing appropriate thresholds of significance to analyze a project's environmental impacts. Among these thresholds is consistency with relevant regulations, plans, policies, and regulatory programs. The City of San Diego's CAP Checklist is a forward-looking document, including strategies to reduce GHG emissions to achieve the 2020 and 2035 targets, and maintain a trajectory to meet its proportional share of the 2050 state target identified in EO S-3-05. As such, consideration of the CAP Checklist below is consistent with the City's CEQA Significance Determination Thresholds and OPR's discussion draft document.

Project Approach to Significance

This EIR, relative to Threshold 1, quantifies the proposed project's GHG emissions during operation and construction. This EIR, relative to Threshold 2, evaluates the proposed project for consistency with applicable plans related to GHG emissions, including the CAP Checklist as stated in the City's CEQA Significance Determination Thresholds.

While this EIR contains information and analysis below regarding the significance of the proposed project's GHG emissions, it also is noted that this proposed activity is addressed in the Final Program Environmental Impact Report for the City of San Diego Climate Action Plan (SCH No. 2015021053, certified December 15, 2015) for greenhouse gas emissions impacts, and the Final Program Environmental Impact Report for the Mission Valley Community Plan Update (SCH No. 2017071066, certified September 10, 2019), which analyzed the environmental implications of land use development parameters for the Mission Valley Community Planning Area that are consistent with the proposed project's attributes (see EIR Table 4.13-7). Pursuant to Section 21166 of CEQA, and based upon review of the two certified EIRs referenced above, there is no change in circumstance, additional information, or change in development parameters for the project site that would require the City of San Diego to conduct additional environmental review, particularly as the proposed project is consistent with the City's Climate Action Plan and Mission Valley Community Plan Update as demonstrated in Section 4.7.4 below.

4.7.4 Impacts Analysis

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

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

The project design includes a number of project design features (PDFs) that are intended to move the proposed project "beyond code." Many of these PDFs are consistent with the City of San Diego CAP and its implementing CAP Consistency Checklist, as well as the City's ~~draft~~ MVCP Update, each of which the proposed project complies with as explained further below.

Project Design Features with Quantified Reductions

A subset of the PDFs has been quantitatively accounted for in this analysis. The ~~four~~ PDFs that have been quantified are: solar photovoltaic (PV) panels, building heating and cooling, naturally ventilated parking structures, EV-ready and EV chargers, TDM Program, and residential hearths. (This list of quantified PDFs was updated in the Final EIR to incorporate refinements to the proposed project's suite of sustainability commitments, as discussed further in Thematic Response—Sustainability Commitments.)

Solar Photovoltaic Panels

The proposed project is incorporating solar PV panels on ~~available roof space~~a total of approximately 428,458 square feet of available roof space~~;~~ that is located throughout the project's campus/office, hotel, stadium, and residential development areas; these panels are~~s~~ estimated to have a total generation capacity equivalent to ~~10,819,478~~10,895,660 kilowatt-hours of electricity, or ~~14.9~~15.0% of the proposed project's total project electricity demand. In the event that the final stadium design does not accommodate the approximately 3,000 square feet of solar PV coverage called for this PDF, the PV panels shall be installed in other on-site development areas.

Building Heating and Cooling

As part of the Mechanical, Electrical and Plumbing Plans (MEPs) for all non-stadium buildings, CSU/SDSU shall require all heating, cooling and ventilation systems (HVAC) and water heating systems to be electric.

Naturally Ventilated Parking Structures

All structured parking on the project site shall be naturally ventilated.

Electric Vehicle-Ready Parking and Electric Vehicle Chargers

The proposed project is equipping 10~~3~~% of total residential parking spaces and 6% of total nonresidential parking spaces with appropriate electric supply equipment to allow for the future installation of EV chargers (i.e., "EV ready"). Of these EV-ready spaces, 50% will be equipped with EV charging stations. Based on these parameters, in total, approximately ~~500~~ 901 parking spaces on the project site will be designated as "EV ready," and ~~252~~ 451 of the "EV ready" spaces will be equipped with operable EV charging stations.

Transportation Demand Management Program

The proposed project's TDM Program, as more fully described in Section 4.15, Transportation, incentivizes alternative transportation besides single-occupant commuter trips. The TDM Monitoring Plan relatedly summarizes the performance metrics and targets to be monitored from the TDM Program (see Fehr & Peers' SDSU Mission Valley Campus TDM Program – Proposed Monitoring Plan Memorandum (F&P 2019), a copy of which is located in Appendix 4.15-3 of the EIR). Strategies contained in the TDM Program for the campus office, residential, and retail uses relate to:

- Land Use Diversity
- Neighborhood Site Enhancement
  - New Bicycle Facilities
  - Dedicated Land for Bicycle/Multi-Use Trails
  - Bicycle Parking
  - Showers and Lockers in Employment Areas
  - Increased Intersection Density
  - Traffic Calming
  - Car Share Service Accommodations
  - Enhanced Pedestrian Network
- Parking Policy and Pricing
  - Unbundled Residential Parking
  - Metered On-Street Parking
  - Reduced Parking Supply
- Commute Trip Reduction Services
  - TDM Program Coordinator and Marketing
  - Electric Bike-Share Accommodations
  - Ridesharing Support
  - School Pool
  - Hotel Shuttle Service

The TDM Program's strategies are expected to reduce VMT by 14.41%. Details of the reductions are included in Fehr & Peer's Transportation Impact Analysis (2019) for the proposed project in Appendix 4.15-1. (TDM Program strategies also have been developed for the proposed project's Stadium land use, but conservatively have not been assigned a quantitative reduction value for reasons described in Appendix 4.15-1.)

Residential Hearths

~~The proposed project is incorporating a limited number of natural gas fireplaces, and no wood burning fireplaces, within project residences. Of all residential units in the proposed project, up to 5% of the units may include a natural gas fireplace.~~ Residential units in the proposed project shall not have natural gas fireplaces or wood-burning fireplaces.

Project Design Features with Unquantified Reductions but Expected Benefits

Other PDFs with GHG reduction benefits that have not been quantified and only are considered qualitatively include[5]:

- The layout of the proposed project's development areas has been designed to maximize the unique infill opportunity presented at this Mission Valley location. This includes benefits from the existing MTS Trolley Green Line that runs through the proposed project, as well as the planned Purple Line transit line and trolley station.
- The SDSU Mission Valley campus locates buildings in close proximity to one another, which would facilitate the use of common heating/cooling sources, where feasible, as project-level development proceeds. (The use of common heating/cooling sources will be evaluated as the building plans for individual development parcels are developed; relevant factors that will influence the use of such sources include the temporal proximity of development, type of use, and market forces.)
- Project development areas would maximize natural ventilation.
- The proposed project would include adaptive lighting controls, where appropriate and feasible, in order to maximize energy efficiency and minimize light pollution.
- The proposed project will pursue and achieve Leadership in Energy and Environmental Design (LEED) Version 4 Gold certification through the U.S. Green Building Council for the proposed Stadium. The proposed project also would achieve ~~Leadership in Energy and Environmental Design (~~LEED~~)~~ Version 4 at a Silver or better certification level as to all other land uses located on the site, as well as a Neighborhood Development designation for sitewide design. LEED certification is based on standards that encourage the development of energy-efficient and sustainable buildings.
- Events at the proposed project's multipurpose Stadium would benefit from implementation of TDM Program strategies specifically developed for application to Stadium-related events. These strategies focus on the use of alternative modes of transportation, including transit, to reduce single-occupancy vehicle usage and parking demand on event days.
- As part of the scoring system for evaluating responses to Requests for Proposals and through the builder/developer review and selection process for each future building site within the Mission Valley Campus Master Plan Area, CSU/SDSU shall include "Sustainability" as a component of the scoring criteria and weigh each builder/developer's commitment to implementing strategies above and beyond CBC Title 24, CalGreen and LEED Silver (Version 4.0) as at least 10% of the overall scoring.
- CSU/SDSU shall require that all electrical conduit for the project site be designed, sized and installed to enable the future electrification of the entire project.
- CSU/SDSU shall (1) require that purple pipe be installed in all streets with landscaping and stubbed to all parks, recreation and open space areas to provide reclaimed water for irrigation purposes, or (2) otherwise provide for future connections to the City of San Diego's Pure Water Phase 2 program to reduce potable water usage.
- CSU/SDU shall utilize pre-consumer organic food composting for the proposed Stadium and University-constructed buildings, and shall encourage the incorporation of composting facilities in the residential units developed through the P3 Process. CSU/SDSU also shall utilize post-consumer organic food composting for the proposed Stadium and University-constructed buildings when feasible (e.g., when the University's solid waste provider operates a facility that is permitted to accept post-consumer compost).

[5] This list of PDFs with unquantified reductions but expected benefits was updated in the Final EIR to incorporate refinements to the proposed project's suite of sustainability commitments, as discussed further in Thematic Response GHG-1 — Sustainability Commitments.

It also is noted that, in 2014, the CSU Board of Trustees adopted its Sustainability Policy (CSU 2014). To the extent applicable, project-related development will comply with the principles and goals set forth in the California State University Sustainability Policy.

Construction and Vegetation Change Emissions

One-time emissions are those emissions that are not reoccurring over the life of the proposed project. This includes emissions associated with construction and emissions associated with land use changes.

Construction Emissions

CalEEMod version 2016.3.2 was used to quantify the construction emissions.

The major construction phases included in this analysis are:

- Demolition: involves tearing down of buildings or structures.
- Grading: involves the cut and fill of land to ensure the proper base and slope for the construction foundation.
- Paving: involves the laying of concrete or asphalt such as in parking lots or roads.
- Building Construction: involves the construction of structures and buildings.
- Architectural Coating: involves the application of coatings to both the interior and exterior of buildings or structures.
- Off-site Improvements: involves the construction of off-site improvements.

Construction generates on-road vehicle GHG emissions from personal vehicles for worker and vendor commuting, and trucks for soil and material hauling. These emissions are based on the number of trips and VMT, along with emission factors from EMFAC2014. Construction of the project would generate 114,680 total hauling trips during the grading and demolition phases. Based on the material imported, the analysis assumes that there will be 11,250 total hauling one-way trips during the first grading period, 28,125 hauling one-way trips during the second grading period, and 12,500 hauling one-way trips during the third grading period. In addition, there will be 5,186 hauling trips during each demolition phase of the SDCCU Stadium.

GHG emissions resulting from off-road equipment are summarized in Table 4.7-1, Annual GHG Construction Emissions from Off-Road Equipment. GHG emissions resulting from on-road equipment are summarized in Table 4.7-2, Annual GHG Construction Emissions from On-Road Equipment. GHG emission resulting from construction are summarized in Table 4.7-3, Summary of Construction Emissions, below. Total GHG emissions from all phases for off-road and on-road emissions are 23,997 and 8,306 MT CO_2e, respectively. Total GHG emissions from all construction activities are 32,303 MT CO_2e. When amortized over a 30-year project lifetime, the construction GHG emissions are 1,077 MT CO_2e/year.[6]

Table 4.7-1. Annual GHG Construction Emissions from Off-Road Equipment

Year	MT CO_2e Emissions[1, 2]
2020	2,055
2021	2,795
2022	7,111
2023	877
2024	910

[6] This approach to one-time construction and vegetation change GHG emissions is based on the GHG Threshold Working Group Meeting #13 Minutes from August 26, 2009 (SCAQMD 2009).

Table 4.7-1. Annual GHG Construction Emissions from Off-Road Equipment

Year	MT CO_2e Emissions[1, 2]
2025	1,156
2026	942
2027	764
2028	845
2029	1,338
2030	1,401
2031	1,181
2032	650
2033	616
2034	550
2035	493
2036	247
2037	66
Total	**23,997**

Notes: MT CO_2e = metric tons carbon dioxide equivalent.

1 Emissions shown here are based on project-specific construction schedule. CalEEMod defaults were used for the on-site construction equipment list, including equipment horsepower and load factors. Emissions are calculated using CalEEMod.

2 CO_2e includes CO_2, CH_4, and N_2O emissions, weighted by their respective GWPs.

Table 4.7-2. Annual GHG Construction Emissions from On-Road Equipment

Year	MT CO_2e Emissions[1, 2]			
	Hauling	*Vendor*	*Worker*	*Total*
2020	1,872	279	183	2,334
2021	1,594	361	297	2,252
2022	922	104	169	1,196
2023	0	37	90	127
2024	0	109	115	224
2025	0	189	155	344
2026	0	188	143	330
2027	0	140	105	245
2028	0	51	59	110
2029	0	102	97	199
2030	0	102	82	183
2031	0	76	64	140
2032	0	51	55	107
2033	0	101	84	185
2034	0	101	75	176
2035	0	76	58	134
2036	0	0	11	11
2037	0	0	7	7
Total	**4,388**	**2,068**	**1,850**	**8,306**

Notes: MT CO_2e = metric tons carbon dioxide equivalent.

1 Emissions shown here are based on Project-specific construction schedule and amount of imported material. CalEEMod defaults were used for on-road vehicle trips. Emissions were calculated using CalEEMod. Refer to Appendix B of Appendix 4.7-1 for detailed CalEEMod outputs.

2 CO_2e includes CO_2, CH_4, and N_2O emissions, weighted by their respective GWPs

Table 4.7-3. Summary of Construction Emissions (Without Project Design Features)

Construction Source	MT CO_2e Emissions[1]
Off-Road Equipment	23,997
On-Road Vehicles	8,306
Total	**32,303**
30-year Amortized[2]	**1,077**

Notes: MT CO_2e = metric tons carbon dioxide equivalent.
1 Emissions calculated using CalEEMod. See Tables 4.7-1a and 4.7-1b for detailed emissions inventories
2 One-time emissions from construction were amortized over a 30-year period.

This analysis assumes that implosion would be used for Stadium demolition. If implosion is not used, some additional pieces of construction equipment would be required during the demolition phase. However, total GHG emissions from all construction equipment over the entire construction period (2020-2037) is expected to be similar to those presented in Table 4.7-3.

Vegetation Changes

CalEEMod was used to calculate GHG emissions associated with the vegetation activities of land use change and the planting of new trees, as according to the IPCC protocol for vegetation. Conservatively, there is no reduction in GHG emissions associated with preservation of a land use. The vegetation changes (additional open space and new trees) result in a net gain in carbon sequestration. GHG emissions resulting from vegetation change is summarized in Table 4.7-4, below.

Table 4.7-4. Summary of Vegetation Change Evaluation

Type of Vegetation Change	Initial Vegetation *(acres)*	Final Vegetation *(acres)*	CO_2e Emissions *(MT)*
Grassland	0.0	83.6	-360
Scrub	0.39	0	6
Total Vegetation Change	**0.39**	**83.6**	**-355**
CO_2e Sequestered from Net New Trees[1]			-436
CO_2e Emissions from Vegetation Change and Net New Trees			-791
30-Year Amortized CO_2e Emissions from Vegetation Change and Net New Trees (/year)			-26

Notes: CO_2e = carbon dioxide equivalent; MT = metric tons.
1 A negative number indicates an increase in carbon sequestration.

Operational Emissions

The operational emissions were modeled in CalEEMod for calendar year 2035. Year 2035 was selected in CalEEMod based on the proposed project's expected operational buildout year of 2037 and model limitation to year 2035. Because California has adopted regulatory measures for GHG emissions that take effect by 2030, some aspects of the project GHG emissions inventory are based on these adopted 2030 regulatory measures (e.g., Renewables Portfolio Standard). Other aspects of the GHG inventory, such as the EMFAC2014 emissions factors for mobile sources, are more representative of project conditions at full buildout. Utilization of year 2035 is conservative and not expected to under-estimate the proposed project's GHG emissions.

Operation of the proposed project would generate GHG emissions through motor vehicle traveling to and from the project site; stationary sources (i.e., emergency diesel generators); landscape maintenance equipment operation; energy use (natural gas and generation of electricity consumed by the proposed project); solid waste disposal; and generation of electricity associated with water supply, treatment, and distribution and wastewater treatment. Sections 4 and 5 of EIR Appendix 4.7-1 contain a detailed description of the methodological parameters used to estimate GHG emissions from these project-related activities; a brief summary of some key parameters is provided below:

- Area source GHG emissions included in this analysis result from landscaping-related fuel combustion sources, such as lawn mowers, and fireplaces. ~~Emissions from fireplaces are calculated assuming that 5% of dwelling units have natural gas fireplaces and that t~~There are no wood-burning or natural gas fireplaces or woodstoves, consistent with the project design.
- At a minimum, the proposed project's residential and nonresidential campus land uses shall accord to the 2016 Building Energy Efficiency Standards, as that code cycle became effective on January 1, 2017.
- The energy usage for the proposed Stadium is based on energy data from the SDCCU Stadium. The SDCCU Stadium energy rates were normalized by attendance levels to develop the existing SDCCU Stadium and project Stadium energy use rates.
- The mobile source emissions were calculated using trip rates and trip length information developed by Fehr & Peers for the proposed project's Transportation Impact Analysis (2019), provided in Appendix 4.15-1.
- The water-related emissions analysis account for the CALGreen standards, which require a 20% reduction in indoor potable water use through the use of water saving fixtures and/or flow restrictors (CBSC 2010). Recycled water also will be used to satisfy a portion of the outdoor, irrigation-related water demand, consistent with the State Water Resources Control Board's recycled water policy (SWRCB 2013).
- Waste will be diverted from landfills by a variety of means, such as reducing the amount of waste generated, recycling, and/or composting to meet the statewide goal of 75% waste diversion (CalRecycle 2013).
- Emissions from the emergency generator for the proposed Stadium are calculated assuming the generator is diesel powered and is operated 1 hour per week for maintenance and/or required emergency power.

The PDFs described above would result in a reduction of GHGs. With these PDFs, the proposed project emits ~~68,74~~63,630~~2~~ MT CO_2e per year, as shown in Table 4.7-5 below. (Table 4.7-5 has been updated to incorporate additional emission reductions attributable to the proposed project's refined sustainability commitments, as discussed further in Thematic Response GHG-1 — Sustainability Commitments.) While the proposed project, even with these PDFs, results in an obvious change to the existing environment by increasing existing GHG emission levels, there is no scientific or regulatory consensus regarding what particular quantity of GHG emissions is significant. Further, no agency with regulatory authority and expertise, such as CARB or the SDAPCD, has adopted numeric GHG thresholds for land use development projects for purposes of CEQA. As such, this numeric increase—on its own—does not indicate that the proposed project's GHG emissions would significantly impact the environment.

Table 4.7-5. Summary of Greenhouse Gas Emissions (With Project Design Features)

Emissions Summary[1]	Existing GHG Emissions[2] *(MT CO_2e/year)*	Project GHG Emissions[2,3] *(MT CO_2e/year)*
Area Sources	~~0~~	240
Updates to Residential Hearth PDF	–	-182
Energy Usage	1,626	17,528

Table 4.7-5. Summary of Greenhouse Gas Emissions (With Project Design Features)

Emissions Summary[1]	Existing GHG Emissions[2] *(MT CO_2e/year)*	Project GHG Emissions[2,3] *(MT CO_2e/year)*
Solar PV	–	*-1,793*
Updates to Solar PV PDF	–	*-13*
New Building Heating and Cooling PDF	–	*-1,410*
New Naturally Ventilated Parking Structures PDF	–	*-1,904*
Water	42	2,772
Waste Disposed	587	2,253
Traffic	1,946	54,496
EV Charging	–	*-2,031*
Updates to EV Charging PDF	–	*-1,604*
TDM Program	–	*-5,812*
Stationary	0.73	40
Operational Sub-Total	*4,202*	*~~67,692~~62,580*
Construction Amortized[4]	–	1,077
Vegetation[4]	–	-26
Total[5]	**4,202**	**~~68,742~~63,630**

Notes: GHG = greenhouse gas; MT CO_2e/year = metric tons of carbon dioxide equivalent per year; PV = photovoltaic; EV = electric vehicle; TDM = Transportation Demand Management; -- = not applicable.

1 One-time emissions (i.e., construction) and operational emissions were calculated using CalEEMod for the buildout year.

2 Emissions are presented as CO_2e, which include CO_2, CH_4, and N_2O emissions, weighted by their respective GWPs.

3 Emissions reductions associated with project design features are shown as negative values due to the decrease in emissions. ~~The project design features related to residential hearths is accounted for in the "Area Sources" table row.~~

4 One-time emissions from construction and vegetation sequestration were amortized over a 30-year period.

5 Sum of annualized one-time emissions and operational emissions.

City of San Diego CAP

In order to evaluate the proposed project's potential to conflict with the CAP, reference was made to the City's CAP Consistency Checklist, the purpose of which is to "provide a streamlined review process for proposed new development projects that are subject to discretionary review and trigger environmental review" under CEQA (City of San Diego 2017). The CAP Checklist "contains measures that are required to be implemented on a project-by-project basis to ensure that the specified emissions targets identified in the CAP are achieved. … Projects that are consistent with the CAP as determined through the use of this Checklist may rely on the CAP for the cumulative impacts analysis of GHG emissions."

As shown in Appendix 4.7-2, City of San Diego CAP Evaluation Memo, the proposed project would be consistent with the CAP and, therefore, result in a less-than-significant impact as a result of its GHG emissions. More specifically, Step 1: Land Use Consistency, of the CAP Checklist assesses a project's consistency with the growth projections used in the development of the CAP. Prior to the adoption of the MVCP Update (i.e., at the time of the preparation of the City's CAP), the underlying land uses of the project site were those contemplated by the 1985 Mission Valley Community Plan for commercial/recreation and public/recreation (i.e., the existing stadium use). Therefore, the project's proposed high-density campus village, while consistent with the San Diego General Plan City of Villages strategy, was inconsistent with the inventory of emissions at the time the City's CAP was prepared. However, ~~U~~under Option B of Step 1, projects may be found to be in compliance with the CAP if they are located within a designated transit priority

area (TPA) and implement strategies that would be consistent with the assumptions in the CAP (i.e., though not consistent with the underlying land use, these projects would be developed in TPAs and generally would be considered to implement strategies that reduce GHG emissions).

Relative to the proposed project, the project site is located within a TPA, as it is served by the Stadium Trolley Station on the Trolley Green Line (Figure 2-4 of Chapter 2), as well as the Fenton Parkway Trolley Station, and; therefore, the proposed project ~~is~~ was determined to be required to comply with Step 2 and Step 3.

Subsequent to the release of the proposed project's Draft EIR, the City of San Diego certified the Program EIR for the Mission Valley Community Plan Update and adopted the MVCP Update. The MVCP Update Program EIR found that impacts related to GHG emissions would be less than significant because the MVCP Update implemented the City of Villages framework, including for the project site. As analyzed in Section 4.10, Land Use and Planning, and Section 4.13, Population and Housing, of the Draft EIR, the proposed project would be consistent with the land uses contemplated for the project site by the Mission Valley Community Plan Update. Therefore, with the adoption of the MVCP Update, the proposed project is also consistent with Option A of Step 1 of the CAP Checklist and is only subject to Step 2 of the CAP Consistency analysis.

Step 2 of the CAP consistency review is to evaluate a project's consistency with the applicable strategies and checklist items of the CAP. As further explained in Appendix 4.7-2, the proposed project would be consistent with the strategies under Step 2. For Strategy 1, Energy and Water Efficient Buildings, the proposed project would provide for cool and/or green roods (Checklist Item 1) and would install low flow plumbing fixtures and appliances (Checklist Item 2). As to Strategy 3, the proposed project would designate approximately ~~500~~ 901 parking spaces as "EV ready," and ~~252~~ 451 of the "EV ready" spaces would be equipped with operable EV charging stations (Checklist Item 3); would provide short and long-term bicycle parking spaces above those required in the Municipal Code (Checklist Item 4); would include shower/changing facilities consistent with the voluntary measures under the California Green Building Code (Checklist Item 5); would designate parking for low-emitting, fuel efficient, and carpool-vanpool vehicles (Checklist Item 6) and would include a TDM program (Checklist Item 7) as detailed in Section 4.15, Transportation.

As described above, with the adoption of the MVCP Update, the proposed project would be consistent with the Community Plan land use and zoning designations (Option A) and would not be required to complete Step 3. Nonetheless, because the proposed project is located within a TPA, and because the proposed project was not consistent with Mission Valley Community Plan at the time the Draft EIR was released, the following Step 3 analysis ~~assesses whether~~determined ~~a~~the project's ~~is located~~ location in a TPA~~, and includes a land use plan and/or zoning designation amendment that~~ is nevertheless consistent with the assumptions in the CAP because it would implement CAP Strategy 3 actions. The following Step 3 questions for the proposed project are answered below:

1. ***Would the proposed project implement the General Plan's City of Villages strategy in an identified TPA that will result in an increase in the capacity for transit-supportive residential and/or employment densities?***

   Yes. The proposed project would implement the General Plan's City of Villages strategy, which provides capacity for transit-supportive residential density within TPAs. As shown in Figure 4.7-1, Transit Priority Area Map the project site is within a TPA. The proposed project incorporates the MTS Trolley Green Line and existing Stadium Trolley Station, and reserves adequate right-of-way for the planned future MTS Trolley Purple Line. The Stadium Trolley Station is within 0.5 miles of all future residents and jobs within the project site.

   Consistent with the San Diego Association of Governments' (SANDAG's) San Diego Forward plan, the proposed project co-locates housing and employment on an infill site in an urbanized area that is served by transit. The

project also would provide further enhancements to the existing transportation options located on the project site through the multi-faceted TDM Program. Thus, the project would ensure the success of smart growth land use policies, which would assist the State in achieving the Senate Bill 375 GHG emission reduction targets by reducing VMT from light-duty vehicles through the development of more compact, complete, and efficient communities. Furthermore, the project is consistent with the goals of Senate Bill 743 to balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of GHG emissions.

The proposed project would accommodate an SDSU Mission Valley campus, including academic and administrative buildings and classrooms; technology, research and development and office space; complementary retail space to serve neighborhood residents, businesses, Stadium games, and events; hotels; faculty and staff housing; undergraduate and graduate student housing; apartment units available for the public; and other workforce, and affordable housing. The proposed project would provide recreational opportunities, employment centers, and a concentration of food and shopping opportunities describe in Chapter 2, Project Description. As a result, the estimated proposed project employment growth would be 5,866 estimated annual jobs and a maximum of 8,282 total estimated jobs (including part-time Stadium employment and future faculty and staff jobs as explained in Section 4.13, Population and Housing). An approximate population of 8,510 represents the estimate of new residents as a result of the proposed project's residential campus component. The proposed project would include 4,600 dwelling units and would provide for 5,866 jobs, each of which is more than the existing commercial recreation and public recreation land uses anticipated in the CAP's underlying land use assumptions (i.e., the existing Mission Valley Community Plan). This would increase the capacity for transit-supportive residential and employment intensities within the TPA.

2. Would the proposed project implement the General Plan's Mobility Element in TPAs to increase the use of transit?

Yes. The project site would be accessible via Trolley via the MTS Trolley Green Line and Stadium Trolley Station on the south end of the project site. The Stadium Trolley Station is within 0.5 miles of all future residents and jobs within the project site. The proposed project would include trolley and public transit improvements, including an enhanced pedestrian connection to the existing Stadium Trolley Station, and accommodating the planned Trolley Purple Line and Transit Station. In addition, the proposed project anticipates future transit service and provides for bus services to the Stadium Trolley Station.

3. Would the proposed project implement pedestrian improvements in TPAs to increase walking opportunities?

Yes. The dense and extensive network of on-site pedestrian facilities would provide new connections parallel to the high-stress Friars Road environment that will enhance pedestrian accessibility adjacent to and within the site for area residents, employees, and visitors. The proposed project would include walking paths and biking paths connected to active and passive recreation opportunities and open space for use by the public, including enhanced pedestrian connections to the existing light rail transit center at the Stadium Trolley Station. Within the site itself, nearly all roadways will include a sidewalk or path on both sides of the street. For the few segments with a walking facility on only one side that will serve a pedestrian destination, appropriate street crossings treatments will be provided within a reasonable walking distance. These treatments include traffic signals, raised crosswalks, or stop signs to delineate right-of-way. Therefore, the proposed project would not result in a significant impact to pedestrian facilities.

Additionally, the proposed site connection to Fenton Parkway provides an additional walkable connection to the shops and restaurants at Fenton Marketplace, as well as the low-volume east–west connection provided by Rio San Diego Drive. The proposed connections will provide an improved pedestrian link between the existing neighborhoods along Rancho Mission Road and Fenton Marketplace area. This new connection will be a substantial improvement over the current walking path through the Friars Road/Interstate (I) 15 interchange.

4. Would the proposed project implement the City of San Diego's Bicycle Master Plan to increase bicycling opportunities?

Yes. The proposed project would not conflict with any existing or planned bicycle facilities, and it would substantially enhance bicycle travel adjacent to and through the site. The proposed project would include biking paths to facilitate the use of alternative mobility options. A new on-site path system along the northern and eastern edges of the site (connecting to San Diego and Rancho Mission Roads) will provide a safer and lower-stress option for cyclists traveling from west of Stadium Way to east of I-15. The proposed project also would include improvements along the San Diego River Park, which would include 8- to 10-foot-wide linear walking and biking trails. The proposed hike and bike trail would be located throughout the San Diego River Park. The trail would connect to the hike and bike loop, which provides access to the rest of the campus. The trail would complete the bikeway connection from Murphy Canyon to Fenton Parkway and connect to the east side of the campus and throughout the campus. Buffered bike lanes would be constructed between Northside and Friars Road to increase the safety of bicyclists by adding a barrier between the car and bike lanes of travel.

The existing protected bike lanes on the Mission Village Drive overpass over Friars Road would be maintained with the proposed widening of the overpass, and they would connect to bike lanes on Street 'D' through the center of the site. A connection to existing bike lanes on Friars Road will also be provided by the signalized intersection at Stadium Way. Additionally, the proposed site connection to Fenton Parkway provides a convenient bike-able connection to the shops and restaurants at Fenton Marketplace, improving the link between the Rio San Diego neighborhood and the Rancho Mission Road neighborhood east of I-15.

Furthermore, to address questions about connectivity between the existing SDSU campus and the project site, a "Campus to Campus bike path" has been added as an off-site improvement as shown in Attachment 4 of the Thematic Response – Project Refinements, which would provide for a continuous bike lane/path between the campuses. This would result in off-site improvements within existing rights-of-way to provide new bike facilities along Rancho Mission Road and Ward Road, east of the project site to connect to existing off-site bike facilities on Mission Gorge Road, Fairmount Drive, and Montezuma Drive.

5. Would the proposed project incorporate implementation mechanisms that support Transit Oriented Development?

Yes. The proposed project would establish a transit-oriented SDSU Mission Valley campus consisting of a variety of land uses, includes 4,600 residential units; 95,000 square feet of neighborhood-serving commercial/retail; 1.565 million square feet of educational, research, and innovation space; and approximately ~~86~~ 83 acres of parks, recreation and open space, all within a TPA area that is served by the MTS Trolley Green Line and Stadium Trolley Station. As described above, the proposed project would include transit, bicycle, and pedestrian improvements to encourage alternative modes of transportation

The total trip reduction attributable to transit, bicycle, and pedestrian trips is expected to be 4,599 daily trips. The higher of the inbound or outbound volumes that comprise this reduction are 361 and 407 during the AM and PM peak hours, respectively, which include the transit alightings and boardings at the project site. The trip reduction does not segregate between modes of transportation, but using engineering judgment and considering adjacent developments and facilities, the highest share is expected to be transit trips. Using a transit mode share of 85% (with the remaining 15% constituting bicycle and pedestrian trips), the project would add roughly 4,000 daily transit trips (4,599 x .85 = 3,909) to and from the project site, with the vast majority of those trips expected to be trolley trips, rather than bus trips, due to the nearby convenient location of the Stadium Trolley Station within the project site. Conservatively assuming that all peak-hour transit trips are trolley trips, this would equate to roughly 309 and 346 peak directional trolley trips in the AM and PM peak hours, respectively. Engineering judgment was used to estimate that a conservative 65% of these peak-hour trips would occur in the peak direction (westbound in the morning and eastbound in the evening) consistent with the existing directional split. This would result in roughly 202 and 226 trips in the peak direction during each commute hour. With the current 15-minute headways (or four trains per hour) and assuming an equal number of riders per train, the proposed project is expected to add up to 50 and 56 patrons in the AM and PM peak directional hours, respectively. The estimate of transit riders is presented in Appendix H of the Transportation Impact Analysis (Appendix 4.15-1).

As previously discussed, the proposed project also would include a TDM Program that incentivizes alternative transportation besides single-occupant commuter trips. The TDM Program, which applies to the proposed project's campus educational, office, residential and retail uses, is described in Section 4.15, Transportation. To determine the effectiveness of the TDM and the amount of VMT and trip reduction that would be attributable to the SDSU Mission Valley Campus TDM Program, the proposed program elements were compared to CAPCOA standards. CAPCOA developed the Quantifying Greenhouse Gas Mitigation Measures (August 2010), (CAPCOA Report; CAPCOA 2010) as a set of guidelines for quantifying the environmental benefits of mitigation measures. The CAPCOA Report includes the most comprehensive and up-to-date set of calculations for calculating TDM effectiveness. For those TDM strategies not addressed by the CAPCOA standards, case studies were utilized to estimate vehicle trip and VMT reduction.

The detailed calculations for each TDM strategy are described in Appendix G of the Transportation Impact Analysis. For each strategy that is based on the CAPCOA Report, the related CAPCOA strategy code (for example, CAPCOA TRT-6 or SDT-3) is provided. It is important to note that the resulting VMT and trip reductions are not simply additive. Combinations of strategies in the major categories are multiplicative in that there is a dampening effect based on a variety of studies.

The summary of the non-Stadium TDM vehicle trip reductions are included in Table 4.7-6.

Table 4.7-6. Proposed Non-Stadium TDM Trip Reductions

CAPCOA Category	TDM Measure	Initial Reduction[1]	Final Reduction
Land Use Diversity[2]	Mix of land uses, including residential, commercial, education, and parks/recreation	-[2]	-[2]

Table 4.7-6. Proposed Non-Stadium TDM Trip Reductions

CAPCOA Category	TDM Measure	Initial Reduction[1]	Final Reduction
Neighborhood Site Enhancements	Improve Site Design including: • New Bicycle Facilities • Dedicated Land for Bicycle/Multi-use Trails • Bicycle Parking • Increased Intersection Density	11.08%	5.00%
	Traffic Calming	0.25%	
	Car Share	0.37%	
	Pedestrian Network	2.00%	
Parking Policy/ Pricing	Unbundle Parking	0.95%	4.07%
	Metered On-Street Parking	3.15%	
Commute Trip Reduction	TDM Marketing with Transportation Coordinator including:	2.21%	6.09%
	Shower and Locker Facilities		
	Carpool Matching/Guaranteed Ride Home	2.80%	
	Bicycle Share	0.50%	
	School Pool	0.70%	
	Hotel Shuttle Service	0.04%	
		Combined Total Reduction	**14.41%**

Note:

[1] The Initial Reduction is the individual stand-alone component reductions in accordance with CAPCOA standards or, for those measures not addressed by CAPCOA, estimates based on case studies; whereas the Final Reduction is the calculated total reduction after taking into account redundancies between various components of the TDM.

[2] The TDM Program's land use diversity benefits are incorporated into the trip generation rates developed for the proposed project; in order to ensure that their benefits are not double-counted, land use diversity is not considered here.

6. *Would the proposed project implement the Urban Forest Management Plan to increase urban tree canopy coverage?*

Yes. The proposed project would plant trees throughout the paseos to provide shade and to contribute to the City's 20% urban canopy tree coverage goal. Major streets and pathways within the project site would include trees and other natural amenities to provide shade and create a more inviting pedestrian environment. The landscape plans include multiple tree types throughout the project site. The proposed project would plant a net of 616 new trees. It is further noted the proposed project would convert an area that is largely asphalt parking lot into over 80 acres of parks, recreation and open space, which has additional sequestration benefits as shown in Table 4.7-4, above.

In summary, the proposed project would result in increased density within a TPA and implement CAP Strategy 3 actions. Additionally, as to Step 2: CAP Strategies Consistency, of the CAP Checklist, the proposed project would implement all applicable strategies and actions of the CAP set forth in its implementing Checklist. Adherence to the CAP Checklist is required by SDMC Section 22.0908, which conditions the sale and development of the project site upon compliance with the City's GHG emission reduction goals.

Mission Valley Community Plan Update

In order to evaluate the proposed project's potential to conflict with the ~~draft~~ MVCP Update, reference was made to the ~~draft~~ MVCP Update, including its Design Guidelines and Policies for Development. One objective of the ~~draft~~ MVCP Update is to "help implement" the City's CAP, and the City has determined that the "land use policies in this plan are consistent with the policy goals identified in the CAP. … Through the policies in this plan, the future Mission Valley will be more sustainable, produce less per capita greenhouse gas emissions, and be a vibrant and thriving community that many will have the privilege to call home" (City of San Diego 2019a).

The ~~draft~~ Final ~~p~~Program EIR (SCH No. 2017071066) prepared for the ~~draft~~ MVCP Update concludes that, while implementation of the ~~draft~~ MVCP Update would increase GHG emissions as a result of its proposed increase in density and intensity in the Mission Valley planning area, such increase would be a direct result of implementation of the CAP's strategies and the General Plan's City of Villages Strategy. (The City of Villages Strategy is designed to focus redevelopment, infill and new growth into pedestrian-friendly, mixed-use activity centers linked to the regional transit system.) Further, increasing residential density and nonresidential intensity along the transit corridors within the Mission Valley area, and the co-located TPAs, would support the City in achieving its GHG emissions reduction targets under the CAP. As explained in the City's ~~draft~~ Final~~p~~ Program EIR, "[c]oncentrating new growth in an area can result in greater GHG emissions than allowing the less intensive land uses to remain since growth is being directed toward areas that would produce less GHG emissions per capita citywide. Thus, consistency with the City of Villages Strategy can result in one Community Plan area having an increase in GHG emissions, with the result still being an overall decrease in citywide GHG emissions" (City of San Diego 2019b).

As shown in Table 4.13-7, the proposed project includes comparable land use and intensities/densities as the underlying land use assumptions in the MVCP Update, including unit count, square footage of office/commercial/retail/hotel uses, stadium size, parks and recreation, and residential population. As shown in Table 4.7-7, the proposed project would be consistent with applicable strategies for the reduction of GHG emissions in the ~~draft Mission Valley Community Plan~~MVCP Update.

It also is noted that the ~~draft~~ MVCP Update contemplates the project site being subject to future redevelopment under a Specific Plan or Campus Master Plan, as proposed by the proposed project. More specifically, the environmental analysis for the ~~draft~~ MVCP Update anticipates the following uses on the project site: 4,800 residential units, 2 million square feet of office space, 300,000 square feet of retail space, a 40,000-capacity stadium, and active park and open space acreage. The proposed project's proposed land uses fall within this envelope of development parameters. As such, the proposed project would be consistent with the ~~draft~~ MVCP Update.

Table 4.7-7. Local Plan-Level Consistency Analysis

Measure/Strategy		Description	Consistency Analysis
City of San Diego's Mission Valley Community Plan			
DG-27	Solar Access and Energy Conservation	Employ climate-appropriate design strategies to allow for passive solar access and energy-efficient installations, including: - Allowing for adequate access to light and air so that daylight is able to reach all living spaces for part of the day, and adequate ventilation is provided when windows are open. Prioritize south-facing windows and private open space. - Siting building so that plazas and other public spaces will not be kept in shadows at all times and will not experience excessive wind conditions. - Locating parking areas with large paved surfaces to the east and north of adjacent buildings to reduce solar reflection on buildings. - Placing evergreen trees on the west side of buildings to provide protection from prevailing winds.	**Consistent.** The proposed project would comply with applicable standards set forth in the California Building Code (24 CCR, Parts 6 and 11), which contributes to the energy conservation noted in this measure. As to the building and site orientation recommendations contained in this measure, the layout of the proposed project's campus development areas has been designed to maximize the unique infill opportunity presented at this Mission Valley location. The proposed project includes a compatible mix of land uses that would intersect in a vibrant campus setting.
DG-28	Energy	Consider clustering buildings to use a common heating/cooling source.	**Consistent.** The proposed project consists of a SDSU Mission Valley campus, which locates buildings in close proximity. The design of the site will ensure the optimum heating and cooling systems are incorporated. Thus, the nature of the proposed project complies with this measure.
DG-34	Roof Surfaces	Consider locating sloped roof surfaces facing the south, and at an angle that can accommodate solar panel or film installation for renewable energy generation or centralized solar hot water heating.	**Consistent.** The proposed project would install solar PV panels throughout the development areas, and roof surfaces with appropriate attributes for solar generation would be selected. For more information on the attributes of the solar design commitment, please see Appendix 4.5-1.
DG-40	Operable Windows	Wherever applicable, provide operable windows that allow natural ventilation and potentially eliminate the need for mechanical ventilation. If mechanical systems are necessary, use energy-efficient and low emission heating, ventilation, and air conditioning (HVAC) systems.	**Consistent.** Project development areas would maximize natural ventilation. Mechanical systems also would be designed and built according to all applicable building code and energy efficiency standards (see, e.g., 24 CCR, Parts 6 and 11).

Table 4.7-7. Local Plan-Level Consistency Analysis

Measure/Strategy		Description	Consistency Analysis
DG-45	Energy and Building Materials	Use building materials which will act as insulators or conductors, depending on energy needs.	**Consistent.** Project development areas would meet the applicable requirements of the California Building Code (24 CCR, Parts 6 and 11), including requirements for building materials.
DG-62	Sustainable Materials	Where possible, use sustainable building materials to the maximum extent feasible. Incorporate recycled, renewable, sustainable, and non-toxic/low-VOC (volatile organic compound) materials. Use of locally harvested and/or manufactured materials is desired.	**Consistent.** The proposed project would comply with applicable standards set forth in the California Building Code (24 CCR, Parts 6 and 11), which includes requirements for building materials. In addition, the proposed project would comply with applicable SDAPCD rules governing volatile organic compound content of coatings. Where applicable, compliance with the Buy Clean California Act (AB 262, 2017) also would be required to aid in the reduction of GHG emissions associated with the manufacture and transport of products used in public works projects.
DG-63	Sustainable Landscaping	Provide on-site landscaping improvements that minimize heat gain and provide attractive and context sensitive landscape environments, by: - Building roof gardens, eco-roofs, or other vegetated roof systems to help reduce the solar heat gain of building roofs and to serve as shared open space. - Minimizing impervious surfaces that have large thermal gain.	**Consistent.** The proposed project integrates extensive parks and landscaping, including the planting of new, on-site trees. (See EIR Chapter 2, Project Description.) Further, project design parameters do not preclude the use of vegetated roofing systems; the installation of such systems would be determined on a building-by-building basis, following consideration of site orientation, building use, available rooftop space (following PV installation), and other factors. In addition, the proposed project would comply with applicable requirements of the CalGreen Building Standards Code (24 CCR, Part 11), which address the reduction of impervious surfaces. Site development is compact by design, in order to maximize the available infill opportunity. Impervious surfaces would be utilized where needed, and complemented by the proposed extensive park areas along the San Diego River.

Table 4.7-7. Local Plan-Level Consistency Analysis

Measure/Strategy		Description	Consistency Analysis
DG-64	Water Efficiency and Conservation	Install water saving appliances and systems such as grey water systems, moisture-sensitive irrigation rainwater cisterns, and low-flow toilets and faucets. Any exterior systems should be integrated into building design.	**Consistent.** The proposed project would comply with applicable requirements of the California Building Code (24 CCR, Parts 6 and 11), and the City of San Diego's CAP Checklist, which include requirements for water management, efficiency, and conservation.
DG-67	Energy Generation	Integrate energy generation and sustainability such as solar, wind, geothermal or other technologies into the overall building design consistent with the architectural design.	**Consistent.** The proposed project would install solar PV panels through the development areas. For more information on the attributes of the solar design commitment, please see Appendix 4.5-1.
DG-68	Carbon Sequestration	Incorporate new trees into site plans that have the potential for storage and sequestration of high levels of carbon.	**Consistent.** The proposed project includes planting of new trees (approximately 3.5 times the number of new trees compared to what currently exists at the site).
DG-69	Zero Net Energy Buildings	Strive for zero net energy in a building design.	**Consistent.** Project development areas would incorporate energy efficiency measures in compliance with the version of the California Building Code (24 CCR, Parts 6 and 11) applicable at the time of building permit application, and incorporate solar PV panels beyond what is required by existing regulatory standards. It also is noted that the 2019 Title 24, Part 6 standards, which go into effect on January 1, 2020, include zero net electricity requirements for low-rise residential buildings (three stories or less).

Table 4.7-7. Local Plan-Level Consistency Analysis

Measure/Strategy	Description	Consistency Analysis
DG-73 Mobility Hubs	Design areas around transit stations to provide for a range of services that can improve first-last mile connections. This includes drop-off/pick-up areas for ride-hailing and shuttle services, space for scooter- and bike share storage, parking spaces dedicated to car sharing services, charging stations, and package pick-up areas.	**Consistent.** The proposed project site is located near the existing MTS Trolley Green Line Stadium Station, and would provide an enhanced pedestrian connection to this station. The River Park is also located near the existing Fenton Station, in the southwest corner of the project site. The proposed project would incorporate connectivity as part of the project design, which includes establishing a sustainable, walkable, and transit-oriented campus with enriched pedestrian spaces, walking paths, and trails, as well as EV charging stations. The proposed project's TDM Program also includes elements such as bicycle racks and secure bicycle parking, showers and lockers for employees, a transportation corridor and an information-sharing website and kiosks, coordination with SANDAG's iCommute program, guaranteed rides home, unbundled residential parking, and metered and time-limited on-street parking.
RES-4 Residential Development	Affordable housing is encouraged to be built on site.	**Consistent.** As contemplated by SDMC Section 22.0908, the proposed project would comply with the City's affordable housing requirements by building the required affordable units on-site.
GBP-1 Green Building Practices	The use of sustainable building practices is highly encouraged. New buildings should strive to qualify for LEED accreditation.	**Consistent.** The proposed project would comply with applicable green building practices set forth in the California Building Code (24 CCR, Parts 6 and 11). Additionally, individual buildings within the proposed project development area would be designed to achieve LEED-equivalent standards (Silver minimum); and the proposed project, as a whole, would be designed to achieve LEED-Neighborhood Design equivalent standards (Silver minimum).
GBP-3 Green Building Practices	New development should not inhibit the solar access of neighboring buildings to the maximum extent practical.	**Consistent.** The proposed project is designed to not inhibit solar access of neighboring buildings to the maximum extent practical.

Table 4.7-7. Local Plan-Level Consistency Analysis

Measure/Strategy		Description	Consistency Analysis
BIC-1	Bicycling	New development required to build 10 long-term bicycle parking spaces should provide a sheltered Bike Kitchen – a place to use tools and repair bicycles.	**Consistent.** The proposed project would meet, and exceed, the number of bicycle parking spaces per dwelling unit specified in the City of San Diego Municipal Code. The proposed project also would include a place to use tools and repair bicycles.
BIC-3	Bicycling	Access plans for new development should clearly identify ingress and egress for bicycles, with minimum interaction with vehicles.	**Consistent.** The proposed project incorporates bicycle paths and ingress/egress points with wayfinding to minimize interaction with vehicles.
BIC-4	Bicycling	New development should provide connections to bicycle trails and routes per the San Diego Regional Bicycle Plan. Open spaces should also be located to abut or provide direct access to bicycle facilities.	**Consistent.** The proposed project incorporates bicycle paths and ingress/egress points. In addition, a hike-and-bike trail would be located throughout the open space portions of the proposed project.
PRK-6	Parking	Parking areas should be distributed throughout a project site to avoid large contiguous parking areas and to integrate landscaping. Each parking area should include no more than 30% of the project's parking spaces.	**Consistent.** The proposed project integrates landscaping into the project site and disperses parking throughout the site. Notably, many of the parking areas consist of multilevel parking garages that are consolidated, allowing additional space for landscaping, paseos, and other open areas.
PRK-8	Parking	A minimum of 10% landscaping of the parking lot area is encouraged.	**Consistent.** The proposed project integrates landscaping into the project site, including in the parking areas.
SMC-2	Smart Cities	For energy efficiency and to minimize light pollution, lighting with adaptive controls should be considered for new and infill development.	**Consistent.** The proposed project would include adaptive lighting controls, where appropriate and feasible, in order to maximize energy efficiency and minimize light pollution. In addition, the proposed project would comply with applicable energy efficiency standards set forth in the California Building Code (24 CCR, Parts 6 and 11), which address lighting energy efficiency.
SMC-1	Smart Cities	Consider providing priority parking and charging stations (preferably solar) to promote sustainable practices and accommodate the use of Electric Vehicles (EVs), including smaller short-distance neighborhood electric vehicles.	**Consistent.** The proposed project would include ~~503~~ 901 EV-ready parking spaces, of which ~~252~~ 451 spaces are equipped with EV charging stations.

Table 4.7-7. Local Plan-Level Consistency Analysis

Measure/Strategy		Description	Consistency Analysis
PRK-4	Parking	New development should consider designating priority electric vehicle and zero emissions vehicle parking.	**Consistent.** The proposed project would designate certain parking spaces in prioritized locations for electric vehicles and ZEVs.
PRK-2	Parking	New development should consider unbundled parking to offset development costs and encourage use of alternative transportation modes.	**Consistent.** The proposed project's TDM Program requires that residential parking be unbundled from unit counts.
TDM-1	Transportation Demand Management	New development considering community circulators as a TDM measure should evaluate a coordinated effort with additional properties to expand the service and access more destinations.	**Consistent.** This measure is not applicable because the proposed project does not include a community circulator as a part of its TDM Program. However, the proposed project's TDM Program includes several other measures that enhance mobility throughout the project site.
TDM-2	Transportation Demand Management	New development should consider developing and implementing an approved TDM Plan designed to reduce peak period automobile use and lower the minimum parking requirement. Reference San Diego Municipal Code Chapter 14, Article 2, Division 5.	**Consistent.** The proposed project has developed a TDM Program that includes various measures aimed at reducing peak period single-occupancy automobile use and reducing parking needs.
TDM-3	Transportation Demand Management	New development should incorporate mobility hub features such as EV chargers, rideshare pick-up/drop-off space, bicycle parking, and transit information.	**Consistent.** The proposed project will provide EV chargers in the campus educational, residential, retail, office, and Stadium parking areas, as well as rideshare pick-up/drop-off space to serve these uses. Residential bicycle storage will be provided in residential parking areas, and long-term and short-term bicycle parking will be available for public use at various locations in the site. Transit information will be provided by the proposed project's Transportation Coordinator and will be made available to all project employees and residents.
TDM-4	Transportation Demand Management	New development should designate visible space along the property frontage to allow for staging of shared vehicles, bikes, and scooters.	**Consistent.** Visible space for the staging of shared vehicles, bikes, and scooters will be provided along the proposed project frontage and along the project shared-use path that connects the project's land uses and the Trolley Station, as well as other locations throughout the site as needed.

Table 4.7-7. Local Plan-Level Consistency Analysis

Measure/Strategy		Description	Consistency Analysis
TDM-5	Transportation Demand Management	New development should consider participating in existing TDM programs, including but not limited to those overseen by SANDAG and MTS, in order to: • Encourage rideshare and carpool for major employers and employment centers. • Promote car/vanpool matching services. • Continue promotion of SANDAG's guaranteed ride home for workers who carpool throughout Mission Valley. • Provide flexible schedules and telecommuting opportunities for employees.	**Consistent.** The proposed project's Transportation Coordinator will encourage residents and employees to participate in rideshare and carpool services and promote SANDAG's guaranteed ride home program. Additionally, the Transportation Coordinator will encourage employers to provide flexible schedules and telecommuting opportunities.
TDM-6	Transportation Demand Management	New development should provide flexible curb space in commercial/retail and residential areas to meet the needs of shared mobility services and the changing demands of users.	**Consistent.** Flexible curb space will be provided in the commercial/retail and residential areas of the proposed project in order to accommodate Transportation Network Company loading and unloading operations, deliveries, and other loading activities.
TDM-7	Transportation Demand Management	New development should post information related to available transit service and bicycle infrastructure as a means to encourage use of alternative transportation modes.	**Consistent.** As discussed in relation to measure TDM-3, the proposed project's Transportation Coordinator will provide information related to available transit service and bicycle infrastructure to all residents and employees.
TDM-8	Transportation Demand Management	Employers should consider providing "parking cash out" options to employees—option for employees to receive the cash value of employer-paid parking subsidies in lieu of a parking spot—as an alternative to providing free or subsidized parking or transit passes.	**Consistent.** Employers that rent office space on the project site will be educated about this program by the Transportation Coordinator and can decide to participate in either of the programs if they choose to do so.

Table 4.7-7. Local Plan-Level Consistency Analysis

Measure/Strategy	Description	Consistency Analysis
City of San Diego's CAP Checklist		
Strategy 1 Energy and Water Efficient Buildings [Roofing]	• Would the project include roofing materials with a minimum 3-year aged solar reflection and thermal emittance or solar reflection index equal to or greater than the values specified in the voluntary measures under California Green Building Standards Code (Attachment A)?; OR • Would the project roof construction have a thermal mass over the roof membrane, including areas of vegetated (green) roofs, weighing at least 25 pounds per square foot as specified in the voluntary measures under California Green Building Standards Code?; OR • Would the project include a combination of the above two options?	**Consistent.** Project development areas would comply with one, both or a combination of the roofing options provided in this strategy, upon CSU Building Permit issuance and pursuant to the *SDSU Mission Valley Campus Master Plan Design Guidelines*.
Strategy 1 Energy and Water Efficient Buildings [Residential: Plumbing fixtures and fittings]	Residential buildings: • Kitchen faucets: maximum flow rate not to exceed 1.5 gallons per minute at 60 psi [pounds per square inch]; • Standard dishwashers: 4.25 gallons per cycle; • Compact dishwashers: 3.5 gallons per cycle; and • Clothes washers: water factor of 6 gallons per cubic feet of drum capacity?	**Consistent.** The proposed project's residential campus areas would comply with the maximum flow rates for plumbing fixtures and appliances provided in this strategy, upon CSU Building Permit issuance and pursuant to the SDSU Mission Valley Campus Master Plan Design Guidelines.
Strategy 1 Energy and Water Efficient Buildings [Non-residential: Plumbing fixtures and fittings]	Non-residential buildings: • Plumbing fixtures and fittings that do not exceed the maximum flow rate specified in Table A5.303.2.3.1 (voluntary measures) of the California Green Building Standards Code (See Attachment A); and • Appliances and fixtures for commercial applications that meet the provisions of Section A5.303.3 (voluntary measures) of the California Green Building Standards Code (See Attachment A)?	**Consistent.** The proposed project's nonresidential campus areas would comply with the maximum flow rates for plumbing fixtures and appliances provided in this strategy, as required by the SDSU Mission Valley Campus Master Plan Design Guidelines.

Table 4.7-7. Local Plan-Level Consistency Analysis

Measure/Strategy		Description	Consistency Analysis
Strategy 3	Bicycling, Walking, Transit, & Land Use [EV Chargers]	Multiple-family projects of 17 dwelling units or less: Would 3% of the total parking spaces required, or a minimum of one space, whichever is greater, be provided with a listed cabinet, box or enclosure connected to a conduit linking the parking spaces with the electrical service, in a manner approved by the building and safety official, to allow for the future installation of electric vehicle supply equipment to provide electric vehicle charging stations at such time as it is needed for use by residents?	**Not Applicable.** This strategy is not applicable because the proposed project includes more than 17 dwelling units.
Strategy 3	Bicycling, Walking, Transit, & Land Use [EV Chargers]	Multiple-family projects of more than 17 dwelling units: Of the total required listed cabinets, boxes or enclosures, would 50% have the necessary electric vehicle supply equipment installed to provide active electric vehicle charging stations ready for use by residents?	**Consistent.** The proposed project would provide a minimum of ~~85~~ 284 EV-ready spaces with charging stations in the residential development areas.
Strategy 3	Bicycling, Walking, Transit, & Land Use [EV Chargers]	Non-residential projects: Of the total required listed cabinets, boxes or enclosures, would 50% have the necessary electric vehicle supply equipment installed to provide active electric vehicle charging stations ready for use?	**Consistent.** The proposed project would provide a minimum of ~~167~~ 167 EV-ready spaces with charging stations in the non-residential campus areas.
Strategy 3	Bicycling, Walking, Transit & Land Use [Bicycle Parking]	Bicycle Parking Spaces: Would the project provide more short- and long-term bicycle parking spaces than required in the City's Municipal Code (Chapter 14, Article 2, Division 5)?	**Consistent.** The proposed project would meet, and exceed, the number of bicycle parking spaces per dwelling unit specified in the San Diego Municipal Code.
Strategy 3	Bicycling, Walking, Transit & Land Use [Shower facilities]	If the project includes nonresidential development that would accommodate over 10 tenant occupants (employees), would the project include changing/shower facilities in accordance with the voluntary measures under the California Green Building Standards Code as shown in the table?	**Consistent.** The proposed project's nonresidential campus areas would provide changing/shower facilities as required by the referenced CALGreen provision, as required by the SDSU Mission Valley Campus Master Plan Design Guidelines.
Strategy 3	Bicycling, Walking, Transit & Land Use [Parking spaces]	Designated Parking Spaces: If the project includes a nonresidential use in a TPA [Transit Priority Area], would the project provide designated parking for a combination of low-emitting, fuel-efficient, and carpool/vanpool vehicles in accordance with the table?	**Consistent.** The proposed project's nonresidential campus areas would provide designated parking for a combination of the specified vehicles, as required by the SDSU Mission Valley Campus Master Plan Design Guidelines.

Table 4.7-7. Local Plan-Level Consistency Analysis

Measure/Strategy	Description	Consistency Analysis

Strategy 3 Bicycling, Walking, Transit & Land Use [TDM]	Transportation Demand Management Program. If the project would accommodate over 50 tenant-occupants (employees), would it include a transportation demand management program that would be applicable to existing tenants and future tenants that includes the components listed in the CAP Checklist?	**Consistent.** A TDM Program has been designed for the proposed project. The TDM Program includes:
		• Land Use Diversity
		• Neighborhood Site Enhancement
		  ○ New Bicycle Facilities
		  ○ Dedicated Land for Bicycle/Multi-Use Trails
		  ○ Bicycle Parking
		  ○ Showers and Lockers in Employment Areas
		  ○ Increased Intersection Density
		  ○ Traffic Calming
		  ○ Car Share Service Accommodations
		  ○ Enhanced Pedestrian Network
		• Parking Policy and Pricing
		  ○ Unbundled Residential Parking
		  ○ Metered On-Street Parking
		  ○ Reduced Parking Supply
		• Commute Trip Reduction
		  ○ TDM Program Coordinator and Marketing
		  ○ Electric Bike-Share Accommodations
		  ○ Ridesharing Support
		  ○ School Pool
		  ○ Hotel Shuttle Service

San Diego Association of Governments

SANDAG's San Diego Forward plan (the current RTP/SCS for the region) contains five basic strategies. As discussed below, the proposed project is consistent with each of these strategies.

1. *Focus housing and job growth in urbanized areas where there is existing and planned transportation infrastructure, including transit.*

   The proposed project is consistent with Strategy 1 because it co-locates housing and employment on an infill site in an urbanized area that is served by transit. By way of background, the project site is identified as a potential "Town Center" (specifically, "SD MV-5") on SANDAG's Smart Growth Concept Map for the Mid-City and East County Subregion (SANDAG 2016a). As described by SANDAG, "Existing/Planned smart growth areas are locations that either contain existing smart growth development or allow planned smart growth in accordance with the identified land use targets, and are accompanied by existing or planned transit services included in San Diego Forward: The Regional Plan" (SANDAG 2016b).

   Here, the existing MTS San Diego Trolley Green Line runs through the project site; the Stadium Station also is located on site and presently is frequented by the traveling public during Stadium events. The Green Line provides daily service along a 23.6-mile route, with 27 stations, and operates from the Santee Transit Center through Mission Valley to the 12th & Imperial Transit Center in downtown San Diego. In addition to the Green Line, MTS Bus Route 14 also is in the vicinity of the project site; the closest bus stop is located at Rancho Mission Road/San Diego Mission Road, which is an approximately 0.5-mile walk from the existing Stadium's main gate. MTS Bus Route 14 connects to other bus routes and several trolley stations.

   SANDAG also is studying the feasibility of the San Diego Trolley Purple Line. Potential alignments for this future trolley line would enter the project site from the southeast, heading in a west-northwesterly direction, and would include the siting of another trolley station on the project site.

2. *Protect the environment and help ensure the success of smart growth land use policies by preserving sensitive habitat, open space, cultural resources, and farmland.*

   The proposed project is consistent with Strategy 2 because it would provide approximately ~~86~~ 83 acres of parks, recreation, and open space, including a River Park. Impacts to biological resources are discussed in Section 4.3; however, it is noted that 98% of the project site is currently urban/developed, and impacts to sensitive habitat/communities are limited to less than 1 acre. No portion of the project site is designated as farmland. Cultural Resources impacts are discussed in Section 4.4 and would be reduced to less than significant with implementation of mitigation.

3. *Invest in a transportation network that gives people transportation choices and reduces GHG emissions.*

   The proposed project is consistent with Strategy 3 because it would provide further enhancements to the existing transportation options located on the project site (see trolley and bus options discussed above). Further, as explained above under the City of San Diego CAP discussion, the proposed project would include walking paths and sidewalks connected to enhanced pedestrian connections to the existing light rail transit center at the Stadium Trolley Station, as well as off-site pedestrian improvements and connections. The proposed project would also include biking paths. The proposed project would include a new on-site path system along the northern and eastern edges of the site (connecting to San Diego and Rancho Mission Roads) and improvements along the San Diego River Park, which would include 8- to 10-foot-wide linear walking and biking trails. The proposed hike and bike trail would be located throughout the San Diego River Park. The trail would connect to the hike and bike loop, which provides access to the rest of the project site. The trail would complete the bikeway connection from Murphy Canyon to Fenton Parkway and connect to the east side of the campus and throughout the campus. Buffered bike lanes would be constructed between

Northside and Friars Road to increase the safety of bicyclists by adding a barrier between the car and bike lanes of travel. Additionally, through implementation of the multifaceted TDM Program, the proposed project would reduce its VMT by approximately 14%.

4. *Address the housing needs of all economic segments of the population.*

   The proposed project is consistent with Strategy 4 because it would provide a range of housing for faculty, staff, and students, as well as other workforce and affordable housing. As to the latter type of housing, up to approximately 10% of the residential units would be built on-site as affordable housing. Provision of affordable housing accords to SDMC Section 22.0908, which conditions the sale and development of the project site upon conformance with the City's housing impact fees/affordable housing requirements.

5. *Implement the Regional Plan through incentives and collaboration.*

   The proposed project is consistent with Strategy 5 because it includes a TDM Program that incorporates innovative pricing policies discussed in San Diego Forward, such as unbundling parking and alternative transportation (e.g., bicycle share). These measures help further the implementation of the RTP/SCS.

Based on the consistency with all five basic strategies of the Regional Plan, and SANDAG's identification of the project site as a potential "Town Center" on its Smart Growth Concept Map, the proposed project would not conflict with SANDAG's San Diego Forward plan.

Statewide Emissions Reduction Targets

Studies have shown that, in order to meet the statewide 2050 reduction target, aggressive and economy-wide technological changes in the transportation and energy sectors, including electrification of the vehicle fleet and decarbonization of electricity and fuel sources, will be required among many other possible measures (California Council on Science and Technology 2011). One study indicated that, even with these emerging technologies, the 2050 goal will not be met, due to the population growth to 55 million by 2050 (LBL 2013). A more recent study, however, shows that the existing and proposed regulatory framework will allow the state to reduce GHG emissions to 40% below 1990 levels by 2030, and to 60% below 1990 by 2050 (Greenblatt 2015). Even though this study did not provide a regulatory and technology roadmap to achieve the 2050 target, it demonstrated that various combinations of policies could allow statewide emissions to remain very low through 2050, suggesting that the combination of new technologies and other regulations not analyzed in the study could allow the state to meet the 2050 target. The 2017 Scoping Plan describes two paths to achieving the 2050 target. The first path would be one in which consistent progress is made between 2020 and 2050, the 2030 target is achieved, and progress leads to achievement of the 2050 target earlier. The other path is one that begins with the 2030 target and then progresses towards the 2050 target of 80% below 1990 levels (CARB 2017a).

Statewide efforts are underway to facilitate the state's achievement of its 2050 target, and it is reasonable to expect the proposed project's emissions to decline as the regulatory initiatives identified by CARB in its Scoping Plan are implemented, new regulatory programs or incentives are implemented to reduce GHG emissions, and other technological innovations occur. Many of these initiatives include reducing the carbon content of motor fuels and fuels for electricity generation.[7] Reducing the carbon content of motor fuels and fuels for electricity generation will reduce CO_2e emissions from this project over time.

[7] The extent to which GHG emissions from traffic at the proposed project will change in the future depends on the quantity (e.g., number of vehicles, average daily mileage) and quality (i.e., carbon content) of fuel that will be available and required to meet both regulatory standards and residents' needs. In addition, renewable power requirements, LCFSs, and vehicle emissions standards discussed above will all decrease GHG emissions per unit of energy delivered or per VMT.

For example, CARB's 2014 First Update "lays the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80% below 1990 levels by 2050." And, many of the emission reduction strategies recommended by CARB would serve to reduce the proposed project's post-buildout (2037) emissions level to the extent applicable by law:

- **Energy Sector**: Continued improvements in California's appliance and building energy efficiency programs and initiatives would serve to reduce the proposed project's emissions level. Additionally, further additions to California's renewable resource portfolio would favorably influence the proposed project's emissions level.
- **Transportation Sector**: Anticipated deployment of improved vehicle efficiency, zero emission technologies, lower carbon fuels, and improvement of existing transportation systems all will serve to reduce the proposed project's emissions level.
- **Water Sector**: The proposed project's emissions level will be reduced as a result of further desired enhancements to water conservation technologies.
- **Waste Management Sector**: Plans to further improve recycling, reuse and reduction of solid waste will beneficially reduce the proposed project's emissions level.

In addition, it is important to note that the majority of the proposed project's GHG emissions are related to sectors that are covered by the California Cap-and-Trade Program. Emissions from major GHG-emitting sources, such as electricity generation, fuel distributors (e.g., natural gas and propane fuel providers and transportation fuel providers), and large stationary sources are capped under the rules of the Cap-and-Trade Program, and the majority of policy proposals developed by CARB and other state agencies pursuing GHG emissions-reducing strategies are designed to secure reductions from these sectors well into the future. If the proposed project emissions associated with these sectors are excluded, the only category that remains is related to vegetation change.

The proposed project's emissions total at buildout (2037) represents the maximum emissions inventory for the proposed project as California's emissions sources are being regulated (and are foreseeably expected to continue to be regulated in the future) in furtherance of the state's environmental policy objectives. Indeed, in light of the above, the proposed project's emissions at project buildout (2037) are reasonably anticipated to decline due to continued regulatory and technological advancements.

Further, the project design itself advances many of the state's primary policies directed towards the reduction of GHG emissions. For example, approximately 68% of the proposed project's emissions profile is attributable to transportation-related emissions. The proposed project addresses that emissions source in two complementary ways: First, the proposed project would facilitate the use of ZEVs through the provision of on-site charging infrastructure. The extension of ZEV infrastructure is critical to the transition of the vehicle fleet from internal combustion engines to zero emission engines. Second, the SB 743 analysis prepared for the proposed project (see Fehr & Peers' Transportation Impact Analysis [2019]) confirms that—with implementation of the TDM Program—the project-generated VMT per service population would represent an approximately 25% reduction from the regional baseline VMT per service population level and an approximately 21% reduction from the citywide baseline VMT per service population level. Further, when viewed in the cumulative setting, the proposed project would reduce regional VMT as compared to regional VMT without the proposed project, illustrating the benefits of the locational attributes of developing residential and nonresidential uses on the project site. The proposed project's reduction from baseline VMT per service population levels is consistent with the focus of CARB, in its 2017 Scoping Plan, on reducing statewide VMT through a suite of strategies. The proposed project also would provide on-site renewable energy (through the installation of solar PV panels) and be designed to achieve LEED Version 4 at a Silver or better certification level (this commitment extends to individual buildings,

including the Stadium, on the project site, and also includes a Neighborhood Development designation for sitewide design). These PDFs illustrate that the built environment will go beyond the bounds of existing regulatory compliance in pursuit of sustainability.

Finally, the location of the project site is compatible with and complementary of the state's GHG reduction goals. More specifically, the proposed campus project would develop residential and nonresidential land uses in an infill setting that is served by multimodal transportation options (trolley and bus), and would further enhance other multimodal options by designing the site to encourage pedestrian- and bicycle-oriented connectivity. The infill location allows the City of San Diego specifically, and the San Diego region generally, to accommodate existing and projected population and employment growth within a developed, urbanized area (i.e., Mission Valley), thereby avoiding the conversion of undeveloped land to developed uses, which also is consistent with CARB's objectives in the 2017 Scoping Plan.

In summary, the proposed project would not conflict with the statewide emissions reduction targets for 2020, 2030, and 2050.

Summary

While the proposed project would represent an increase in GHG emissions when compared to the existing conditions on the site, accommodating California's growing population base at this location and with the proposed project's proposed design attributes is more efficient than other alternatives, such as development in a non-urbanized area without transit. As explained in the City's General Plan (City of San Diego 2008):

> The City of Villages strategy to direct compact growth in limited areas that are served by transit is, in itself, a conservation strategy. Compact, transit-served growth is an efficient use of urban land that reduces the need to develop outlying areas and creates an urban form where walking, bicycling, and transit are more attractive alternatives to automobile travel. Reducing dependence on automobiles reduces vehicle miles traveled which, in turn, lowers greenhouse gas emissions.

Further, as discussed above, the proposed project would not conflict with the City's CAP, the City's ~~draft~~ MVCP Update, SANDAG's RTP/SCS, or statewide emission reduction targets. Various factors support these determinations, such as the proposed project's location on an infill site in Mission Valley that is served by transit; the proposed project's implementation of a TDM Program that reduces VMT at a level that is consistent with the objectives of SB 743; and the proposed project's exceedance of existing regulatory compliance standards for the built environment. Therefore, the proposed project's GHG emissions will be **less than significant**.

Would the project result in a cumulative impact to greenhouse gas emissions?

GHG impacts are cumulative impacts; therefore, assessment of significance is based on a determination of whether the GHG emissions from a project represent a cumulatively considerable contribution to the global atmosphere. If a project exceeds the identified significance thresholds, its contribution of GHG emissions would be cumulatively considerable, resulting in a cumulatively significant impact on climate change. The City's CAP Consistency Checklist also serves as the significance determination threshold for cumulative impacts related to climate change. Therefore, the proposed project's GHG emissions would not be cumulatively considerable.

4.7.5 Summary of Impacts Prior to Mitigation

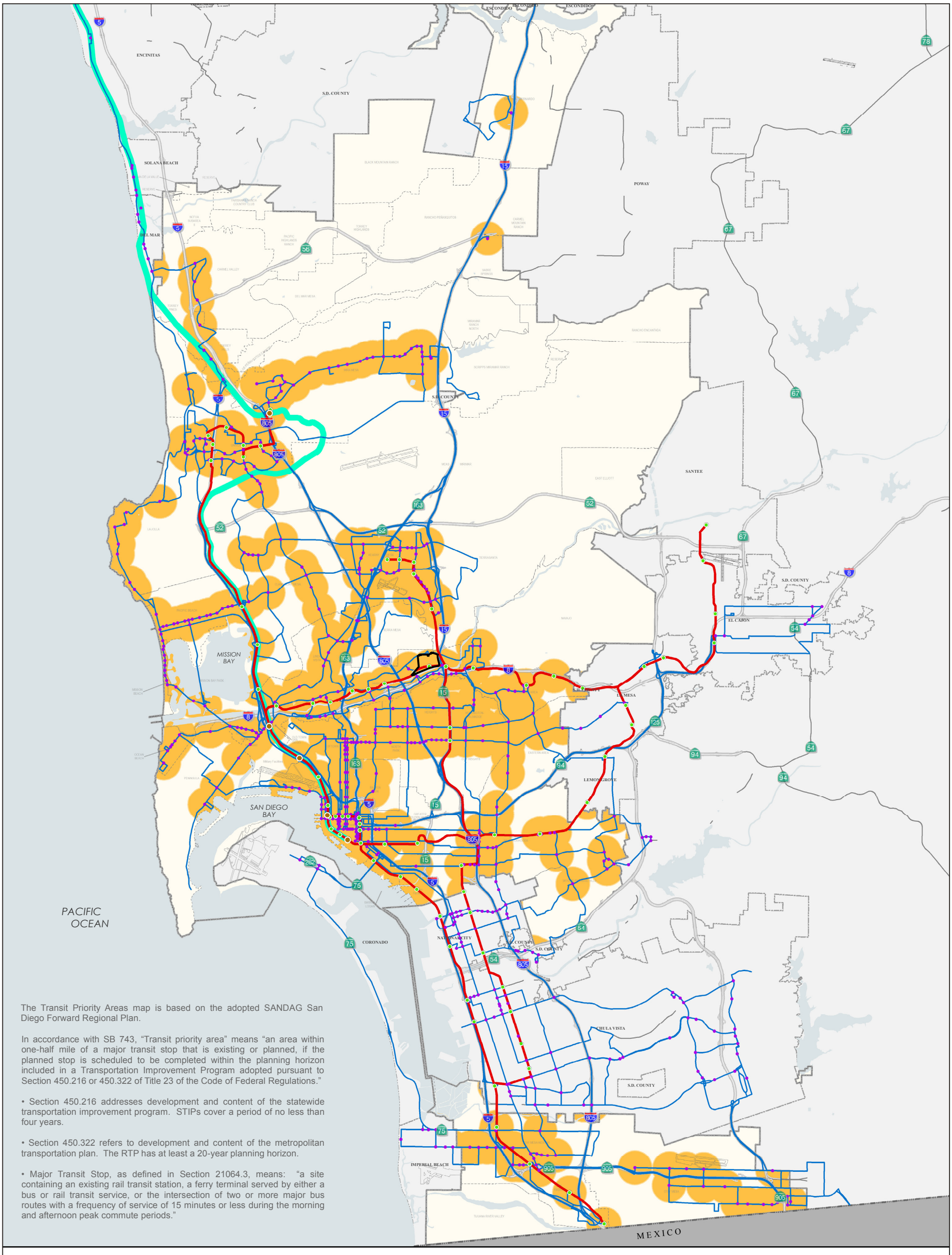
As discussed above, the proposed project would not conflict with the City's CAP, the City's ~~draft~~ MVCP Update, SANDAG's RTP/SCS, or statewide emission reduction targets. Further, the proposed project has been designed as a mixed use campus with office, commercial, residential, park and open space uses, consistent with the City of San Diego City of Villages strategy, and includes a suite of Project Design Features which would reduce GHG emissions. Therefore, the proposed project and cumulative GHG emissions impacts would be **less than significant**.

4.7.6 Mitigation Measures

No significant impacts related to GHG emissions have been identified. No mitigation measures are required.

4.7.7 Level of Significance After Mitigation

Project and cumulative impacts would be **less than significant** without mitigation.



The Transit Priority Areas map is based on the adopted SANDAG San Diego Forward Regional Plan.

In accordance with SB 743, "Transit priority area" means "an area within one-half mile of a major transit stop that is existing or planned, if the planned stop is scheduled to be completed within the planning horizon included in a Transportation Improvement Program adopted pursuant to Section 450.216 or 450.322 of Title 23 of the Code of Federal Regulations."

• Section 450.216 addresses development and content of the statewide transportation improvement program. STIPs cover a period of no less than four years.

• Section 450.322 refers to development and content of the metropolitan transportation plan. The RTP has at least a 20-year planning horizon.

• Major Transit Stop, as defined in Section 21064.3, means: "a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service of 15 minutes or less during the morning and afternoon peak commute periods."

Long Term through 2035

Legend

- Major Transit Stops
- Trolley Stations
- Coaster Station
- Project Boundary
- High Frequency Routes
- Trolley Lines
- Coaster Line
- Transit Priority Areas
- Planning Areas
- Municipal Boundaries

N W E S

3500 1750 0 3500
Feet

SanGIS

Document Path: L:\GIS\PGIS\Transportation\SB 743\TPA - LongTerm 2019 Revision to 2017 TPA.mxd

SDSU Mission Valley Campus Master Plan EIR

San Diego State University

Figure 4.7-1

Transit Area Priority Map

INTENTIONALLY LEFT BLANK