COUNTY OF SAN BERNARDINO

GREENHOUSE GAS REDUCTION PLAN UPDATE

June 2021

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GREENHOUSE GAS REDUCTION PLAN UPDATE

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Executive Summary

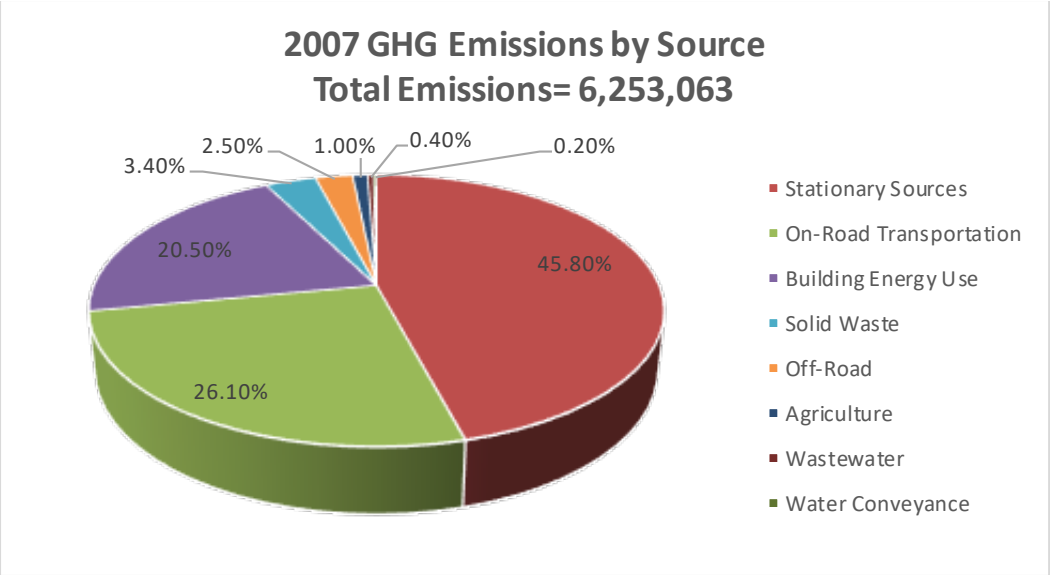
Note Regarding Terminology: The 2011 San Bernardino County Greenhouse Gas Reduction Plan is herein referred to as the **GHGRP**. This document, the San Bernardino County Greenhouse Gas Reduction Plan Update, is herein referred to as the **GHGRP Update**. Finally, the San Bernardino County Regional Greenhouse Gas Reduction Plan Update, which includes the GHGRP Update along with the other 24 cities within San Bernardino County is identified herein as the **Regional Plan**.

The County of San Bernardino (County) is committed to providing a more livable, equitable, and economically vibrant community through the reduction of greenhouse gas (GHG) emissions and enhancing the community resilience with regard to vulnerabilities and risks posed by climate change. By using energy more efficiently, harnessing renewable energy to power buildings, recycling waste, and enhancing access to sustainable transportation modes, the County will keep dollars in the local economy, create jobs, and improve the community's quality of life. The efforts toward increasing the reduction of countywide GHG emissions described in this report would occur in coordination with the County's other planning and land use decisions. Through the GHGRP, the County has established goals and policies that incorporate environmental responsibility into the everyday management of its community operations. The following presents a brief summary of the steps taken to prepare this GHGRP Update.

S.1 Inventory

The first step in completing the GHGRP Update was to update the County's GHG emissions inventory. The County completed a baseline year 2007 GHG inventory as part of the GHGRP that was adopted in 2011. For the GHGRP Update, the 2007 GHG inventory was updated to ensure consistency in data analysis and methodologies. The County emitted approximately 6,253,063 metric tons carbon dioxide equivalent (MT CO_2e) in 2007. The largest portion of the County's 2007 emissions was from stationary sources which are not under the jurisdictional control of the County, followed by emissions from transportation, electricity and natural gas use in buildings. For the purposes of the GHGRP Update, the County completed a 2016 emissions inventory for communitywide sectors. Figure ES-1 shows a sector level comparison of results for the 2007 and 2016 inventories. Note that the 2016 emissions inventory followed current protocols for community-wide emissions which focus on emission sources that the County has direct or indirect jurisdictional control.

The 2016 inventory indicated that the County emitted approximately 2,873,469 MT CO_2e. The largest portion of emissions in the 2016 inventory came from the transportation sector, which was 52.9 percent of the County's total GHG emissions. Commercial and residential energy (both electricity and natural gas) uses were the second largest contributor of GHG emissions with 33 percent of total emissions. Solid waste accounted for 7 percent and Agriculture accounted for 5 percent of total GHG emissions in 2016. Off-Road Equipment accounted for approximately 1.2 percent of total GHG emissions, and both water and wastewater-related uses emitted less than 1 percent.



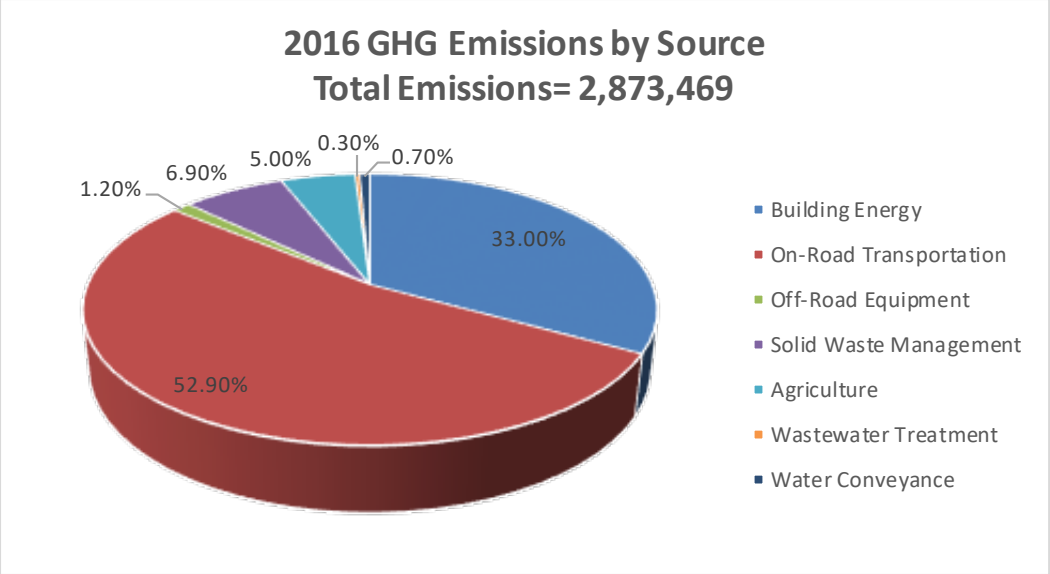


Figure ES-1: Community GHG Emissions by Sector for Years 2007 and 2016

S.2 Forecast and Target Setting

The next step after conducting the 2016 GHG inventory update was to estimate future emissions from different sectors in the County and to establish GHG reduction targets.

The County's future emissions were estimated using demographic indicators, such as households and jobs growth. Growth indicators used are shown by sector in Table ES-A.

Table ES-A: Growth Indicators for 2016, 2020 and 2030

Sector	Demographic Indicator	2016	2020	2030
Residential Energy	Households	97,066	99,533	105,700
Commercial/Industrial Energy	Jobs	58,795	60,736	65,587
N/A	Population	308,079	313,541	328,897
Solid Waste, Water, Wastewater, and Off-road Sources	Service Population (Population + Jobs)	366,874	374,277	394,484
Transportation	Annual VMT	3,335,448,372	3,402,207,845	3,569,106,527

Source: Southern California Association of Government (SCAG) Demographic Growth Projections., San Bernardino Transportation Analysis Model (SBTAM) annual VMT.
Not applicable (NA). Population data are shown for informational purposes but are not used for forecasting any sector.
VMT = vehicle miles traveled

Future emissions estimates also included reductions that would happen with implementation of legislation adopted at the State level. That is, some level of emission reduction is anticipated within the County as a result of policies implemented at the State level, including:

- Low Carbon Fuel Standards;
- Assembly Bill (AB) 1493 and Advanced Clean Cars;
- California Building Code Title 24; and
- Renewable Portfolio Standard.

The resulting projected emissions are considered an "adjusted" business-as-usual forecast. Table ES-B and ES-C show historic Business as Usual (BAU) emissions and Adjusted BAU (ABAU) forecasts.

Table ES-B: San Bernardino County Business as Usual (BAU) Emissions

Sector	2016 (MT CO_2e)	2020 (MT CO_2e)	Percent Change 2016–2020	2030 (MT CO_2e)	Percent Change 2016–2030
Building Energy	948,183	975,155	3%	1,043,581	10%
On-Road Vehicles	1,519,146	1,557,858	3%	1,641,251	8%
Off-Road Equipment	35,618	37,598	6%	44,682	25%
Agriculture	143,146	121,477	-15%	80,591	-44%
Solid Waste Management	197,260	200,758	2%	210,590	7%
Wastewater Treatment	9,651	9,823	3%	10,304	7%
Water Transport, Distribution and Treatment	20,465	20,827	2%	20,960	2%
Total	**2,873,469**	**2,923,496**	**2%**	**3,051,959**	**6%**

Source: Draft San Bernardino County Regional GHG Reduction Plan Update 2020
MT CO_2e = metric tons carbon dioxide equivalent

Table ES-C: San Bernardino County Adjusted Business as Usual (ABAU) Emissions

Sector	2016 (MT CO_2e)	2020 (MT CO_2e)	2020 Percent of Total	2030 (MT CO_2e)	2030 Percent of Total
Building Energy	948,183	975,155	33%	604,037	30%
On-Road Vehicles	1,519,146	1,557,858	53%	1,131,917	56%
Off-Road Equipment	35,618	37,598	1%	44,682	2%
Agriculture	143,146	121,477	4%	80,591	4%
Solid Waste Management	197,260	200,758	7%	114,572	6%
Wastewater Treatment	9,651	9,823	0%	10,304	1%
Water Transport, Distribution and Treatment	20,465	20,827	1%	20,960	1%
Total	**2,873,469**	**2,923,496**	**100%**	**2,007,063**	**100%**

Source: Draft San Bernardino County Regional GHG Reduction Plan Update 2019
MT CO_2e = metric tons carbon dioxide equivalent

Consistent with the State's adopted AB 32 GHG reduction target, the County has set a goal to reduce emissions to 1990 levels by 2020. This target was calculated as a 15 percent decrease from 2007 levels, as recommended in the AB 32 Scoping Plan. San Bernardino County achieved this 2020 GHG reduction target that was set in the GHGRP. This GHGRP Update presents a target for the year 2030, which is to reduce emissions to 40 percent below 2007 levels, as shown in Table ES-D. This goal would put the County on a path toward the State's long-term goal to achieve statewide carbon neutrality (zero net emissions) by 2045.

Table ES-D: Mass GHG Reduction Targets for Community Emissions

Strategy	Target
2020 Target	15% below 2007 levels
2020 Emissions Goal (MT CO_2e)	5,315,000
2030 Target	40% below 2020 levels
2030 Emissions Goal (MT CO_2e)	1,754,098

Source Draft San Bernardino County Regional GHG Reduction Plan Update 2021
MT CO_2e = metric tons of carbon dioxide equivalent

S.3 Reduction Measures

The County has demonstrated its commitment to conserve energy and reduce emissions through a variety of programs and policies. In addition to State measures, the County would implement the additional local reduction measures described in this report. The local reduction measures were developed collaboratively with the 24 cities within San Bernardino County through the San Bernardino Council of Governments (SBCOG) San Bernardino County Regional GHG Reduction Plan Update (Regional Plan). The numbering of the reduction goals corresponds to the goals chosen by the County within this regional framework. The reduction goals include energy efficiency, water conservation, alternative transportation, solid waste reduction, and clean energy. Table ES-E summarizes the reductions from measures that would be implemented to meet the Community GHG reduction goals for 2030.

Table ES-E: Summary of Community GHG Reduction Strategies and Emission Reductions

Local Measures	2030 Emission Reductions (MT CO_2e)
Energy	
Energy Goal 1: Energy Efficiency Programs for Existing Homes and Businesses	3,251
Energy Goal 2: Weatherizing Low-Income Homes	4,119
Energy Goal 3: Energy Efficiency Retrofits for Existing Commercial/Industrial Users	13,405
Energy-Goal 7: Solar Installation on Existing Homes	30,274
Energy-Goal 8: Solar Installation on Existing Commercial/Industrial Uses	88,198
Energy Goal 10: Urban Tree Planting for Shading and Energy Savings	27
Total:	**139,275**
On-Road Transportation	
On-Road Goal 3: Transportation Demand Management and Signal Synchronization	11,319
On-Road Goal 4: Expand Bike Routes	11,239
Total:	**22,559**
Off-Road Equipment	
Off-Road Goal 2: Idling Ordinance	457
Total:	**457**
Solid Waste Management	
Waste Goal 2: Waste Diversion and Reduction	72,474
Total:	**72,474**
Water Consumption	
Water Goal 3: Water-Efficient Landscaping Practices	2,973
Total:	**2,973**
GHG Performance Standard for New Development	
DRP-1: Development Review Process Setting Standards for New Development	16,889
TOTAL:	**254,625**

MT CO_2e = metric tons of carbon dioxide equivalent
Wastewater-3 is implemented through the Screening Tables and is quantified under the GHG Performance Standard.
Water-2 is implemented through the Screening Tables and is quantified under the GHG Performance Standard.

S.4 Implementation

Finally, the GHGRP in itself is not enough to meet the reduction goals without a commitment to implementation. The Implementation Chapter of the GHGRP Update identifies the process for implementing and monitoring the identified strategies. Figure ES-2 summarizes the five-step process.

Figure ES-2: Process of Implementing the Greenhouse Gas Reduction Plan Update

Through successful implementation of this GHGRP Update, the County will demonstrate the potential economic, social, and environmental benefits of reducing GHG emissions and providing environmental stewardship within the community.

1.0 Introduction

The County of San Bernardino is committed to planning sustainably for the future while ensuring a livable, equitable, and economically vibrant community. Planning sustainably includes acknowledging the local role in climate change and how the County can mitigate its greenhouse gas (GHG) emissions and prepare for (i.e., adapt to) anticipated climate-related changes. The County adopted its first Greenhouse Gas Reduction Plan (GHGRP) in September 2011. The GHGRP provided the GHG emissions inventory for the year 2007, and target for reducing GHG emissions 15 percent below 2007 levels by 2020. The County has implemented strategies to reduce its GHG emissions identified in the 2011 GHGRP, which has helped the County meet its 2020 GHG reduction targets. Since the adoption of County's GHGRP, the State has enacted new climate change regulations, most notably the Senate Bill (SB) 32, which provides statewide targets to reduce GHG emissions to 40 percent below 1990 levels by 2030. To ensure conformity with the latest State climate change regulations, the County is currently updating its 2011 GHGRP. This GHGRP Update serves as a comprehensive roadmap to outline strategies that the County will implement to continue achieving its GHG emissions reductions into the year 2030 and beyond, thereby ensuring sustainable and healthy growth.

1.1 Climate Change Science

Climate change is a term used to describe large-scale shifts in historically observed patterns in earth's climate system. Although the climate has historically responded to natural drivers, recent climate change has been unequivocally linked to increasing concentrations of GHGs in earth's atmosphere.

Gases that trap heat in the atmosphere are called GHGs because they transform the light of the sun into heat, similar to the glass walls of a greenhouse. Human-generated GHG emissions significantly contribute to the changes in the global climate, which have a number of physical and environmental effects. Effects associated with global climate change include sea level rise, an increase in the frequency and intensity of droughts, and increased temperature. Increased GHG emissions are largely the result of the increase in the combustion of fossil fuels.

The Intergovernmental Panel on Climate Change (IPCC)[1] assesses scientific, technical, and socioeconomic information relevant to the understanding of climate change, its potential impacts, and options for adaptation and mitigation. The IPCC identifies six key GHG compounds: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), perfluorocarbons (PFC), sulfur hexafluoride (SF_6), and hydrofluorocarbons (HFC). Each GHG has a different capacity to trap heat, and therefore, GHG emissions are generally reported in metric tons (MT) of carbon dioxide equivalent (CO_2e). Non-CO_2 emissions are converted to a CO_2e using each GHG's Global Warming Potential (GWP). IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of CO_2e, which compares the gas in question to that of the same mass of CO_2 (CO_2 has a GWP of 1 by definition). Common GHGs included in the GHGRP are CO_2, CH_4, and N_2O, which are the GHGs that most commonly result from human activities, and are detailed below.

[1] Intergovernmental Panel on Climate Change (IPCC) https://www.ipcc.ch/ (accessed on September 30, 2020).

Carbon Dioxide with a GWP of 1 is the most important anthropogenic GHG and accounts for more than 75 percent of all GHG emissions caused by humans. Its atmospheric lifetime of 50–200 years ensures that atmospheric concentrations of CO_2 will remain elevated for decades, even after mitigation efforts to reduce GHG concentrations are implemented. The primary sources of anthropogenic CO_2 in the atmosphere include the burning of fossil fuels (including motor vehicles), gas flaring, cement production, and land use changes (e.g., deforestation, oxidation of elemental carbon). Transportation, which primarily consists of on-road travel, is the single largest source of CO_2 in California. Electricity production, industrial, and residential sources also contribute to CO_2 emissions in California.[2] CO_2 can be removed from the atmosphere by photosynthetic organisms (e.g., plants and certain bacteria). Atmospheric CO_2 has increased from a preindustrial concentration of 280 parts per million (ppm) to approximately 411 ppm in 2020.[3]

Methane (CH_4), the main component of natural gas, is the second most abundant GHG and has a GWP of 25. Agriculture accounts for the majority of methane emissions in California, resulting primarily from livestock enteric fermentation and manure management. Industrial sources and landfills are also sources of CH_4. Other sources contribute only a small fraction to CH_4 emissions including residential, transportation, electricity generation, and commercial sources.[4]Certain land uses also function as a both a source and sink for CH_4. For example, the primary terrestrial source of CH_4 is wetlands, whereas undisturbed, aerobic soils act as a CH_4 sink (i.e., they remove CH_4 from the atmosphere). Atmospheric CH_4 has increased from a preindustrial concentration of 715 parts per billion (ppb) to 1,873 ppb in 2020.[5]

Nitrous Oxide (N_2O) is a powerful GHG, with a GWP of 298. In the United States, more than 70 percent of N_2O emissions are related to agricultural soil management practices, particularly fertilizer application. Agriculture accounts for the majority of N_2O emissions, primarily from fertilizer and manure added to soil. Commercial and residential use of nitrogen fertilizer on turf and transportation (through the combustion of fossil fuels) are also major sources of N_2O. Industrial sources of N_2O include solid waste and wastewater treatment, manufacturing, refining and other sources.[6] N_2O concentrations in the atmosphere have increased nearly 21 percent, from preindustrial levels of 270 ppb to 332.9 ppb in 2020.[7]

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2 California Air Resources Board, 2016 Carbon Dioxide (CO_2) https://www.arb.ca.gov/cc/inventory/background/co2.htm (accessed September 30, 2020)

3 National Oceanic and Atmospheric Administration (NOAA). Annual Greenhouse Gas Index, Recent Monthly Average CO2. Website: https://www.esrl.noaa.gov/gmd/ccgg/trends/ (accessed October 23, 2020).

4 California Air Resources Board, 2016 Methane (CH_4) https://www.arb.ca.gov/cc/inventory/background/ch4.htm (accessed October 23, 2020)

5 NOAA, Annual Greenhouse Gas Index, Recent Monthly Mean CH_4. Website: https://www.esrl.noaa.gov/gmd/ccgg/trends_ch4/ (accessed October 23, 2020).

6 California Air Resources Board, 2016 Nitrous Oxide (N_2O) https://www.arb.ca.gov/cc/inventory/background/n2o.htm (accessed September 30, 2020)

7 NOAA, Annual Greenhouse Gas Index, Graph of N_2O Concentration. Website: https://www.esrl.noaa.gov/gmd/aggi/aggi.fig2.png (accessed October 23, 2020).

1.2 Benefits of the GHGRP Update

This GHGRP Update, while addressing climate change, also benefits the County of San Bernardino in many direct and indirect ways.

- **Local Control:** This GHGRP Update allows the County to identify strategies to reduce resource consumption, costs, and GHG emissions in all economic sectors in a way that maintains local control over the issues and fits the character of the community. It also may position the County for funding to implement programs tied to climate goals.
- **Energy and Resource Efficiency:** This GHGRP Update identifies opportunities for the County to increase energy efficiency and lower GHG emissions in a manner that is most feasible in the community. Reducing energy consumption through increasing the efficiency of energy technologies, reducing energy use, and using alternative sustainable sources of energy are effective ways to reduce GHG emissions. Energy efficiency also provides opportunities for cost savings.
- **Improved Public Health:** Many of the GHG reduction strategies identified in this GHGRP Update also have local public health benefits. Benefits include local air quality improvements; creating a more active community through implementing sustainable living practices; and reducing health risks, such as heat stroke, elevated by climate change impacts such as increased extreme heat days.
- **Demonstrating Consistency with State GHG Reduction Goals:** The GHGRP Update may be used as GHG mitigation in the Countywide Plan, which is an update of the County's General Plan to demonstrate that the County's GHG reduction targets are aligned with State goals for reducing GHG emissions to a level less than cumulatively considerable.

1.3 Regulatory Setting

In an effort to stabilize GHG emissions and to reduce impacts associated with climate change, international agreements, as well as federal and State actions were implemented beginning as early as 1988. The government agencies discussed below work jointly, as well as individually, to address climate change and GHG emissions through legislation, regulations, planning, policy-making, education, and a variety of programs. The policies and regulations provide important policy drivers and context for the County's GHGRP Update.

1.3.1 Federal

1.3.1.1 Clean Air Act

In 2007, through *Massachusetts v. Environmental Protection Agency* (Docket No. 05–1120), the United States Supreme Court held that the United States Environmental Protection Agency (EPA) has authority to regulate GHGs. As such, the United States Supreme Court ruled that the EPA should be required to regulate carbon dioxide and other GHGs as pollutants under Section 202(a)(1) of the Federal Clean Air Act.

1.3.2 State

1.3.2.1 California Air Resources Board Standards and Programs

The California Air Resources Board (CARB), a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and State air pollution control and climate change programs within California. In this capacity, CARB conducts research, sets State ambient air quality standards (California Ambient Air Quality Standards or CAAQS), compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products, and various types of commercial equipment.

1.3.2.2 Executive Order S-3-05

On June 1, 2005, California Governor Arnold Schwarzenegger announced through Executive Order S-3-05, the following GHG emissions targets:

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

Executive Order S-3-05 also laid out responsibilities among State agencies for implementation and for reporting on progress toward the targets.

1.3.2.3 Executive Order B-30-15

On April 29, 2015, California Governor Jerry Brown announced through Executive Order B-30-15, the following GHG emissions target:

- By 2030, California shall reduce GHG emissions to 40 percent below 1990 levels.

The emission reduction target of 40 percent below 1990 levels by 2030 is an interim-year goal to make it possible to reach the ultimate goal of reducing emissions 80 percent under 1990 levels by 2050. The order directs the CARB to provide a plan with specific regulations to reduce statewide sources of GHG emissions. The Executive Order does not include a specific guideline for local governments.

1.3.2.4 Senate Bill 32

In 2016, Governor Brown signed Senate Bill (SB) 32 into law, which established a new reduction target. SB 32 codifies Executive Order B-30-15's year 2030 goal by requiring the State Board to ensure that statewide GHG emissions be reduced to 40 percent below 1990 levels by 2030. The new 2030 target places California on a trajectory toward meeting its long term-goal, which is to bring emissions down to 80 percent below 1990 levels by 2050.

1.3.2.5 Assembly Bill 32, the California Global Warming Solutions Act of 2006

AB 32 requires CARB to reduce statewide GHG emissions to 1990 level by 2020. As part of this legislation, CARB was required to prepare a "Scoping Plan" that demonstrates how the State will

achieve this goal. The Scoping Plan was adopted in 2011 and in it, local governments were described as "essential partners" in meeting the statewide goal, recommending a GHG reduction level 15 percent below 2005–2008 levels, depending on when a full emissions inventory is available, by 2020.

CARB released the 2017 Scoping Plan Update on January 20, 2017. The 2017 Scoping Plan Update provides strategies for achieving the 2030 target established by Executive Order B-30-15 and codified in SB 32 (40 percent below 1990 levels by 2030). The 2017 Scoping Plan Update recommends local plan level GHG emissions reduction goals. CARB recommends that local governments aim to achieve emissions of no more than 6 metric tons (MT) of CO_2e per capita by 2030 and no more than 2 MT CO_2e per capita by 2050.

1.3.2.6 Executive Order B-55-18

On September 12, 2018, California Governor Jerry Brown announced, through Executive Order B-55-18, the following GHG emissions target:

- By 2045, California shall achieve statewide net carbon neutrality.

The emission reduction target of net carbon neutrality is a long-term goal. The order includes specific CARB actions including setting a goal of five million zero emission vehicles and doubling the reduction of carbon fuels by 2030 and developing a forest carbon plan with specific regulations to reduce statewide sources of GHG emissions toward carbon neutrality. The Executive Order does not include a specific guideline for local governments.

1.3.2.7 Assembly Bill 1493, Clean Car Standards

Also known as "Pavley I," Assembly Bill (AB) 1493 standards were the nation's first GHG standards for automobiles. AB 1493 requires CARB to adopt vehicle standards that will lower GHG emissions from new light-duty autos to the maximum extent feasible. In January 2012, CARB adopted the Advanced Clean Cars Program to achieve additional GHG emission reductions for passenger vehicles for model years 2017–2025. The program includes low-emission vehicle regulations and zero-emission vehicle regulations. Together, the two standards are expected to increase average fuel economy to roughly 43 miles per gallon by 2020 (and more for years beyond 2020).

1.3.2.8 Assembly Bill 341 (Commercial Recycling)

AB 341 sets a statewide goal of 75 percent recycling, composting, or source reduction of solid waste by the year 2020. As required by AB 341, the California Department of Resources Recycling and Recovery (CalRecycle) adopted the Mandatory Commercial Recycling Regulation on January 17, 2012. The regulation was approved by the Office of Administrative Law on May 7, 2012. It became effective immediately and clarifies the responsibilities in implementing mandatory commercial recycling. The Mandatory Commercial Recycling Regulation focuses on increased commercial waste diversion as a method to reduce GHG emissions. The regulation is designed to achieve a reduction in GHG emissions of 5 million MT of CO_2, which equates to roughly an additional 2 to 3 MT of currently disposed commercial solid waste being recycled by 2020 and thereafter.

1.3.2.9 Senate Bill 97

SB 97, enacted in 2007, amends the CEQA statute to clearly establish that GHG emissions and the effects of GHG emissions are appropriate subjects for CEQA analysis. The legislation directed the California Office of Planning and Research to develop draft *CEQA Guidelines* "for the mitigation of GHG emissions or the effects of GHG emissions" and directed the Resources Agency to certify and adopt the *State CEQA Guidelines*. *CEQA Guidelines* Section 15183.5, Tiering and Streamlining the Analysis of GHG Emissions, was added as part of the *CEQA Guidelines* amendments that became effective in 2010 and describes the criteria needed in a GHG reduction plan that would allow for the tiering and streamlining of CEQA analysis for development projects.

1.3.2.10 Executive Order S-1-07, Low Carbon Fuel Standard

California Executive Order S-01-07 mandates (1) that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020, and (2) that a low carbon fuel standard (LCFS) for transportation fuels be established in California. CARB developed the LCFS regulation pursuant to the authority under AB 32 and adopted it in 2009.

1.3.2.11 Executive Order S-13-08, The Climate Adaptation and Sea Level Rise Planning Directive

Executive Order S-13-08 provides clear direction for how the State should plan for future climate impacts. Executive Order S-13-08 calls for the implementation of four key actions to reduce the vulnerability of California to climate change:

- Initiate California's first statewide Climate Adaptation Strategy that will assess the State's expected climate change impacts, identify where California is most vulnerable, and recommend climate adaptation policies.
- Request that the National Academy of Sciences establish an expert panel to report on sea level rise impacts in California in order to inform State planning and development efforts.
- Issue interim guidance to State agencies for how to plan for sea level rise in designated coastal and floodplain areas for new and existing projects.
- Initiate studies on critical infrastructure and land-use policies vulnerable to sea level rise.

1.3.2.12 California Code of Regulations Title 24, Part 6

California Code of Regulations (CCR) Title 24, Part 6 (California's Energy Efficiency Standards for Residential and Nonresidential Buildings) (Title 24), was established in 1978 to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. Although it was not originally intended to reduce GHG emissions, electricity production by fossil fuels and natural gas use result in GHG emissions and energy-efficient buildings require less electricity and natural gas. Therefore, increased energy efficiency results in decreased GHG emissions.

The California Energy Commission (CEC) adopted 2008 Standards on April 23, 2008, in response to AB 32. The Standards were adopted to provide California with an adequate, reasonably priced, and

environmentally sound supply of energy; to pursue California energy policy, which states that energy efficiency is the resource of first choice for meeting California's energy needs; to meet the West Coast Governors' Global Warming Initiative commitment to include aggressive energy efficiency measures into updates of State building codes every three years; and to meet the Executive Order in the Green Building Initiative to improve the energy efficiency of nonresidential buildings through aggressive standards. The latest update of CCR Title 24, Part 6 went into effect July 1, 2014, which significantly increases the energy efficiency of new residential buildings. The 2019 Title 24 standards, which became effective on January 1, 2020, are estimated to result in new buildings that use 7 percent less energy for lighting, heating, cooling, ventilation, and water heating than the previous 2016 Standards. The 2019 updates to Title 24 are focused on moving closer to zero net energy (ZNE) homes by increasing energy efficiency and requiring solar photovoltaic (PV) systems for new homes. The 2019 Title 24 standards also encourage demand responsive technologies including battery storage and heat pump water heaters and improving buildings' thermal envelopes through high performance attics, walls, and windows to improve comfort and energy savings.

1.3.2.13 Senate Bill 375, Sustainable Communities Strategy

SB 375 provides for a new planning process that coordinates land use planning, regional transportation plans, and funding priorities to help California meet the GHG reduction goals established in AB 32. SB 375 requires regional transportation plans, developed by metropolitan planning organizations to incorporate a sustainable communities strategy in their regional transportation plans. The goal of the sustainable communities strategy is to reduce regional vehicle miles traveled (VMT) through land use planning and consequent transportation patterns. SB 375 also includes provisions for streamlined CEQA review for some infill projects such as transit-oriented development.

1.3.2.14 CALGreen Building Code

CCR Title 24, Part 11 (California's Green Building Standard Code [CALGreen]), was adopted in 2010 and went into effect January 1, 2011. CALGreen is the first statewide mandatory green building code and significantly raises the minimum environmental standards for construction of new buildings in California. The mandatory provisions in CALGreen will reduce the use of volatile organic compound-emitting materials, will strengthen water conservation, and will require construction waste recycling.

1.3.2.15 Renewable Portfolio Standard

The Renewable Portfolio Standard requires energy providers to derive 33 percent of their electricity from qualified renewable sources by 2020. In 2018, the State Legislature passed and Governor Jerry Brown signed SB 100, which requires energy providers to derive 60 percent of their electricity from qualified renewable sources by 2030, and 100 percent by 2045. The Renewable Portfolio Standard is anticipated to lower emission factors (i.e., fewer GHG emissions per kilowatt-hour used) from utilities across the State, including Southern California Edison (SCE).

1.3.2.16 Senate Bill 100 California Renewables Portfolio Standard Program: Emissions of Greenhouse Gases

SB 100 established a landmark policy requiring renewable energy and zero-carbon resources supply 100 percent of electric retail sales to end-use customers by 2045. It requires the CEC, California Public Utilities Commission (CPUC), and CARB to prepare a report.

1.3.2.17 Senate Bill 379 Land Use: General Plan: Safety Element

SB 379 requires all cities and counties to include climate adaptation and resiliency strategies in the safety elements of their general plans upon the next revision beginning January 1, 2017. The bill requires the climate adaptation update to include a set of goals, policies, and objectives for their communities based on the vulnerability assessment, as well as implementation measures, including the conservation and implementation of natural infrastructure that may be used in adaptation projects. Specifically, the bill requires that upon the next revision of a general plan or local hazard mitigation plan, the safety element is to be updated as necessary to address climate adaptation and resiliency strategies applicable to the city or county.

1.3.2.18 Senate Bill 350 Clean Energy and Pollution Reduction Act

SB 350 requires the State to double statewide energy efficiency savings in electricity and natural gas end uses by 2030. The CEC, working with State agencies, including the CPUC, CARB, California Independent System Operator, large utilities, and electrical corporations, is the responsible entity to implement this measure.

1.3.2.19 Assembly Bill 1470 (Huffman)/Assembly Bill 797 Solar Water Heating

AB 1470 created a $25 million per year, 10-year incentive program to encourage the installation of 200,000 solar water heating systems that offset natural gas use in homes and businesses throughout the state. AB 797 extended the operation of the program through July 31, 2020, reserving 50 percent of the total program budget for the installation of solar thermal systems in low-income residential housing or in buildings in disadvantaged communities and expanding the program to homeowners that lack access to natural gas among other things.

1.4 County Setting

San Bernardino County is included in the Riverside-San Bernardino-Ontario metropolitan statistical area, as well as the Los Angeles–Long Beach combined statistical area. San Bernardino County is the largest county in California. The County covers approximately 20,105 square miles in Southern California. The unincorporated area of San Bernardino County has approximately 311,659 residents (SCAG 2018). The population is diverse in age. The ethnicity is approximately 45.5 percent White, 44.8 percent Hispanic, 4.2 percent African American, 2.6 percent Asian, 0.4 percent American Indian, and 2.5 percent other ethnicities. The unincorporated County has approximately 134,458, housing units, including single-family, multifamily units, mobile home, and other units.

1.5 Organization of the GHGRP Update

The remainder of this GHGRP Update includes four additional chapters:

- **Chapter 2.0** summarizes the County's historic and future GHG emissions and the reduction targets the County has established.
- **Chapter 3.0** details the local reduction strategies that will be implemented at the community level to meet the reduction targets identified in Chapter 2.0. Measures also include the local co-benefits of the measures.
- **Chapter 4.0** includes the implementation of the measures, potential funding sources, and how the GHGRP Update will be monitored and updated over time. It also summarizes the outreach and CEQA review process conducted as part of this GHGRP Update.
- **Chapter 5.0** comprises a list of references cited.

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2.0 GHG Emissions Inventory, Forecast, and Targets

2.1 GHG Emissions Inventory

GHG emissions inventories are the foundation of planning for future reductions. Establishing an inventory of emissions helps to identify and categorize the major sources of emissions produced over a single calendar year. A community inventory includes GHG emissions that result from the activities of the County's residents and businesses. The inventories identify the major sources of GHGs emissions caused by activities in sectors that are specific to community activities.

The 2011 GHGRP included a community inventory for the year 2007. The 2007 inventory is considered the baseline year. A baseline year is established as a starting point against which other inventories may be compared and targets may be set and is generally the earliest year with a full emissions inventory. Table A provides the sectors evaluated in the County's 2007 baseline inventory.

Table A: Community Sectors Evaluated in the 2007 Baseline Inventory

Community Sectors
Building Energy
On-Road Transportation
Off-Road Equipment
Solid Waste Management
Agriculture
Wastewater Treatment
Water Conveyance

2.1.1 2016 Greenhouse Gas Emissions Summary

The County's 2016 GHG Inventory update, presented in Table B and Figure 1, shows the contribution of different economic sectors toward GHG emissions. The on-road transportation sector is the largest contributor to the GHG emissions (53 percent of total emissions) followed by building energy (33 percent of total emissions). The solid waste, agriculture, water, off-road transportation, and wastewater sectors contribute to the rest of the emissions.

Table B: Communitywide GHG Emissions by Sector for 2016

Sector	2016 (MT CO_2e)	Percent of Total
On-road Transportation	1,519,146	53.0
Off road Equipment	35,618	1.2
Building Energy	948,183	33.0
Agriculture	143,146	5.0
Solid Waste Management	197,260	7.0
Wastewater Treatment	9,651	0.3
Water Transport, Distribution, and Treatment	20,465	0.7
Total	**2,873,469**	100

Source: Draft San Bernardino County Regional GHG Reduction Plan Update 2020
MT CO_2e = metric tons of carbon dioxide equivalent

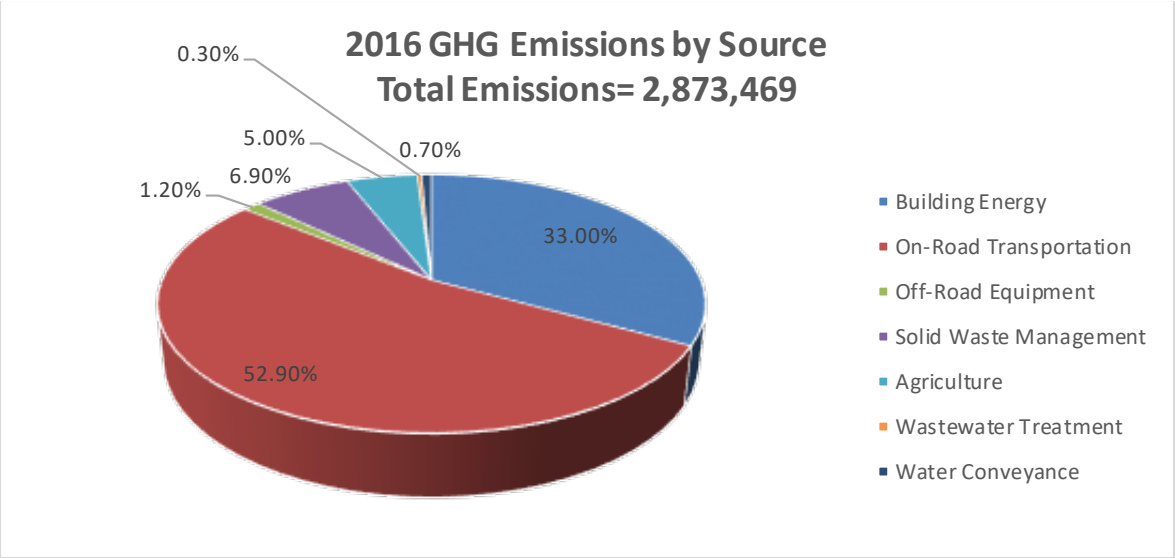
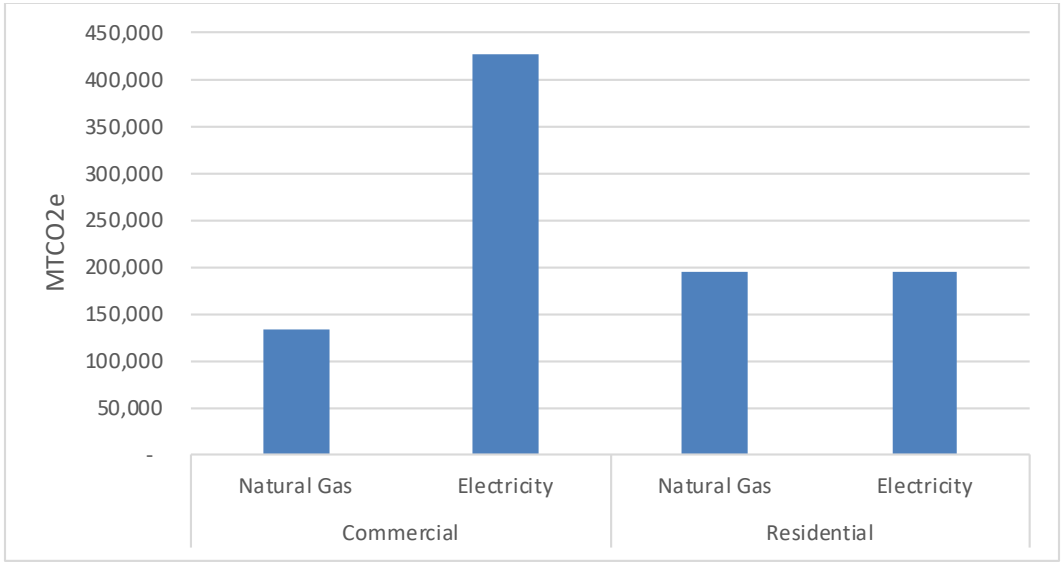


Figure 1: Communitywide GHG Emissions by Sector For 2016

Energy is an area over which local agencies often have the greatest opportunities for effecting change. Therefore, electricity and natural gas use remains a key area for reduction opportunities. Emissions from commercial and residential sectors energy use account for approximately 33 percent of total community emissions in 2016. Figure 2 shows the electricity and natural gas emissions from 2016 for the building energy sector. Table C includes the activity data and GHG emissions for 2016.



Source: GHG Inventory Update for San Bernardino County Regional GHG Reduction Plan Update 2020
MT CO_2e = metric tons of carbon dioxide equivalent

Figure 2: GHG Emissions for Community Electricity and Natural Gas, By Sector

Table C: Activity Data and GHG Emissions for Energy in 2016

Sector	2016	
	Activity (kWh or therms)	Emissions (MT CO_2e)
Commercial/Industrial		
Electricity	1,773,301,839	425,423
Natural Gas	24,954,644	132,470
Residential		
Electricity	812,146,377	194,972
Natural Gas	36,002,776	195,318
Total	**2,646,405,636**	**948,183**

Source: Draft San Bernardino County Regional GHG Reduction Plan Update 2020
kWh = kilowatt hours
MT CO_2e = metric tons of carbon dioxide equivalent

2.1.2 Inventory Forecast

Forecasting future GHG emissions allows the County to understand how emissions are expected to increase or decrease in the future. Major changes in growth or land uses may affect how to best plan to reduce emissions in the future. GHG emissions are forecast using two scenarios: a Business-as-Usual (BAU) and an Adjusted BAU (ABAU) scenario. The BAU scenario describes emissions based on projected growth in population and employment and does not consider policies that would reduce emissions in the future (that is, the policies and related efficiency levels in place in 2016 are assumed to remain constant through 2045). In general, the County is expecting modest growth to 2045 as population, housing, and jobs are all expected to increase. Table D shows the growth projections used to develop the emissions forecasts.

Table D: Growth Indicators for 2016, 2020, 2030

Sector	Demographic Indicator	2016	2020	2030
Residential Energy	Households	97,066	99,533	105,700
Commercial/Industrial Energy	Jobs	58,795	60,736	65,587
N/A	Population	308,079	313,541	328,897
Solid Waste, Water, Wastewater, and Off-road Sources	Service Population (Population + Jobs)	366,874	374,277	394,484
Transportation	VMT	3,335,448,372	3,402,207,845	3,569,106,527

Source: SCAG Demographic Growth Projections. 2019, SBTAM VMT forecasts
Not applicable (NA). Population data are shown for informational purposes but are not used for forecasting any sector.
VMT = vehicle miles traveled

The Adjusted BAU scenario describes emissions based on projected growth *and* considers policies that will achieve GHG reductions in the future. Policies, described in the Regulatory Setting section of Chapter 1.0, include State-adopted or approved legislation that will affect future emissions. By evaluating the two scenarios, the County can evaluate the effect that existing policies may have on future emissions and determine which local measures would provide additional reductions.

The sections below describe BAU and ABAU forecasts. Two future years are forecast for each scenario: 2020 and 2030. The 2020 and 2030 forecast years are consistent with the goals identified in AB 32, SB 32, and the corresponding Scoping Plan, which identifies statewide GHG reduction targets by 2020 and 2030.

2.1.2.1 Business-as-Usual Forecasts

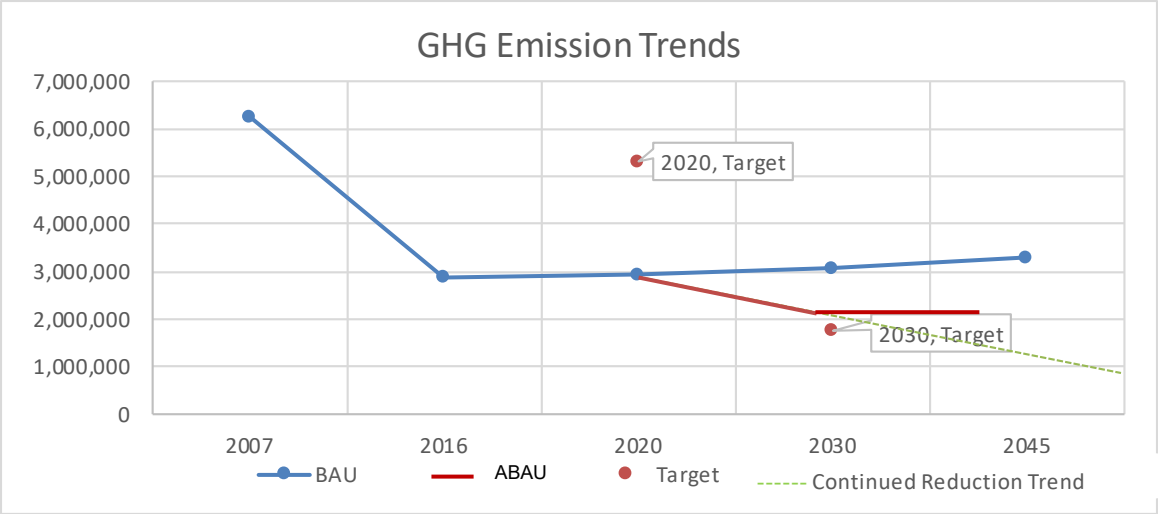
The County's BAU emissions in 2020 are estimated to be 2,923,496 MT CO_2e. The 2030 BAU emissions are estimated to be 3,051,959 MT CO_2e. Table E shows the BAU emissions for different sectors. The agriculture sector shows a decline in emissions from 2016–2030 due to decline in agricultural activities in the County over time.

Table E: San Bernardino County Business as Usual (BAU) Forecast Emissions

Sector	2016 (MT CO_2e)	2020 (MT CO_2e)	Percent Change 2016–2020	2030 (MT CO_2e)	Percent Change 2016–2030
Building Energy	948,183	975,155	3%	1,043,581	10%
On-Road Vehicles	1,519,146	1,557,858	3%	1,641,251	8%
Off-Road Equipment	35,618	37,598	6%	44,682	25%
Agriculture	143,146	121,477	-15%	80,591	-44%
Solid Waste Management	197,260	200,758	2%	210,590	7%
Wastewater Treatment	9,651	9,823	3%	10,304	7%
Water Transport, Distribution and Treatment	20,465	20,827	2%	20,960	2%
Total	**2,873,469**	**2,923,496**	**2%**	**3,051,959**	**6%**

Source: Draft San Bernardino County Regional GHG Reduction Plan Update 2020
MT CO_2e = metric tons carbon dioxide equivalent

It is important to note a downward trend in County's GHG emissions from the 2007 baseline inventory to the 2016 inventory update (Figure 3). The County's total GHG emissions in 2007 were 6,253,063 MT CO_2e and in 2016 the emissions were 2,873,469 MT CO_2e. The blue line in Figure 3, which represents the 2007 to 2016 emissions trend and BAU forecasts, shows that there was a downward trend in GHG emissions between the years 2007 and 2016. By the year 2020, with no additional measures or strategies to reduce GHG emissions in place, BAU starts to curve up and gradually continues to go up through the year 2045. The green line in Figure 3 represents a "continued reduction trend," which indicates the continued downward trend in the County's emissions post-year 2016 that could be achieved by implementing additional GHG reduction strategies and measures identified in this GHGRP Update to limit the BAU emissions trend. This trend also emphasizes the need to implement strategies and measures to adhere to the continued reduction trend in order to help the State achieve the climate change reduction goals and also make the County of San Bernardino sustainable and healthy.



Source: GHG Inventory Update for San Bernardino County Regional GHG Reduction Plan Update 2020

Figure 3: GHG Emissions Trends

2.1.2.2 Adjusted Business-as-Usual Forecasts

The 2017 Scoping Plan Update provides the State's roadmap in achieving a statewide reduction of 40 percent below 1990 levels of emissions by 2030. Future emissions estimates within the County of San Bernardino also included reductions that would occur with implementation of the 2017 Scoping Plan Update at the State level. A great level of emission reduction is anticipated within the County as a result of the 2017 Scoping Plan Update policies and legislation implemented at the State level.

The resulting projected emissions are considered an "adjusted" business-as-usual (Adjusted BAU) forecast. The County's ABAU emissions are estimated to be 2,007,063 MT CO_2e in 2030 (Figure 3). This change represents an approximately 30.2 percent reduction from 2016 by 2030. Table F shows the change in emissions from 2016 to 2030 under the ABAU scenario.

Table F: San Bernardino County Adjusted BAU (ABAU) Forecast Emissions

Sector	2016 (MT CO_2e)	2020 (MT CO_2e)	2020 Percent of Total	2030 (MT CO_2e)	2030 Percent of Total
Building Energy	948,183	975,155	33%	604,037	30%
On-Road Vehicles	1,519,146	1,557,858	53%	1,131,917	56%
Off-Road Equipment	35,618	37,598	1%	44,682	2%
Agriculture	143,146	121,477	4%	80,591	4%
Solid Waste Management	197,260	200,758	7%	114,572	6%
Wastewater Treatment	9,651	9,823	0%	10,304	1%
Water Transport, Distribution and Treatment	20,465	20,827	1%	20,960	1%
Total	**2,873,469**	**2,923,496**	**100%**	**2,007,063**	**100%**

Source: Draft San Bernardino County Regional GHG Reduction Plan Update 2019
MT CO_2e = metric tons carbon dioxide equivalent

2.1.3 Reduction Targets

The State has set goals for reducing GHG emissions by 2020, 2030, and 2045 through AB 32, SB 32, SB-100, EO-B-55-18.The State has also provided guidance to local jurisdictions as "essential partners" in achieving the State's goals by identifying a 2020 and 2030 recommended reduction goal. That goal, stated in the AB 32 Scoping Plan, was for local governments to achieve a 15 percent reduction below 2005 to 2008 levels by 2020, which aligns with the State's goal of not exceeding 1990 emissions levels by 2020. This target for San Bernardino County was calculated as a 15 percent decrease from 2008 levels by 2020.

The State passed an executive order (EO-B-55-18), which mandates statewide net carbon neutrality by 2045. In the interim, the State has also provided a target of 40 percent below 2020 levels by 2030. The County has identified this target as a 40 percent below 2020 emission levels by 2030 (Table G).

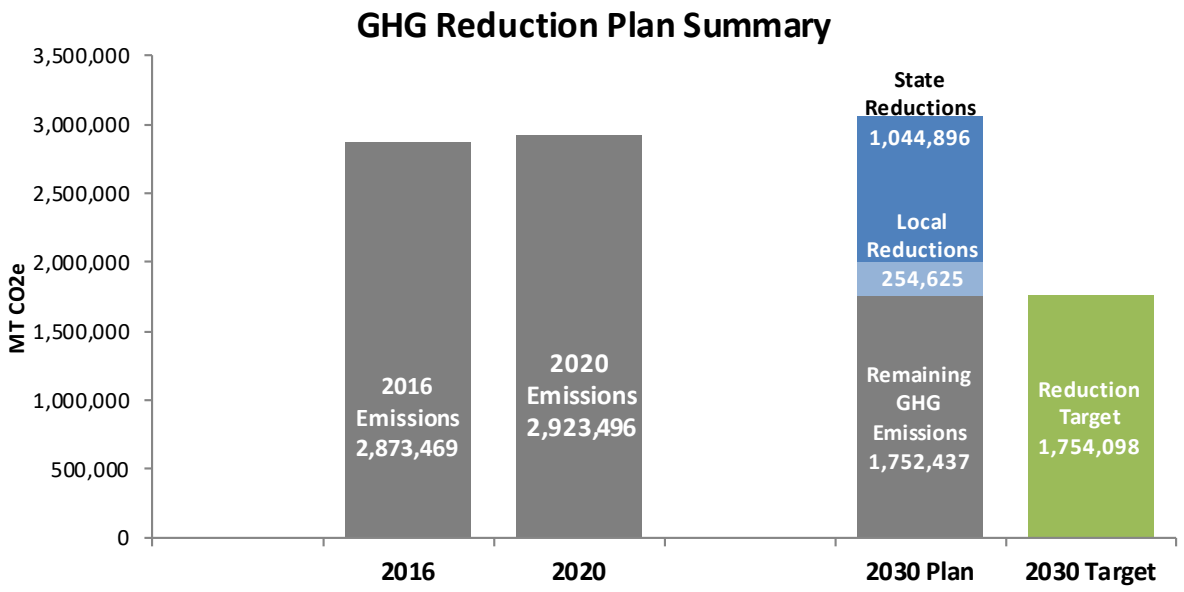
It is clear that the issue of climate change will not end in 2030 and continued reduction goals should be implemented to keep the State on a path toward the 2045 goal. The 2030 target will put the County on a path toward the State's long-term goal to achieve zero net carbon emissions by 2045.

Table G: San Bernardino County GHG Reduction Targets for Countywide Emissions

Strategy	Target
2020 Target	15 percent below 2007 baseline levels
2020 Emissions Goal (MT CO_2e)	5,315,000
2030 Target	40 percent below 2020 BAU levels
2030 Emissions Goal (MT CO_2e)	1,754,098

MT CO_2e = Metric tons of carbon dioxide equivalent

As shown in Figure 4, in 2030, San Bernardino County would need to reduce its emissions to 1,754,098 MT CO_2e to meet the GHG reduction target of 40 percent below 2020 levels. The County will meet and exceed the 2030 goal with State measures, as shown in Figure 4. However, the County has committed to additional local measures designed to reduce GHG emissions through its own operations; to save money over time for local building owners and managers by reducing energy use; and to support the County's healthy community efforts by improving conditions for pedestrians and cyclists.



Source: Draft San Bernardino County Regional GHG Reduction Plan Update 2021
MT CO_2e = metric tons of carbon dioxide equivalent

Figure 4: San Bernardino County Emissions Forecast Compared to the Reduction Target

The State measures will provide significant reductions of up to 1,044,896 MT CO_2e (Table H). An additional reduction of nearly 254,625 MT CO_2e will be achieved through local measures as described in Chapter 3.0 of this GHGRP Update (Figure 4).

Table H: State Measure Reductions

Sector	2030 (MT CO_2e)
Energy: SB 100 SB 100 Obligates eligible renewable energy resources and zero-carbon resources to supply 100 percent of retails sales of electricity to California end-use customers by 2045	303,807
Energy: SB 350 (Clean Energy and Pollution reduction Act) SB 350 requires the state to double statewide energy efficiency savings in electricity and natural gas end uses by 2030	132,965
Energy: Title 24 Standards for Non-Residential and Residential Buildings Requires that building shells and building components be designed to conserve energy and water. Mandatory and voluntary measures became effective on January 1, 2020, and the guidelines are periodically updated.	1,302
Energy: Solar Water Heater (AB 797 Solar Thermal Systems) AB 1470 created a $25 million per year, 10-year incentive program to encourage the installation of 200,000 solar water heating systems that offset natural gas use in homes and businesses throughout the state. AB 797 extended the operation of the program for two additional years to 2020, reserving 50% of the total program budget for the installation of solar thermal systems in low-income residential housing or in buildings in disadvantaged communities.	213
Energy: Increased Combined Heat and Power (CHP) The CPUC administers a Qualifying Facilities and Combined Heat and Power Program. Qualifying facilities are co-generation (CHP) facilities that meet certain size and efficiency criteria.	1,257

Table H: State Measure Reductions

Sector	2030 (MT CO_2e)
On Road: Fuel Efficiency Measures. Such as Low Carbon Fuel Standards	509,334
Waste: SB 1383 Short-Lived Climate Pollutant (SLCP) Reduction Strategy SB 1383 establishes a 50% statewide reduction target for organic waste by 2020, using 2014 levels as a standard. By 2025, the state aims for a 75% reduction target.	96,018
TOTAL	**1,044,896**

Source: Draft San Bernardino County Regional GHG Reduction Plan Update 2020
SB= Senate Bill
MT CO_2e= Metric tons of carbon dioxide equivalent

3.0 GHG Reduction Measures

The GHGRP Update is built on a combination of State, County, and local reduction measures to achieve the County's GHG reduction goal of 40 percent below 2020 levels by 2030. This chapter details the regional and local community measures that will result in additional GHG reductions beyond those achieved by implementing State measures.

3.1 Existing Regional GHG Reduction Measures

The Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) is the cornerstone of transportation planning and programming activities in the SCAG region. The San Bernardino County Transportation Authority (SBCTA) is actively engaged in development of the RTP/SCS through various policy and technical advisory committees maintained by SCAG, and through the coordination and preparation of local and sub-regional input to the RTP/SCS. All of the key features of the RTP/SCS support the County's efforts to reduce greenhouse gas emissions at the local level, providing the regional roadway, transit, bicycle, and pedestrian framework with which the County's local network interacts. These efforts are documented in the policies of the County's recently adopted Countywide Plan – Policy Plan, which is the updated General Plan.

This section summarizes the proposed local reduction measures to be implemented by the County that would further reduce its community GHG emissions beyond regional and State measures. The local reduction measures included in this GHGRP Update are in the following areas: Building Energy, On-Road Transportation, Solid Waste Management, Wastewater Management, Water Conveyance, and New Development. Many local GHG reduction measures described below are a continuation of the County's local GHG reduction measures from the 2011 GHGRP.

The San Bernardino County local GHG reduction strategy is organized by emission categories (energy, transportation, etc.) and includes reduction goals and measures. The reduction goals were developed collaboratively with the 24 cities within San Bernardino County through the San Bernardino Council of Governments (SBCOG) San Bernardino County Regional GHG Reduction Plan Update (Regional Plan). The numbering of the reduction goals corresponds to the goals chosen by the County within this regional framework. The goals describe the overarching objective related to reducing energy consumption, such as by reducing urban heat island effect, as well as reducing VMT and solid waste generation. Within each goal, one or more measures are presented indicating the County's commitment toward meeting the goal. Within each measure, one or more actions are presented that indicate the steps the County will take in achieving the measure. Each measure includes the GHG reduction potential in 2030. Actions are designed to include the steps needed to implement the measure. Actions include a performance indicator, implementation timeframe, and department or agency responsible for implementation. In addition, this Plan will result in local benefits while reducing GHG emissions, called co-benefits. Co-benefits range from providing improved air quality and mobility to increased awareness about sustainability. Co-benefits are identified with each measure by an icon.

County agencies, departments, and divisions included in GHG reduction measures include: Land Use Services (Planning and Building & Safety), Public Works (Transportation Infrastructure), Community Development and Housing,

Local Co-Benefits		
Increased energy efficiency/reduced demand	Water conservation	Improved public health
Improved air quality	Increased renewable energy	Increased non-motorized transportation
Sustainability education and awareness	Enhanced land use/ community design	Increased resiliency

3.2 Energy

3.2.1 Energy Efficiency in Existing Buildings 1: Education and Outreach

Energy Goal 1: Improve the efficiency of existing buildings by focusing on increasing community awareness and education about energy efficiency; and promoting emissions reduction and existing incentive programs.

Measure Energy-1: Increase Energy Efficiency in Existing Buildings: Outreach and Incentives

Co-Benefits

County Implementation Actions:
1. Review the energy efficiency programs for existing buildings offered by SCE in the unincorporated parts of the County.
2. Create outreach materials highlighting the efficiency programs that are most relevant to County residents.
3. Track the energy efficiency programs to understand how they change and identify new programs.

County Implementation Actions:		
Target Year	**Performance Metric**	**GHG Reduction Potential (MT CO_2e)**
2030	Track the building permits in the building permit systems reductions in GHGs related to existing residential permits remodels, HVAC systems change outs and re-roofing residential	3,251

The State of California, Southern California Edison (SCE), and Southern California Gas Company (SCG) have a number of incentive programs that are designed, tested, and continuously improved to achieve energy savings in existing buildings. The County will promote these successful programs by distributing educational materials and information on energy efficiency programs offered by the State, utility companies, and other entities to homeowners and nonresidential owners. The information should include available incentive programs, technical assistance, and financial resources such as free energy audits and energy efficiency rebates. The programs fall into several categories, which are described below, along with examples from current offerings by relevant agencies.

Category	Current Program Examples
Home retrofits/Conservation (single-family)	Home Energy Upgrade Financing program (SCE) Energy Upgrade California (SCE) High Efficiency Hot Water Distribution Program (Solar) (SGC) PACE Financing Program (SBCOG)
Home retrofits/Conservation (multifamily)	Energy Efficiency Benchmarking (SGC) Multifamily Direct Installation Programs (SGC) PACE Financing Program (SBCOG)
Home retrofits/Conservation (mobile home)	Comprehensive Mobile Home Program (SGC) PACE Financing Program (SBCOG)
Commercial/Industrial (building retrofits/conservation)	Energy Challenger (SCE) Energy Efficient Express Solutions (SCE) Energy Efficiency Customized Solutions (SGC) Small Industrial Facility Upgrades (SGC) Solar Rooftop Program (SCE) Commercial Conservation Rebates (IEUA) PACE Financing Program (SBCOG)

Sources: *CEC, SCE SGC, and IEUA* 2020
SCE = Southern California Edison
SGC = Southern California Gas Company
IEUA = Inland Empire Utilities Agency
SBCOG = San Bernardino Council of Governments

3.2.2 Energy Efficiency for Existing Buildings 2: Promote Energy Efficiency in Low-Income Residences

Energy Goal 2: Partner with community services agencies, utilities, nonprofits, and other entities to incentivize weatherization program for low-income residents, with a goal to weatherize 60 percent of low-income homes by 2030.

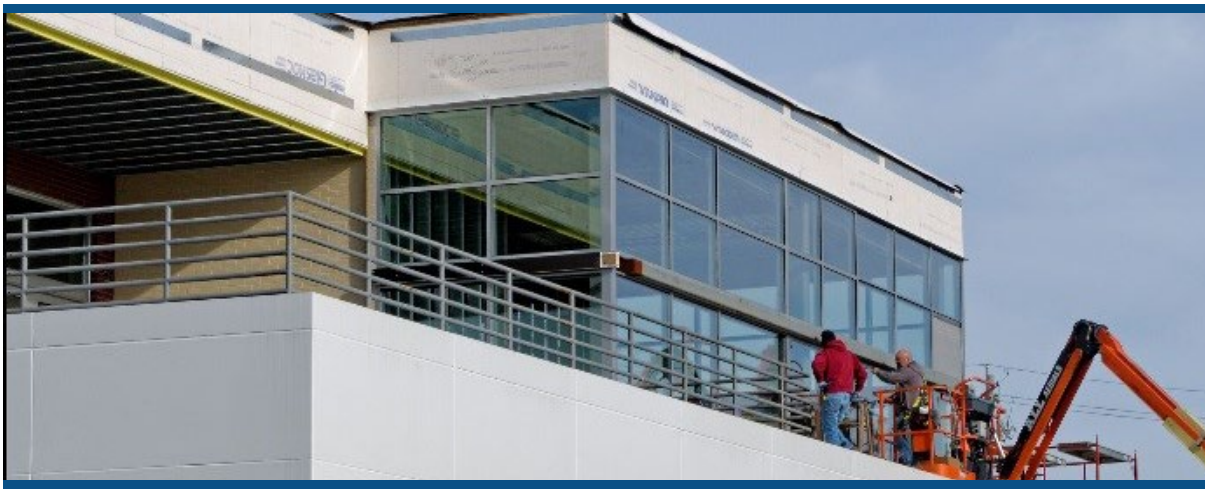
Measure Energy-2: Promote Energy Efficiency in Low-Income Residences

Co-Benefits

County Action:		
1. Track the implementation of County's low-income home improvement loan and grants program.		
Target Year	**Performance Metric**	**GHG Reduction Potential (MT CO_2e)**
2030	60 percent of low-income homes weatherized for energy savings by 2030	4,119
Responsible Department: Development Services, Housing Division in coordination with the utility companies		

3.2.3 Energy Efficiency for Existing Buildings 3: Promote Energy Efficiency in Non-Residential Buildings

Energy Goal 3: Incentivize energy efficiency tune-ups of existing non-residential buildings with a goal to optimize energy and water performance by identifying low- or no-cost actions related to building operations and maintenance that generate energy savings.



Measure Energy-3: Promote Energy Efficiency Tune-Ups of Existing Commercial Units

Co-Benefits

County Action:		
1. Partner with local utility (SCE) to take advantage of energy audit programs for municipal buildings and promote awareness of these programs for private commercial buildings.		
Target Year	**Performance Metric**	**GHG Reduction Potential (MT CO_2e)**
2030	50 percent of commercial buildings participating in energy efficiency tune-ups by 2030 Track Commercial buildings retrofits.	12,405
Responsible Department: Development Services, Building Division in coordination with the utility companies		

3.2.4 Solar Energy: Local Energy 7. Solar Installations for Existing Housing

Energy Goal 7: Achieve a target of 40 percent of existing residential units (homes built prior to 2020) to incorporate solar components through the promotion of incentive programs offered by utility companies and other funding entities to be achieved by 2030.

Measure Energy-7: Promote Installation of Solar Panels within Existing Residential Units

Co-Benefits

County Actions:		
1. Identify funding sources from State, County, and utility programs for solar energy projects. 2. Prepare handouts for the public, provide information on the County's website, and identify County events such as the farmer's markets, New Business Reception, job fairs, etc. where staff can distribute information.		
Target Year	**Performance Metric**	**GHG Reduction Potential (MT CO_2e)**
2030	Number of solar panels installed on existing homes within unincorporated parts of San Bernardino County.	30,274

Responsible Department: Development Services, Building Division

3.2.5 Solar Energy: Local Energy 8. Solar Installations for Existing Commercial/Industrial Buildings

Energy Goal 8: Achieve a target of 40 percent of existing commercial/industrial buildings (built before 2020) to incorporate solar components through the promotion of incentive programs offered by utility companies and other funding entities by 2030.

Measure Energy-8: Promote Installation of Solar Panels within Existing Commercial/Industrial Units

Co-Benefits	

County Action:		
1. Identify funding sources from State, County, and utility programs for solar energy projects. 2. Prepare handouts for the public, provide information on the County's website, and identify County events such as farmer's markets, New Business Reception, job fairs, etc. where staff can distribute information.		
Target Year	**Performance Metric**	**GHG Reduction Potential (MT CO_2e)**
2030	Number of solar panels installed on existing commercial/industrial buildings within unincorporated parts of San Bernardino County	88,198
Responsible Department: Development Services, Building Division		

3.2.6 Building Energy: Local Energy 10: Urban Tree Planting for Shading and Energy Savings

Energy Goal 10: Urban Tree planting would reduce energy consumption and associated GHG emissions by reducing the heat island effect. Trees and vegetation that directly shade buildings can reduce energy use by decreasing demand for air conditioning.

Measure Energy-10: Urban Tree Planting for Shading and Energy Savings

Co-Benefits

County Implementation Actions:		
1. Require new development to include trees within parking lots and streetscapes. 2. Require trees within median strip of roadways. 3. 1,000 adult shade trees planted per year. 4. 10 non-shade trees planted per year.		
Target Year	**Performance Metric**	**GHG Reduction Potential (MT CO_2e)**
2030	Number of trees planted per year	27
Responsible Department: Community Development in coordination with the utility companies		

In addition to reducing heat island effect, the urban tree planting will contribute to enhanced carbon sequestration by increasing tree canopy cover. The County will also benefit from other opportunities for carbon sequestration. The recently adopted Countywide Plan – Policy Plan comprises policies that are geared toward preserving and enhancing natural habitats. Preserving and enhancing the County's natural habitats will also provide the additional carbon sequestration benefits as the natural habitats are GHG sinks.

A vast majority of area in the County is encompassed by desert ecosystems. Studies indicate that closed or endorheic basins in deserts are a significant storehouse of carbon (*Scientific American* 2017). Most of the growth that is expected to occur in the County will be in the Bloomington Community (located in valley in the Rialto Sphere of Influence) and Apple Valley Sphere of Influence (located in Desert, but is part of a plan adopted by Town of Apple Valley). This expected growth will not affect the pristine desert soils of the County. Therefore, the closed basins of desert in the County are expected to provide carbon sequestration benefits.

The soils in the areas of High Desert in the County that are being disturbed on a regular basis due to construction activities, will have to follow the Mojave Desert Air Quality Management District's (MDAQMD) fugitive dust control measures to minimize dust and soil disturbance during construction. The Countywide Plan – Policy Plan also includes policies to reduce disturbance to fragile desert soils

as much as practicable to reduce fugitive dust. These policies and measures will also help prevent loss of sequestration potential associated with soil disturbance.

3.3 On-Road Transportation

On-road transportation emissions include emissions from light- and medium-duty vehicles and heavy-duty trucks associated with land use activity. Emissions originate from the combustion of fossil fuels (such as diesel, gasoline, and compressed natural gas) to power the vehicles. These are direct emissions and accounted for approximately 53 percent of total emissions in 2016. On-road transportation measures can achieve significant benefits for both individual residents and the County as a whole. Reductions in VMT and traffic congestion would reduce smog-forming emissions, toxic air contaminants, and diesel particulate matter. Alternative modes of transportation, such as bicycling, walking, and transit, may also help reduce many serious health risks associated with vehicle exhaust. Community well-being and quality of life may also be improved as individuals spend less time commuting, waiting for the bus, and/or sitting in heavy congestion.

San Bernardino County has taken significant steps toward implementing strategies for GHG reductions in the on-road transportation sector. The County developed and implemented the Non-Motorized Transportation Plan.[8] In order to be in compliance with SB 743 and State law, the County developed the VMT threshold of significance that will generally be applied to new projects to assess potential traffic impacts to the environment under CEQA. A resolution outlining the threshold of significance and methodology to be used in the County is required in order to comply with SB 743.

3.3.1 On-Road Transportation: Local On-Road-3. Transportation Demand Management and Signal Synchronization

On-Road Goal 3: Continue Implementing a Transportation Demand Management (TDM) and signal synchronization program.

[8] San Bernardino County Non-Motorized Transportation Plan. 2018. Website: https://www.gosbcta.com/wp-content/uploads/2019/10/Non-Motorized-Transportation-Plan-.pdf (Accessed October 20, 2020)

Measure On-Road-2: Continue Implementing Transportation Demand Management (TDM) and Signal Synchronization Program Within the County

Co-Benefits

County Actions:		
1. Continue implementing TDM program. 2. County traffic engineers study all signalized intersections throughout the County and develop a signal timing optimization plan based on the Traffic Signal Control System.		
Target Year	**Performance Metric**	**GHG Reduction Potential (MT CO_2e)**
2030	Number of employers participating in TDM programs. Number of San Bernardino County staff members participating in TDM program. VMT reductions associated with TDM programs.	11,319
Responsible Department: Community Development and Public Works		

3.3.2 On-Road Transportation: Local On-Road-4. Expand Bike Routes

On-Road Goal 4: Expand Bike Routes per the County's Non-Motorized Transportation Plan.

Measure On-Road-4: Implement Non-Motorized Transportation Plan

Co-Benefits

County Action: Construct Bike Paths		
1. The County will implement recommended bikeway projects to improve bike transit, which would implement County's Non-Motorized Transportation Plan.		
Target Year	**Performance Metric**	**GHG Reduction Potential ($MTCO_2e$)**
2030	Miles of new bikeway constructed or other strategies implemented based on County's Non-Motorized Transportation Plan	11,239
Responsible Department: Community Development and Public Works		

3.4 Off-Road Equipment

Off-road equipment accounts for 1.2 percent of total GHG emissions. These emissions are direct emissions resulting from equipment fuel combustion. Off-road equipment includes construction equipment and off-road vehicles. Typical industries that use off-road equipment include the agricultural, construction, industrial, entertainment, rail yards and dredging sectors. In addition, recreational vehicles (e.g., all-terrain vehicles), pleasure craft (e.g., jet skis), and lawn and garden equipment (e.g., mowers) are sources of off-road emissions. Reduction measures in the off-road equipment sector typically provide modest GHG reductions relative to other sectors.

Off-Road Goal 2: Idling Ordinance would change the County's current idling restriction. Currently, the County requires idling time of no more than 5 minutes for all off-road equipment fleet, per State requirements. Adopting an ordinance that limits idling time for heavy-duty diesel trucks beyond CARB or local air district, recommended idling limit is 3 minutes would help County further reduce emissions resulting from off-road equipment fleet. As part of permitting requirements or County contracts, the County could encourage contractors to submit a construction vehicle management plan that includes such things as idling time requirements; requiring hour meters on equipment; and documenting the serial number, horsepower, age, and fuel of all on-site equipment. Implementation of this measure would be a one-time action. Once the ordinance is adopted, the measure would begin to yield benefits.

Measure Off-Road-2: Idling Ordinance

Co-Benefits	

County Action:
1. Consider adopting an ordinance that limits idling time for heavy-duty construction equipment to 3 minutes.
2. Requiring hour meters on off-road equipment.
3. Documenting horsepower, age and fuel of all on-site equipment.

Target Year	Performance Metric	GHG Reduction Potential (MT CO_2e)
2030	Updates to the County off-road idling ordinance.	457
Responsible Department: Community Development and Public Works		

3.5 Solid Waste

Emissions from solid waste generated by the County accounted for approximately 7 percent of total emissions in 2016. The County's waste diversion programs include, but are not limited to, construction and demolition debris, green waste, single-stream recycling, white goods, electronics, household hazardous waste, tires, scrap metal, inert materials and more. The County and Waste Management will identify diversion opportunities and achieve the statewide diversion goal of 75 percent. These goals will continue to progress the County toward zero waste. CalRecycle defines zero waste as "a process and a philosophy that involves a redesign of products and consumption, so that all material goods can be reused or recycled—or not needed at all."[9]

3.5.1 Solid Waste: Local Waste-2. Waste Diversion and Reduction

Waste Goal 1: Exceed the waste diversion goal (50 percent) recommended by AB 939 and CALGreen by adopting countywide waste goals of at least 75 percent of waste diversion.

Measure Waste-2: Reduce Waste at Landfills

Co-Benefits	

County Action: Divert at Least 75 Percent of Waste
1. Require solid waste collectors to provide recycling containers for all customers in compliance with State law and facilitate waste diversion requirements mandated on all solid waste facilities. Starting in 2020, require all development during construction and demolition activities to recycle construction and demolition waste.

[9] CalRecycle. 2017. "Zero Waste." January 26, 2020. Website: http://www.calrecycle.ca.gov/ZeroWaste/ (accessed December 18, 2017).

Target Year	Performance Metric	GHG Reduction Potential (MT CO_2e)
2030	Divert 70 percent total solid waste generated in the County.	72,474
Responsible Department: Community Development and Public Works		

3.6 Water Consumption

3.6.1 Water Consumption: Local W-3. Promote Water-Efficient Landscaping Practices

Water Consumption Goal 3: The County to continue to promote water-efficient landscaping practices for homeowners, businesses, and non-residential property owners.

Image Credit: CBWCD

Measure Water Consumption-3: Promote Water-Efficient Landscaping Practices

Co-Benefits

County Action:		
1. Create awareness and incentives for residents to use water-efficient landscaping practices. 2. Require drought-tolerant landscaping in all municipal buildings. 3. Promote installation of dual plumbing in all new development, allowing gray water to be used for landscape irrigation where purple pipe is not an option.		
Target Year	**Performance Metric**	**GHG Reduction Potential (MT CO_2e)**
2030	Water saved through implementing drought-tolerant water-saving landscaping.	2,973
Responsible Department: Public Works in collaboration with IEUA		

3.7 GHG Performance Standards for New Development

3.7.1 GHG Performance Standards for New Development: Local DRP-1. Development Review Process Setting Standards for New Development

Goal DRP-1: Continue to Decrease GHG Emissions from New Development through Performance Standards implementing screening tables.

County planners have a unique opportunity to provide developers a flexible way of demonstrating GHG reductions within new development by providing screening tables for developers to fill out during applications of new development projects. Screening tables are a menu of options of energy efficiency improvements, renewable energy options, water conservation measures, and other options that provide predictable GHG reductions. Appendix A provides screening tables for this GHGRP Update. Each option within the screening tables includes point values based upon the GHG reduction that option would provide to a development project. Developers that choose options from the screening tables totaling 100 points or more will be determined to have provided a fair-share contribution of GHG reductions and, therefore, are considered consistent with the GHGRP Update. This determination of consistency can be used in a CEQA climate change analysis of the development, which provides a legally defensible and streamlined CEQA process for the project.

Measure DRP-1: Development Review Process Setting Standards for New Development

Co-Benefits

County Action:		
1. Educate County staff, developers, etc., on how the screening tables work and advantages in using the screening tables. 2. Include screening tables in submittal packages for development projects and have developers select their choices of reduction measures within the screening tables to include in as a project's conditions of approval. 3. Establish online permitting to facilitate upgrades.		
Target Year	**Performance Metric**	**GHG Reduction Potential (MT CO_2e)**
2030	Project level GHG emissions analysis to determine methods implemented for energy savings and projected GHG reductions.	16,889
Responsible Department: Community Development		

3.9 Summary of Reductions

Table I summarizes the strategies and the potential GHG reductions from local measures.

Table I: Summary of Community GHG Reduction Strategies and Emission Reductions

Local Measures	2030 Emission Reductions (MT CO_2e)
Energy	
Energy Goal 1: Energy Efficiency Programs for Existing Homes and Businesses	3,251
Energy Goal 2: Weatherizing Low-Income Homes	4,119
Energy Goal 3: Energy Efficiency Retrofits for Existing Commercial/Industrial Users	13,405

Table I: Summary of Community GHG Reduction Strategies and Emission Reductions

Local Measures	2030 Emission Reductions (MT CO_2e)
Energy Goal 7: Solar Installation on Existing Homes	30,274
Energy Goal 8: Solar Installation on Existing Commercial/Industrial Uses	88,198
Energy Goal 10: Urban Tree Planting for Shading and Energy Savings	27
Energy Total:	**139,275**
On-Road Transportation	
On-Road Goal 3: Transportation Demand Management and Signal Synchronization	11,319
On-Road Goal 4: Expand Bike Routes	11,239
On-Road Total:	**22,559**
Off-Road Equipment	
Off-Road Goal 2: Idling Ordinance	457
Off-Road Total:	**457**
Solid Waste Management	
Waste Goal 2: Waste Diversion and Reduction	73,380
Waste Total:	**73,380**
Water Consumption	
Water Goal 3: Water-Efficient Landscaping Practices	2,973
Water Total:	**2,973**
GHG Performance Standard for New Development	
DRP-1: Development Review Process Setting Standards for New Development	16,889
TOTAL:	**254,625**

MT CO_2e = metric tons of carbon dioxide equivalent SB = Senate Bill
Water-2 is implemented through the Screening Tables and is quantified under the GHG Performance Standard.

3.10 Beyond 2030 Target

The County's emission reduction targets for the year 2030 discussed in this GHGRP Update are consistent with the goals identified in SB 32 and the corresponding Scoping Plan, which identifies statewide GHG reduction targets by 2020 and 2030. It is important to note that 2030 is only a milestone in GHG reduction planning. To be consistent with the State regulations, the County would need to look beyond 2030 and take into consideration Executive Order EO B-55-18, which calls for achieving statewide carbon neutrality by 2045. The 2030 target will keep the County on a right trajectory to meet the State of California 2045 emission goals.

As the County proceeds with implementing the measures identified above, the reduction targets may need adjustments to reflect updates in the inventory and resultant GHG emission reductions achieved through implementation of these measures from now until 2030. In future when the County would be close to meeting 2030 target pursuant to this GHGRP Update and would have a better understanding of the effectiveness and efficiency of different reduction strategies and approaches, the County would revisit the GHG reduction measures and strategies identified in the GHGRP Update.

Furthermore, the federal, State, and local programs and policies for the GHG reductions for the near term (2020–2030) are likely to be well underway and continuing technological change in the fields of energy efficiency, alternative energy generation, vehicles, fuels, methane capture and other areas will have taken place. The County will then be able to take the local, regional, State, and federal context

into account and may consider updating the GHG reduction targets post-2030. The potential new GHGRP Update will include specific strategies and measures for meeting the State mandate beyond 2030. The targets will be consistent with broader State and federal reduction targets and will take into consideration the effectiveness and applicability of the reduction measures identified in this GHGRP Update.

4.0 Plan Implementation

This chapter describes implementation steps for the GHGRP Update to support achievement of the energy efficiency and GHG reduction goals for the community at large. Success in meeting the County's energy efficiency and GHG emission reduction goals will depend on cooperation, innovation, and participation by the County, residents, businesses, and local government entities. This section outlines key steps that the County would follow for the implementation of this GHGRP Update.

Successful implementation of the GHGRP Update will require the following components. These are described in more detail in the sections below.

- Administration and Staffing;
- Financing and Budgeting;
- Timelines for Measure Implementation;
- Community Outreach and Education; and
- Monitoring, Reporting, and Adaptive Management.

The steps above are basic steps that any county might take or that other California communities have taken to implement a GHG reduction plan. These are suggested—not required—and are intended to guide the County in its implementation planning.

4.1 Administration and Staffing

The GHGRP Update's success will require coordination with other regional agencies. The County will work with these agencies and will designate staff to oversee the successful implementation and the tracking of all selected GHG reduction strategies. The County will primarily be responsible for coordinating with contacts across departments to gather data, to report on progress, to track completed projects, and to ensure that scheduling and funding of upcoming projects is discussed at key County meetings. The County may identify one or more staff to act as the Plan Implementation Administrator(s) to guide monitoring, reporting, and dissemination of information to the public.

The Administrator could have the following responsibilities:

- Secure long-term financing for the energy efficiency and GHG reduction measures (i.e., grant applications).
- Coordinate GHGRP Update implementation-related meetings.
- Serve as the external communication hub to local and regional climate action organizations, including SCAG.
- Conduct public outreach to inform the community of the County's reduction planning efforts.
- Investigate methods to use existing resources and harness community support to better streamline implementation of the Plan.

- Monitor implementation of reduction measures and success of the GHGRP Update.
- Develop a protocol for monitoring the effectiveness of emission-reduction programs.
- Establish guidelines for reporting and documenting emission-reduction progress.
- Submit annual reports to the Board of Supervisors.
- Develop a protocol for using the real-time information collected through the verification process to modify and revise existing reduction programs.
- Track State and federal legislation and its applicability to the County.

In general, the goal in implementing the GHGRP Update is not to create new administrative tasks or new staff positions necessarily, but rather to leverage existing programs and staff to the maximum extent feasible. Counties should seek to fold GHG planning and long-term reduction into their existing procedures, institutional organization, reporting, and long-term planning.

4.2 Financing and Budgeting

Implementation of the local GHG reduction measures may require investment for the capital improvements and other investments, and increased operations and maintenance costs. However, in some cases, operating costs are anticipated to decrease, resulting in offset savings. This section presents a summary of funding and financing options (Table J) available at the time of writing this document. The County should monitor private and public funding sources for new grant and rebate opportunities and to better understand how larger agencies are accessing funds that can be used for GHG reductions in their areas. Leveraging financing sources is one of the most important roles a local government can play in helping the community to implement many of the GHG reduction measures.

Table J: Potential Funding Sources to Support GHG Reduction Measures

Funding Source	Description
State and Federal Funds	
Federal Tax Credits for Energy Efficiency	■ Tax credits for energy efficiency can be promoted to residents.
Energy Efficient Mortgages (EEM)	■ An EEM is a mortgage that credits a home's energy efficiency in the mortgage itself. ■ Residents can finance energy-saving measures as part of a single mortgage. ■ To verify a home's energy efficiency, an EEM typically requires a home energy rating of the house by a home energy rater before financing is approved. ■ EEMs are typically used to purchase a new home that is already energy efficient, such as an ENERGY STAR®-qualified home.
California Department of Resources Recycling and Recovery (CalRecycle)	■ CalRecycle grant programs allow jurisdictions to assist public and private entities in management of waste streams. ■ Incorporated cities and counties in California are eligible for funds. ■ Program funds are intended to: ○ Reduce, reuse, and recycle all waste ○ Encourage development of recycled-content products and markets ○ Protect public health and safety and foster environmental sustainability

Table J: Potential Funding Sources to Support GHG Reduction Measures

Funding Source	Description
California Energy Commission (CEC)	■ CEC has energy efficiency financing options for projects with proven energy savings. These options include 0% interest rate loans for K–12 school districts, county offices of education, State special schools, community colleges, and 1% interest rate loans for cities, counties, special districts, public colleges or universities, public care institutions/ public hospitals, University of California campuses, and California State University campuses. ■ Projects eligible for the CEC energy efficiency financing low interest loans include: ○ Lighting system upgrades ○ Pumps and motors ○ Streetlights and light-emitting diode (LED) traffic signals ○ Building insulation ○ Heating, ventilation, and air conditioning equipment ○ Water and wastewater treatment equipment
California Air Resources Board (CARB)	■ CARB offers several grants, incentives, and credits programs to reduce on-road and off-road transportation emissions. Residents, businesses, and fleet operators can receive funds or incentives depending on the program. ■ The following programs can be utilized to fund local measures: ○ Air Quality Improvement Program (Assembly Bill 118) ○ Carl Moyer Program – Voucher Incentive Program ○ Goods Movement Emission Reduction Program (Proposition 1B Incentives) ○ Loan Incentives Program ○ Lower-Emission School Bus Program/School Bus Retrofit and Replacement Account (Proposition 1B and United States Environmental Protection Agency Incentives)
Existing Capital Improvement Program	■ State and federal funds would most likely continue to local governments, builders, and homeowners in the following forms: ○ Grants ○ Transportation and transit funding ○ Tax credit and rebate programs ○ The Capital Improvement Program can be used for measures relating to traffic or transit.
State Funding for Infrastructure	■ The State's Infill Infrastructure Grant Program may potentially be used to help fund measures that promote infill housing development. ■ Grants can be used for gap funding for infrastructure improvements necessary for specific residential or mixed-use infill development projects.
Transportation-Related Federal and State Funding	■ For funding measures related to transit, bicycle, or pedestrian improvements, the following funding sources from SCAG may be used. ○ Sustainability Planning Grant ○ California Active Transportation Program ■ Caltrans Transportation Planning Grant Program provides funding that would lead to programming and implementation of transportation improvement projects. ○ Sustainable Communities Grants ○ Strategic Partnerships Grants ○ Adaptation Planning Grants

Table J: Potential Funding Sources to Support GHG Reduction Measures

Funding Source	Description
Utility Rebates	■ Department of Water and Power offers a variety of residential and commercial rebate programs: ○ Residential and Commercial Turf Replacement Program ○ Pool/Spa Cover Rebates ○ Rebates for Water-Efficient Devices ○ Recirculating Pump Rebate ○ Free Urinal Flush Valve Upgrades and Installation ■ Southern California Edison is one of the utilities participating in the California Solar Initiative. ■ A variety of rebates are available for existing and new homes. ■ Photovoltaics, thermal technologies, and solar hot water projects are eligible. ■ Single-family homes, commercial development, and affordable housing are eligible.
Energy Upgrade California	■ The program is intended for home energy upgrades. ■ Funding comes from the American Recovery and Reinvestment Act, California utility ratepayers, and private contributions. ■ Utilities administer the program, offering homeowners the choice of one of two upgrade packages—basic or advanced. ■ Homeowners are connected to home energy professionals. ■ Rebates, incentives, and financing are available. ■ Homeowners can receive money back on an upgrade through the local utility.
Private Funding	
Private Funding	■ Private equity can be used to finance energy improvements, with returns realized as future cost savings. ■ Rent increases can fund retrofits in commercial buildings. ■ Net energy cost savings can fund retrofits in households. ■ Power Purchase Agreements involve a private company that purchases, installs, and maintains a renewable energy technology through a contract that typically lasts 15 years. After 15 years, the company would uninstall the technology or sign a new contract. ■ On-Bill Financing (OBF) can be promoted to businesses for energy-efficiency retrofits. OBF funding is a no-interest loan that is paid back through monthly utility bills. Lighting, refrigeration, HVAC, and LED streetlights are all eligible projects.
Other Funding Mechanisms for Implementation	
Other Funding	■ Increased operating costs can be supported by grants from the Strategic Growth Council or the State Department of Conservation to fund sustainable community planning, natural resource conservation and development, and adoption.
Future Funding Options: Funding Mechanisms for Capital and/or Implementation Costs	
New Development Impact Fees	■ These types of fees may have some potential to provide funding, but such fees are best implemented when the real estate market and overall regional economic conditions are strong.
General Obligation Bond	■ A general obligation bond is a form of long-term borrowing and could be used to fund municipal improvements.

Table J: Potential Funding Sources to Support GHG Reduction Measures

Funding Source	Description
Assembly Bill (AB) 811 Districts Property-Assessed Clean Energy (PACE)	■ AB 811 is intended to help municipalities accomplish the goals outlined in AB 32. ■ The PACE finance program is intended to finance energy and water improvements within a home or business through a land-secured loan, and funds are repaid through property assessments. ■ Municipalities are authorized to designate areas where property owners can enter into contractual assessments to receive long-term, low-interest loans for energy and water efficiency improvements, and renewable energy installation on their property. ■ Financing is repaid through property tax bills. ■ AB 811 and the PACE program are currently on hold for residential properties due to potential violation of standard Federal Housing Finance Agency federally guaranteed (Fannie Mae/Freddie Mac) residential mortgage contracts. ■ The SBCTA has implemented the Home Energy Renovation Opportunity (HERO; a PACE program) in San Bernardino County to assist residents in financing residential energy efficiency and solar retrofits.

HVAC = heating, ventilation, and air conditioning
SCAG = Southern California Association of Governments

In addition to pursuing the funding options above and monitoring the availability of others, the County should take the following steps to best inform decisions related to the cost of GHG reduction measures:

- **Perform and Refine Cost Estimates.** Cost estimates for local reduction measures should be performed to identify the cost-effectiveness of each measure to inform and to guide the implementation process. This analysis will likely be based on a variety of participation, per-unit, and other assumptions. As programs are developed, cost estimates should be refined and updated over time with more precise implementation-level data.
- **Integrate GHG Reduction into Existing County Budget and Capital Improvements Program.** Certain capital improvements may need to be added to the Capital Improvements Program (CIP) and facility master plan programs, as well as those of the County utility enterprises and other public agencies that have control for project implementation. For CIPs completely under the County's control, new projects would need to be assessed for consistency with the GHGRP Update.
- **Adopt or Update Ordinances and/or Codes:** Some local reduction measures may require new or revised ordinances. Staff would need to coordinate these efforts in conjunction with planning departments, planning commissions, and Board of Supervisors.
- **Pursue Outside Funding Sources:** A range of funding from State and federal agencies has been identified. The County would need to pursue these (and other emerging) funding sources as a part of implementation efforts.
- **Implement and Direct Preferred County Funding Sources:** While County funding sources are limited, the County , when financially able, as a part of its budget process, could appropriate funding from general sources or make changes in its fee schedules, utility rates, and other sources as needed to support funding the implementation of the GHG reduction measures.

- **Create Monitoring/Tracking Processes:** Local reduction measures would require program development, tracking, and/or monitoring.
- **Identify Economic Indicators to Consider Future Funding Options:** Economic recovery may occur rapidly or slowly. Whatever the timeframe, the County would need to determine the point at which certain additional funding sources may become feasible and/or favorable. Identification and monitoring of economic indicators and trends, such as home prices, energy prices, cost per kWh on solar installations, unemployment rates, or real wage increases, can help the County decide when to further explore the potential for funding local reduction measures through different financing mechanisms.

4.3 Community Outreach, Education and CEQA Review

4.3.1.1 Community Outreach and Education

The County's citizens and businesses are integral to the success of the GHGRP Update and to overall GHG reduction for the region. Their involvement is essential, considering that several measures depend on the voluntary commitment, creativity, and participation of the community. A GHGRP Update survey was utilized to gather feedback from community stakeholders and residents in order to determine priorities and benefits for the County to focus on while updating the GHGRP. The County placed the GHGRP Update Survey on its website under the GHGRP webpage for the community to contribute. The survey asked a variety of questions including what GHG reduction priorities each participant would like the County to focus on while updating the GHGRP. Eighty-three (83) percent of survey respondents were residents of San Bernardino County and the remaining percentage were community stakeholders and interested parties who provided valuable feedback. The rating scale of 1 to 5 was used to rank the importance of GHG reduction strategies, as shown in Figure 5. The survey highlighted that residents prioritize air quality and GHG emission reduction (48 percent), traffic management (40 percent), water conservation and urban greening (38 percent) as high priority strategies to address climate change.

It is important for the County to have a plan that is consistent with the character of the community and take into account the community's needs. There will be a continuous effort to ensure the GHGRP Update will take the community's needs into account now and in the future. Moving forward, the County would educate stakeholders, such as businesses, business groups, residents, developers, and property owners about the GHG reduction measures that require their participation, encourage participation in these programs, and alert them to program requirements, incentives and/or rebate availability, depending on the measure. The County staff would schedule periodic meetings to facilitate formal community involvement in GHGRP Update implementation and adaptation over time. This could include focused meetings for a specific measure or program such as the PACE program and/or agenda items at Council or other public meetings. These meetings would be targeted to particular stakeholder groups and provide information on GHGRP Update implementation progress as well as the implementation of a specific program or new policy. Alternatively, periodic written updates could be provided in County newsletters, SCAG's newsletter, on County websites, or through other media communications with the general public, such as press releases and public service announcements. Stakeholders would be provided an opportunity to comment on potential improvements or changes to the GHGRP Update. The County would also sponsor periodic outreach

events to directly inform and solicit the input, suggestions, and participation of the community at large.

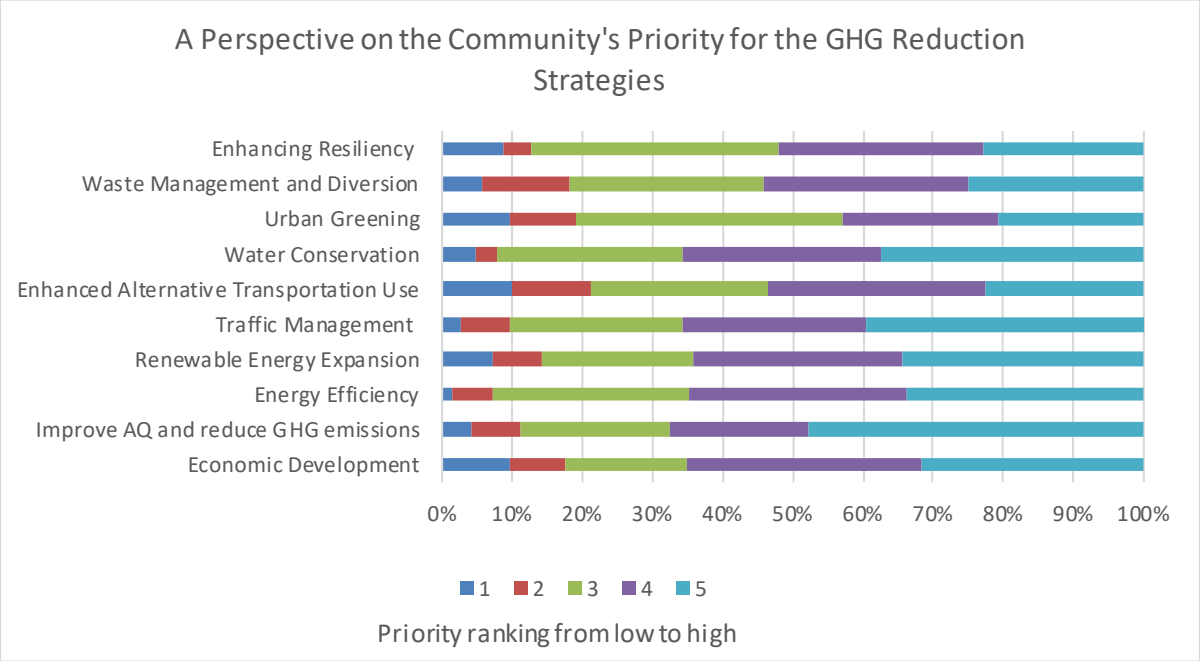


Figure 5: GHGRP Update Survey: County community's priorities for GHG reduction strategies

4.3.1.2 California Environmental Quality Act (CEQA) Review

The GHGRP Update requires compliance with CEQA prior to adoption. In 2021, the County provided CEQA review of potential environmental impacts using an Addendum to the 2011 GHGRP Supplement Program Environmental Impact Report (SEIR). The County determined that an Addendum was appropriate based on *CEQA Guidelines* Section 15164(a), which states that "The lead agency shall prepare an addendum to a previously certified EIR if some changes or additions are necessary but none of the conditions described in *CEQA Guidelines* Section 15162 calling for preparation of a subsequent EIR have occurred." To summarize, the conditions described in *CEQA Guidelines* Section 15162 include changes to the project that require major revisions of the previous EIR to address new significant environmental effects or a substantial increase in the severity of previously identified environmental effects. The GHGRP Update has not created conditions that will create new significant environmental effects or increase the severity of previously identified environmental effects. The County determined that the environmental effects resulting from the GHGRP Update would be less than those addressed in the 2011 SEIR. This conclusion is primarily due to substantially reduced energy use, reduced emissions, and moderately less VMT and noise resulting from the GHGRP Update. Because the GHGRP Update has made changes to the currently adopted GHGRP, but the changes did not create any of the conditions described in *CEQA Guidelines* Section 15162, an Addendum to the 2011 GHGRP SEIR is the appropriate CEQA document.

4.4 Monitoring, Reporting, and Adaptive Management

Regular monitoring is important to ensure programs function as they were originally intended. Early identification of effective strategies and potential issues would enable the County to make informed decisions on future priorities, funding, and scheduling. Moreover, monitoring provides concrete data to document the County's progress in reducing GHG emissions. The County would be responsible for developing a protocol for monitoring the effectiveness of emission reduction programs as well as for undertaking emission inventory updates:

- **Update GHG Inventory:** The County would update inventory emissions prior to 2030 to ensure it meets its GHG reduction goals. This includes regular data collection in each of the primary inventory sectors (utility, regional VMT, waste, wastewater, and water), and comparing the inventory to the County's baseline GHG emissions in 2007. The County would consolidate information in a database or spreadsheet that could be used to evaluate the effectiveness of individual reduction measures.
- **Track State Progress:** The GHGRP Update will rely heavily on State-level measures. The County would be responsible for tracking the State's progress on implementing State-level programs. Close monitoring of the real gains being achieved by State programs would allow the County to adjust the GHGRP Update, if needed.
- **Track Completion of GHG Reduction Measures:** The GHGRP would keep track of measures implemented as scheduled in the GHGRP Update, including progress reports on each measure, funding, and savings. This will allow at least a rough attribution of gains when combined with regular GHG inventory updates.
- **Regular Progress Reports:** The County may report annually (or semi-annually or at other assigned intervals) to the Board of Supervisors on GHGRP Update implementation progress. If annual reports, periodic inventories, or other information indicates that the GHG reduction measures are not as effective as originally anticipated, the GHGRP Update may need to be adjusted, amended, or supplemented.

4.5 Tracking Tools

4.5.1 Screening Tables

The purpose of the screening tables is to provide a measurable way of determining if a development project is implementing the GHG Performance Standard and is able to quantify the reduction of emissions attributable to certain design and construction measures incorporated into development projects. The screening table assigns points for each option incorporated into a project as mitigation or a project design feature (collectively referred to as "feature"). The point values correspond to the minimum emission reduction expected from each feature. The menu of features allows maximum flexibility and options for how development projects can implement the GHG Performance Standard. Projects that earn enough points would be consistent with the reductions anticipated in the GHGRP Update.

The County would use a Screening Tables tracker tool, which is a Microsoft Excel-based spreadsheet program that can be used to track implementation of the various menu options within the screening

tables. This spreadsheet would allow the County to track cumulative points garnered by projects and to predict emission reductions. These values of reductions can then be input into the GHG Performance Standard within the Plan Implementation Tracker Tool (PITT) described in more detail below.

4.5.2 Plan Implementation Tracker Tool (PITT)

The County's Permit Implementation Tracker Tool (PITT) is integrated into the County's permit application tracking system that will help the County track GHG reductions achieved through implementation of the GHG reduction measures within the GHGRP Update, to monitor the plan's implementation progress, and to share findings with stakeholders, partners, and the community. Through the PITT the County will be able to automatically derive estimates for annual GHG reductions achieved by State, County, and local reduction measures to track progress toward meeting the County's GHG reduction targets.

4.5.3 Progress Reports

The GHGRP Update will be tracked continuously through the County's permitting software. The County will use this automated tracking system to report progress toward the GHGRP Update goals. Metrics would be established for all measures to track implementation progress more specifically. The sector specific GHG reduction summaries could be prepared and used by the county staff to demonstrate progress towards implementation of GHG reduction strategies.

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APPENDIX A:

SCREENING TABLES

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County of San Bernardino

GREENHOUSE GAS EMISSIONS

Development Review Process Screening Tables

Revised September 2021

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CONTENTS

ATTACHMENTS

TABLES

Introduction

The County of San Bernardino (County) adopted its current Greenhouse Gas (GHG) Emissions Reduction Plan in 2011. The GHG Emissions Reduction Plan provided baseline greenhouse gas (GHG) emissions inventory for the year 2008, and targets to reduce the County's GHG emissions to 15 percent below baseline emissions by 2020. This was roughly equivalent to the Scoping Plan adopted by the State of California in 2008 that recommended a target of 15 percent below 'current' (2005-2008) levels by the year 2020. LSA updated the County's GHG inventory for year 2016, which demonstrated that the County achieved the 2020 reduction target in that year. Since the adoption of the County's GHG Emissions Reduction Plan, the State has enacted new climate change regulations, most notably Senate Bill (SB) 32, which stipulates statewide targets to reduce GHG emissions to 40 percent below 1990 levels by 2030. The State has also published the 2017 Climate Change Scoping Plan (the Scoping Plan), which provides a framework on how the State will achieve the goals of SB 32. The County has determined that reducing GHG emissions within the unincorporated County area 40 percent below the 2016 levels of emissions by 2030 matches the State goal outlined in SB 32 and complements the Statewide efforts outlined in the Scoping Plan. To ensure conformity with the latest State climate change regulations and 2017 Scoping Plan, the County's GHG Emissions Reduction Plan is currently being updated.

Reductions related to transportation, water, solid waste, energy, and renewable energy sources all play a crucial part in gaining the level of efficiency needed within new development across the County. Mitigation of GHG emissions impacts through the Development Review Process (DRP) provides one of the most substantial reduction strategies for reducing communitywide GHG emissions associated with new development.

The County's forthcoming GHG Emissions Reduction Plan Update includes the Performance Standard that will reduce 7,891 Metric Tons of Carbon Dioxide Equivalents (MT CO_2e) per year from new development by 2030 as compared to the 2030 business as usual (BAU) scenario. The DRP procedures for evaluating GHG impacts and determining significance for CEQA purposes will be streamlined by utilizing (1) applying a uniform set of performance standards to all development projects, and (2) utilizing the Interim Screening Tables to mitigate project GHG emissions. Projects will have the option of preparing a project-specific technical analysis to quantify and mitigate GHG emissions. A review standard of 3,000 $MTCO_2e$ per year will be used to identify projects that require the use of the Interim Screening Tables or a project-specific technical analysis to quantify and mitigate project emissions. The review standard of 3,000 $MTCO_2e$ per year and the performance standard are described in Attachment 1, and the Screening Tables & methodology are described in Attachment 2, the methodology for determining unmitigated and mitigated emission is described in Attachment 3.

The County is proposing to extend its 2011 GHG Emissions Reduction Plan through 2020, at which time its Update is expected be completed. In the interim, the County shall utilize the Interim screening tables developed as part of the forthcoming GHG Emissions Reduction Plan Update and edit it to become the

Interim screening tables for use by the County during the interim period starting in 2020 and extending until adoption of the GHG Emissions Reduction Plan Update. The interim screening tables will continue to provide GHG reductions from new development during the interim period. The levels of GHG reductions designed into the Interim screening tables are consistent with the State goal of achieving 40 percent below 1990 levels of emissions by 2030.

The California Environmental Quality Act (CEQA) requires the assessment of environmental impacts for proposed projects including the impacts of GHG emissions. The purpose of this document is to provide guidance on how to analyze GHG emissions and determine the significance of those emissions during CEQA review of proposed development projects within the County. The analysis, methodology, and significance determination (thresholds) are based upon the forthcoming GHG Emissions Reduction Plan Update. The Performance Standards and Screening Tables can be used by the County for review of development projects in order to ensure that the specific reduction strategies in the forthcoming GHG Emissions Reduction Plan Update are implemented as part of the CEQA process for development projects. The Screening Tables provide a menu of options that ensures both implementation of the reduction strategies and flexibility on how development projects would implement the reduction strategies to achieve an overall reduction of emissions, consistent with the reduction targets of the forthcoming GHG Emissions Reduction Plan Update.

California Environmental Quality Act

CEQA Mandates for Analysis of Impacts

CEQA requires that Lead Agencies inform decision-makers and the public regarding the following: potential significant environmental effects of proposed projects; feasible ways that environmental damage can be avoided or reduced through the use of feasible mitigation measures and/or project alternatives; and the reasons why the Lead Agency approved a project if significant environmental effects are involved (*CEQA Guidelines* § 15002). CEQA also requires Lead Agencies to evaluate potential environmental effects based to the fullest extent possible on scientific and factual data (*CEQA Guidelines* § 15064[b]). A determination of whether or not a particular environmental impact would be significant shall be based on substantial evidence, which includes facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts (*CEQA Guidelines* § 15064f[5]).

The amended *CEQA Guidelines* § 15064.4[a] [b] explicitly require Lead Agencies to evaluate GHG emissions during CEQA review of potential environmental impacts generated by a proposed project. To assist in this effort, two questions were added to Appendix G of the *CEQA Guidelines*:

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

- Would the project conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

Finally, under the "rule of reason," an Environmental Impact Report (EIR) is required to evaluate impacts to the extent that is reasonably feasible (*CEQA Guidelines* § 15151; *San Francisco Ecology Center v. City and County of San Francisco* [1975] 48 Cal.App.3rd 584). While CEQA does require Lead Agencies to make a good faith effort to disclose what they reasonably can, CEQA does not demand what is not realistically possible (*Residents at Hawks Stadium Committee v. Board of Trustees* [1979] 89 Cal.App.3rd 274, 286).

Greenhouse Gas Impact Determination

Statewide or Regional Thresholds of Significance

There are currently no published statewide thresholds of significance for measuring the impact of GHG emissions generated by a proposed project. *CEQA Guidelines* § 15064.7 indicates only that "each public agency is encouraged to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects." South Coast Air Quality Management District (SCAQMD) has published draft thresholds that, when finalized, jurisdictions within the SCAQMD boundary can use if they do not have their own thresholds and GHG mitigation plans. However, the forthcoming GHG Reduction Plan Update for the County addresses cumulative GHG emissions, has reduction targets that reduce the cumulative GHG impacts to less than significant, has a set of reduction measures that achieves the reduction targets, and provides an implementation plan to implement the reduction measures. This document provides guidance in how to address GHG emissions in CEQA analysis and determine the significance of project-generated GHG emissions.

Quantitative Analysis Relative to the GHG Reduction Plan

METHODOLOGY OVERVIEW

An individual project cannot generate enough GHG emissions to influence global climate change. The project participates in climate change by its incremental contribution combined with the cumulative increase of all other sources of GHGs, which when taken together may have a significant impact on global climate change (AEP 2007). To address the State's requirement to reduce GHG emissions, the County is preparing the GHG Reduction Plan Update with targets of reducing GHG emissions within the County by 40 percent below the 2016 emission levels by 2030. The County's target is consistent with SB 32 and ensures that the County is providing GHG reductions locally that will complement State and international efforts of stabilizing climate change.

Because the County's forthcoming GHG Reduction Plan Update addresses GHG emissions reduction, in concert with SB 32, and international efforts to address global climate change, and includes specific local

requirements that would substantially lessen the cumulative problem, compliance with the forthcoming GHG Reduction Plan Update would fulfill the description of mitigation found in *CEQA Guidelines* § 15130(a)(3) and § 15183.5.

GHG emissions are only important in the context of cumulative emissions; therefore, the focus of the analysis is on answering the question of whether incremental contributions of GHGs are a cumulatively considerable contribution to climate change impacts. The forthcoming GHG Reduction Plan Update includes a set of reduction measures designed to substantially lessen cumulative impacts associated with GHG emissions as described in *CEQA Guidelines* § 15130(a)(3), in determining if a project's effects would result in significant impacts. The forthcoming GHG Reduction Plan Update has the following components that fulfill cumulative mitigation for GHG emissions:

1. Provides a communitywide GHG emissions reduction target that would substantially lessen the cumulative impact;
2. Provides measures that new development projects shall follow to meet the County's reduction target and substantially lessen the cumulative impact;
3. Provides a set of GHG emission inventories that provide quantitative facts and analysis for how the measures within the GHG Reduction Plan Update meet the reduction targets that substantially lessen the cumulative impact; and
4. Provides an implementation, monitoring, and update program to ensure that the reduction target is met.

The forthcoming GHG Reduction Plan Update satisfies the first condition by adopting targets of reducing GHG emissions within the County 40 percent below 2016 levels of emissions by 2030. The 2030 reduction target is compliant with SB 32.

The forthcoming GHG Reduction Plan Update satisfies the second condition through the implementation of the reduction measures for new development. This document supplies the specific criteria that new development shall follow to ensure that the reduction measures associated with new development are implemented and the reduction targets are met.

The forthcoming GHG Reduction Plan Update satisfies the third criterion by providing a set of communitywide GHG emissions inventories for existing conditions (2008 baseline) and future 2030 and 2045 GHG emissions that are anticipated without the reduction measures (Adjusted Business-As-Usual, or ABAU). The GHG Reduction Plan Update also demonstrates reduced levels of 2030 and 2045 GHG emissions that demonstrate how the implementation of reduction measures achieves the reduction targets. These communitywide GHG emission inventories are found in Appendix A of the forthcoming GHG Reduction Plan Update.

The Development Review Process

Integrating the reduction measures of the forthcoming GHG Reduction Plan Update into the CEQA development review process is the first step in determining how a proposed project will implement the GHG reduction measures within the forthcoming GHG Reduction Plan Update. The GHG emissions development review process is predicated on responses to two questions:

- **Question 1:** Is the proposed activity a "Project" as defined by CEQA? If the activity is not a project under CEQA, no further action is required concerning GHG emissions in the development review process.
- **Question 2:** Is the project exempt under CEQA? If so, then the California Air Resources Board has determined that GHG emissions are less than significant and no additional GHG reductions are needed. *CEQA Guidelines* § 15300 through § 15332 list the CEQA exemptions.

Appendix A of this document contains a flow chart that diagrams this development review process.

There are also exemption opportunities associated with transit-oriented development (TOD) associated with the Sustainable Communities Strategy (SCS) for the region developed by the Southern California Association of Governments (SCAG) and first introduced in the 2012 Regional Transportation Plan (RTP). Exemptions associated with TOD are divided into two categories: transit priority projects (TPP) and Sustainable Community Projects (SCP). Appendix B of this document provides the TPP and SCP Checklist to assist project applicants in determining if a project qualifies for these exemptions under CEQA. If the project does not qualify for a CEQA exemption, then the applicant needs to incorporate GHG reductions and implement the County GHG Plan i using a uniform set of performance standards applied to development projects. These performance standards are part of the County Development Code to ensure consistent application during development review. The complete Development Review Process, including the use of performance standards, for assessing and mitigating GHG emissions is outlined below.

a) County Performance Standards. All development projects, including those otherwise determined to be exempt from CEQA will be subject to applicable Development Code provisions, including the GHG performance standards, and state requirements, such as the California Building Code requirements for energy efficiency. With the application of the GHG performance standards, projects that are exempt from CEQA and small projects that do not exceed 3,000 $MTCO_2e$ PER YEAR will be considered to be consistent with the Plan and determined to have a less than significant individual and cumulative impact for GHG emissions. (See Attachment 1 hereto, for description of the performance standards and the methodology relating to the 3,000 $MTCO_2e$ per year level)

b) Regulatory Agency Performance Standards. When, and if, South Coast Air Quality Management District or Mojave Basin Air Quality Management District adopts standards, the County will consider such guidance and incorporate all applicable standards.

c) Projects Using Screening Table. For projects exceeding 3,000 $MTCO_2e$ per year of GHG emissions, the County will use Screening Tables as a tool to assist with calculating GHG reduction measures and the determination of a significance finding. Projects that garner a 100 or greater points would not require quantification of project specific GHG emissions. The point system was devised to ensure to Project compliance with the reduction measures in the GHG Plan such that the GHG emissions from new development, when considered together with those existing development, will allow the County to meet its 2020 target and support reductions in GHG emissions beyond 2020. Consistent with the CEQA Guidelines, such projects are consistent with the Plan and therefore will be determined to have a less than significant individual and cumulative impact for GHG emissions. (See Attachment 2 hereto, for a full description of the Screening Tables and methodology.)

d) Projects Not Using Screening Tables. Projects exceeding 3,000 MTY of GHG emissions that do not use the Screening Tables, will be required to quantify project-specific GHG emissions and achieve the equivalent level of GHG emissions efficiency as a 100-point project. Consistent with the CEQA Guidelines, such projects are consistent with the Plan and therefore will be determined to have a less than significant individual and cumulative impact for GHG emissions. (See below for a description of this alternative GHG mitigation analysis and methodology.)

e) Residential Projects Located Outside City Sphere of Influence. Residential Projects (or mixed use projects with a residential component) in excess of 250 residential dwelling units that are located in unincorporated area not within a City Sphere of Influence (SOI) will not be eligible to use the Screening Tables or rely on the Plan for a determination of less than significant on individual or cumulative impact for GHG emissions. These projects must perform an independent project-specific evaluation of GHG emissions as described in Attachments 1 and 3 hereto, and present project-specific conclusions regarding significance of GHG emissions impacts. (As part of the implementation of the County GHG Plan, a uniform set of performance standards will be applied to development projects. These performance standards will be added to the County Development Code to ensure consistent application during development review.

ALTNERATIVE METHODS FOR THE CALCULATION OF GHG EMISSIONS

Analysis of development projects can either be done through emissions calculations or by using the Screening Tables as described below.

Total GHG emissions are the sum of emissions from both direct and indirect sources. Direct sources include mobile sources, such as construction equipment, motor vehicles, and landscape equipment, and stationary sources, such as cooling and heating equipment. Indirect sources comprise electrical and potable water use, and the generation of solid waste and wastewater.

Direct GHG emissions from mobile and stationary sources are determined as the sum of the annual GHG emissions from construction equipment, motor vehicles, landscape equipment, and heating and cooling equipment.

Indirect sources are determined based on source as follows. Electrical usage is reported as annual emissions from electrical usage. Potable water usage is reported as the annual emissions from electricity used for potable water treatment and transportation. Solid waste is reported as the sum of annual emissions from solid waste disposal treatment, transportation, and fugitive emissions of methane at the solid waste facilities. Wastewater usage is reported as the annual emissions from wastewater transport and treatment.

Analysis of development projects not using the Screening Tables should use the emission factors found in the latest version of the California Climate Action Registry (CCAR) General Reporting Protocol (CCAR, January 2009), and guidance in the Association of Environmental Professionals' (AEP) *White Paper: Community-Wide Greenhouse Gas Emission Inventory Protocols* (AEP, June 2011). Quantification of emissions from electricity used for potable water treatment and transportation as well as wastewater transport and treatment can be found in the California Energy Commission (CEC) document titled *Refining Estimates of Water-Related Energy Use in California* (CEC 2006).

ATTACHMENT 1:

PERFORMANCE STANDARDS

PROJECTS EMITTING 3,000 MT CO_2E OR LESS PER YEAR

RESIDENTIAL PROJECTS OUTSIDE THE SPHERES OF INFLUENCE

PERFORMANCE STANDARDS

The GHG reducing performance standards were developed by the County to improve the energy efficiency, water conservation, vehicle trip reduction potential, and other GHG reducing impacts from all new development approved within the unincorporated portions of San Bernardino County. As such, the following Performance Standards establish the minimum level of compliance that development must meet to assist in meeting the 2030 GHG reduction target identified in the in the County GHG Emissions Reduction Plan. These Performance Standards apply to all Projects, including those that are exempt under CEQA, and will be included as Conditions of Approval for development projects.

The following are the Performance Standards (Conditions of Approval) used for Industrial, Commercial and Residential projects in the County:

COMMERCIAL AND INDUSTRIAL PROJECTS

1. *GHG – Operational Standards. The developer shall implement the following as greenhouse gas (GHG) mitigation during the operation of the approved project:*

   a) *Waste Stream Reduction. The "developer" shall provide to all tenants and project employees County-approved informational materials about methods and need to reduce the solid waste stream and listing available recycling services.*

   b) Vehicle Trip Reduction. The "developer" shall provide to all tenants and project employees County-approved informational materials about the need to reduce vehicle trips and the program elements this project is implementing. Such elements may include: participation in established ride-sharing programs, creating a new ride-share employee vanpool, designating preferred parking spaces for ride sharing vehicles, designating adequate passenger loading and unloading for ride sharing vehicles with benches in waiting areas, and/or providing a web site or message board for coordinating rides.

   c) Provide Educational Materials. The developer shall provide to all tenants and staff education materials and other publicity about reducing waste and available recycling services. The education and publicity materials/program shall be submitted to County Planning for review and approval. The developer shall also provide to all tenants and require that the tenants shall display in their stores current transit route information for the project area in a visible and convenient location for employees and customers. The specific transit routes displayed shall include Omni Trans Route 8, San Bernardino-Mentone-Yucaipa.

d) Landscape Equipment. The developer shall require in the landscape maintenance contract and/or in onsite procedures that a minimum of 20% of the landscape maintenance equipment shall be electric-powered.

2. *GHG – Construction Standards. The "developer" shall submit for review and obtain approval from County Planning of a signed letter agreeing to include as a condition of all construction contracts/subcontracts requirements to reduce GHG emissions and submitting documentation of compliance. The developer/construction contractors shall do the following:*
   a) Implement the approved Coating Restriction Plans.
   b) Select construction equipment based on low GHG emissions factors and high-energy efficiency. All diesel/gasoline-powered construction equipment shall be replaced, where possible, with equivalent electric or CNG equipment.
   c) Grading contractor shall provide the implement the following when possible:
      1) training operators to use equipment more efficiently.
      2) identifying the proper size equipment for a task can also provide fuel savings and associated reductions in GHG emissions
      3) replacing older, less fuel-efficient equipment with newer models
      4) use GPS for grading to maximize efficiency
   d) Grading plans shall include the following statements:
      - *"All construction equipment engines shall be properly tuned and maintained in accordance with the manufacturers specifications prior to arriving on site and throughout construction duration."*
      - *"All construction equipment (including electric generators) shall be shut off by work crews when not in use and shall not idle for more than 5 minutes."*
   e) *Schedule construction traffic ingress/egress to not interfere with peak-hour traffic and to minimize traffic obstructions. Queuing of trucks on and off site shall be firmly discouraged and not scheduled. A flagperson shall be retained to maintain efficient traffic flow and safety adjacent to existing roadways.*
   f) Recycle and reuse construction and demolition waste (e.g. soil, vegetation, concrete, lumber, metal, and cardboard) per County Solid Waste procedures.
   g) The construction contractor shall support and encourage ridesharing and transit incentives for the construction crew and educate all construction workers about the required waste reduction and the availability of recycling services.

3. *GHG – Design Standards. The developer shall submit for review and obtain approval from County Planning that the following measures have been incorporated into the design of*

the project. These are intended to reduce potential project greenhouse gas (GHGs) emissions. Proper installation of the approved design features and equipment shall be confirmed by County Building and Safety prior to final inspection of each structure.

a) *Meet Title 24 Energy Efficiency requirements implemented January 1, 2020. The Developer shall document that the design of the proposed structures meets the current Title 24 energy-efficiency requirements. County Planning shall coordinate this review with the County Building and Safety. Any combination of the following design features may be used to fulfill this requirement, provided that the total increase in efficiency meets or exceeds the cumulative goal (100%+ of Title 24) for the entire project (Title 24, Part 6 of the California Code of Regulations; Energy Efficiency Standards for Residential and Non Residential Buildings, as amended February 14, 2019; Cool Roof Coatings performance standards as amended February 14, 2019):*
   - *Incorporate dual paned or other energy efficient windows,*
   - *Incorporate energy efficient space heating and cooling equipment,*
   - *Incorporate energy efficient light fixtures, photocells, and motion detectors,*
   - *Incorporate energy efficient appliances,*
   - *Incorporate energy efficient domestic hot water systems,*
   - *Incorporate solar panels into the electrical system,*
   - *Incorporate cool roofs/light colored roofing,*
   - *Incorporate other measures that will increase energy efficiency.*
   - *Increase insulation to reduce heat transfer and thermal bridging.*
   - *Limit air leakage throughout the structure and within the heating and cooling distribution system to minimize energy consumption.*

b) *Plumbing. All plumbing shall incorporate the following:*
   - *All showerheads, lavatory faucets, and sink faucets shall comply with the California Energy Conservation flow rate standards.*
   - *Low flush toilets shall be installed where applicable as specified in California State Health and Safety Code Section 17921.3.*
   - *All hot water piping and storage tanks shall be insulated. Energy efficient boilers shall be used.*

c) *Lighting. Lighting design for building interiors shall support the use of:*
   - *Compact fluorescent light bulbs or equivalently efficient lighting.*
   - *Natural day lighting through site orientation and the use of reflected light.*
   - *Skylight/roof window systems.*

- *Light colored building materials and finishes shall be used to reflect natural and artificial light with greater efficiency and less glare.*
- *A multi-zone programmable dimming system shall be used to control lighting to maximize the energy efficiency of lighting requirements at various times of the day.*
- *Provide a minimum of 2.5 percent of the project's electricity needs by on-site solar panels.*

d) *Building Design. Building design and construction shall incorporate the following elements:*
- *Orient building locations to best utilize natural cooling/heating with respect to the sun and prevailing winds/natural convection to take advantage of shade, day lighting and natural cooling opportunities.*
- *Utilize natural, low maintenance building materials that do not require finishes and regular maintenance.*
- *Roofing materials shall have a solar reflectance index of 78 or greater.*
- *All supply duct work shall be sealed and leak-tested. Oval or round ducts shall be used for at least 75 percent of the supply duct work, excluding risers.*
- *Energy Star or equivalent appliances shall be installed.*
- *A building automation system including outdoor temperature/humidity sensors will control public area heating, vent, and air conditioning units*

e) *Landscaping. The developer shall submit for review and obtain approval from County Planning of landscape and irrigation plans that are designed to include drought tolerant and smog tolerant trees, shrubs, and groundcover to ensure the long-term viability and to conserve water and energy. The landscape plans shall include shade trees around main buildings, particularly along southern and western elevations, where practical.*

f) *Irrigation. The developer shall submit irrigation plans that are designed, so that all common area irrigation areas shall be capable of being operated by a computerized irrigation system, which includes either an on-site weather station, ET gauge or ET-based controller capable of reading current weather data and making automatic adjustments to independent run times for each irrigation valve based on changes in temperature, solar radiation, relative humidity, rain and wind. In addition, the computerized irrigation system shall be equipped with flow sensing capabilities, thus automatically shutting down the irrigation system in the event of a mainline break or broken head. These features will assist in conserving water, eliminating the potential*

of slope failure due to mainline breaks and eliminating over-watering and flooding due to pipe and/or head breaks.

g) *Recycling. Exterior storage areas for recyclables and green waste shall be provided. Where recycling pickup is available, adequate recycling containers shall be located in public areas. Construction and operation waste shall be collected for reuse and recycling.*

h) *Transportation Demand Management (TDM) Program. The project shall include adequate bicycle parking near building entrances to promote cyclist safety, security, and convenience. Preferred carpool/vanpool spaces shall be provided and, if available, mass transit facilities shall be provided (e.g. bus stop bench/shelter). The developer shall demonstrate that the TDM program has been instituted for the project or that the buildings will join an existing program located within a quarter mile radius from the project site* that provides a cumulative 20% reduction in unmitigated employee commute trips*. The TDM Program shall publish ride-sharing information for ride-sharing vehicles and provide a website or message board for coordinating rides. The Program shall ensure that appropriate bus route information is placed in each building.*

4. *GHG – Installation/Implementation Standards. The developer shall submit for review and obtain approval from County Planning of evidence that all applicable GHG performance standards have been installed, implemented properly and that specified performance objectives are being met to the satisfaction of County Planning and County Building and Safety. These installations/ procedures include the following:*

   a) *Design features and/or equipment that cumulatively increases the overall compliance of the project to exceed Title 24 minimum standards by five percent.*

   b) *All interior building lighting shall support the use of fluorescent light bulbs or equivalent energy-efficient lighting.*

   c) *Installation of both the identified mandatory and optional design features or equipment that have been constructed and incorporated into the facility/structure.*

RESIDENTIAL PROJECTS

1. *GHG – Operational Standards. The developer shall implement the following as greenhouse gas (GHG) mitigation during the operation of the approved project:*

   a. *Waste stream reduction. The* "developer" shall provide to all tenants and project employees County-approved informational materials about methods and need to reduce the solid waste stream and listing available recycling services.

b. Vehicle Trip Reduction. The "developer" shall provide to all tenants and homeowners County-approved informational materials about the need to reduce vehicle trips and the program elements this project is implementing. Such elements may include: participation in established ride-sharing programs, creating a new ride-share employee vanpool, and/or providing a web site or message board for coordinating rides.

c) Provide Educational Materials. The developer shall provide to all tenants and employees education materials and about reducing waste and available recycling services. The education materials shall be submitted to County Planning for review and approval.

d) Landscape Equipment. The developer shall require in the landscape maintenance contract and/or in onsite procedures that a minimum of 20% of the landscape maintenance equipment shall be electric-powered.

2. *GHG – Construction Standards. The developer shall submit for review and obtain approval from County Planning of a signed letter agreeing to include as a condition of all construction contracts/subcontracts requirements to reduce impacts to GHG and submitting documentation of compliance. The developer/construction contractors shall do the following:*

   a) Implement both the approved Coating Restriction Plans.

   b) Select construction equipment based on low-emissions factors and high-energy efficiency. All diesel/gasoline-powered construction equipment shall be replaced, where possible, with equivalent electric or CNG equipment.

   c) Grading plans shall include the following statements:

   - *"All construction equipment engines shall be properly tuned and maintained in accordance with the manufacturers specifications prior to arriving on site and throughout construction duration."*
   - *"All construction equipment (including electric generators) shall be shut off by work crews when not in use and shall not idle for more than 5 minutes."*

   d) *Schedule construction traffic ingress/egress to not interfere with peak-hour traffic and to minimize traffic obstructions. Queuing of trucks on and off site shall be firmly discouraged and not scheduled. A flagperson shall be retained to maintain efficient traffic flow and safety adjacent to existing roadways.*

   e) Recycle and reuse construction and demolition waste (e.g. soil, vegetation, concrete, lumber, metal, and cardboard) per County Solid Waste procedures.

   f) The construction contractor shall support and encourage ridesharing and transit incentives for the construction crew and educate all construction workers about the required waste reduction and the availability of recycling services.

3. *GHG – Design Standards. The developer shall submit for review and obtain approval from County Planning that the following measures have been incorporated into the design of the*

project. These are to reduce potential project impacts on green house gases (GHGs): Proper installation of the approved design features and equipment shall be confirmed by County Building and Safety prior to final inspection of each structure.

a) *Meet Title 24 Energy Efficiency requirements implemented January 1, 2020. The Developer shall document that the design of the proposed structures meets the current Title 24 energy-efficiency requirements. County Planning shall coordinate this review with the County Building and Safety. Any combination of the following design features may be used to fulfill this requirement, provided that the total increase in efficiency meets or exceeds the cumulative goal (100%+ of Title 24) for the entire project (Title 24, Part 6 of the California Code of Regulations; Energy Efficiency Standards for Residential and Non Residential Buildings, as amended February 14, 2019; Cool Roof Coatings performance standards as amended February 14, 2019):*
   - *Incorporate dual paned or other energy efficient windows,*
   - *Incorporate energy efficient space heating and cooling equipment,*
   - *Incorporate energy efficient light fixtures, photocells, and motion detectors,*
   - *Incorporate energy efficient appliances,*
   - *Incorporate energy efficient domestic hot water systems,*
   - *Incorporate solar panels into the electrical system,*
   - *Incorporate cool roofs/light colored roofing,*
   - *Incorporate other measures that will increase energy efficiency.*
   - *Increase insulation to reduce heat transfer and thermal bridging.*
   - *Limit air leakage throughout the structure and within the heating and cooling distribution system to minimize energy consumption.*

b) *Plumbing. All plumbing shall incorporate the following:*
   - *All showerheads, lavatory faucets, and sink faucets shall comply with the California Energy Conservation flow rate standards.*
   - *Low flush toilets shall be installed where applicable as specified in California State Health and Safety Code Section 17921.3.*
   - *All hot water piping and storage tanks shall be insulated. Energy efficient boilers shall be used.*
   - *If possible, utilize grey water systems and dual plumbing for recycled water.*

c) *Lighting. Lighting design for building interiors shall support the use of:*
   - *Compact fluorescent light bulbs or equivalently efficient lighting.*
   - *Natural day lighting through site orientation and the use of reflected light.*
   - *Skylight/roof window systems.*

- *Light colored building materials and finishes shall be used to reflect natural and artificial light with greater efficiency and less glare.*
- *A multi-zone programmable dimming system shall be used to control lighting to maximize the energy efficiency of lighting requirements at various times of the day.*

d) The developer may use rooftop solar panels in complying with the GHG Design Standards. If the developer uses solar as a way of increasing efficiency, the developer shall ensure that a minimum of 2.5 percent of the project's electricity needs is provided by on-site solar panels.

e) Building Design. Building design and construction shall incorporate the following elements:

- *Orient building locations to best utilize natural cooling/heating with respect to the sun and prevailing winds/natural convection to take advantage of shade, day lighting and natural cooling opportunities.*
- *Utilize natural, low maintenance building materials that do not require finishes and regular maintenance..*
- *Roofing materials shall have a solar reflectance in compliance with Title 24, Cool Roof Coatings performance standards.*
- *All supply duct work shall be in compliance with Title 24, Part 6 Energy Efficiency Standards for Residential Buildings..*
- *Energy Star or equivalent equipment shall be installed.*
- *A building automation system including outdoor temperature/humidity sensors will control public area heating, vent, and air conditioning units*

f) Landscaping. The developer shall submit for review and obtain approval from County Planning of landscape and irrigation plans that are designed to include drought tolerant and smog tolerant trees, shrubs, and groundcover to ensure the long-term viability and to conserve water and energy. The landscape plans shall include shade trees around main buildings, particularly along southern and western elevations, where practical.

g) Irrigation. The developer shall submit irrigation plans that are designed, so that all common area irrigation areas shall be capable of being operated by a computerized irrigation system, which includes either an on-site weather station, ET gauge or ET-based controller capable of reading current weather data and making automatic adjustments to independent run times for each irrigation valve based on changes in temperature, solar radiation, relative humidity, rain and wind. In addition, the computerized irrigation system shall be equipped with flow sensing capabilities, thus

automatically shutting down the irrigation system in the event of a mainline break or broken head. These features will assist in conserving water, eliminating the potential of slope failure due to mainline breaks and eliminating over-watering and flooding due to pipe and/or head breaks.

h) Recycling. Exterior storage areas for recyclables and green waste shall be provided. Adequate recycling containers shall be located in public areas. Construction and operation waste shall be collected for reuse and recycling.

i) Transportation Demand Management (TDM) Program. The project shall include adequate bicycle parking near building entrances to promote cyclist safety, security, and convenience. If available, mass transit facilities shall be provided (e.g. bus stop bench/shelter). The developer shall publish ride-sharing information for ride-sharing vehicles and provide a website or message board for coordinating rides. The Program shall ensure that appropriate bus route information is available to tenants and homeowners.

4. GHG – Installation/Implementation Standards. The developer shall submit for review and obtain approval from County Planning of evidence that all applicable GHG performance standards have been installed, implemented properly and that specified performance objectives are being met to the satisfaction of County Planning and County Building and Safety. These installations/ procedures include the following:

a) Design features and/or equipment that cumulatively provide the efficiency to meet or exceed Title 24 for the entire project (Title 24, Part 6 of the California Code of Regulations; Energy Efficiency Standards for Residential and Non Residential Buildings, as amended January 24, 2013; Cool Roof Coatings performance standards as amended January 24, 2013).

b) *All interior building lighting shall support the use of fluorescent light bulbs or equivalent energy-efficient lighting.*

c) *Installation of both the identified mandatory and optional design features or equipment that have been constructed and incorporated into the facility/structure.*

3,000 MTCO2e Emission Level

The County determined the size of development that is too small to be able to provide the level of GHG emission reductions expected from the Screening Tables or alternate emission analysis method (described in Attachment D) based upon the 90th percentile capture rate concept. To do this the County determined the GHG emission amount allowed by a project such that 90 percent of the emissions on average from

projects would exceed that level and be "captured" by the Screening Table or alternate emission analysis method.

In determining this level of emissions the County used the database of Projects kept by the Governor's Office of Planning and Research (OPR). That database contained 798 Projects, 60 of which were extremely large General Plan Updates, Master Plans, or Specific Plan Projects. The 60 very large projects were removed from the database in order not to skew the emissions value, leaving a net of 738 Projects. In addition, 27 projects were found to be outliers that would skew the emission value to high, leaving 711 as the sample population to use in determining the 90th percentile capture rate. Note that while the OPR database is a statewide database and may not exactly reflect emissions within the County, this method was considered conservative because development projects within unincorporated San Bernardino County tend to have higher energy consumption rates and have longer commute distances than the statewide average. As such, using the statewide database may produce an emissions value for the 90th percentile capture rate that may capture more than 90 percent of emissions.

The analysis of the 738 Projects within the sample population combined commercial, residential, and mixed use projects. Also note that the sample of projects included warehousing and other industrial land uses but did not include industrial processes (i.e. oil refineries, heavy manufacturing, electric generating stations, mining operations, etc.). Emissions from each of these Projects were calculated by SCAQMD and provide a consistent method of emissions calculations across the sample population further reducing potential errors in the statistical analysis. In calculating the emissions from Projects within the sample population, construction period GHG emissions were amortized over 30-years (the average economic life of a development project).

Large Residential Projects Located Outside a City Sphere of Influence

Residential Projects outside of a City Sphere of Influence that exceed 250 residential units will be required to prepare a project-specific GHG emissions analysis that includes a robust assessment of emissions, appropriate mitigation measures, and the issues associated with land use intensification and VMT generation on a project and regional basis. The analysis must produce an assessment that allows for a determination of whether the specific project causes cumulatively considerable GHG impacts. Residential Projects outside of a City Sphere of Influence that exceed 250 residential units will not qualify for the tiering and streamlining benefits otherwise provided by this Plan as allowed by CEQA Guidelines Section 15183.5 due to the inability to adequately analyze and incorporate programmatic mitigation that comprehensively addresses the issues of GHG emissions for regionally significant residential projects beyond the 2020 analysis horizon. It is anticipated that upon completion of the Sustainable Communities Strategy (SCS) by Southern California Association of Governments (SCAG) and the Regional GHG Reduction

Plan currently under preparation by the San Bernardino County Association of Governments (SANBAG), adequate methodology for quantification of regional VMT and more comprehensive mitigation will provide suitable planning tools that can be incorporated into this Plan through a future amendment. Both the SCS and the Regional GHG Reduction Plan are intended to satisfy the requirements of SB 375 and allow better forecasts of GHG emissions in future years, as well as providing a regional strategy for reducing GHG emissions. This provision provides a mechanism to ensure that these types of land use commitments outside of SOIs do not impede the expected emissions trajectory to mid-century and are not likely to conflict with the long term goal of GHG emissions reductions through 2045.

ATTACHMENT 2:

SCREENING TABLES

Screening Tables

The purpose of the Screening Tables is to provide guidance in measuring the reduction of GHG emissions attributable to certain design and construction measures incorporated into development projects. The analysis, methodology, and significance determination (thresholds) are based upon the GHG Reduction Plan and GHG Reduction Plan Update, which include GHG emission inventories (2008 and 2016); forecasts for years 2020, 2030, and 2045; GHG reduction targets for years 2020 and 2030; and the goals and policies to reach the targets. Appendix C of this document sets forth the methodology for the development and application of the Screening Tables and uses the California Air Pollution Control Officers Association (CAPCOA) guidance on quantifying project-level GHG reductions (CAPCOA 2010).

INSTRUCTIONS FOR RESIDENTIAL, COMMERCIAL, OR INDUSTRIAL PROJECTS

The Screening Tables assign points for each option incorporated into a project as mitigation or a project design feature (collectively referred to as "feature"). The point values correspond to the minimum emissions reduction expected from each feature. The menu of features allows maximum flexibility and options for how development projects can implement the GHG reduction measures. The point levels are based upon improvements compared to 2016 emission levels of efficiency. Projects that garner at least 100 points will be consistent with the reduction quantities anticipated in the GHG Reduction Plan Update. Consistent with *CEQA Guidelines*, such projects would be determined to have a less than significant individual and cumulative impact for GHG emissions.

Note that the Screening Tables use a base level of efficiency that corresponds to the California Building Energy Efficiency Standards for Residential and Non-residential Buildings (Title 24, Part 6) that became effective January 1, 2020. These are the statewide minimum requirements of efficiency that are currently in effect.

INSTRUCTIONS FOR MIXED-USE PROJECTS

Mixed-use projects provide additional opportunities to reduce emissions by combining complementary land uses in a manner that can reduce vehicle trips. Mixed-use projects also have the potential to complement energy-efficient infrastructure in a way that reduces emissions. For mixed-use projects, both Table 1 and Table 2 should be filled out, but the points should be proportioned identical to the proportioning of the mix of uses. For example, a mixed-use project that is 50 percent commercial uses and 50 percent residential uses will show ½ point for each assigned point value in Table 1 and Table 2, and the points will be added from both tables. Mixed-use projects that garner at least 100 points will be consistent with the reduction quantities in the County's forthcoming GHG Reduction Plan Update and would be considered less than significant for GHG emissions.

Those projects that do not garner 100 points using the Screening Tables will need to provide additional analysis to determine the significance of GHG emissions. Nothing in this guidance shall be construed as limiting the County's authority to adopt a statement of overriding consideration for projects that require the preparation of an EIR due to significant GHG impacts. The following tables provide a menu of performance standards/options related to GHG mitigation measures and design features that can be used to demonstrate consistency with the reduction measures and GHG reduction quantities in the forthcoming GHG Reduction Plan Update.

Table 1: Screening Table for Implementing GHG Performance Standards for Residential Development

Feature	Description	Assigned Point Values	Project Points
Reduction Measure Energy : Exceed Energy Efficiency Standards in New Residential Units			
Building Envelope			
Insulation	• 2019 Title 24 Requirements (walls R-8, roof/attic R-30) • Enhanced Insulation (rigid wall insulation R-13, roof/attic R-38) • Greatly Enhanced Insulation (spray foam wall insulated walls R-18 or higher, roof/attic R-38 or higher)	4 points 9 points 11 points	
Windows	• 2019 Title 24 Windows (0.3 U-factor, 0.23 solar heat gain coefficient [SHGC]) • Enhanced Window (0.28 U-Factor, 0.22 SHGC) • Greatly Enhanced Window (less than 0.28 U-Factor, less than 0.22 SHGC)	2 points 4 points 5 points	
Cool Roofs	• Enhanced Cool Roof (CRRC Rated 0.2 aged solar reflectance, 0.75 thermal emittance) • Greatly Enhanced Cool Roof (CRRC Rated 0.35 aged solar reflectance, 0.75 thermal emittance)	6 points 7 points	
Air Infiltration	Minimizing leaks in the building envelope is as important as the insulation properties of the building. Insulation does not work effectively if there is excess air leakage. • Air barrier applied to exterior walls, caulking, and visual inspection such as the HERS Verified Quality Insulation Installation (QII or equivalent) • Blower Door HERS Verified Envelope Leakage or equivalent	 6 points 5 points	
Thermal Storage of Building	Thermal storage is a design characteristic that helps keep a constant temperature in the building. Common thermal storage devices include strategically placed water filled columns, water storage tanks, and thick masonry walls. • Modest Thermal Mass (10% of floor or 10% of walls 12" or more thick exposed concrete or masonry with no permanently installed floor covering such as carpet, linoleum, wood, or other insulating materials) • Enhanced Thermal Mass (20% of floor or 20% of walls 12" or more thick exposed concrete or masonry with no permanently installed floor covering such as carpet, linoleum, wood, or other insulating materials)	 1 point 2 points	
Indoor Space Efficiencies			
Heating/ Cooling Distribution System	• Minimum Duct Insulation (R-6 required) • Enhanced Duct Insulation (R-8) • Distribution loss reduction with inspection (HERS Verified Duct Leakage or equivalent)	2 points 4 points 5 points 7 points	

Table 1: Screening Table for Implementing GHG Performance Standards for Residential Development

Feature	Description	Assigned Point Values	Project Points
Space Heating/ Cooling Equipment	• 2019 Title 24 Minimum HVAC Efficiency (SEER 13/75% AFUE or 7.7 HSPF) • Improved Efficiency HVAC (SEER 14/78% AFUE or 8 HSPF) • High Efficiency HVAC (SEER 15/80% AFUE or 8.5 HSPF) • Very High Efficiency HVAC (SEER 16/82% AFUE or 9 HSPF)	1 points 2 points 4 points 5 points	
Water Heaters	• 2019 Title 24 Minimum Efficiency (0.57 Energy Factor) • Improved Efficiency Water Heater (0.675 Energy Factor) • High Efficiency Water Heater (0.72 Energy Factor) • Very High Efficiency Water Heater (0.92 Energy Factor) • Solar Pre-heat System (0.2 Net Solar Fraction) • Enhanced Solar Pre-heat System (0.35 Net Solar Fraction)	4 points 7 points 9 points 11 points 2 points 5 points	
Daylighting	Daylighting is the ability of each room within the building to provide outside light during the day reducing the need for artificial lighting during daylight hours. • All peripheral rooms within the living space have at least one window (required) • All rooms within the living space have daylight (through use of windows, solar tubes, skylights, etc.) • All rooms daylighted	 0 points 1 point 1 point	
Artificial Lighting	• Efficient Lights (25% of in-unit fixtures considered high efficiency. High efficiency is defined as 40 lumens/watt for 15 watt or less fixtures; 50 lumens/watt for 15-40 watt fixtures, 60 lumens/watt for fixtures >40watt) • High Efficiency Lights (50% of in-unit fixtures are high efficiency) • Very High Efficiency Lights (100% of in-unit fixtures are high efficiency)	5 points 6 points 7 points	
Appliances	• Energy Star Refrigerator (new) • Energy Star Dishwasher (new) • Energy Star Washing Machine (new)	1 point 1 point 1 point	
Miscellaneous Residential Building Efficiencies			
Building Placement	North/south alignment of building or other building placement such that the orientation of the buildings optimizes natural heating, cooling, and lighting.	3 points	
Shading	At least 90% of south-facing glazing will be shaded by vegetation or overhangs at noon on June 21st.	2 points	
Energy Star Homes	EPA Energy Star for Homes (version 3 or above)	15 points	
Independent Energy Efficiency Calculations	Provide point values based upon energy efficiency modeling of the project. Note that engineering data will be required documenting the energy efficiency and point values based upon the proven efficiency beyond Title 24 Energy Efficiency Standards.	TBD	
Other	This allows innovation by the applicant to provide design features that increase the energy efficiency of the project not provided in the table. Note that engineering data will be required documenting the energy efficiency of innovative designs and point values given based upon the proven efficiency beyond Title 24 Energy Efficiency Standards.	TBD	

Table 1: Screening Table for Implementing GHG Performance Standards for Residential Development

Feature	Description	Assigned Point Values	Project Points
Existing Residential Retrofits	Having residential developments within walking and biking distances of local retail helps to reduce vehicle trips and/or vehicle miles traveled. The point value of residential projects in close proximity to local retail will be determined based upon traffic studies that demonstrate trip reductions and/or reductions in vehicle miles traveled (VMT). The suburban project will have at least three of the following on site and/or off site within ¼-mile: Residential Development, Retail Development, Park, Open Space, or Office. The mixed-use development should encourage walking and other non-auto modes of transport from residential to office/commercial locations (and vice versa). The project should minimize the need for external trips by including services/facilities for daycare, banking/ATM, restaurants, vehicle refueling, and shopping.	TBD	
Reduction Measure Energy 3: All Electric Homes			
All-Electric Homes	All electric homes reduce GHG emissions, as the grid electricity they use is generated using less carbon over time. Grid electricity in California will be 60 percent renewable energy by 2030 and 100 percent renewable energy by 2040.	12 points	
Reduction Measure Energy-7: Clean Energy			
Residential Renewable Energy Generation			
Photovoltaic	Solar Photovoltaic panels installed on individual homes or in collective neighborhood arrangements such that the total power provided augments: • 30 percent of the power needs of the project • 40 percent of the power needs of the project • 50 percent of the power needs of the project • 60 percent of the power needs of the project • 70 percent of the power needs of the project • 80 percent of the power needs of the project • 90 percent of the power needs of the project • 100 percent of the power needs of the project	 9 points 12 points 17 points 20 points 23 points 25 points 28 points 31 points	
Wind Turbines	Some areas of the County lend themselves to wind turbine applications. Analysis of the areas' capability to support wind turbines should be evaluated prior to choosing this feature. Individual wind turbines at homes or collective neighborhood arrangements of wind turbines such that the total power provided augments: • 30 percent of the power needs of the project • 40 percent of the power needs of the project • 50 percent of the power needs of the project • 60 percent of the power needs of the project • 70 percent of the power needs of the project • 80 percent of the power needs of the project • 90 percent of the power needs of the project • 100 percent of the power needs of the project	 9 points 12 points 17 points 21 points 23 points 25 points 28 points 31 points	
Off-site Renewable Energy Project	The applicant may submit a proposal to supply an off-site renewable energy project such as renewable energy retrofits of existing homes. These off-site renewable energy retrofit project proposals will be determined on a case-by-case basis and shall be accompanied by a detailed plan that documents the quantity of renewable energy the proposal would generate. Point values will be determined based upon the energy generated by the proposal.	TBD	

Table 1: Screening Table for Implementing GHG Performance Standards for Residential Development

Feature	Description	Assigned Point Values	Project Points
Other Renewable Energy Generation	The applicant may have innovative designs or unique site circumstances (such as geothermal) that allow the project to generate electricity from renewable energy not provided in the table. The ability to supply other renewable energy and the point values allowed will be decided based upon engineering data documenting the ability to generate electricity.	TBD	
Reduction Measure Water : Exceed Water Efficiency Standards			
Residential Irrigation and Landscaping			
Water Efficient Landscaping	• Limit conventional turf to < 25% of required landscape area • Limit conventional turf to < 50% of required landscape area • No conventional turf (warm season turf to < 50% of required landscape area and/or low water using plants are allowed) • Only California Native Plants that require no irrigation or some supplemental irrigation	0 points 2 points 4 points 5 points	
Water Efficient Irrigation Systems	• Low precipitation spray heads < 0.75”/hr or drip irrigation • Weather based irrigation control systems or moisture sensors (demonstrate 20% reduced water use)	1 point 2 points	
Storm Water Reuse Systems	Innovative on-site storm water collection, filtration, and reuse systems are being developed that provide supplemental irrigation water and provide vector control. These systems can greatly reduce the irrigation needs of a project. Point values for these types of systems will be determined based upon design and engineering data documenting the water savings.	TBD	
Residential Potable Water			
Showers	Water Efficient Showerheads (2.0 gpm)	2 points	
Toilets	Water Efficient Toilets (1.5 gpm)	2 points	
Faucets	Water Efficient Faucets (1.28 gpm)	2 points	
Dishwasher	Water Efficient Dishwasher (6 gallons per cycle or less)	1 point	
Washing Machine	Water Efficient Washing Machine (Water factor <5.5)	1 point	
WaterSense	EPA WaterSense Certification	7 points	
Increase Residential Reclaimed Water Use			
Recycled Water	5% of the total project’s water use comes from recycled/reclaimed water	5 points	
Reduction Measure On Road: Alternative Transportation Options			
Increase Residential Density			
Residential Density	Designing the project with increased densities, where allowed by the General Plan and/or Zoning Ordinance, reduces GHG emissions associated with traffic in several ways. Increased densities affect the distance people travel and provide greater options for the modes of travel they choose. This strategy also provides a foundation for implementation of many other strategies, which would benefit from increased densities. 1 point is allowed for each 10% increase in density beyond 7 units/acre, up to 500% (50 points)	1–50 points	

Table 1: Screening Table for Implementing GHG Performance Standards for Residential Development

Feature	Description	Assigned Point Values	Project Points
Mixed-Use Development			
Mixed-Use	Mixes of land uses that complement one another in a way that reduces the need for vehicle trips can greatly reduce GHG emissions. The point value of mixed-use projects will be determined based upon a Transportation Impact Analysis (TIA) demonstrating trip reductions and/or reductions in vehicle miles traveled. Suggested ranges: • Diversity of land uses complementing each other (2–28 points) • Increased destination accessibility other than transit (1–18 points) • Increased Transit Accessibility (1–25 points) • Infill location that reduces vehicle trips or VMT beyond the measures described above (points TBD based on traffic data).	TBD	
Residential Near Local Retail (Residential-only Projects)	Having residential developments within walking and biking distance of local retail helps to reduce vehicle trips and/or vehicle miles traveled. The point value of residential projects in close proximity to local retail will be determined based upon traffic studies that demonstrate trip reductions and/or reductions in vehicle miles traveled (VMT). The suburban project will have at least three of the following on site and/or off site within ¼-mile: Residential Development, Retail Development, Park, Open Space, or Office. The mixed-use development should encourage walking and other non-auto modes of transport from residential to office/commercial locations (and vice versa). The project should minimize the need for external trips by including services/facilities for day care, banking/ATM, restaurants, vehicle refueling, and shopping.	1–16 points	
Traffic Flow Management Improvements			
Signal Synchroni-zation	Techniques for improving traffic flow include: traffic signal coordination to reduce delay, incident management to increase response time to breakdowns and collisions, Intelligent Transportation Systems (ITS) to provide real-time information regarding road conditions and directions, and speed management to reduce high free-flow speeds. • Signal synchronization • Traffic signals connected to existing ITS	 1 point/signal 3 points/signal	
Increase Public Transit			
Public Transit Access	The point value of a project's ability to increase public transit use will be determined based upon a Transportation Impact Analysis (TIA) demonstrating decreased use of private vehicles and increased use of public transportation. Increased transit accessibility (1–15 points)	TBD	
Reduction Measure: Install Electric Chargers			
Single-family DU EV Chargers	Installation of Electric Vehicle (EV) chargers in the garage of single-family DUs: • Level 1 110 volt AC Chargers • Level 2 240 volt AC Fast Chargers	 2 points 5 points	
Multi-family DU EV Chargers	Installation of Electric Vehicle (EV) chargers in the parking areas of Multi-family Residential Development: • Level 1 110 volt AC Chargers • Level 2 240 volt AC Fast Chargers	 2 points/charger 5 points/ charger	

Table 1: Screening Table for Implementing GHG Performance Standards for Residential Development

Feature	Description	Assigned Point Values	Project Points
Reduction Measure: Adopt and Implement a Bicycle Master Plan to Expand Bike Routes around the County			
Sidewalks	• Provide sidewalks on both sides of the street (required) • Provide pedestrian linkage between residential and commercial uses within 1 mile	1 point 3 points	
Bicycle Paths	• Provide bicycle paths within project boundaries • Provide bicycle path linkages between residential and other land uses • Provide bicycle path linkages between residential and transit	TBD 2 points 5 points	
Reduction Measure Waste-2 : Reduce Waste to Landfills			
Recycling	County-initiated recycling program diverting 100% of waste requires coordination in neighborhoods to realize this goal. The following recycling features will help the County fulfill this goal: • Provide green waste composting bins at each residential unit • Multifamily residential projects that provide dedicated recycling bins separated by types of recyclables combined with instructions/education program explaining how to use the bins and the importance of recycling • Construction waste recycling	 4 points 3 points 4 points	
Other GHG Reduction Feature Implementation			
Other GHG Emissions Reduction Features	This allows innovation by the applicant to provide residential design features for the GHG emissions from construction and/or operation of the project not provided in the table. Note that engineering data will be required documenting the GHG reduction amount and point values given based upon emission reductions calculations using approved models, methods, and protocols.	TBD	
Total Points Earned by Residential Project:			

Table 2: Screening Table for Implementing GHG Performance Standards for Commercial Development and Public Facilities

Feature	Description	Assigned Point Values	Project Points
Reduction Measure Energy: Exceed Energy Efficiency Standards in New Commercial Units			
Building Envelope			
Insulation	• 2019 Title 24 Requirements (walls R-16; roof/attic R-32) • Modestly Enhanced Insulation (walls R-15, roof/attic R-38) • Enhanced Insulation (rigid wall insulation R-13, roof/attic R-38) • Greatly Enhanced Insulation (spray foam insulated walls R-18 or higher, roof/attic R-38 or higher)	0 points 9 points 11 points 12 points	
Windows	• 2019 Title 24 Windows (0.57 U-factor, 0.4 SHGC) • Modestly Enhanced Window Insulation (0.4 U-factor, 0.32 SHGC) • Enhanced Window Insulation (0.32 U-factor, 0.25 SHGC) • Greatly Enhanced Window Insulation (0.28 or less U-factor, 0.22 or less SHGC)	0 points 4 points 5 points 7 points	
Cool Roofs	• Enhanced Cool Roof (CRRC Rated 0.2 aged solar reflectance, 0.75 thermal emittance) • Greatly Enhanced Cool Roof (CRRC Rated 0.35 aged solar reflectance, 0.75 thermal emittance)	8 points 10 points	
Air Infiltration	Minimizing leaks in the building envelope is as important as the insulation properties of the building. Insulation does not work effectively if there is excess air leakage. • Air barrier applied to exterior walls, caulking, and visual inspection such as the HERS Verified Quality Insulation Installation (QII or equivalent) • Blower Door HERS Verified Envelope Leakage or equivalent	7 points 6 points	
Thermal Storage of Building	Thermal storage is a design characteristic that helps keep a constant temperature in the building. Common thermal storage devices include strategically placed water filled columns, water storage tanks, and thick masonry walls. • Modest Thermal Mass (10% of floor or 10% of walls 12" or more thick exposed concrete or masonry with no permanently installed floor covering such as carpet, linoleum, wood, or other insulating materials) • Enhanced Thermal Mass (20% of floor or 20% of walls 12" or more thick exposed concrete or masonry with no permanently installed floor covering such as carpet, linoleum, wood, or other insulating materials) • Enhanced Thermal Mass (80% of floor or 80% of walls 12" or more thick exposed concrete or masonry with no permanently installed floor covering such as carpet, linoleum, wood, or other insulating materials)	2 points 4 points 14 points	

Table 2: Screening Table for Implementing GHG Performance Standards for Commercial Development and Public Facilities

Feature	Description	Assigned Point Values	Project Points
Indoor Space Efficiencies			
Heating/Cooling Distribution System	• Modest Duct insulation (R-6 required) • Enhanced Duct Insulation (R-8) • Distribution loss reduction with inspection (HERS Verified Duct Leakage or equivalent)	0 points 6 points 8 points	
Space Heating/ Cooling Equipment	• 2019 Title 24 Minimum HVAC Efficiency (SEER 13/75% AFUE or 7.7 HSPF) • Improved Efficiency HVAC (SEER 14/78% AFUE or 8 HSPF) • High Efficiency HVAC (SEER 15/80% AFUE or 8.5 HSPF) • Very High Efficiency HVAC (SEER 16/82% AFUE or 9 HSPF)	0 points 4 points 5 points 7 points	
Commercial Heat Recovery Systems	Heat recovery strategies employed with commercial laundry, cooking equipment, and other commercial heat sources for reuse in HVAC air intake or other appropriate heat recovery technology. Point values for these types of systems will be determined based upon design and engineering data documenting the energy savings.	TBD	
Water Heaters	• 2019 Title 24 Minimum Efficiency (0.57 Energy Factor) • Improved Efficiency Water Heater (0.675 Energy Factor) • High Efficiency Water Heater (0.72 Energy Factor) • Very High Efficiency Water Heater (0.92 Energy Factor) • Solar Pre-heat System (0.2 Net Solar Fraction) • Enhanced Solar Pre-heat System (0.35 Net Solar Fraction)	0 points 8 points 10 points 11 points 2 points 5 points	
Daylighting	Daylighting is the ability of each room within the building to provide outside light during the day reducing the need for artificial lighting during daylight hours. • All peripheral rooms within building have at least one window or skylight • All rooms within building have daylight (through use of windows, solar tubes, skylights, etc.) • All rooms daylighted	0 points 1 point 1 point	
Artificial Lighting	• Efficient Lights (25% of in-unit fixtures considered high efficiency. High efficiency is defined as 40 lumens/watt for 15 watt or less fixtures; 50 lumens/watt for 15-40 watt fixtures, 60 lumens/watt for fixtures >40 watt) • High Efficiency Lights (50% of in-unit fixtures are high efficiency) • Very High Efficiency Lights (100% of in-unit fixtures are high efficiency	5 points 7 points 8 points	
Appliances	• Energy Star Commercial Refrigerator (new) • Energy Star Commercial Dishwasher (new) • Energy Star Commercial Clothes Washer (new)	2 points 2 points 2 points	

Table 2: Screening Table for Implementing GHG Performance Standards for Commercial Development and Public Facilities

Feature	Description	Assigned Point Values	Project Points
Miscellaneous Commercial Building Efficiencies			
Building Placement	North/south alignment of building or other building placement such that the orientation of the buildings optimizes conditions for natural heating, cooling, and lighting.	4 points	
Shading	At least 90% of south-facing glazing will be shaded by vegetation or overhangs at noon on June 21st.	6 points	
Other	This allows innovation by the applicant to provide design features that increase the energy efficiency of the project not provided in the table. Note that engineering data will be required documenting the energy efficiency of innovative designs and point values given based upon the proven efficiency beyond Title 24 Energy Efficiency Standards.	TBD	
Existing Commercial Buildings Retrofits	The applicant may wish to provide energy efficiency retrofit projects to existing commercial buildings to further the point value of their project. Retrofitting existing commercial buildings within the County is a key reduction measure that is needed to reach the reduction goal. The potential for an applicant to take advantage of this program will be decided on a case-by-case basis and shall have the approval from the County of San Bernardino Planning Department. The decision to allow applicants to participate in this program will be evaluated based upon, but not limited to the following: • Will the energy efficiency retrofit project benefit low income or disadvantaged communities? • Does the energy efficiency retrofit project provide co-benefits important to the County? • Point value will be determined based upon engineering and design criteria of the energy efficiency retrofit project.	TBD	
Reduction Measure Energy-3: All Electric Buildings			
All-Electric Buildings	All electric buildings reduce GHG emissions, as the grid electricity they use is generated using less carbon over time. Grid electricity in California will be 60 percent renewable energy by 2030 and 100 percent renewable energy by 2040.	15 points	
Reduction Measure Energy-7: Clean Energy			
Commercial/Industrial Renewable Energy Generation			
Photovoltaic	Solar Photovoltaic panels installed on commercial buildings or in collective arrangements within a commercial development such that the total power provided augments: • 30 percent of the power needs of the project • 40 percent of the power needs of the project • 50 percent of the power needs of the project • 60 percent of the power needs of the project • 70 percent of the power needs of the project • 80 percent of the power needs of the project • 90 percent of the power needs of the project • 100 percent of the power needs of the project	8 points 12 points 16 points 19 points 23 points 26 points 30 points 34 points	

Table 2: Screening Table for Implementing GHG Performance Standards for Commercial Development and Public Facilities

Feature	Description	Assigned Point Values	Project Points
Wind Turbines	Some areas of the County lend themselves to wind turbine applications. Analysis of the areas capability to support wind turbines should be evaluated prior to choosing this feature. Wind turbines as part of the commercial development such that the total power provided augments: • 30 percent of the power needs of the project • 40 percent of the power needs of the project • 50 percent of the power needs of the project • 60 percent of the power needs of the project • 70 percent of the power needs of the project • 80 percent of the power needs of the project • 90 percent of the power needs of the project • 100 percent of the power needs of the project	 8 points 12 points 16 points 19 points 23 points 26 points 30 points 34 points	
Off-site Renewable Energy Project	The applicant may submit a proposal to supply an off-site renewable energy project such as renewable energy retrofits of existing residential or existing commercial/industrial. These off-site renewable energy retrofit project proposals will be determined on a case-by-case basis accompanied by a detailed plan documenting the quantity of renewable energy the proposal will generate. Point values will be based upon the energy generated by the proposal.	TBD	
Other Renewable Energy Generation	The applicant may have innovative designs or unique site circumstances (such as geothermal) that allow the project to generate electricity from renewable energy not provided in the table. The ability to supply other renewable energy and the point values allowed would be decided based upon engineering data documenting the ability to generate electricity.	TBD	
Reduction Measure Water 1-3: Exceed Water Efficiency Standards			
Commercial Irrigation and Landscaping			
Water Efficient Landscaping	• Eliminate conventional turf from landscaping • Only moderate water using plants • Only low water using plants • Only California Native landscape that requires no or only supplemental irrigation	0 point 2 points 3 points 5 points	
Water Efficient Irrigation Systems	• Low precipitation spray heads< 0.75”/hr or drip irrigation • Weather based irrigation control systems combined with drip irrigation (demonstrate 20% reduced water use)	1 point 3 points	
Storm Water Reuse Systems	Innovative on-site storm water collection, filtration, and reuse systems are being developed that provide supplemental irrigation water and provide vector control. These systems can greatly reduce the irrigation needs of a project. Point values for these types of systems will be determined based upon design and engineering data documenting the water savings.	TBD	
Commercial Potable Water			
Showers	Water Efficient Showerheads (2.0 gpm)	2 points	
Toilets	• Water Efficient Toilets/Urinals (1.5 gpm) • Waterless Urinals (note that commercial buildings having both waterless urinals and high efficiency toilets will have a combined point value of 6 points)	3 points 3 points	
Faucets	Water Efficient faucets (1.28 gpm)	2 points	

Table 2: Screening Table for Implementing GHG Performance Standards for Commercial Development and Public Facilities

Feature	Description	Assigned Point Values	Project Points
Commercial Dishwashers	Water Efficient dishwashers (20% water savings)	2 points	
Commercial Laundry Washers	• Water Efficient laundry (15% water savings) • High Efficiency laundry equipment that captures and reuses rinse water (30% water savings)	2 points 4 points	
Commercial Water Operations Program	Establish an operational program to reduce water loss from pools, water features, etc., by covering pools, adjusting fountain operational hours, and using water treatment to reduce draw down and replacement of water. Point values for these types of plans will be determined based upon design and engineering data documenting the water savings.	TBD	
Increase Commercial/Industrial Reclaimed Water Use			
Recycled Water	Graywater (purple pipe) irrigation system on site	5 points	
Reduction Measure On Road: Alternative Transportation Options			
Mixed-Use Development			
Mixed-Use	Mixes of land uses that complement one another in a way that reduces the need for vehicle trips can greatly reduce GHG emissions. The point value of mixed-use projects will be determined based upon traffic studies that demonstrate trip reductions and/or reductions in vehicle miles traveled.	TBD	
Local Retail Near Residential (Commercial only Projects)	Having residential developments within walking and biking distance of local retail helps to reduce vehicle trips and/or vehicle miles traveled. The point value of residential projects in close proximity to local retail will be determined based upon traffic studies that demonstrate trip reductions and/or reductions in vehicle miles traveled.	TBD	
Preferential Parking			
Parking	• Provide reserved preferential parking spaces for car-share, carpool, and ultra-low or zero emission vehicles. • Provide larger parking spaces that can accommodate vans used for ride-sharing programs and reserve them for vanpools and include adequate passenger waiting/loading areas.	1 point 1 point	
Signal Synchronization and Intelligent Traffic Systems			
Signal Improvements	Techniques for improving traffic flow include: traffic signal coordination to reduce delay, incident management to increase response time to breakdowns and collisions, Intelligent Transportation Systems (ITS) to provide real-time information regarding road conditions and directions, and speed management to reduce high free-flow speeds. • Synchronize signals along arterials used by project. • Connect signals along arterials to existing ITS.	1 point/signal 3 points/signal	
Increase Public Transit			
Public Transit	The point value of a project's ability to increase public transit use will be determined based upon a Transportation Impact Analysis (TIA) demonstrating decreased use of private vehicles and increased use of public transportation. Increased transit accessibility (1–15 points)	TBD	

Table 2: Screening Table for Implementing GHG Performance Standards for Commercial Development and Public Facilities

Feature	Description	Assigned Point Values	Project Points
Reduction Measure: Install Electric Vehicle Chargers			
Worker and Customer Based Electric Vehicle Chargers	Installation of Electric Vehicle (EV) Chargers for passenger EVs: Level 2 240 volt AC Fast Chargers Level 3 480 volt DC Rapid Chargers	 5 points/charger 8 points/charger	
Electric Commercial Truck Chargers	Installation of electric chargers for medium duty and heavy duty trucks: Level 1 AC Chargers for EV Medium Duty Trucks Level 1 AC Chargers for EV Class 8 (Heavy Duty) Trucks Level 2 AC Chargers for EV Medium Duty Trucks Level 2 AC Chargers for EV Class 8 (Heavy Duty) Trucks Level 3 DC Fast Chargers for EV Class 8 (Heavy Duty) Trucks	 3 points/charger 5 points/charger 8 points/charger 12 points/charger 16 points/charger	
Reduction Measure: Adopt and Implement a Bicycle Master Plan to Expand Bike Routes around the County			
Sidewalks	• Provide sidewalks on both sides of the street (required) • Provide pedestrian linkage between commercial and residential land uses within 1 mile	0 points 3 points	
Bicycle Paths	• Provide bicycle paths within project boundaries • Provide bicycle path linkages between commercial and other land uses • Provide bicycle path linkages between commercial and transit	1 point 2 points 5 points	
Reduction Measure: Reduce Waste to Landfills			
Recycling	County initiated recycling program diverting 80% of waste requires coordination with commercial development to realize this goal. The following recycling features will help the County fulfill this goal: • Provide separated recycling bins within each commercial building/floor and provide large external recycling collection bins at central location for collection truck pick-up	2 points	
	• Provide commercial/industrial recycling programs that fulfills an on-site goal of 80% diversion of solid waste • Recycle construction waste	5 points 4 points	
Other GHG Reduction Feature Implementation			
Other GHG Emissions Reduction Features	This allows innovation by the applicant to provide commercial design features that the GHG emissions from construction and/or operation of the project not provided in the table. Note that engineering data will be required documenting the GHG reduction amount and point values given based upon emission reductions calculations using approved models, methods, and protocols.	TBD	
Total Points Earned by Commercial/Industrial Project:			

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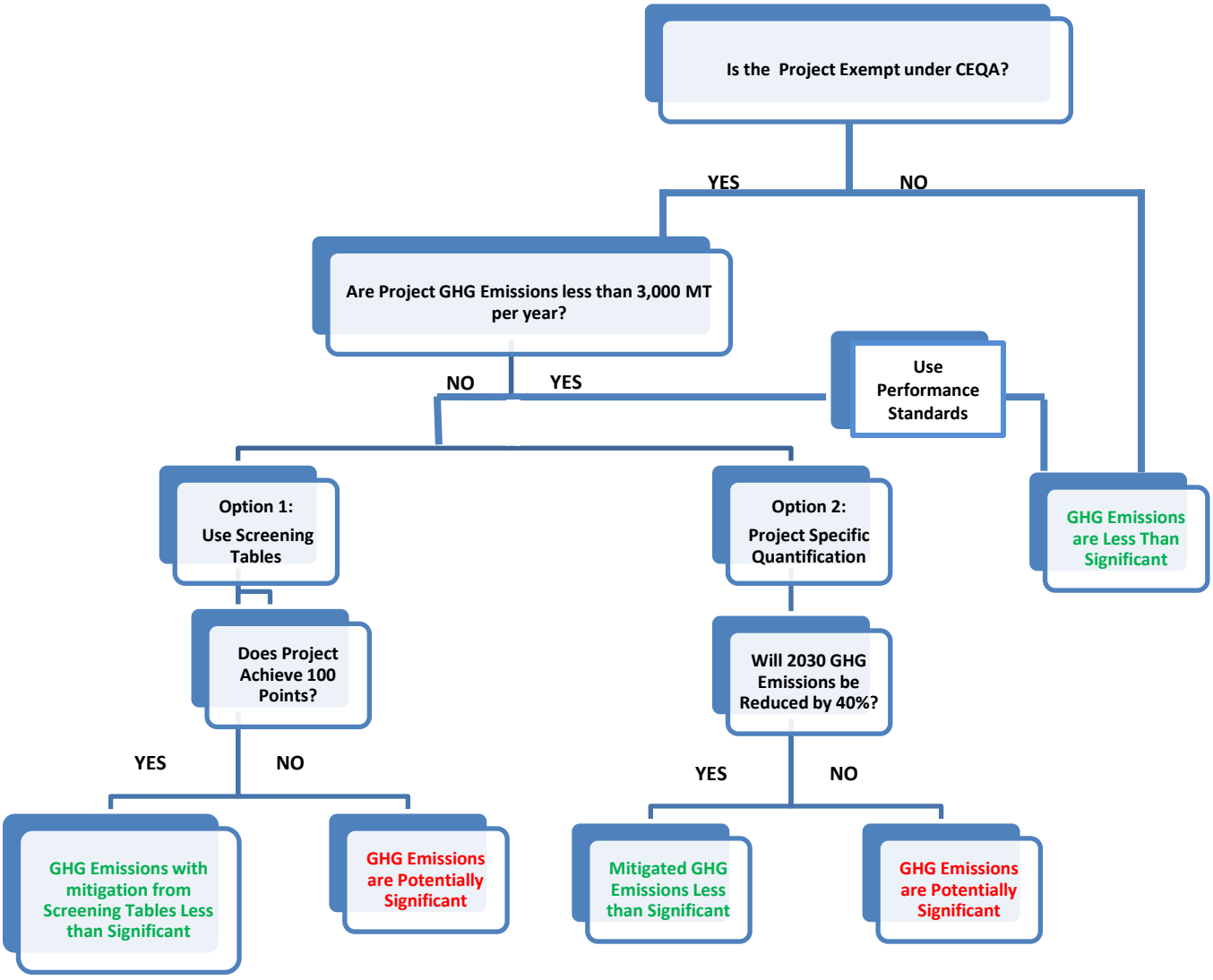
APPENDIX A: GHG DEVELOPMENT REVIEW PROCESS FLOW CHART DIAGRAM

Approach to Implementation of GHG Development Review



APPENDIX B: TRANSIT PRIORITY PROJECT AND SUSTAINABLE COMMUNITY PROJECT CHECKLIST

TRANSIT PRIORITY PROJECT CHECKLIST

The following checklist will assist in determining if your project qualifies as a Transit Priority Project (TPP) and a Sustainable Community Project (SCP) as defined in PRC 21155(a), (b), and PRC 21152.

Yes	No	Is the project:	
☐	☐	1.	Located within ½ mile of a trolley station, future station, or transit center?
☐	☐	2.	At least 50% residential use, based upon total square footage, and non-residential uses within the project between 26% and 50% of total square footage with FAR of not less than 0.75?
☐	☐	3.	At or above a minimum net density of at least 20 dwelling units per acre?
☐	☐	4.	Is your project consistent with the general land use designations in the SCP (if you answered yes to questions 1 through 3, then answer yes to this one)?

If you answered **Yes** to questions 1 through 4 then your project is a Transit Priority Project (TPP) as defined by PRC Section 21155(b). Continue with the next list of environmental questions:

Yes	No	Does the project:	
☐	☐	5.	Contain sites on the Cortese List?
☐	☐	6.	Site contain any hazardous substances, contaminated soil or hazardous material?
☐	☐	7.	Site include historical resources?
☐	☐	8.	Have an unusually high risk of fire or explosion from material stored or used at properties within ¼ mile of the project site?
☐	☐	9.	Site currently include areas developed as Open Space (parks, habitat, etc.)?

Continue with the next list of land use questions below:

Yes	No		
☐	☐	10.	Does the project design have all the buildings at least 15% more efficient than Title 24 energy standards and uses 25% or less water than average households?
☐	☐	11.	Is the project site eight acres or less in size?
☐	☐	12.	The project does not include any single level of a building exceeding 75 TSF?
☐	☐	13.	The project does not conflict with nearby industrial uses?
☐	☐	14.	The project will sell at least 20% of housing to families of moderate income, or 10% of housing will be rented to families of low income, or at least 5% of housing will be rented to families of very low income, or the project provides open space equal or greater than 5 acres per 1,000 residents, or the developer will pay in-lieu fees sufficient to result in the development of affordable housing meeting one of the criteria described above?

Determining Eligibility based upon the answers:

Full CEQA Exemption for Sustainable Community Projects (SCPs)

If you answered **Yes** to all the TPP questions 1 through 4, **No** to all the environmental questions 5 through 9, and **Yes** to all the land use questions 10 through 14, then your project is an SCP and is eligible for a full CEQA Exemption under SB 375.

Transit Priority Projects (TPP)

If you answered **Yes** to all the TPP questions 1 through 4, but did not qualify as an SCP then your project is a TPP. Your TPP needs to incorporate all appropriate mitigation measures required by an applicable CEQA document (such as an adopted EIR for a Specific Plan) for your project location. If your TPP meets these two criteria then your TPP does not need to analyze the following impacts in the Sustainable Communities Environmental Assessment (SCEA) or CEQA analysis:

- Growth-inducing impacts,
- Regional transportation impacts, and
- GHG emissions related to passenger cars and light-duty trucks.

The impacts listed above are considered less than significant because the project is a TPP and the SCEA or CEQA document should reference PRC Section 21155.2(c)

Other Residential and Mixed-Use Projects

If you answered Yes to question 4, but did not qualify as an SCP or TPP, your project may not need to analyze some of the impacts in the CEQA analysis if your project is a **residential project or mixed-use project with 75%** of the total building square footage of the project is residential units. In addition, your project needs to incorporate all appropriate mitigation measures required by an applicable prior CEQA document (such as an adopted EIR for a Specific Plan) for your project location. If your project meets these criteria, then the CEQA analysis of your project does not need to analyze the following impacts:

- Growth-inducing impacts,
- Regional transportation impacts, and
- GHG emissions related to passenger cars and light-duty trucks.

The impacts listed above are considered less than significant because the project meets the criteria in PRC Section 21155.2(c)

APPENDIX C: METHODOLOGY FOR THE DEVELOPMENT AND APPLICATION OF THE SCREENING TABLES

METHODS SUMMARY

The point values in the Screening Tables were derived from the projected emissions reductions that would be achieved by each of the reduction measures associated with new development within the County of San Bernardino forthcoming GHG Reduction Plan Update. The points within the Screening Tables were proportioned by residential unit or square footage of commercial/industrial uses. This was accomplished by taking the predicted growth in households and commercial uses in 2030 and proportioning the appropriate reduction quantities for new development to the residential, commercial, and industrial land use sectors within the Screening Tables. This results in point values that are proportioned by residential unit or commercial/industrial square footage. Because of this outcome, the size of the project is not relevant to the Screening Tables. Regardless of size, each project needs to garner 100 points to demonstrate consistency with the forthcoming GHG Reduction Plan Update. Efficiency, not size of the project, is critical.

Note that the Screening Tables and point values are best used for typical development projects processed by the County. Examples of typical development projects include residential subdivisions, multifamily residential apartments, condominiums, and townhouses, retail commercial, big box retail, office buildings, business parks, and typical warehousing. Mixed-use projects can use the instructions at the beginning of the Screening Tables. Transit-oriented development (TOD) and infill projects are able to use the Screening Tables; however, the Screening Table points are likely to underestimate total emission reductions afforded these types of projects. Note that the Screening Tables include the opportunity to custom develop points in order to provide points in the sections of the Screening Tables marked TBD and account for the predicted reductions in vehicle trips and vehicle miles traveled within a project-specific traffic study and GHG analysis. TOD and infill projects can be more accurately assessed and points allocated using this method.

However, more unusual types of industrial projects, such as cement manufacturing, metal foundries, refrigerant manufacturing, electric generating stations—including large alternative energy electric generation, and oil refineries, cannot use the Screening Tables because the emission sources for those types of uses were not contemplated in the forthcoming GHG Reduction Plan Update.

DEVELOPMENT OF THE POINT VALUES

Within the local reduction measures, 7,891 MT CO_2e would be reduced using the Screening Tables for new development. The Screening Tables and the point allocation within the Screening Tables are tied to 7,891 MT CO_2e of reductions.

The first step in allocating point values is to determine the number of new homes and commercial buildings that are anticipated by year 2030. The County predicts that a total of 6,167 new residential units

will be needed by 2030 and a total of approximately 4,851,000 square feet of new commercial and industrial buildings within the County is needed to accommodate anticipated job growth.

Approximately 6,167 new residential units and 4,851,000 square feet of new commercial and industrial buildings within the County are anticipated to either use the Screening Tables or provide an independent analysis demonstrating reductions. Evaluating the growth in residential and commercial/industrial land uses, approximately 69.6 percent is attributable to residential and 30.4 percent is attributable to commercial/industrial land uses. Using those ratios, the Screening Tables would need to reduce 5,491 MT CO_2e from residential development and 2,400 MT CO_2e from commercial/industrial development by 2030.

Dividing the 5,491 MT CO_2e reductions of emissions afforded the Screening Table for new residential development by the anticipated 6,167 new residential units that will be built yields 0.89 MT CO_2e per residential unit that needs to be reduced to fulfill the anticipated reductions of the GHG Reduction Plan Update. Using the same process, the Screening Tables for new commercial/industrial development would need to reduce 0.50 MT CO_2e per 1,000 gross square feet of commercial/industrial building area.

The levels of reduction efficiency for typical residential units in this climate zone yields:

0.009 MT CO_2e per Point per Residential Unit

The levels of reduction efficiency for the mix of commercial/industrial uses in this climate zone yields:

0.005 MT CO_2e per Point per 1,000 Square Feet of Gross Commercial/Industrial Building Area

Since each residential unit needs to reduce 0.89 MT CO_2e and each 1,000 square feet of commercial/ industrial building area needs to reduce 0.50 MT CO_2e, each project needs to gain 100 points to provide the expected reductions from the Screening Tables.