

DRAFT
2045 Climate
Action Plan

County of Los Angeles
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ACRONYMS

2020 CCAP	Los Angeles County Community Climate Action Plan 2020
2045 CAP	<i>2045 Los Angeles County Climate Action Plan</i>
AB	Assembly Bill
AB 32	Global Warming Solutions Act
AB 118	Air Quality Improvement Program
AB 341	California Department of Resources Recycling and Recovery 75 percent waste diversion initiative
AB 398	Cap-and-Trade Program
AB 1493	Pavley and Advanced Clean Car Standards
AB 1668	Water Conservation and Drought Planning
ACWM	Agricultural Commissioner Weights and Measures Department
AEP	California Association of Environmental Professionals
AFOLU	Agriculture, Forestry, and Other Land Use
AHSC	Affordable Housing and Sustainable Communities Program

AR5	Intergovernmental Panel on Climate Change Fifth Assessment Report
ATP	Active Transportation Program
AV	autonomous vehicle
AVAQMD	Antelope Valley Air Quality Management District
AVL	Automatic Vehicle Locator
BAU	business-as-usual
BEV	battery electric vehicle
BIPOC	Black, Indigenous, and People of Color
BPI	Biodegradable Products Institute
BUILD	Building Initiative for Low Emissions Development
CAA	Clean Air Act
CAFE	Corporate Average Fuel Economy
Cal. Code Regs.	California Code of Regulations
CAL FIRE	California Department of Forestry and Fire Protection
CalCAP	California Capital Access Program
CALeVIP	California Electric Vehicle Infrastructure Project
CalGreen Code	California Green Building Standards Code
CalRecycle	California Department of Resources Recycling and Recovery
CalSTA	California State Transportation Agency
Caltrans	California Department of Transportation
CAP	climate action plan
CARB	California Air Resources Board
CCA	community choice aggregation
CCI	California Climate Investments
CCS	capture and carbon and sequestration
CDFA	California Department of Food and Agriculture
CDFW	California Department of Fish and Wildlife

CDI	commercial direct install
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CH ₄	methane
CHP	combined heat and power
Climate Vulnerability Assessment	<i>LA County Climate Vulnerability Assessment</i>
CNG	compressed natural gas
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
County	the unincorporated areas of Los Angeles County
Countywide	Los Angeles County in its entirety, inclusive of both unincorporated areas and all 88 incorporated cities
COVID-19	SARS-CoV-2 or coronavirus disease 2019
CPA	Clean Power Alliance
CPUC	California Public Utilities Commission
CRIS	Climate Registry Information System
CSO	Chief Sustainability Office
CVA	Climate Vulnerability Assessment
CVRP	Clean Vehicle Rebate Project
DHS	Department of Health Services
DOE	U.S. Department of Energy
DPH	Department of Public Health
DPR	direct potable reuse
DRP	Department of Regional Planning
DU	dwelling unit
e-bike	electric bicycle

ECAA	Energy Conservation Assistance Act
EGIA	Electric & Gas Industries Association
EIR	Environmental Impact Report
EMFAC2021	EMission FACtors 2021
EO	Executive Order
EO B-55-18	Achieve Carbon Neutrality Statewide by 2045
EO S-01-07	Low Carbon Fuel Standards
EPA	U.S. Environmental Protection Agency
ESAP	Energy Savings Assistance Program
EUI	energy use intensity
EV	electric vehicle
EVCS	electric vehicle charging station
EVSE	electric vehicle supply equipment
FCEV	fuel cell electric vehicle
FHA	Federal Housing Administration
Food DROP	Food Donation Recovery and Outreach Program
FOD	first order of decay
FTA	Federal Transit Administration
GGRF	Greenhouse Gas Reduction Fund
General Plan	<i>Los Angeles County General Plan 2035</i>
GHG	greenhouse gas
GPC	Global Protocol for Community-scale GHG Emission Inventories
GPCD	gallons per capita per day
GW	gigawatt
GWP	global warming potential
HCD	U.S. Department of Housing and Community Development
HERO	Home Energy Renovation Opportunity

HFC	hydrofluorocarbon
HOME	HOME Investment Partnerships Program
HQTA	high quality transit area
HUD	U.S. Department of Housing and Urban Development
ICLEI	U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions
II	internal-internal
IPCC	Intergovernmental Panel on Climate Change
IPPU	Industrial Processes and Product Use
ISD	Internal Services Department
IX	internal-external
JWPCP	Joint Water Pollution Control Plant
kBtu	one thousand British thermal units
kW	kilowatt
LA County	County of Los Angeles government
LACDA	Los Angeles County Development Authority
LACSD	Los Angeles County Sanitation Districts
LADWP	Los Angeles Department of Water and Power
LARC	Los Angeles Regional Collaborative
LASD	Los Angeles County Sheriff's Department
LED	light-emitting diode
LFG	landfill gas collection
LiHEAP	Low Income Home Energy Assistance Program
LIWP	Low Income Weatherization Program
LNG	liquefied natural gas
LTF	Local Transportation Fund
MAP-21	Moving Ahead for Progress in the 21st Century

Metro	Los Angeles County Metropolitan Transportation Authority
MRR	Mandatory Greenhouse Gas Reporting Regulations
MSRC	Mobile Source Air Pollution Reduction Review Committee
MTCO ₂ E	metric tons of carbon dioxide equivalent
MW	megawatt
MWD	Metropolitan Water District of Southern California
N ₂ O	nitrous oxide
ND	negative declaration
NF ₃	nitrous trifluoride
NGV	natural gas vehicle
NZEV	near-zero-emission vehicle
OurCounty Sustainability Plan	<i>OurCounty: Los Angeles Countywide Sustainability Plan</i>
PACE	Property Assessed Clean Energy
Paris Agreement	2016 Paris Climate Agreement
Parks	Department of Parks & Recreation
PEV	plug-in electric vehicle
PFC	perfluorocarbon
PHEV	plug-in hybrid electric vehicle
PM	particulate matter
PW	Department of Public Works'
PV	photovoltaic
RGAP	Ridership Growth Action Plan
RMP	Refrigerant Management Program
RPS	Renewables Portfolio Standard
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SB	Senate Bill

SB 32	California Global Warming Solutions Act of 2006
SB 100	Renewable Portfolio Standards
SB 606	Water Management Planning
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Monitoring District
SCE	Southern California Edison
SEA	Significant Ecological Area
SF ₆	sulfur hexafluoride
SGC	Strategic Growth Council
SLCP	Short-Lived Climate Pollutant
SoCalGas	Southern California Gas Company
SoCalREN	Southern California Regional Energy Network
solar PV	solar photovoltaic
SOV	single-occupancy vehicle
SP	service population
SWIMS	Los Angeles County Public Works Solid Waste Information Management System
SWIS	California Department of Resources Recycling and Recovery's Solid Waste Integrated System
TAZ	traffic analysis zone
TBD	to be determined
TCC	Transformative Climate Communities
TDA	Transportation Development Act
TDM	transportation demand management
TECH	Technology and Equipment for Clean Heating
TEP	Transportation Electrification Partnership
TIRCP	Transit and Intercity Rail Capital Program
Title 24	California Green Building Standards Code

TOD	Transit Oriented District
tpd	tons per day
TSSP	Traffic Signal Synchronization Program
USD	U.S. dollars
USDA	U.S. Department of Agriculture
U.S. EPA	U.S. Environmental Protection Agency
VMT	vehicle miles traveled
WDACS	County Workforce Development, Aging and Community Services
WUI	wildland urban interface
XI	external-internal
XX	external-external
ZEV	zero-emission vehicle
ZNE	Zero Net Energy

GLOSSARY

AB 1668	A legislative standard enacted in 2018 to guide water conservation and use efficiency for indoor and outdoor uses.
Active transportation	A mode of transportation that includes walking, running, biking, scootering, skateboarding, and other human-powered forms of transportation. It can also include low-speed electrical devices such as motorized wheelchairs, e-scooters, and electric-assist bicycles.
Adaptation	The effort to adjust practices and development in response to climate change to lessen future impacts.
Anaerobic digestion	A process by which organic matter, such as food waste or sewage, is broken down in the absence of oxygen to produce biogas and biofertilizer.
Biodiversity	The variety and variability of flora, fauna, and ecosystems. Biodiversity can be observed on macro levels, micro levels, and in between. Biodiversity is complex, fragile, and increasingly threatened by urbanization and climate change. Rich biodiversity supports many aspects of human life, from food and medicine to environmental quality.

Biodegradable Products Institute (BPI) certification	A certification for environmentally friendly products that meet high-quality compostable standards, and are proven to compost without toxic or lingering plastic residues.
Biogas	A type of gas, composed primarily of methane, derived from the process of bacterial decomposition of sewage, manure, food, plant crops, or other organic waste products.
Biogenic CO ₂	Carbon emissions released through the combustion or decomposition of natural and organic sources (i.e., trees, soil, wood).
Biomass conversion	Thermal conversion of organic materials such as wood waste, lawn clippings, agricultural waste, and nonrecyclable paper, when separated from other waste.
Building decarbonization	The process of creating buildings that contribute zero GHG emissions. For example, a newly constructed building can incorporate reused, recycled, and other low-carbon-intensity materials. Operationally, the building is energy efficient and uses renewable, zero-carbon energy sources for heating, cooling, and power.
Carbon dioxide (CO ₂)	A GHG made up of one carbon atom and two oxygen atoms that is released primarily through the burning of fossil fuels, other hydrocarbons, solid waste, and trees and wood products. Changes in land use also play a have an impact. Deforestation and soil degradation add carbon dioxide to the atmosphere, while forest regrowth takes it out of the atmosphere. While carbon dioxide is naturally occurring, the proportion of carbon dioxide in our atmosphere is increasing as a result of human activities. Increasing concentration levels of carbon dioxide and other GHGs contribute to climate change.
Carbon efficient	Contributing fewer carbon emissions compared to a conventional process while still providing the same service. A building, machine, or process is carbon efficient if it can deliver more functions or services for the same amount of carbon emissions, or the same function or service for fewer carbon emissions, compared to a conventional alternative.

Carbon neutral	A system or jurisdiction that has net zero GHG emissions, meaning that GHG emissions generated by sources such as transportation, power plants, and industrial processes are less than or equal to the amount of carbon dioxide that is stored, both in natural sinks and through mechanical sequestration. Strategies to achieve carbon neutrality include renewable energy supply, efficient buildings, low-carbon transportation, sustainable materials choices, and deep retrofits to existing buildings and infrastructure. Carbon neutrality may require carbon sequestration technologies to capture the remainder of GHG emissions.
Car share	An integrated network of passenger vehicles available for short-term rental. Car share can take the form of return systems in which a vehicle must be returned to the parking space from which it was rented. Alternatively, it can take the form of point-to-point systems in which the car can be returned to another space or left anywhere within a predetermined geographic zone.
Chargeback	A usage fee for electric vehicle chargers.
Clean manufacturing	Manufacturing processes that minimize waste and pollution production and limit or eliminate the use of toxic chemicals.
Clean Power Alliance (CPA)	A nonprofit community choice energy program now serving 32 jurisdictions across Los Angeles and Ventura counties. The CPA offers participants the option to increase their share of renewable energy, offering three tiers of electric service: Lean Energy at 36 percent renewable, Clean Energy at 50 percent renewable, and 100 percent Renewable.
Climate vulnerability assessment	An analysis of the extent to which a species, habitat, ecosystem, or civilization is susceptible to harm from climate change impacts. Vulnerability assessments are an integral component of climate adaptation planning.
Cogeneration facility	An energy plant that recovers waste heat from conventional power generation to produce thermal energy. Also called a <i>combined heat and power (CHP) system</i> .
Community shared solar facilities	Solar photovoltaic (PV) systems that generate and supply electricity to multiple customers within a specific geographic area. Participants typically make payments to reserve a portion of a solar system or the rights to a portion of its output. As the system generates electricity, all participants receive credits on their energy bill.

Compost	The product, rich in nutrients, that results from the decomposition of organic material. Material used to make compost includes landscape trimmings, agricultural crop residues, paper pulp, food scrap, wood chips, manure, and biosolids. These are typically referred to as <i>feedstock</i> .
Cool pavement	A type of paving material that reflects more solar energy, enhances water evaporation, or has been otherwise modified to remain cooler than conventional pavements. Cool pavements include a range of established and emerging technologies that communities are exploring as part of their heat island reduction efforts.
Decarbonization	Reduction in the carbon intensity and GHG emissions of a system or sector, such as buildings or transportation.
Disadvantaged communities	The areas that suffer most from a combination of economic, health, and environmental burdens as defined by the California Office of Environmental Health Hazard Assessment. These burdens typically include poverty, unemployment, health conditions, air and water pollution, and hazardous waste.
Distributed energy resources (DERs)	Decentralized sources of energy that are smaller than utility-scale energy sources and can be aggregated to provide the power necessary to meet regular demand.
Economic opportunity	The potential of someone to realize economic success. Similar to economic mobility, economic opportunity can be influenced by many factors, such as where one lives and goes to school or the availability of jobs.
Ecosystem services	The benefits and services (i.e., water purification, nutrient cycling, raw materials availability, pollination) provided to people directly or indirectly by ecosystems, wildlife, and natural systems.
E-scooters/electric scooters	Scooters with an electric motor that assist with user mobility. See also <i>micromobility</i> .
Electric vehicles (EVs)	An umbrella term to describe a variety of vehicle types that use electricity as their primary fuel source for propulsion or as a means to improve the efficiency of conventional internal combustion engine. These generally include battery electric vehicles, plug-in hybrid electric vehicles, and fuel cell electric vehicles.

Embodied carbon	The greenhouse gas emissions that result from the manufacturing, processing, transportation, installation, maintenance, and disposal of building materials.
Energy efficiency	The use of less energy to provide the same service. A process, building, machine, or other energy-consuming object is more energy efficient if it delivers more functions or services for the same energy input, or the same function or service for less energy input, than a conventional process.
Energy retrofit	Major changes to the structure or systems of an existing building for the purpose of achieving significant reductions in energy consumption (and operational costs) with the use of more efficient technologies, products, and designs. Energy retrofits may also reduce water consumption and improve occupant amenities.
Energy storage system	Technologies that collect generated energy so that it may be used at another time. Energy storage includes both electric systems such as batteries and thermal systems such as hot and cold water storage tanks. Energy storage can enhance the technical and economic viability of a distributed generation system and can operate critical systems during grid outages or in the case of emergency.
Energy use intensity (EUI)	The amount of energy consumed by a building over a period of time and normalized by another factor, such as per square foot or per person. EUI is most often represented as total energy consumption of one building in one year (typically presented in thousand British thermal units [kBtu]) divided by the total gross floor area of the building. These factors allow for the comparison of building performance across buildings of different types and sizes. See also <i>kBtu</i> .
Environmental justice	Defined by Government Code Section 65040.12(e) as “the fair treatment of people of all races, cultures and incomes with respect to the development, adoption, implementation and enforcement of environmental laws, regulations, and policies.
Equity	An end state in which all groups have access to the resources and opportunities necessary to improve the quality of their lives.
Executive Order B-55-18	An executive order by then-Governor Jerry Brown that set a goal to bring California to carbon neutrality by 2045, five years before the Paris Climate Agreement deadline.

First/last mile	The beginning or end of an individual’s trip on transit. Strategies may include bike lanes, bike parking, bike share, sidewalks, and crosswalks, bike share, signage, and wayfinding (e.g., information kiosks and mobile apps).
Fossil fuels	Hydrocarbon fuels formed by natural processes such as the anaerobic decomposition of organic matter. This process is time-intensive and fossil fuels are regenerated on the order of magnitude of millions of years. Typical fossil fuels include coal, oil, and natural gas.
Frontline communities	Marginalized groups of people who have historically experienced a disproportionately high share of environmental impacts, while not necessarily equally benefiting from policies to address the environmental effects. People of color and those earning low incomes tend to be most vulnerable to climate change, yet they tend to have fewer resources to prevent, adapt, or recover from climate disasters.
Gigawatt (GW)	A unit of electric power equal to one thousand megawatts (MW) or one billion watts.
Global Warming Solutions Act (AB 32)	A law enacted by the State of California in 2006 that established a statewide goal to address climate change by reducing greenhouse gas emissions to 2000 levels by 2010, 1990 levels by 2020, and 80 percent below 1990 levels by 2050.
Green chemistry	The design of chemical products or processes that reduce or eliminate the generation of hazardous substances.
Green infrastructure	A method for naturally managing rain and floodwaters. Green infrastructure reduces and treats stormwater runoff while also improving the local environment by mimicking natural processes. Green infrastructure includes strategies such as green roofs, bioswales, and permeable pavements.
Greenhouse gas (GHG) emissions	Gases that trap heat in the atmosphere by absorbing and emitting solar radiation within the atmosphere, causing a greenhouse effect that warms the atmosphere and leads to global climate change. The main GHGs are water vapor, carbon dioxide, methane, nitrous oxide, and ozone.
Gray water	Wastewater generated in homes and offices that is sourced from baths, sinks, washing machines, or kitchen appliances. Gray water may contain amounts of dirt, food, grease, or cleaning products, but does not have fecal contamination.

Global warming potential (GWP)	The cumulative radiative forcing, both direct and indirect effects, over a specified time horizon resulting from the emission of a unit mass of gas related to carbon dioxide.
Habitat connectivity	The degree to which patches of land used as habitat by local plants and animals are connected to each other. Habitat connectivity ensures that species are able to move around freely to mate, hunt, forage, or reproduce. Habitat connectivity also allows species the ability to migrate to preferable areas in case of habitat loss or climate event, avoiding habitat fragmentation.
Habitat linkages	An area of land that poses sufficient cover, food, forage, water, or other essential elements to serve as a movement pathway for species between two or more areas of habitat.
Heat island effect	Measurable elevated temperatures in developed areas, as compared to more rural surroundings. Temperatures in developed areas are affected by absorption of heat by hardscapes and radiation of heat into surrounding areas, resulting in local climate changes. Heat islands are influenced by geographic location and by local weather patterns, with effects changing on a daily or seasonal basis.
High-frequency transit	Transit that has reliable, high-frequency service, often with service every 15 minutes or less.
High-global-warming-potential (high-GWP) refrigerants	Potent greenhouse gases with high global warming potential (i.e., hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride) that result in greater emissions from an individual unit relative to carbon dioxide.
High quality transit area (HQTa)	Generally, a walkable transit area that is consistent with the adopted Regional Transportation Plan and is within one half-mile of a well-serviced transit stop or a transit corridor providing service frequency of every 15 minutes or less during peak commute hours.
Intergovernmental Panel on Climate Change (IPCC)	A United Nations body that evaluates current impacts and future risks of a changing climate. The IPCC prepares comprehensive scientific reports on climate change and provides technical and policy-relevant guidelines for reducing the rate at which climate change occurs.
Impermeable areas	Solid surfaces, such as paved roads and parking lots, that do not allow water to penetrate into the ground below.
kBtu	One thousand British thermal units. Often used to calculate the energy use intensity per square foot of buildings.

Life-cycle carbon intensity	The overall GHG emissions associated with all stages of the life cycle of a commercial product, process, or service, including each stage of its production and use. For instance, in the case of a manufactured product, GHG emissions from raw-material extraction and processing (cradle), through the product's manufacture, distribution, and use, to the recycling or final disposal of the materials composing it (grave) are part of the product's life-cycle carbon intensity.
Light-duty vehicle	A passenger vehicle with a maximum gross vehicle weight rating of 8,500 pounds.
Medium-duty vehicle	A passenger vehicle with a maximum gross vehicle weight rating from 8,501 to 10,000 pounds.
Methane (CH ₄)	A gas made up of one carbon atom and four hydrogen atoms. Methane is the main component of natural gas, commonly used as a fuel for heating. Methane is released during the production and distribution of natural gas, but also through livestock and other agricultural practices and by the decay of organic waste in landfills. Like carbon dioxide, methane is a GHG and exacerbates climate change. However, methane has a much higher global warming potential than carbon dioxide, meaning that methane has a much larger effect than the same amount of carbon dioxide.
Microgrid	An electrical distribution network that is connected to two or more buildings in a local area that can enter into "island mode" (i.e., operates in isolation from the central or local electricity distribution network) and provide power to buildings without using the central grid.
Micromobility	Transportation options that include personal vehicles meant to carry one or two passengers such as bicycles, small electric cars, or scooters.
Micro transit	Public or private multi-passenger transportation services that serve passengers using dynamically generated routes; they provide transit-like service on a smaller, more flexible scale.
Mode	A particular form of travel such as walking, traveling by automobile, traveling by bus, or traveling by train.
Native population	The indigenous inhabitants who have lived or currently live in the geographic area within the current boundaries of Los Angeles County before and after the arrival of Europeans.

Natural forests	Native trees and related vegetation in natural land areas where there are no clearly visible indications of human activities and where the ecological processes are not significantly disturbed.
Natural gas	A non-renewable hydrocarbon consisting largely of methane, a potent greenhouse gas. See "fossil fuel."
Near-zero-emission vehicle (NZEV)	Plug-in hybrid electric vehicles powered by both an internal combustion and battery-electric power train that are capable of operating like a zero-emission vehicle for some distances. NZEVs are considered a bridge technology that will help the development of the full zero-emission vehicle market.
Negative-carbon concrete	A process where carbon is captured during the production of concrete and then emitted over time during the concrete's lifetime, resulting in a carbon-negative effect.
Net Zero Carbon	A system, process, building, or community that mitigates any GHG emissions associated with its resource use or does not use energy sources that contribute to GHG emissions.
Net Zero Waste	A system, process, building, or community that sends no waste to landfills by reducing consumption and maximizing recycling and composting.
Net Zero Water	A system, process, building, or community that reduces water consumption and does not rely on off-site water sources to meet any of its water demand. Instead, alternative on-site sources such as rainwater collection or wastewater treatment and reuse are used.
Non-biogenic CO ₂	Carbon emissions from the combustion of fossil fuels.
Ordinance	A piece of legislation enacted by a municipal authority.
Organic waste	Biodegradable waste containing materials from living organisms. Organic waste may include food waste, green waste, landscaping and pruning waste, nonhazardous wood waste, or food-soiled paper waste that is mixed in with food waste. Organic waste can be processed through composting or anaerobic digestion.
OurCounty Sustainability Plan	A regional sustainability plan for the 88 cities and unincorporated areas of Los Angeles County. The OurCounty Sustainability Plan does not supersede the General Plan, but adds to LA County's strategic framework for addressing climate change.

Paris Climate Agreement	A global action plan to avoid the catastrophic impacts of climate change. Adopted in December 2015, the Paris Agreement formalized world leaders’ efforts to limit the global average temperature increase to 1.5 degrees Celsius above preindustrial levels. The agreement urged national leaders to join forces with states and local governments to commit to net-zero carbon emissions by 2050.
Particulate matter (PM)	A combination of solid and liquid droplets found in the air. Particulate matter can include dust, dirt, soot, or smoke. Some PM is large enough to be seen, but other types are microscopic (fine particulate matter). Fine particulate matter can travel deeply into the human respiratory tract and can cause health effects such as throat irritation, coughing, or asthma.
Precipitation whiplash	A condition under which the region is likely to experience drier periods than historically experienced followed by much wetter periods with more extreme rain events, which can lead to increased water scarcity, mudslides, and flooding.
Public-private partnership	A collaborative arrangement between public agencies and private-sector companies. These partnerships allow large-scale government projects to be completed with private funding, where the private entities are able to receive operating profits.
Plug-in electric vehicle (PEV)	A vehicle that can be recharged from an external source of electricity, such as a wall socket, and that stores this electricity in rechargeable battery packs that power the vehicle’s motion.
Reach code	A local building energy code that “reaches” beyond the state’s minimum requirements for energy use in building design and construction.
Regenerative agricultural practices	A holistic land management and agriculture practice that reverses the effects of climate change through rebuilding soil organic matter and restoring degraded soil biodiversity. Practices that support regenerative agriculture include well-managed grazing, the use of compost, or minimal tillage.
Renewable energy	Energy coming from resources that are naturally replenished on a human time scale, such as sunlight, wind, tides, waves, bioenergy, hydrogen, and geothermal.

Residual emissions	The emissions remaining after all technically and economically feasible opportunities to reduce emissions in all covered scopes and sectors have been implemented.
Resilience	The capacity to survive, adapt, and thrive in the face of chronic stresses and acute shocks and to even transform as conditions require. See also <i>shocks and stresses</i> .
Resilience hubs	As defined by the Urban Sustainability Directors Network, “community-serving facilities augmented to support residents, coordinate communication, distribute resources, and reduce carbon pollution while enhancing quality of life. Hubs provide an opportunity to effectively work at the nexus of community resilience, emergency management, climate change mitigation, and social equity while providing opportunities for communities to become more self-determining, socially connected, and successful before, during, and after disruptions.”
SB 32	A statute that codified a target to reduce California’s 2030 emissions by 40 percent below 1990 levels.
SB 606	A statute for water management planning that established water efficiency regulations and reporting requirements, and requires setting urban water use objectives.
Shocks and stresses	<i>Shocks</i> : Sudden events that threaten or affect the community’s immediate well-being. These can include earthquakes, fires, landslides, public health emergencies, civil unrest, terrorism, chemical emergencies, financial crises, extreme heat, flooding, infrastructure outages or disruptions, or building failures. <i>Stresses</i> : Longer term, chronic challenges that weaken natural, built, and economic or human resources. These can include inequity, disparities in employment, health and education, crime and violence, homelessness, economic recession, lack of affordable housing, food insecurity, climate change, air pollution, and the heat island effect.
Significant Ecological Areas (SEAs)	Land identified as holding important biological resources representing the wide-ranging biodiversity of Los Angeles County, based on the criteria for SEA designation established by the General Plan and as mapped in the adopted SEA Policy Map.

Single-occupancy vehicle (SOV) trips	Trips in privately operated vehicles that contain only one occupant.
Source separation	The proper separation of different waste streams for waste collection and treatment; for instance, properly separating and discarding of paper recycling from organic waste.
Sunset strategy	A strategy to manage declining industries, such as the oil and gas industry, and phase them out.
Sustainability	Meeting the needs of the present without compromising the ability of future generations to meet their own needs.
Transit-Oriented District (TOD)	A planning strategy that explicitly links land use and transportation by focusing mixed uses, mixed housing, employment, and commercial growth around bus and rail stations (approximately one-quarter to one-half mile radius of a significant transit facility station). TODs can reduce the number and length of vehicle trips by encouraging more bicycle/pedestrian and transit use and can support transit investments by creating the density around stations to boost ridership.
Transportation demand management (TDM)	Strategies to change travel behavior in an effort to reduce traffic congestion, increase safety and mobility, conserve energy, and reduce GHG emissions. These strategies are intended to reduce the demand for roadway travel and increase the overall efficiency of a local or regional transportation system. Strategies may include ridesharing, telecommuting, park-and-ride programs, pedestrian improvements, and alternative work schedules.
Unincorporated areas	Areas that are not within the boundaries of a city. More than 65 percent of Los Angeles County (2,654 square miles) is unincorporated. For the population of over 1 million people living in these areas, the LA County Board of Supervisors acts as their city council and the supervisor representing a specific area acts as the city mayor. County departments provide the municipal services for these areas. There are approximately 120–125 unincorporated areas in Los Angeles County.
Urban agriculture	Agriculture practices in urban areas that take the form of front-yard, backyard, rooftop, or balcony gardening; community gardening in vacant lots or parks; or roadside agriculture and livestock grazing in available open space.

Urban forests	Trees and related vegetation in urban and near-urban areas, including but not limited to street trees, park trees, residential trees, and other trees on other public or private properties.
Urban heat island effect	A phenomenon in urban cities created by dense concentrations of heat-absorbing surfaces (i.e., dark pavements, roofs, buildings) and lack of vegetation surfaces that results in heat retention and contributes to global warming
Vehicle miles traveled (VMT)	A measurement of miles traveled by vehicles within a specified region for a specified time period.
Vision Zero	The commitment to eliminate traffic-related deaths and severe injuries by a certain date.
Vulnerable populations	The population of Los Angeles County including older adults, people with disabilities, children, people of color, and people with chronic medical conditions who are at elevated risk of climate change impacts such as extreme heat, fire, and flooding. These communities typically lack the resources to protect themselves from climate events or recover quickly from damage or illness.
Waste diversion	The process of managing a waste stream such that waste products do not end up in landfills. Waste can be diverted through strategies such as reuse, recycling, composting, or anaerobic digestion.
Waste generation	The total amount of waste created within a jurisdiction (or by a business or residence), both that which is disposed and that which is diverted.
Watershed	An area of land that drains all the streams and rainfall to a common outlet such as the outflow of a reservoir, mouth of a bay, or any point along a stream channel.
Weatherization	The modification of a building to reduce energy consumption and optimize energy efficiency by protecting the interior of a building from environmental elements such as sunlight, precipitation, wind, and temperature.
Working lands	Farms, ranches, forests, other extractive land uses, and managed natural areas that support economic activity and land-based livelihoods. These areas supply life-sustaining resources including clean water, air, and food.

- Zero-emission vehicles (ZEVs) Vehicles that produce no tailpipe emissions. Generally, ZEVs feature electric powertrains. Technically, ZEVs are still responsible for some GHG emissions, if the GHG content from the electricity generation comes from fossil fuel sources.
- Zero net energy (ZNE) building As defined by the U.S. Department of Energy, “An energy-efficient building where, on a source energy basis, the actual annual delivered energy is less than or equal to the on-site renewable exported energy.”

EXECUTIVE SUMMARY

The County of Los Angeles (LA County) acknowledges the well-established consensus that human activity, especially the combustion of fossil fuels since the beginning of industrialization, is the primary cause of the climate crisis. Now, more than ever, climate change has become a real, urgent, and significant threat, with impacts being felt today in Los Angeles County and around the globe. Climate change has already inflicted harm on Los Angeles County residents, especially its most vulnerable, and has the strong potential to negatively affect the safety, public health, economy, and quality of life of future generations. On September 4, 2018, the LA County Board of Supervisors adopted a motion supporting the 2016 Paris Climate Agreement (Paris Agreement) and added Los Angeles County to the *We Are Still In* Declaration. By this action, LA County is committed to adapting its programs and services to reduce the unincorporated County areas' greenhouse gas (GHG) emissions and help limit global temperature increases.

This *2045 Los Angeles County Climate Action Plan* (2045 CAP) is LA County's path toward meeting the goals of the Paris Agreement and achieving carbon neutrality for unincorporated areas of the County. The 2045 CAP builds on previous climate action work from the *Unincorporated Los Angeles County Community Climate Action Plan 2020* (2020 CCAP), adopted in October 2015 as a subcomponent of the Air Quality Element of the *Los Angeles County General Plan 2035* (General Plan). The 2045 CAP identifies strategies, measures, and actions to mitigate emissions from community activities, which may include some municipal operations; however, municipal operations are not the focus of this plan.

Actions to reduce GHG emissions provide multiple co-benefits for residents, employees, and employers. These benefits have not always reached disadvantaged communities. For example, residents of affordable

housing and multifamily housing have not been well served by local renewable energy programs, such as rooftop solar, leading to cycles of disinvestment and potentially higher energy bills. Concurrently, many of these same residents are already extremely rent and utility burdened, and COVID-19 has exacerbated these problems. The lack of housing and high cost of living in the region mean that increased costs in household expenses could trigger displacement. New and innovative approaches are needed to bring the benefits of renewable energy to all residents while protecting and increasing affordable housing. The 2045 CAP attempts to address these issues to reduce GHG emissions while encouraging affordable and equitable housing.

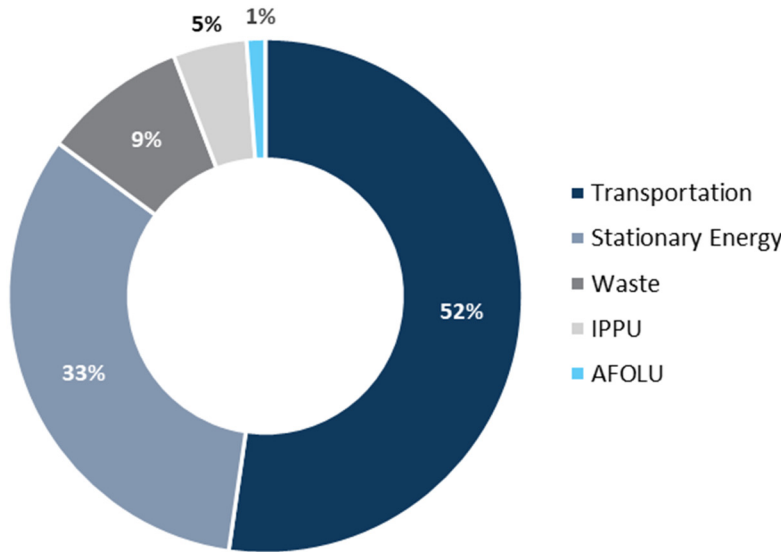
Since the adoption of the 2020 CCAP, local, state, and international leaders have established new targets for carbon reductions that seek deep and long-term transformations in emissions-generating sectors. In 2016, global leaders signed the Paris Agreement, a plan to limit the global average temperature increase to 1.5 degrees Celsius above pre-industrial levels. In 2016, then-California Governor Jerry Brown signed Senate Bill 32, which established a 2030 target to reduce GHG emissions by 40 percent below 1990 levels. In 2018, Governor Brown issued Executive Order B-55-18, which established a new statewide goal to reach carbon neutrality by 2045 and achieve and maintain net negative emissions thereafter.

The 2045 CAP is an update to the 2020 CCAP, and it sets new GHG emissions reduction targets beyond the 2020 time frame that are consistent with state goals. The 2045 CAP includes the following elements:

- A GHG emissions inventory from community-wide activities in unincorporated Los Angeles County in 2018, along with a baseline inventory for 2015.
- Projections of future emissions for 2030, 2035, and 2045.
- GHG reduction targets for 2030 and 2035
- A long-term aspirational goal for carbon neutrality by 2045.
- Climate strategies, measures, and actions to reduce GHG emissions from major sectors.
- Implementation and monitoring measures to ensure successful climate action.

Greenhouse Gas Emissions in the Unincorporated County

Estimated GHG emissions generated by community activities in the unincorporated areas in 2018 (the most recent inventory completed) were approximately 5.2 million metric tons of carbon dioxide equivalent (MTCO₂e). The largest contributor to these emissions (at 52 percent) is the transportation sector, which consists mostly of on-road vehicles. The second-largest contributor (at 33 percent) is the stationary energy sector, which includes emissions from electricity generation facilities, landfill-to-gas facilities, district energy systems, and the use of natural gas use in buildings. It also includes emissions from fossil fuel extraction and fugitive emissions from oil and natural gas systems. Together, these two sectors constitute approximately 85 percent of all community-scale GHG emissions in the County. The remaining sources are waste and wastewater generation (9 percent), industrial processes and product use (5 percent), and the agriculture, forestry, and other land use (AFOLU) sector (1 percent). **Figure ES-1** shows a breakdown by sector of 2018 community-wide GHG emissions for unincorporated Los Angeles County.



Abbreviations: AFOLU = agriculture, forestry, and other land use; IPPU = industrial processes and product use

Figure ES-1: 2018 Greenhouse Gas Emissions Inventory for Unincorporated Los Angeles County, by Sector

CAP Strategies to Reduce Greenhouse Gas Emissions

Achieving carbon neutrality will require ambitious climate actions that address GHG emissions from all sectors and sources. To reduce emissions across all sectors, the 2045 CAP establishes two GHG emissions reduction targets and one long-term aspirational goal:

- *Target:* By 2030, reduce GHG emissions by 40 percent below 2015 levels.
- *Target:* By 2035, reduce GHG emissions by 50 percent below 2015 levels.
- *Aspirational Goal:* By 2045, achieve carbon neutrality in unincorporated Los Angeles County.

The 2045 CAP includes 10 strategies and 25 measures that, when combined, put the unincorporated County on the path toward carbon neutrality and are estimated to reduce annual emissions by 1.5 million MTCO₂e in 2030, 1.9 million MTCO₂e in 2035, and 2.5 million MTCO₂e in 2045. All strategies require that LA County employ climate leadership and lead by example, recognizing the important role that LA County has as a convener and leader in the region. Reaching the targets and goals of the 2045 CAP requires regional collaboration and partnership with various stakeholders, including communities, local governments, and the State of California. LA County will continue to foster these partnerships to move toward a low-carbon future.

Energy Supply

The source of energy used in the County is essential to LA County’s goal to reduce GHG emissions associated with energy supply and consumption. This strategy includes a range of measures aimed at decarbonizing the energy used in buildings and energy industries. The approach combines decarbonizing the energy supply, generating energy on-site through renewables, and utilizing load management and peak reductions. LA County’s participation in the Clean Power Alliance, and its commitment to sourcing 100 percent renewable energy for its electricity supply by 2025, will enable this shift and ensure a low-carbon energy future.



Energy Supply Strategy

- Decarbonize the energy supply.

Transportation

The transportation sector makes up 52 percent of community-wide GHG emissions. Transportation strategies emphasize and promote alternatives to single-occupancy trips, including public transit, active transportation—such as biking and walking—and land use planning that better connects housing to jobs and services. Transportation strategies also include the transition to zero-emission vehicles throughout the County. The success of the transportation strategies will rely on the availability of low-carbon electricity as a fuel source, including expanded EV infrastructure, as well as the adoption and expansion of zero-emission technologies.



Transportation Strategies

- Increase densities and diversity of land uses near transit.
- Reduce single-occupancy vehicle trips.
- Institutionalize low-carbon transportation.

Building Energy and Water

Buildings are a major source of emissions because of their heating, cooling, and power needs. Efforts to decarbonize building energy use will require a mix of energy efficiency programs and a shift to electric alternatives for natural gas appliances.

Building Energy Strategies

- Decarbonize buildings.
- Improve efficiency of existing building energy use.
- Conserve water.



Waste

LA County is committed to a sustainable waste future. Creating this future will require programs that both support stakeholder engagement and education and develop the necessary infrastructure to support zero-waste goals. Strategies in the 2045 CAP expand efforts to reduce and reuse waste at the source and divert waste from landfills through participation in recycling programs, and by converting organic waste, which is responsible for the majority of the waste sector's emissions, to compost and fertilizers.

Waste Strategy

- Minimize waste and recover energy and materials from the waste stream.



Agriculture, Forestry, and Other Land Use

The AFOLU sector’s strategies focus on conservation and restoration of existing forest lands and urban forests to sequester carbon and support local ecosystems. These strategies promote clean water, air, and food, in addition to a reduced urban heat island effect. Preserving and supporting the unincorporated County’s forests, parks, and working lands is essential for reducing climate change impacts, as well as protecting the communities, economies, and ecosystems that depend on the land.



Agriculture, Forestry, and Other Land Use Strategies

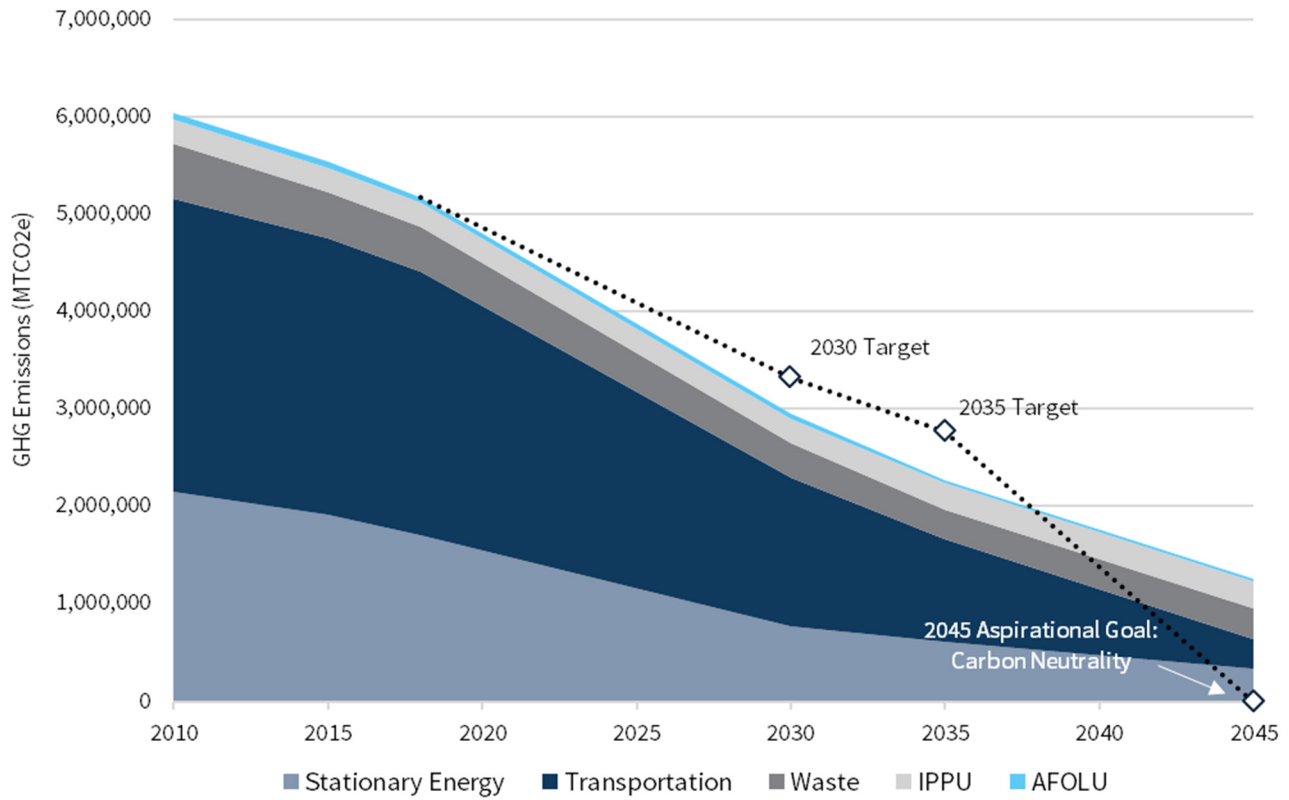
- Conserve forests and working lands.
- Sequester carbon and implement sustainable agriculture.

The Path to Carbon Neutrality

The 2045 CAP puts the County on a path to achieve carbon neutrality by reducing emissions from each sector. **Figure ES-2** shows the County’s path toward the 2045 carbon-neutral goal, representing implementation of the 2045 CAP, which should enable the County to exceed its 2030 and 2035 emissions targets and make substantial progress toward carbon neutrality. As shown, the largest decline in emissions will be realized from changes to the transportation and stationary energy sectors, including existing state regulations that mandate the use of more fuel-efficient vehicles and require that higher percentages of renewable power be provided by electric utilities. A portion of the County’s emissions, however, cannot currently be fully eliminated, given existing technology limitations. These remaining emissions, also known as *residual emissions*, include a small amount of natural gas use in buildings, emissions from fossil fuel-powered vehicles and off-road equipment, oil and gas industries, manufacturing facilities, landfills, wastewater treatment, fluorinated products, and fertilizer use. Total residual emissions are approximately 1.3 million MTCO₂e. LA County expects that new technologies developed over the next 25 years, along with evolving state regulations and financial incentives, will further reduce these residual emissions. LA County will continually monitor the state of technology and will update the 2045 CAP every five years to include new policies and programs that takes advantage of these technological advancements.

If residual emissions cannot be eliminated through new technologies or be reduced over time in response to changes in community-wide activities, LA County will consider future implementation of

carbon removal strategies (such as carbon capture and sequestration and direct air capture), along with future implementation of a carbon offsets/credits program, following completion of a feasibility study, to achieve carbon neutrality by 2045.



Abbreviations: AFOLU = agriculture, forestry, and other land use; GHG = greenhouse gas; IPPU = industrial processes and product use; MTCO₂e = metric tons of carbon dioxide equivalent

Figure ES-2: Greenhouse Gas Emissions Reduction Path to 2045 Carbon Neutrality

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CHAPTER 1

Introduction

1.1 Purpose and Scope

There is well-established scientific consensus that human activities are responsible for an increase in heat-trapping greenhouse gas (GHG) emissions in the atmosphere, causing average global temperatures to rise over time. This rise in temperature is changing global climate patterns and increasing the likelihood of weather-related natural disasters, the effects of which are disproportionately felt by the most vulnerable communities in Los Angeles County and worldwide. Climate change has the potential to threaten the safety, public health, economic health, and quality of life of this generation and future generations.

To address climate change and safeguard local communities, in 2006, the State of California adopted Assembly Bill (AB) 32, the Global Warming Solutions Act, which established a statewide goal to achieve 1990 emissions levels by 2020. In turn, local governments throughout the state developed climate action plans (CAPs) to reduce emissions and support the state's goals. In 2015, the County of Los Angeles (LA County) adopted the *Unincorporated Los Angeles County Community Climate Action Plan 2020* (2020 CCAP) as a component of the Air Quality Element of the *Los Angeles County General Plan 2035* (General Plan) and set a target to reduce emissions in unincorporated Los Angeles County by 11 percent by 2020.

Worldwide, leaders are establishing goals to achieve deep reductions in carbon emissions. In December 2015, world leaders adopted the 2016 Paris Climate Agreement (Paris Agreement), a global action plan to avoid catastrophic impacts of climate change, formalizing their concerted efforts to limit the global

average temperature increase to 1.5 degrees Celsius above preindustrial levels. The agreement urged national leaders to join forces with states and local governments to commit to net-zero carbon emissions by 2050. In September 2018, the LA County Board of Supervisors signed the *We Are Still In* Declaration, affirming LA County’s continued commitment to uphold the target set by the Paris Agreement. In November 2019, then-Governor Jerry Brown’s Executive Order (EO) B-55-18 set a new goal to bring the state to carbon neutrality by 2045, which is five years before the Paris Agreement deadline.

This Draft *2045 Los Angeles County Climate Action Plan (2045 CAP)* builds upon these existing and ongoing efforts, and focuses on actions to reduce GHG emissions associated with community activities in unincorporated Los Angeles County (**Figure 1-1**). The 2045 CAP, which replaces the 2020 CCAP and sets new targets and goals beyond 2020, ties together existing climate change initiatives and provides a blueprint for deep carbon reductions.

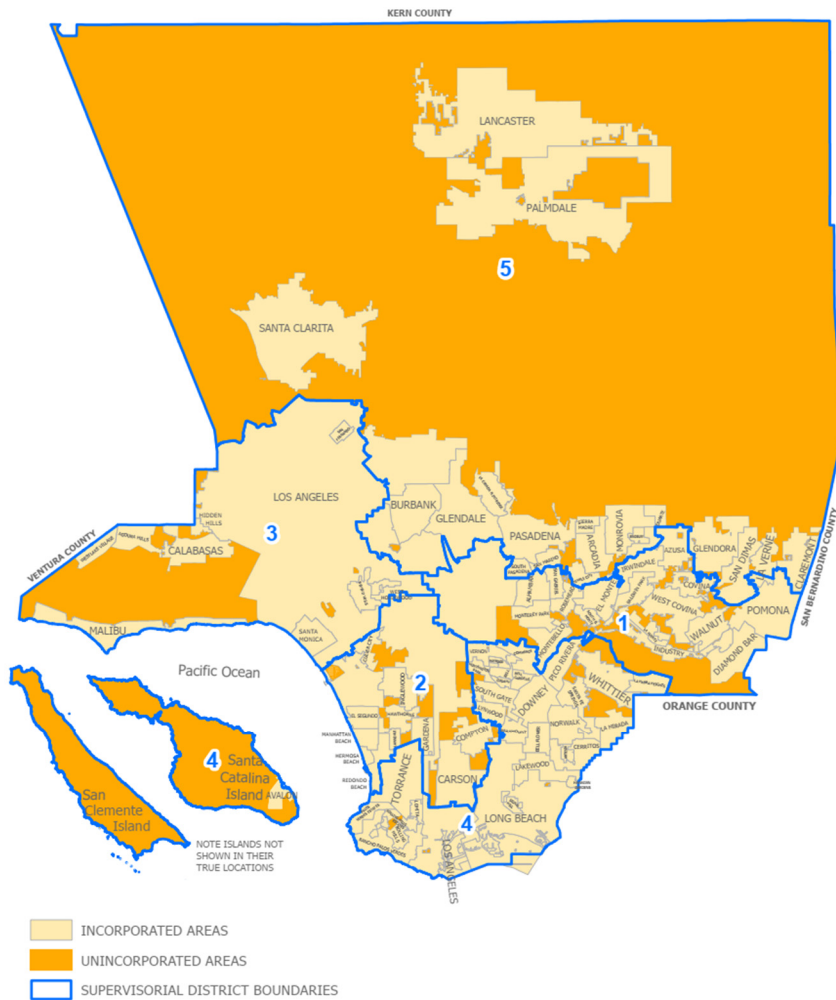


Figure 1-1: Map of Unincorporated Los Angeles County

The 2045 CAP achieves unincorporated Los Angeles County’s emissions reduction targets for 2030 and 2035. The 2045 CAP also includes an aspirational goal to achieve carbon neutrality by 2045 to align with the *We Are Still In* Declaration and the state’s carbon reduction targets and goals.

The 2045 CAP includes a GHG emissions inventory; projections for future emissions; and a roadmap for addressing emissions from the transportation, stationary energy (used by buildings and other facilities), waste, industrial, agricultural, and land use sectors. GHG emissions reduction strategies, measures, and actions identified in the 2045 CAP will also yield community co-benefits, such as improvements in air quality, public health, mobility, equity, and climate resilience. The 2045 CAP also includes an implementation and monitoring program.

Please note the use of the following terms throughout this document:

- “**County**” refers to the unincorporated areas of Los Angeles County.
- “**Countywide**” refers to Los Angeles County in its entirety, inclusive of both unincorporated areas and all 88 incorporated cities.
- “**LA County**” refers to County of Los Angeles government.

Strategies are the overall, sector-level goals of the 2045 CAP. These are broad strategies that aim for overarching goals within each emissions sector.

Measures are focused, sub-sector specific programs and goals that include performance standards which are designed to be quantified for GHG emission reductions.

Actions are the specific policies, programs, or tools that will be implemented to support long-range planning.

Using the 2045 Climate Action Plan for CEQA Streamlining

This 2045 CAP can be used to comply with project-level review requirements pursuant to the California Environmental Quality Act (CEQA). The CEQA Guidelines specify that the CEQA evaluation of a project’s GHG emissions can be streamlined if the CAP does the following (CEQA Guidelines Section 15183.5):

- Quantifies GHG emissions, both existing and projected, from activities within a defined geographic area over a specified time period.
- Establishes a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable.
- Identifies and analyzes the GHG emissions resulting from specific actions or categories of actions anticipated within the geographic area.
- Specifies measures or a group of measures, including performance standards, that would collectively achieve the specified emissions level if implemented on a project-by-project basis, as demonstrated by substantial evidence.

- Establishes a mechanism for monitoring the plan’s progress toward achieving the target, and requires an amendment if the plan is not achieving specified levels.
- Is adopted in a public process following environmental review.

The 2045 CAP meets the requirements of CEQA Guidelines Section 15183.5 by:

- (1) Quantifying all primary sectors of GHG emissions within unincorporated Los Angeles County for 2015 through 2045;
- (2) Including GHG emissions reduction targets for 2030 and 2035, below which GHG emissions would not be cumulatively considerable, as well as an aspirational goal for 2045;
- (3) Analyzing community emissions for unincorporated Los Angeles County as a whole and including predicted growth expected by 2045;
- (4) Including specific measures to achieve the overall reduction targets for 2030 and 2035, and make progress toward the aspirational goal for 2045;
- (5) Including a monitoring program; and
- (6) Being adopted through a public process in compliance with CEQA.

Project-specific environmental documents that incorporate applicable 2045 CAP actions and are consistent with the General Plan can meet project-level CEQA evaluation requirements for GHG emissions, and a separate quantitative analysis is not required. However, a qualitative analysis is still required to demonstrate compliance with the 2045 CAP.

1.2 Climate Change Impacts

This 2045 CAP focuses on reducing GHG emissions. The region, however, is already experiencing the impacts of a changing climate. Furthermore, mitigation and adaptation efforts are interrelated. Taking action to prevent climate change can help reduce the speed and magnitude of climate change impacts on a community. While climate change adaptation is not the primary focus of the 2045 CAP, many GHG emissions reduction strategies in the 2045 CAP also will increase climate resilience. Many climate strategies achieve both mitigation and adaptation benefits. GHG emissions reduction strategies and measures that help increase community resilience to climate change are identified in Chapter 3. Concurrent efforts seek to minimize the impacts of climate change through actions that adapt and prepare communities for climate change.

California’s Climate Change Assessment

California’s Fourth Climate Change Assessment, released in 2018, highlighted key projected climate impacts on the Los Angeles region, taking into account both low-emissions and high-emissions future

scenarios, with the latter containing more extreme impacts that are projected to occur if emissions are not cut substantially.¹ These climate impacts include the following:

- **Warming and Extreme Heat.** Extreme temperatures in the Los Angeles region are expected to increase in both intensity and frequency. Under a higher emissions scenario, the hottest day of the year may be up to 10 degrees Fahrenheit warmer by late in the century. Average maximum daily temperatures are projected to increase around 4–5 degrees Fahrenheit by mid-century and 5–8 degrees Fahrenheit by late in the century.
- **Drought and Precipitation.** While average precipitation is projected to change only slightly overall, the dry and wet extremes are projected to increase. This “precipitation whiplash” means that the region is likely to experience drier periods than what the region has historically experienced, followed by much wetter periods with more extreme rain events, potentially leading to increased water scarcity, mudslides, and flooding.
- **Wildfire.** Wildfires are projected to continue to increase in size, frequency, and intensity. Thirteen of the 20 most destructive wildfires in California have occurred in the past five years.²
- **Sea Level Rise.** Sea levels are projected to rise roughly 1–2 feet by mid-century and as much as 8–10 feet by the end of the century based on the most extreme projections. Sea level rise can exacerbate the impacts of high tides, storm surges, and heavy precipitation, and can lead to increased coastal flooding.

LA County Climate Vulnerability Assessment

The *LA County Climate Vulnerability Assessment* (Climate Vulnerability Assessment) assesses risks and challenges to Los Angeles County from climate change.³ The assessment builds on the findings of *California’s Fourth Climate Change Assessment*, with an emphasis on social vulnerabilities and the dangers of cascading impacts, where harms to one type of infrastructure can affect other facilities or systems, related services, and the people who rely on them. The social vulnerability assessment overlays climate hazard exposure with social sensitivities, such as preexisting health conditions, age, and income, to determine where higher social vulnerability is present, and highlights the inequities in access to resources that help communities adapt to climate change. The physical vulnerability assessment evaluates the climate vulnerability of different physical infrastructure and facilities Countywide, including level of sensitivity to climate hazards and adaptive capacity to respond to hazards. The Climate Vulnerability Assessment highlights key findings related to infrastructure, such as the role of parks in mitigating extreme heat hazards. Energy infrastructure is recognized as one of the

¹ Governor’s Office of Planning and Research, California Energy Commission, and California Natural Resources Agency. n.d. *California’s Fourth Climate Assessment: Los Angeles Region Report*. Available: https://www.energy.ca.gov/sites/default/files/2019-11/Reg%20Report-%20SUM-CCCA4-2018-007%20LosAngeles_ADA.pdf. Accessed in April 2022.

² California Department of Forestry and Fire Protection. 2022. Top 20 Most Destructive California Wildfires. Available: <https://www.fire.ca.gov/stats-events/>. Last updated January 13, 2022. Accessed in January 2022.

³ Los Angeles County Chief Sustainability Office. 2021. *LA County Climate Vulnerability Assessment*. October 2021. Available: <https://ceo.lacounty.gov/cso-actions/>. Accessed in February 2022.

physical assets at highest risk from various hazards that include extreme heat, stormwater flooding, and coastal flooding.

In outlining the region’s vulnerabilities to climate hazards, the assessment identifies the following high-level measures and actions that LA County and community stakeholders can take to increase resiliency and response to climate change.

LA County

- Implement multi-beneficial climate adaptation and mitigation measures that address multiple hazards and prioritize historically disadvantaged communities.
- Collaborate with local and regional jurisdictions to implement a comprehensive climate resilience strategy that addresses area-specific and regional climate vulnerabilities.
- Advocate for equitable legislation and funding to support vulnerable people and places, and climate projects for these communities.
- Inform communities about climate hazards and preparation and mitigation measures.
- Continue research on climate change hazards and risks to eliminate gaps and inform adaptive capacity.

Community Stakeholders

- Support communities’ climate planning and adaptation efforts by illuminating needs and gaps.
- Build on information-sharing and awareness of climate issues in communities and for local residents.
- Enhance social connections to build community resilience and adaptive capacity.

1.3 Existing Laws, Regulations, and Policies

Federal and state laws can enable and inform local actions. As such, the 2045 CAP considers applicable federal and state laws (**Table 1-1**) and recognizes that future amendments to measures may be needed to address future federal and state regulations.

According to the U.S. Environmental Protection Agency, transportation emissions have accounted for the largest portion of U.S. GHG emissions in recent years.⁴ Federal climate change legislation has therefore focused on curbing emissions from the transportation sector by regulating fuel consumption standards for light-duty vehicles, and for medium- and heavy-duty trucks and engines. These fuel efficiency standards are defined for new vehicle model years and are regulated under the Clean Air Act and the Corporate Average Fuel Economy program.

⁴ U.S. Environmental Protection Agency. 2022. Inventory of U.S. Greenhouse Gas Emissions and Sinks. Available: <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>. Accessed in February 2022.

Over the past 30 years, the State of California has enacted legislation to address climate change (**Table 1-2**). In 2006, the state adopted the Global Warming Solutions Act (AB 32) to address emissions from all sources throughout the state. AB 32 authorized the California Air Resources Board (CARB) to implement a comprehensive program to achieve the state’s targets of reducing GHG emissions to 2000 levels by 2010, 1990 levels by 2020, and 80 percent below 1990 levels by 2050. By 2016, the state met the AB 32 target set for 2020. In the same year, then-Governor Jerry Brown signed Senate Bill (SB) 32, which established a new 2030 target to reduce GHG emissions by 40 percent below 1990 levels, as established by his EO B-30-15 (2015). In 2018, Governor Brown issued EO B-55-18, establishing a new statewide goal to reach carbon neutrality by 2045, and maintain net negative emissions thereafter.

Table 1-1: Relevant Federal Laws and Regulations

LEGISLATION/REGULATION	YEAR	DESCRIPTION
Clean Air Act	1970	Established a comprehensive framework for reducing harmful air pollution.
Corporate Average Fuel Economy Standards	1975	Established fuel efficiency standards for medium- and heavy-duty vehicles.
Code of Federal Regulations, Title 40, Part 89	1994	Established emissions standards for off-road compression-ignition engines.
<i>Massachusetts v. Environmental Protection Agency</i>	2007	The U.S. Supreme Court ruled that carbon dioxide is an air pollutant under the Clean Air Act and authorized the U.S. Environmental Protection Agency to regulate greenhouse gas emissions.
Phase 2 Heavy-Duty National Program*	2016	Established emissions standards for heavy-duty trucks through model year 2027.

Note:

* Portions of Phase 2 were rolled back in July 2018.

Table 1-2: Relevant State Laws, Regulations, and Policies

LEGISLATION/REGULATION	YEAR	DESCRIPTION
Transportation		
AB 1493 Clean Car Standards	2002	Established emissions reduction requirements for new passenger vehicles from 2009 to 2016.
EO S-01-07 Low Carbon Fuel Standard	2007	Established the State of California’s Low Carbon Fuel Standard and an emissions reduction target of at least 10 percent of the carbon intensity of the state’s transportation fuels by 2020. With the adoption of the 2017 Scoping Plan Update, the standard has been revised to a reduction of at least 18 percent.
SB 375	2008	Directed the California Air Resources Board to set regional targets for GHG emissions reductions from passenger vehicles.
AB 1493 Amendments	2009	Cemented the state’s enforcement of the legislation starting in 2009, while providing vehicle manufacturers with new compliance flexibility.
Advanced Clean Cars Program	2012	Combined the control of smog-causing pollutants and GHG emissions into a single coordinated package of regulations to guide the development of environmentally advanced cars.

Table 1-2: Relevant State Laws, Regulations, and Policies (cont.)

LEGISLATION/REGULATION	YEAR	DESCRIPTION
Mobile Source Strategy	2016	Described the strategy for transitioning to zero-emission vehicles, or ZEVs, with a goal of 1.5 million ZEVs by 2025 and 4.2 million ZEVs by 2030. The Mobile Source Strategy includes more stringent GHG emissions requirements for light-duty vehicles beyond 2025, and calls for increased deployment of ZEV trucks.
Advanced Clean Cars Update	2017	Affirmed that adopted GHG emissions reduction standards remain appropriate for 2022 through 2025 model years.
EO B-48-15	2018	Established a statewide goal of at least 5 million ZEVs on state roads by 2030, and installation of 200 hydrogen fueling stations and 250,000 ZEV chargers.
EO N-79-20	2020	Established a target that 100 percent of in-state sales of new passenger cars and trucks be zero-emission by 2035 and that 100 percent of medium- and heavy-duty vehicles in the state be zero-emission by 2045 and by 2035 for drayage trucks.
Energy		
SB 1078	2002	Required that 20 percent of electricity retail sales be served by renewable resources by 2017.
CALGreen Code (Title 24, Part 11)	2011	Established the first mandatory green building standards code in the country.
SB 350	2015	Accelerated implementation of SB 1078 and mandated a 50 percent Renewables Portfolio Standard, or RPS, by 2030. SB 350 includes interim annual RPS targets with three-year compliance periods and requires that 65 percent of RPS procurement be derived from long-term contracts of 10 or more years.
CALGreen Code Update	2016	Affirmed energy standards for newly constructed buildings, and additions and alterations to existing buildings. Added requirements for demand reductions during critical peak periods and future solar electric and thermal system installations.
SB 100 California Renewables Portfolio Standard Program	2018	Established a goal of supplying 100 percent of the state’s electricity from clean sources by 2045.
Waste and Water		
AB 341	2011	Required each city, county, and regional agency to develop a source reduction and recycling element of an integrated waste management plan containing specified components, including a source reduction component, a recycling component, and a composting component. With certain exceptions, the source reduction and recycling element of that plan was required to divert 75 percent of all solid waste from landfill disposal or transformation by 2020, through source reduction, recycling, and composting activities.
AB 1826	2014	Required a business, defined as a commercial or public entity, that generates more than 4 cubic yards of commercial solid waste per week or is a multifamily residential dwelling of 5 units or more, to arrange for recycling services.
SB 1383	2016	Established emissions reduction targets in a statewide effort to reduce emissions of short-lived climate pollutants, including methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030.
SB 606 and AB 1668	2018	Required urban and agricultural water suppliers to enact new urban efficiency standards for indoor use, outdoor use, and water lost to leaks.

Table 1-2: Relevant State Laws, Regulations, and Policies (cont.)

LEGISLATION/REGULATION	YEAR	DESCRIPTION
Statewide Emissions Reduction Targets		
EO S-3-05	2005	Established the state’s first GHG emissions reductions targets: reduction to 2000 levels by 2010, 1990 levels by 2020, and 80 percent below 1990 levels by 2050.
AB 32, Global Warming Solutions Act	2006	Codified EO S-3-05 and authorized the California Air Resources Board to implement a comprehensive, multiyear program to reduce GHG emissions from all sources throughout the state.
AB 32 Scoping Plan	2008	Described the long-term roadmap for achieving the AB 32 target of reducing emissions to 1990 levels by 2020.
SB 535, Greenhouse Gas Reduction Fund and Disadvantaged Communities	2012	Required that 25 percent of all funds allocated pursuant to an investment plan for the use of state moneys collected through a Cap-and-Trade program be allocated to projects that benefit disadvantaged communities, and that at least 10 percent of these be spent on projects located in disadvantaged communities.
EO B-30-15	2015	Established a GHG emissions reduction target of 40 percent below 1990 levels by 2030.
SB 32, California Global Warming Solutions Act of 2006: Emissions limit	2016	Codified EO B-30-15.
2017 Scoping Plan Update	2017	Described the long-term roadmap for achieving the SB 32 target of reducing emissions by 40 percent below 1990 levels by 2030.
AB 398, California’s Cap-and-Trade Program	2017	Extended the state’s Cap-and-Trade Program through 2030, a key strategy for reducing GHGs in the state. The Cap-and-Trade Program sets total allowable emissions for facilities and creates carbon offset credits through carbon sequestration projects.
EO B-55-18	2018	Established a target to achieve carbon neutrality (net zero GHG emissions) by 2045.

Abbreviations: AB = Assembly Bill; CALGreen Code = California Green Building Standards Code; EO = Executive Order; GHG = greenhouse gas; RPS = Renewable Portfolio Standard; SB = Senate Bill; ZEV = zero-emission vehicle

1.4 County Climate Action Framework

General Plan and 2020 CCAP

The General Plan provides the policy framework and long-range vision for growth in the County through the year 2035. It establishes goals, policies, and programs to foster healthy, livable, and sustainable communities, and provides a guide for future land use, housing, and economic development. The General Plan includes the Planning Areas Framework, which serves as a mechanism for local communities to work with LA County to develop plans that respond to their unique and diverse characteristics.

In 2015, LA County adopted the 2020 CCAP as a component of the Air Quality Element of the General Plan. It identified emissions related to community activities, established a 2020 GHG emissions

reduction target consistent with AB 32, and established 26 local actions for reductions of GHG emissions. The 2020 CCAP was the first plan to set GHG emissions reduction goals in unincorporated Los Angeles County, providing a roadmap for implementing measures to reduce the County's GHG emissions. The 2020 CCAP addressed emissions from land use, transportation, building energy, water consumption, and waste generation.

This 2045 CAP builds upon the 2020 CCAP by including new emissions reduction targets that address both GHG emissions from General Plan buildout and the projected reductions needed to reach carbon neutrality by 2045, in accordance with the state's most recent efforts. The 2045 CAP also integrates the guiding principles from the General Plan to identify tailored climate action opportunities within the County and to examine potential co-benefits (see Appendix D). These guiding principles include the following objectives:

- Employ smart growth.
- Ensure community services and infrastructure are sufficient to accommodate growth.
- Provide the foundation for a strong and diverse economy.
- Promote excellence in environmental resource management.
- Provide healthy, livable, and equitable communities.

OurCounty Sustainability Plan

In August 2019, the LA County Board of Supervisors adopted *OurCounty: Los Angeles Countywide Sustainability Plan* (OurCounty Sustainability Plan). The plan includes a bold and cross-cutting set of goals, strategies, actions, and targets for creating a resilient, inclusive, and sustainable Los Angeles County.

The OurCounty Sustainability Plan does not supersede the General Plan. It is a forward-looking strategic framework for creating a more equitable and resilient Los Angeles County in the face of climate change. This 2045 CAP is consistent with the OurCounty Sustainability Plan's visions and goals for the region, but differs in that it is part of the General Plan and focuses on reducing GHG emissions from community activities projected for the unincorporated areas of Los Angeles County. Further, the measures identified in the 2045 CAP underwent environmental review pursuant to CEQA.

Appendix C provides a summary of the strategies and actions in the OurCounty Sustainability Plan that align most closely with the 2045 CAP.

1.5 County Leadership on Climate Action

LA County recognizes that achieving carbon neutrality requires large-scale transformations extending well beyond the borders of unincorporated Los Angeles County. While the 2045 CAP is focused on

reducing community emissions, LA County must take a strong leadership role and build partnerships that will be necessary to realize deep carbon reductions across sectors and geographies.

Appendix C, *Prior and Current County Actions on Climate Change*, summarizes past and current actions by LA County on climate change, focusing on key achievements over the past 10–15 years. Section 3.3, *Strategies, Measures, and Actions*, summarizes within each sector recent climate actions initiated by LA County to reduce emissions from municipal operations or catalyze community change to facilitate emissions reductions.

1.6 Equity

The 2045 CAP prioritizes equity, where every individual, regardless of race, income level, or neighborhood, has access to resources and opportunities to address climate change. The development and implementation of policies and programs to address climate change is designed to be inclusive, accessible, and meaningful to frontline communities, or marginalized groups of people, such as Black, Indigenous, and People of Color (BIPOC) and low-income households who have historically experienced a disproportionately high share of environmental impacts. Frontline communities also have fewer resources to prevent, adapt, or recover from climate disasters.

To address the impacts of climate change equitably, the 2045 CAP ensures that all policies and programs result in the equitable distribution of benefits and burdens across all segments of a community. It also ensures that climate change does not result in unfair burdens on future generations.

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CHAPTER 2

GHG Emissions Inventory, Forecasts, and Reduction Targets

2.1 Community GHG Emissions Inventory

The 2015 GHG emissions inventory for unincorporated Los Angeles County forms the baseline inventory for the 2045 CAP. The year 2015 was selected as the emissions baseline for 2045 CAP because of the availability in that year of the most recent, reliable, accurate, and complete emissions activity data that were available when the OurCounty Sustainability Plan was prepared. The 2015 GHG emissions inventory is compliant with the *Global Protocol for Community-Scale Greenhouse Gas Inventories*, which accounts for communitywide GHG emissions in line with 2006 Intergovernmental Panel on Climate Change guidelines for national GHG inventories. The inventory accounts for the carbon dioxide equivalence of seven gases: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride. These emissions are organized into five sectors, based on the activity type or source:

- **Transportation:** The transportation sector accounts for emissions from fuel combustion and electricity consumption from passenger vehicles, goods movement, public transit systems (including bus and rail), and off-road vehicles.
- **Stationary energy:** The stationary energy sector includes emissions from energy use in buildings, facilities, and stationary (off-road) equipment. Emissions from fossil fuel combustion at on-site and off-site energy generation facilities, fossil fuel extraction, and fugitive emissions released from oil and natural gas systems are reported for this sector.

- **Waste:** The waste sector accounts for emissions generated at landfills, biological treatment (composting and anaerobic digestion), and wastewater treatment plants.
- **Industrial Processes and Product Use (IPPU):** Emissions from non-energy industrial activities and use of products like refrigerants, foams, aerosols, and alternatives to ozone depleting substances, among other fossil fuel-based solvents, are reported under IPPU.
- **Agriculture, Forestry, and Other Land Use (AFOLU):** The AFOLU sector accounts for land-related emissions (and removals). Land-use changes, agriculture, forestry, and aggregate sources (including wildfires, biomass burning, and fertilizer use) are reported for this sector.

In 2015, emissions generated by community activities occurring in the County amounted to 5.5 million metric tons carbon dioxide equivalent (MTCO₂e).⁵ The transportation and stationary energy sectors were the largest contributors to the inventory. The transportation sector accounts for approximately 2.8 million MTCO₂e (51 percent) of total GHG emissions, while the stationary energy sector accounts for approximately 1.9 million MTCO₂e (35 percent) of total GHG emissions. The transportation sector includes emissions from on-road passenger vehicles, trucks, and railways. The stationary energy sector includes emissions from residential, commercial, and institutional uses; industrial buildings; and stationary equipment. The remaining emissions sources include waste and wastewater (8 percent), refrigerants and other industrial products (5 percent), and other land-related activities including forestry and agriculture (1 percent).

To capture the latest emissions profile and emissions trends in Los Angeles County since 2015, LA County prepared an updated inventory for the year 2018, given the availability in that year of the most recent complete data set of emissions-generating activity. The 2018 inventory relies on the same protocol and data sources that were used in the 2015 GHG emissions inventory. In 2018, communitywide emissions totaled 5.2 million MTCO₂e. The transportation sector was the greatest contributor, accounting for 52 percent of emissions and 2.7 million MTCO₂e. The stationary energy sector was the second greatest contributor at 33 percent and 1.7 million MTCO₂e. The remaining emissions were generated by the waste (9 percent), IPPU (5 percent), and AFOLU (1 percent) sectors.

Total GHG emissions decreased approximately 7 percent between 2015 and 2018. The stationary energy sector saw the greatest decrease (11 percent), followed by the IPPU sector (6 percent) and the transportation sector (5 percent).⁶ Emissions from stationary energy decreased primarily because of the

⁵ The 2015 GHG emissions inventory for the County is adapted from the Countywide 2015 Community GHG Inventory prepared for the OurCounty Sustainability Plan. Per the OurCounty Sustainability Plan, 2015 emissions from unincorporated Los Angeles County amounted to 9.5 million MTCO₂e. The CAP accounts for emissions from all the sectors and subsectors reported in the OurCounty Sustainability Plan and includes additional community activities for unincorporated Los Angeles County (including off-road equipment, buses, and product use emissions, as detailed in Appendix A.1). However, due to updated activity data, emission factors, and modeling protocols, the 2045 CAP reports significantly lower emissions for 2015 (5.5 million MTCO₂e).

⁶ This decrease is attributable to declining emissions factors from the CARB Emissions FACTors 2021 (EMFAC2021) model, which outpace the increase in total vehicle miles traveled (VMT) as modeled with the Southern California Association of Governments' (SCAG's) 2016 Regional Travel Demand Model. According to the California Department of Tax and Fee Administration, statewide taxable sales of gasoline and diesel fuel increased by 2 percent from 2015 to 2018. Statewide gasoline and diesel fuel sales may not trend precisely with County gasoline and diesel fuel sales, and VMT apportioned to areas in unincorporated Los Angeles County may not correlate perfectly with gasoline sales, which could explain this difference. For additional discussion, please see Appendix A.

increasing level of renewable energy supplied by Southern California Edison into the electricity grid and because certain power-generating facilities decreased their fossil fuel combustion in the intervening years. Emissions from transportation decreased primarily because of vehicle turnover to more fuel-efficient vehicles. **Table 2-1** and **Figure 2-1** show the 2015 and 2018 emissions breakdowns by sector and sub-sector. (See Appendix A for more detail on the inventories.)

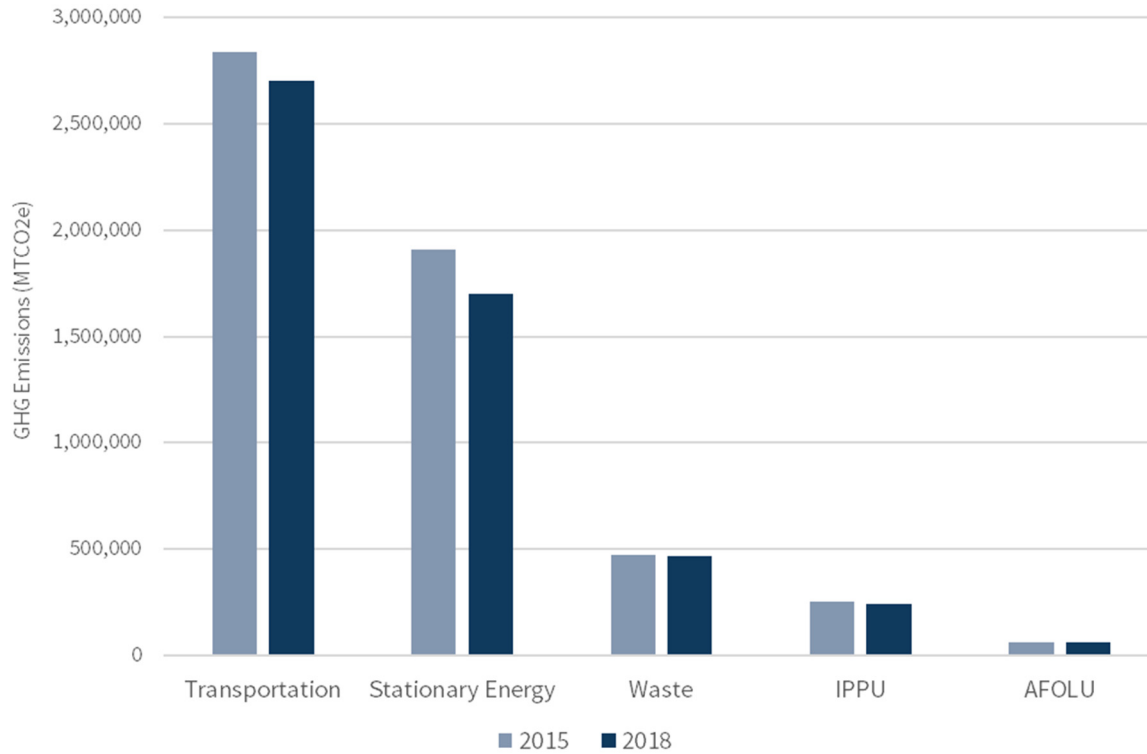


Figure 2-1: 2015 and 2018 Greenhouse Gas Emissions by Sector

Source: Appendix A: Greenhouse Gas Accounting, Business as Usual Forecast, and Emission Reduction Targets.

Table 2-1: 2015 and 2018 Greenhouse Gas Emissions by Sector and Sub-sector

SECTOR/SUB-SECTOR	ANNUAL GHG EMISSIONS (MTCO ₂ e)	
	2015	2018
Transportation	2,838,133	2,704,685
On-Road Transportation	2,828,720	2,695,195
Railways	9,413	9,490
Stationary Energy	1,908,637	1,698,809
Residential Buildings	1,030,285	962,743
Commercial and Institutional Buildings	386,753	349,373
Manufacturing and Construction	309,449	244,417
Energy Industries	121,252	98,554
Fugitive Emissions from Oil and Natural Gas Systems	58,222	41,066
Agricultural Off-Road Equipment	2,675	2,658
Waste	469,997	469,382
Solid Waste Disposal	404,604	407,578
Biological Treatment of Solid Waste	10,214	5,309
Wastewater Treatment	55,179	56,495
IPPU	253,529	239,505
Product Use	253,529	239,505
AFOLU	60,860	60,860
Aggregate Sources and Non-CO ₂ Emissions Sources	25,048	25,048
Land-use Change	35,811	35,811
TOTAL	5,531,155	5,173,240

Abbreviations: AFOLU = Agriculture, Forestry, and Other Land Use; CO₂ = carbon dioxide; GHG = greenhouse gas; IPPU = Industrial Processes and Product Use; MTCO₂e = metric tons of carbon dioxide equivalent

Note: Totals may not add precisely due to rounding.

Source: Appendix A: Greenhouse Gas Accounting, Business as Usual Forecast, and Emission Reduction Targets.

2.2 Emissions Forecasts

The emissions forecasts used in the 2045 CAP account for socioeconomic trends, population growth, historic emissions patterns, and existing policies and legislation that affect GHG emissions. **Figure 2-2** shows population and employment growth projections from 2015 to 2045 for the County. The 2018 GHG emissions inventory serves as the year from which future emissions are forecasted. Note that the 2045 CAP’s baseline year for target-setting is 2015; 2018 is just the most recent GHG emissions inventory conducted by LA County and was therefore used to forecast emissions.

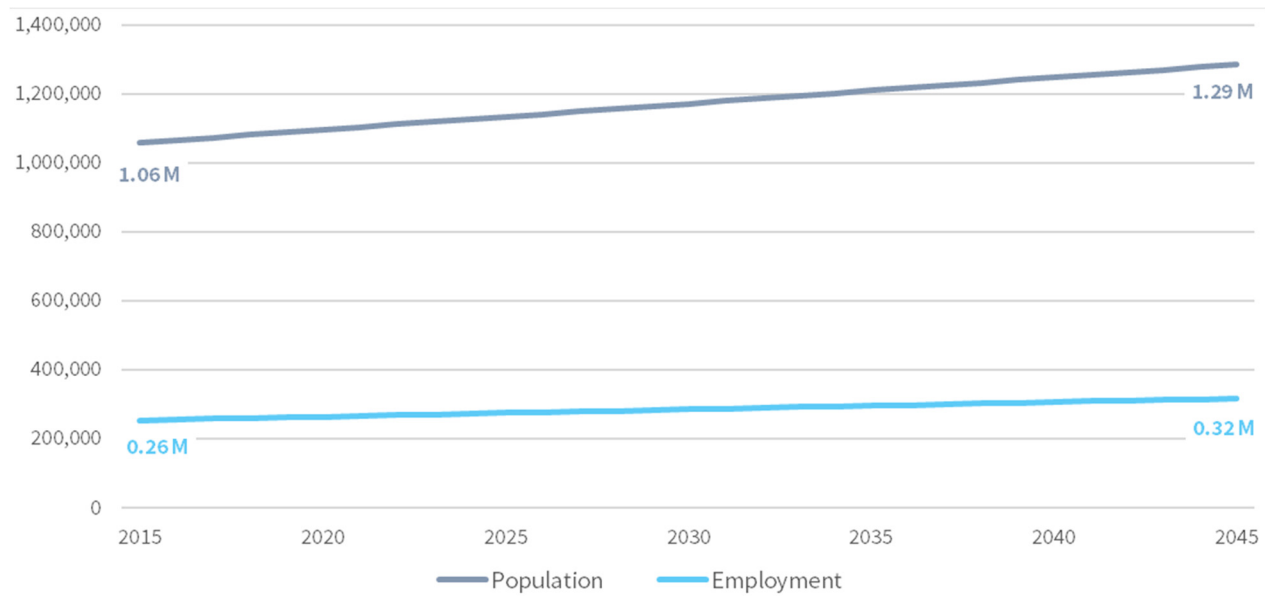


Figure 2-2: Population and Employment Growth in Unincorporated Los Angeles County⁷

Business-as-Usual Forecast

Forecasts were developed by sector under a business-as-usual (BAU) scenario for the years 2019 through 2045 (**Figure 2-3**). The BAU forecast assumes that no further government action is taken to reduce GHG emissions and is consistent with the following:

- Population projections by the Southern California Association of Governments (SCAG) to 2040 used in the 2016 Regional Transportation Model.⁸
- Building demolition and construction rates from building area data obtained from the LA County Office of the Assessor.
- Passenger vehicle and truck vehicle miles traveled (VMT) and emissions estimated using the 2016 SCAG Regional Travel Demand Model and CARB Emissions FACTors 2021 (EMFAC2021) model.

⁷ Southern California Association of Governments. 2016. *The 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy*. April 2016 Model. Accessed by Fehr and Peers in July 2019.

⁸ The General Plan uses the 2008 Regional Transportation Model.

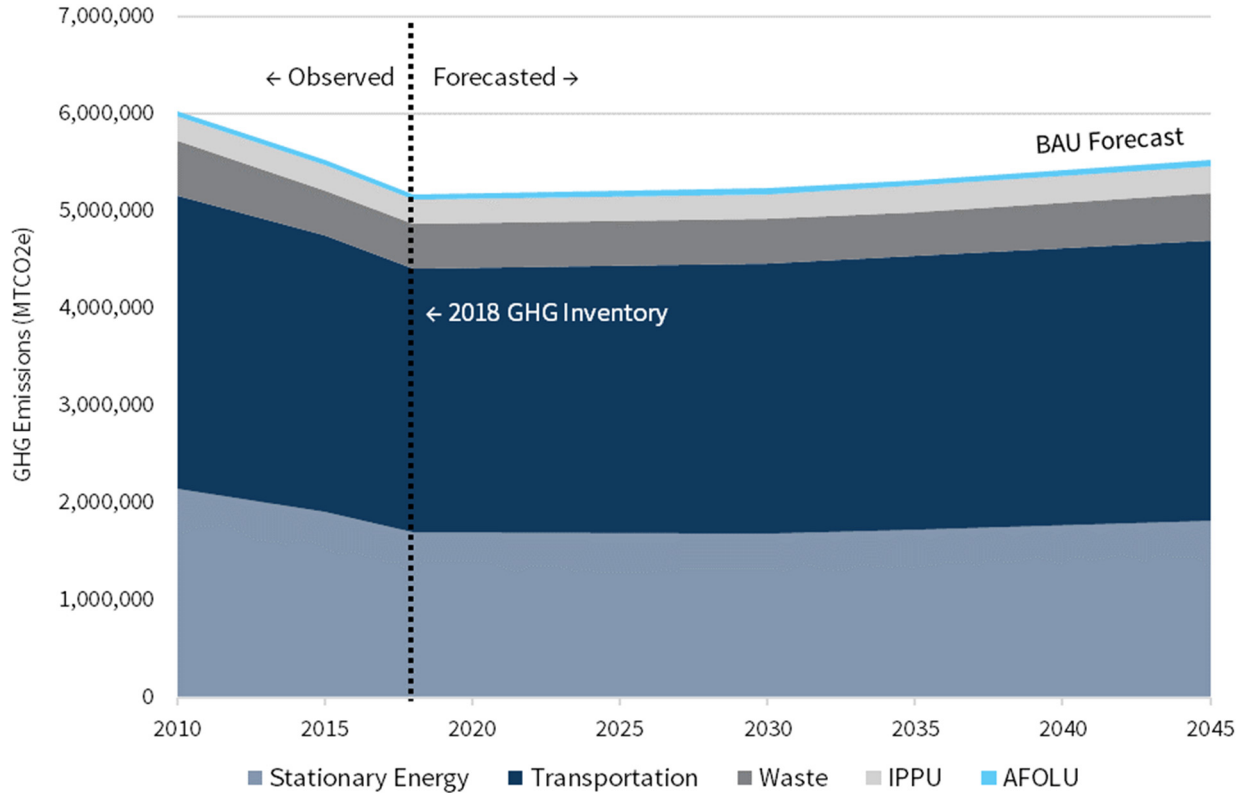


Figure 2-3: Forecast of 2045 Business-as-Usual Greenhouse Gas Emissions

Source: Appendix A: Greenhouse Gas Accounting, Business as Usual Forecast, and Emission Reduction Targets.

Adjusted Business-as-Usual Forecast

The Adjusted BAU forecast accounts for future growth under BAU conditions, but makes adjustments for federal, state, and LA County regulations that were implemented before the development of the 2045 CAP. The Adjusted BAU forecast assumes that population, housing, employment, and transportation activities would continue to grow over time, consistent with the projections shown in Figure 2-2.

The Adjusted BAU forecast also accounts for existing standards and regulations, such as the California Energy Commission’s 2019 and 2022 Title 24 building energy efficiency requirements, Renewable Portfolio Standards (SB 100), the California Department of Resources Recycling and Recovery (CalRecycle) 75 percent waste diversion initiative (AB 341), Pavley and Advanced Clean Car Standards (AB 1493), and Low Carbon Fuel Standards (EO S-01-07). Furthermore, some existing GHG emissions reduction commitments by LA County agencies and select strategies from the 2020 CCAP and OurCounty Sustainability Plan are also incorporated into the Adjusted BAU forecast, such as decommissioning of the Pitchess Cogeneration facility and LA County fleet purchases of zero-emission vehicles (ZEVs).

Table 2-2 shows the projected total emissions for each target year under the Adjusted BAU forecast. Total emissions for unincorporated Los Angeles County are forecasted to decline from 5.5 million MTCO₂e in 2015 to 3.8 million MTCO₂e by 2045, a 31 percent reduction. The table also shows the forecasts by each major sector. **Figure 2-4** compares the Adjusted BAU forecast to the BAU forecast.

Table 2-2: Forecasts of Adjusted Business-as-Usual Greenhouse Gas Emissions

SECTOR	ANNUAL GHG EMISSIONS (MTCO ₂ e)				
	2015	2018	2030	2035	2045
Transportation	2,838,133	2,704,685	2,205,885	2,080,234	1,993,281
Stationary Energy	1,908,637	1,698,809	1,502,306	1,341,401	1,018,793
Waste	469,997	469,382	451,919	454,097	482,489
IPPU	253,529	239,505	259,605	267,981	284,731
AFOLU	60,860	60,860	60,860	60,860	60,860
TOTAL	5,531,155	5,173,240	4,480,574	4,204,572	3,840,154

Abbreviations: AFOLU = Agriculture, Forestry, and Other Land Use; GHG = greenhouse gas; IPPU = Industrial Processes and Product Use; MTCO₂e = metric tons of carbon dioxide equivalent

Source: Appendix B: Emissions Forecasting and Reduction Methods.

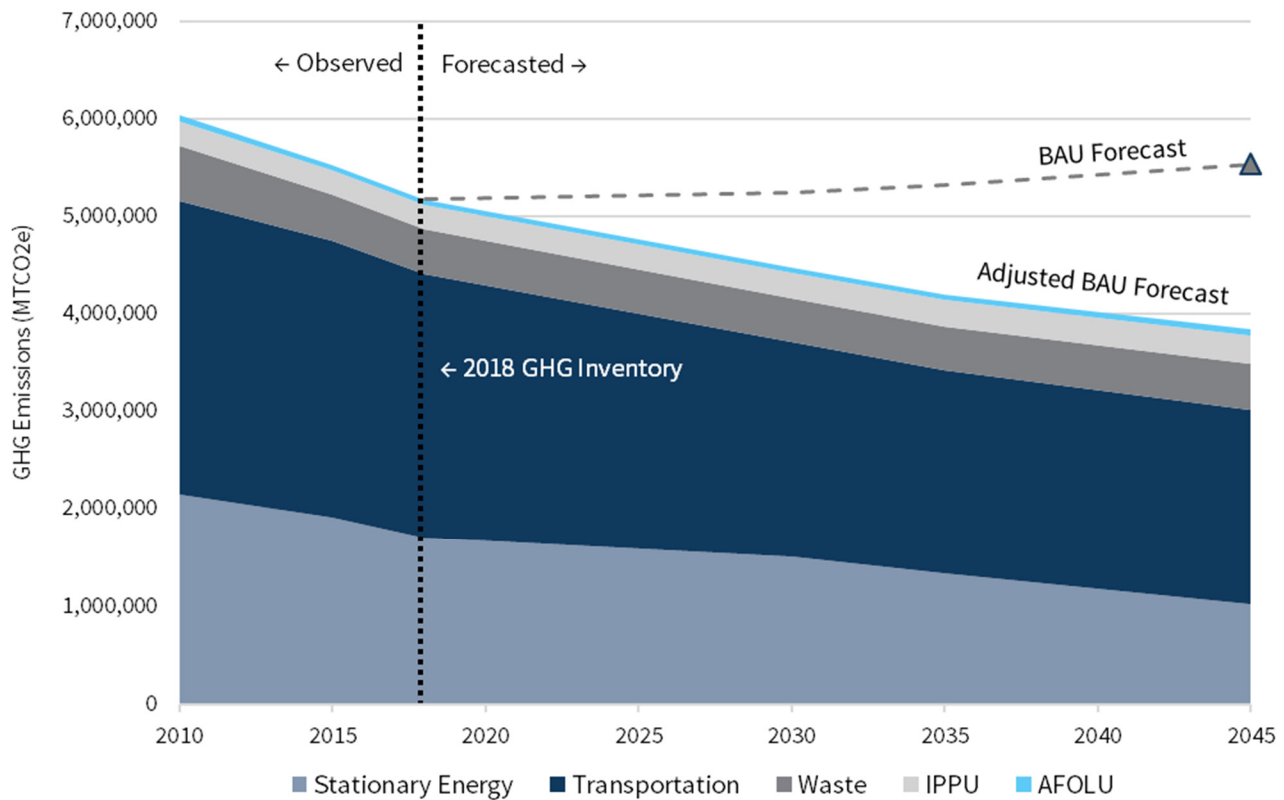


Figure 2-4: Forecast of 2045 Adjusted Business-as-Usual Greenhouse Gas Emissions

Source: Appendix B: Emissions Forecasting and Reduction Methods.

2.3 Emissions Targets

Over the past two decades, the State of California has established multiple GHG emissions reduction targets between 1990 and 2050 to address various aspects of climate change. AB 32 and SB 32 codified the state's GHG emissions reduction targets by requiring that statewide GHG emissions be reduced to 1990 levels by 2020, and to 40 percent below 1990 levels by 2030, respectively. The 2045 CAP sets a series of GHG emissions reduction targets and goals to align with various state, regional, and LA County targets. Most notably, this includes the targets established by SB 32 and SB 100, as well as the statewide goal established by EO B-30-15 to achieve carbon neutrality by 2045.

State Targets

AB 32, SB 32, and EO B-30-15:

- By 2030, reduce GHG emissions to 40 percent below 1990 levels.
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

EO B-55-18:

- By 2045, achieve statewide carbon neutrality.

SB 100:

- By 2045, source 100 percent of retail sales of electricity to California end-use customers from eligible renewable energy resources and zero-carbon resources.

The 2017 Scoping Plan sets forth a statewide plan to achieve the state's SB 32 2030 GHG emissions reduction target. There is currently no state plan to achieve state GHG emissions reduction targets beyond 2030.

Regional Targets

SB 375/SCAG Regional Transportation Plan:

- By 2035, reduce GHG emissions from light-duty vehicles by 19 percent per capita.
- By 2040, reduce GHG emissions from light-duty vehicles by 21 percent per capita, below a 2005 baseline.

OurCounty Sustainability Plan:

- By 2025, reduce GHG emissions Countywide by 25 percent below 2015 levels.
- By 2035, reduce GHG emissions Countywide by 50 percent below 2015 levels.
- By 2045, achieve carbon neutrality for LA County municipal operations.
- By 2050, achieve carbon neutrality Countywide.

2045 CAP Targets and Carbon Neutrality Goal

The 2045 CAP identifies two “targets” and one long-term aspirational “goal” for GHG emissions in unincorporated Los Angeles County. The targets are emissions reductions levels that the 2045 CAP can achieve through the implementation of strategies, measures, and actions, based on quantitative emissions modeling. The goal is for carbon neutrality, but implementation of the 2045 CAP is not enough to achieve this emissions level. The targets and carbon neutrality goal in the 2045 CAP align with various state, regional, and LA County targets for 2030, 2035, and 2045. The 2045 CAP includes a target for the year 2030 to align with SB 32 and to support using the 2045 CAP for CEQA streamlining of project-level climate change impacts. (See Chapter 4 for additional discussion of the 2045 CAP’s relationship to CEQA.)

2045 CAP Targets:

- By 2030, reduce GHG emissions by 40 percent below 2015 levels in the County.
- By 2035, reduce GHG emissions by 50 percent below 2015 levels in the County.

2045 CAP Aspirational Goal:

- By 2045, achieve carbon neutrality in the County.

Figure 2-5 shows the County’s emissions from 2010 through 2018 along with the Adjusted BAU forecast through 2045. It also includes the BAU forecast for reference and shows the 2045 CAP’s target and goal trendline from 2018 through 2045. As shown in Figure 2-5, the 2030 target of 40 percent below 2015 levels by 2030 sets the County on a course that exceeds the 2025 Countywide target from the OurCounty Sustainability Plan and proceeds on a near-linear trajectory toward the 2035 target and the aspirational 2045 carbon neutrality goal.

The 2030 target is consistent with the SB 32 target of a 40 percent reduction below 1990 levels. Total unincorporated Los Angeles County emissions in 1990 are estimated to be 6.4 million MTCO₂e. Because the 2015 emissions of 5.5 million MTCO₂e are 15 percent lower than the 1990 emissions, the 2030 target of a 40 percent reduction below 2015 levels is equivalent to a 48 percent reduction below 1990 levels. This exceeds the state target of 40 percent below 1990 levels by 2030. As such, the 2045 CAP’s 2030 target is in line with (and actually more stringent than) the SB 32 target for the state. In addition, the 2035 target of 50 percent below 2015 levels (equivalent to 57 percent below 1990 levels) puts the County on the trajectory to achieve carbon neutrality by 2045, consistent with state targets.

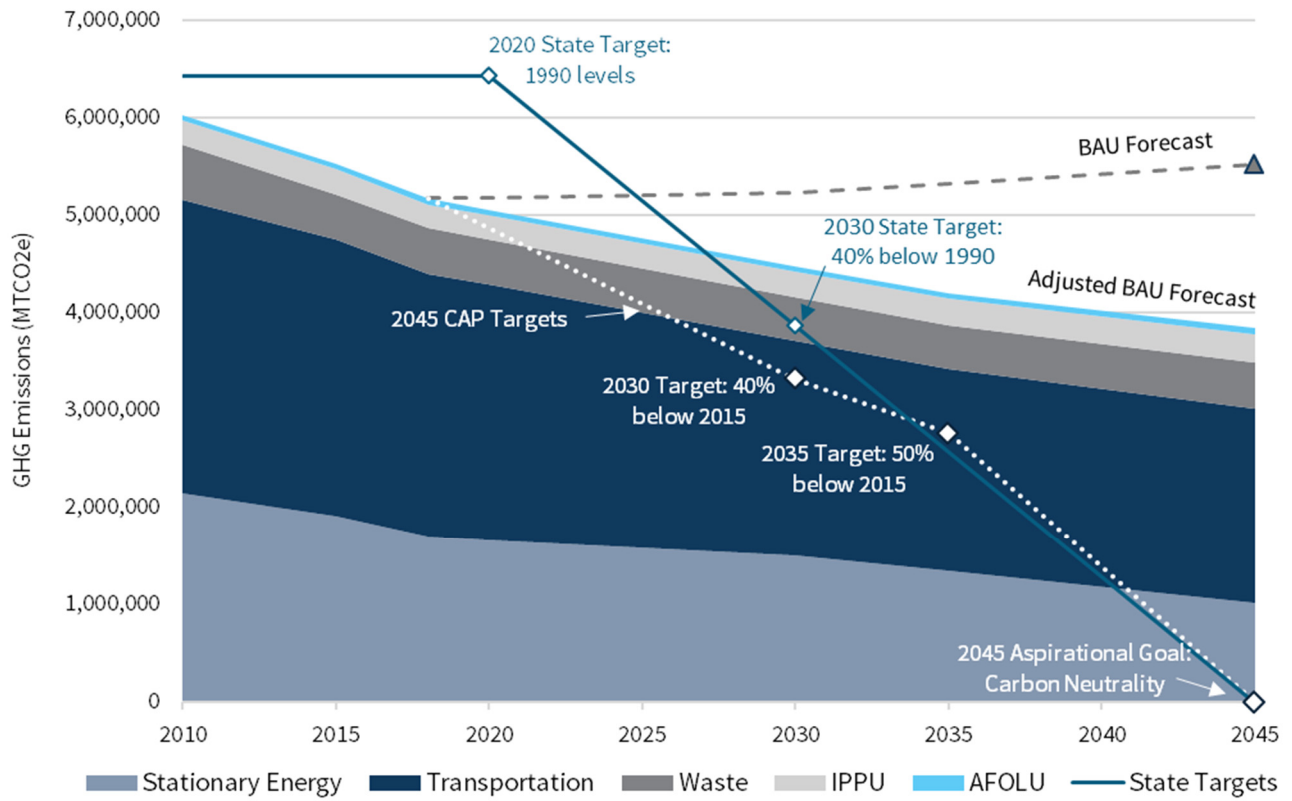


Figure 2-5: 2030 and 2035 Greenhouse Gas Emissions Targets and 2045 Aspirational Goal

Source: Appendix B: Emissions Forecasting and Reduction Methods.

CHAPTER 3

GHG Emissions Reduction Strategies, Measures, and Actions

3.1 GHG Emissions Reduction Framework

Although state policies and regulations contribute greatly to reducing GHG emissions, local measures are critical to the County’s ability to meet its emissions reduction targets and its long-term aspirational goal to be carbon neutral. This chapter describes LA County’s actions to reduce GHG emissions, organized by the following five categories of strategies:



Energy Supply



Transportation



Building Energy
and Water



Waste



Agriculture,
Forestry, and
Other Land Uses

Throughout this chapter, strategies, measures, and actions are defined as follows:

- **Strategies** are the overall, sector-level goals of the 2045 CAP. These are broad strategies that aim for overarching goals within each emissions sector and are based on the Draft CAP strategies. For example, “*Decarbonize the Energy Supply*” is a strategy.
- **Measures** are focused, sub-sector-specific programs and goals that include performance standards that are designed to be quantified for GHG emissions reductions. They support strategies and are achieved through individual implementing actions. For example, “*Procure Zero-Carbon Electricity*” is a measure.
- **Actions** are the specific policies, programs, or tools that will be implemented to support long-range planning. Actions are intended to be implemented in a coordinated manner to make meaningful progress toward the associated measure and strategy. For example, “*Enroll the community in CPA’s 100 percent Green Power option*” is an action.

Strategies in the 2045 CAP include at least one defined GHG emissions reduction measure with implementing actions and time-defined targets that state the levels of performance required to reduce emissions.

3.2 GHG Emissions Reduction Potential

Quantitative modeling has been used to estimate the GHG emissions reductions associated with the performance objective(s) of 19 separate measures. The modeling incorporates state and LA County policies, resolutions, programs, and incentives, as well as outreach and education activities (as detailed in Appendix B). This analysis quantifies the annual emissions reductions anticipated from each of the 19 measures in 2030, 2035, and 2045.

Through locally implemented strategies and measures, described in more detail in the following sections, annual emissions reductions for the unincorporated County are anticipated to be 1,530,400 MTCO_{2e} by the year 2030 (**Table 3-1**). Combined with state and regional measures, local measures will enable unincorporated Los Angeles County to reduce total community GHG emissions to approximately 2,959,938 MTCO_{2e} in the year 2030 (**Table 3-2**). This reduction of approximately 46 percent from 2015 levels would enable the County to exceed its 2030 and 2035 targets and put the County on a path to attain carbon neutrality by 2045.

Table 3-1: Annual Greenhouse Gas Emissions Reductions by Strategy

STRATEGY	ANNUAL GHG EMISSIONS REDUCTIONS (MTCO ₂ e/YEAR)		
	2030	2035	2045
Energy Supply			
Strategy 1: Decarbonize the Energy Supply	507,674	360,706	52,148
Transportation			
Strategy 2: Increase Densities and Diversity of Destinations with an Emphasis Land Uses Near Transit	66,542	63,286	61,480
Strategy 3: Reduce Single-Occupancy Vehicle Trips	14,420	13,715	13,324
Strategy 4: Institutionalize Low-Carbon Transportation	606,019	969,808	1,660,946
Building Energy and Water			
Strategy 5: Decarbonize Buildings	184,129	293,517	498,216
Strategy 6: Improve Efficiency of Existing Building Energy Use	19,608	41,388	72,196
Strategy 7: Conserve Water	10,660	15,235	15,046
Waste			
Strategy 8: Minimize Waste and Recover Energy and Materials from the Waste Stream	108,854	150,442	172,967
Agriculture, Forestry, and Other Land Use			
Strategy 9: Conserve Forests and Working Lands	8,953	17,906	26,858
Strategy 10: Sequester Carbon and Implement Sustainable Agriculture	3,540	7,080	14,160
TOTAL REDUCTIONS	1,530,400	1,933,083	2,587,342

Abbreviation: MTCO₂e/year = metric tons of carbon dioxide equivalent per year
 Note: Totals may not add precisely due to rounding.
 Source: Appendix B: Emissions Forecasting and Reduction Methods.

Table 3-2: Summary of Unincorporated Los Angeles County Greenhouse Gas Emissions Reductions

DATA/METRIC	ANNUAL GHG EMISSIONS (MTCO ₂ e/YEAR)		
	2030	2035	2045
Business-as-Usual Forecast	5,238,062	5,319,243	5,524,939
Adjusted Business-as-Usual Forecast	4,480,574	4,204,572	3,840,154
Total Reductions from 2045 CAP Measures	-1,530,400	-1,933,083	-2,587,342
Resulting Community Emissions with 2045 CAP Implementation	2,950,175	2,271,490	1,252,812
Emissions Targets (2030 and 2035) and Aspirational Goal (2045)	3,318,693	2,765,578	0
Target/Goal Met?	Yes	Yes	No

Abbreviations: 2045 CAP = 2045 Los Angeles County Climate Action Plan; MTCO₂e/year = metric tons of carbon dioxide equivalent per year
 Note: Totals may not add precisely due to rounding.
 Source: Appendix B: Emissions Forecasting and Reduction Methods.

Figure 3-1 depicts the County’s GHG emissions reduction pathway for meeting its targets through 2035 and making substantial progress toward the long-term aspirational goal of carbon neutrality by 2045. To achieve that long-term aspirational goal, additional state and local measures will be needed, potentially including carbon offsets. The figure illustrates that approximately 1.3 million MTCO₂e in residual emissions will need to be eliminated or offset to meet the 2045 carbon-neutral aspirational goal.

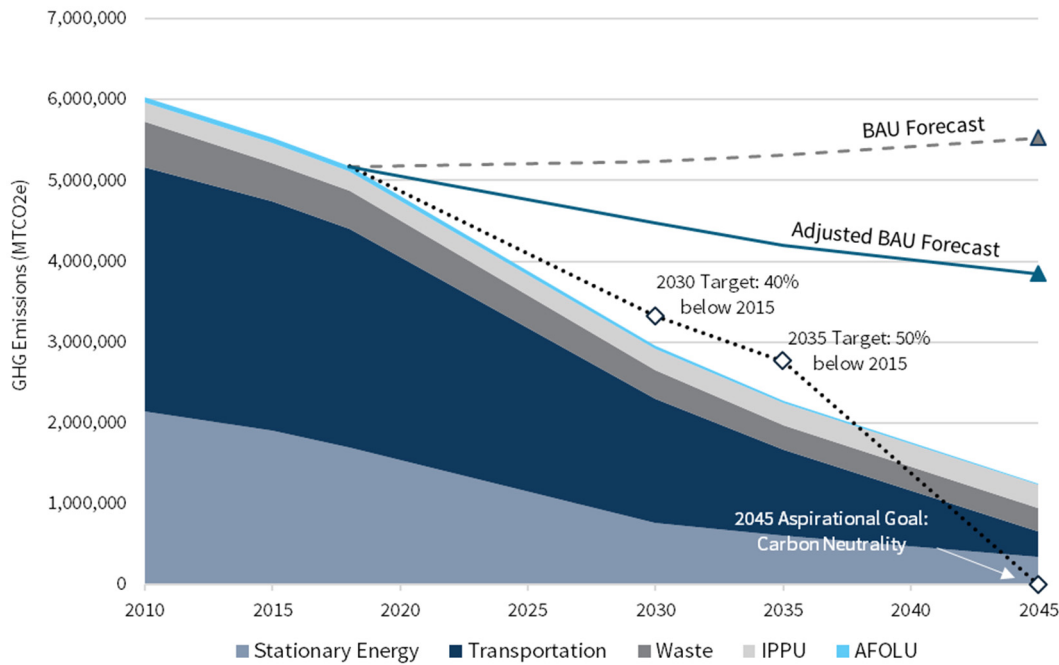


Figure 3-1: Communitywide Greenhouse Gas Emissions Forecasts with 2045 Climate Action Plan Implementation

Source: Appendix B: Emissions Forecasting and Reduction Methods.

Core Measures

Although the 2045 CAP includes 25 measures and more than 90 implementing actions, achieving the GHG emissions targets for 2030 and 2035 described in Chapter 2 can be accomplished by successfully reaching the performance objectives of the core measures.

Based on the GHG emissions reduction estimates provided in Chapter 3, **Figure 3-2** shows how six core measures out of the 19 quantified measures contribute almost 90 percent of the total reductions expected by 2030. The County can meet its targets for 2030 and 2035 solely through implementation of these six core measures:⁹

- T6: Increase ZEV Market Share and Reduce Gasoline and Diesel Fuel Sales
- ES2: Procure Zero-Carbon Electricity

⁹ Achieving the performance objectives for these six measures should cause the County to exceed the 2030 target by more than 160,000MTCO₂e and the 2035 target by more than 230,000 MTCO₂e.

- E1: Transition Existing Buildings to All-Electric
- T8: Accelerate Freight Decarbonization
- W1: Institutionalize Sustainable Waste Systems and Practices
- W2: Increase Organic Waste Diversion

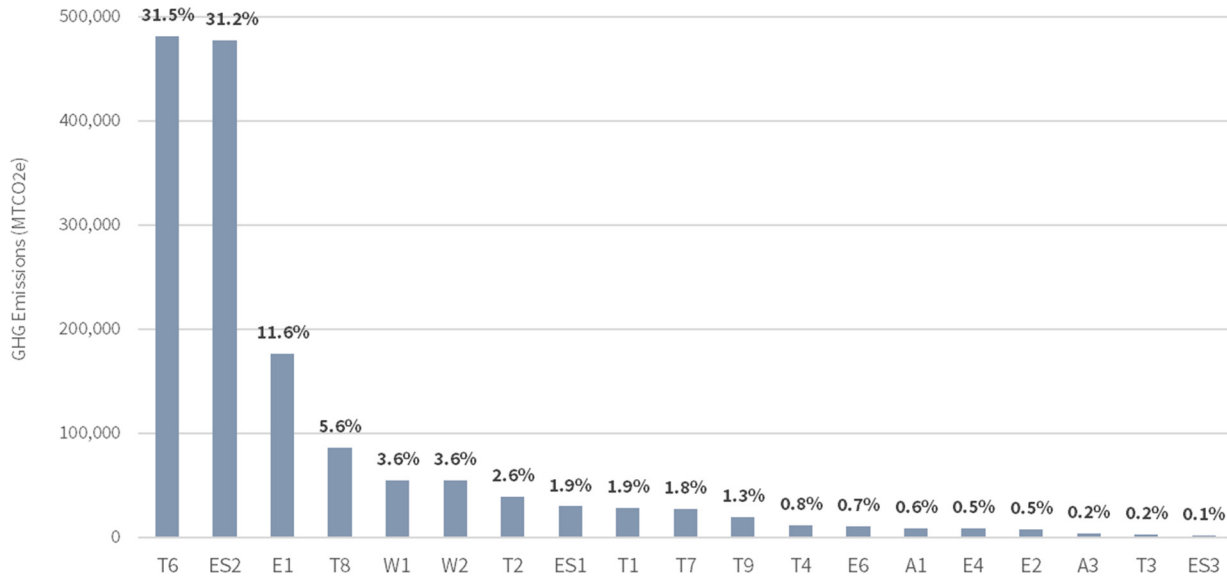


Figure 3-2: Greenhouse Gas Emissions Reduction Measures, Ranked by 2030 Reduction Potential
 Source: Appendix B: Emissions Forecasting and Reduction Methods.

Table 3-3 summarizes the six core measures, including their performance objectives, implementing agencies, and potential funding sources. Additional detail is provided in Appendix E, including each measure’s implementing actions and associated metrics.

Table 3-3: Core Measures for Meeting County 2030 and 2035 Greenhouse Gas Emissions Targets

MEASURE	PERFORMANCE GOALS	COUNTY AGENCY/ DEPT	EXTERNAL PARTNERS	POTENTIAL FUNDING SOURCES
T6: Increase ZEV Market Share and Reduce Gasoline and Diesel Fuel Sales	<p>Increase the total amount of light-duty vehicles in the County that are ZEVs to 30% by 2030; 50% by 2035; and 85% by 2045.</p> <p>Increase the sales of new light-duty vehicles in the County that are ZEVs to 60% by 2030 and 100% by 2035.</p>	CSO ISD PW	LASD Parks Beaches and Harbors SCE CARB SCAG Caltrans LA Metro U.S. EPA	<ul style="list-style-type: none"> • SCE Charge Ready Program • SCAQMD and MSRC Residential EV Charging Incentive Pilot Program • CARB Clean Fuel Reward and CALeVIP • CalCAP EV Charging Station Financing Program for small businesses

Table 3-3: Core Measures for Meeting County of Los Angeles 2030 and 2035 Greenhouse Gas Emissions Targets (cont.)

MEASURE	PERFORMANCE GOALS	COUNTY AGENCY/DEPT	EXTERNAL PARTNERS	POTENTIAL FUNDING SOURCES
ES2: Procure Zero-Carbon Electricity	Participate in CPA’s Green Power option or SCE’s Green Rate option: 100% municipal participation by 2025 and 96% community participation by 2030.	ISD CSO	PW DRP CPA SCE LA100 CARB	CPA Powershare program
E1: Transition Existing Buildings to All-Electric	Electrify all existing residential buildings: 25% by 2030; 40% by 2035; and 70% by 2045. Electrify all existing nonresidential buildings: 15% by 2030; 25% by 2035; 40% by 2045. Require ZNE for all major renovations: 50% by 2030; 75% by 2035; 100% by 2045.	DRP PW ISD CSO	SCE SoCalGas CPA RePowerLA Coalition NRDC	CPUC Technology and Equipment for Clean Heating (TECH) and Building Initiative for Low Emissions Development (BUILD) programs. CPUC BUILD program, CARB Greenhouse Gas Reduction Fund (GGRF), CARB California Climate Investments program, California Alternative Energy and Advanced Transportation Financing Authority (CAEATFA), California Lending for Energy and Environmental Needs (CLEEN) Center, Affordable Housing and Sustainable Communities (AHSC) Program, CPUC Energy Saving Assistance Program (ESAP), CPA and CALeVIP rebates
T8: Accelerate Freight Decarbonization	Increase the total amount of medium- and heavy-duty vehicles in the County are ZEVs to: 40% by 2030; 60% by 2035; and 85% by 2045. Increase the total amount of medium- and heavy-duty vehicles in the LA County-owned fleet that are ZEVs to: 60% by 2030; 80% by 2035; 100% by 2045. Ensure that 100 percent of the drayage truck fleet is ZEV by 2035.	PW DRP CSO	ISD SCE SCAQMD CARB SCAG LA Metro Councils of Governments Cities	<ul style="list-style-type: none"> • SCAQMD Heavy-Duty Zero Emission Vehicle Replacement Grant • SCAQMD Goods Movement Emission Reduction Program • CEC CALeVIP EVSE Rebates • SCE Charge Ready Program EVSE rebates • CARB Advanced Technology Freight Demonstration Projects
W1: Institutionalize Sustainable Waste Systems and Practices	Decrease overall per-capita waste disposal in landfills: 25% by 2030; 30% by 2035; 35% by 2045. Increase the total County waste diversion rate to: 80% by 2025; 85% by 2030; 90% by 2035; and 95% by 2045.	PW CSO	Agricultural Commissioner/ Weights and Measures DRP DPH LACSD CalRecycle	Grants from CalRecycle, CEC, CDFR, USDA
W2: Increase Organic Waste Diversion	Maximize organics waste disposal reduction compared to 2014 levels: 75% by 2025; 80% (340,000 tons) by 2030; 85% (394,000 tons) by 2035; 90% (433,000 tons) by 2045.	PW CSO	DRP Agricultural Commissioner/Weights and Measures LACSD CalRecycle	Grants from CalRecycle, CEC, CDFR, USDA

Table 3-3: Core Measures for Meeting County of Los Angeles 2030 and 2035 Greenhouse Gas Emissions Targets (cont.)

Abbreviations: AHSC = Center, Affordable Housing and Sustainable Communities; BUILD = Building Initiative for Low-Emissions Development Program; CAEATFA = California Alternative Energy and Advanced Transportation Financing Authority; CalCAP = California Capital Access Program; CALeVIP = California Electric Vehicle Infrastructure Project; CalRecycle = California Department of Resources Recycling and Recovery; CARB = California Air Resources Board; CDFA = California Department of Food and Agriculture; CEC = California Energy Commission; CLEEN = California Lending for Energy and Environmental Needs; CPA = Clean Power Alliance; County = unincorporated Los Angeles County; CPUC = California Public Utilities Commission; CSO = Chief Sustainability Office; DPH = Department of Public Health; DRP = Department of Regional Planning; ESAP = Energy Saving Assistance Program; EV = electric vehicle; EVSE = electric vehicle supply equipment; GGRF = Greenhouse Gas Reduction Fund; ISD = Internal Services Department; LA100 = The Los Angeles 100% Renewable Energy Study; LACSD = LA County Sanitation Districts; LASD = Los Angeles County Sanitation Districts; MSRC = Mobile Source Air Pollution Reduction Review Committee; NRDC = National Resources Defense Council; PW = Public Works; SCAG = Southern California Association of Governments; SCAQMD = South Coast Air Quality Management District; SCE = Southern California Edison; SoCalGas = Southern California Gas Company; USDA = U.S. Department of Agriculture; U.S. EPA = U.S. Environmental Protection Agency; ZEV = zero emission vehicle; ZNE = zero net energy. Source: Appendix B: Emissions Forecasting and Reduction Methods.

Costs and Savings

Many GHG emissions reduction actions result in cost savings to residents, businesses, and LA County. These savings are achieved through participation in programs aimed at increasing energy efficiency, water efficiency, use of public transportation, and utilization of renewable energy sources. Increased energy and water efficiency provides cost savings in the form of lower utility bills, while the use of public transportation can reduce costs associated with gasoline use and vehicle maintenance costs. Renewable on-site energy generation also provides cost savings to residents and business owners, as these buildings would not need to purchase as much electricity from utility providers. While state and federal measures are critical to meet LA County's emissions reduction goals, local programs and policies, as well as choices made by the County's residents and businesses, will determine the County's ability to achieve its emissions reduction targets.

The Path to Carbon Neutrality

EO B-55-18 mandates that by 2045, the State of California must achieve carbon neutrality. The 2045 CAP aligns with this executive order through its long-term aspirational goal of carbon neutrality in unincorporated Los Angeles County by 2045. Carbon neutrality means "net zero" emissions of GHGs. In other words, GHG emissions generated by sources such as transportation, power plants, and industrial processes must be less than or equal to the amount of carbon dioxide that is stored, both in natural sinks and through mechanical sequestration. To achieve carbon neutrality, LA County must leverage its influence as a climate leader, collaborating with other local jurisdictions as well as the private, institutional, and nonprofit sectors. Recognizing that no single entity has direct control over communitywide GHG emissions, a collaborative approach is essential to realize equitable and sustainable climate actions for a carbon neutral Los Angeles County.

The 2045 CAP provides a roadmap for successfully achieving both the 2030 and 2035 targets by a substantial margin, placing the County on a trend to achieve carbon neutrality by 2045. However, as illustrated in Figure 3-1, successful implementation of the 2045 CAP alone will not be enough for the County to achieve this aspirational goal. As indicated in Table 3-2, even with CAP implementation, there will still be more than 1.2 million MTCO₂e of residual emissions in 2045. These emissions will originate

from buildings and energy industries that can reduce, but cannot eliminate natural gas (approximately 300,000 MTCO₂e), light-duty vehicles and heavy-duty trucks (approximately 300,000 MTCO₂e), fluorinated products/product use (approximately 285,000 MTCO₂e), solid waste disposal (approximately 256,000 MTCO₂e), wastewater treatment (approximately 73,000 MTCO₂e), miscellaneous other sources (approximately 32,000 MTCO₂e), off-road equipment (approximately 29,000 MTCO₂e), and fertilizer use (approximately 20,000 MTCO₂e).

Figure 3-3 depicts the County’s residual GHG emissions in 2045 with implementation of the 2045 CAP. Total residual emissions are approximately 1.3 million MTCO₂e.

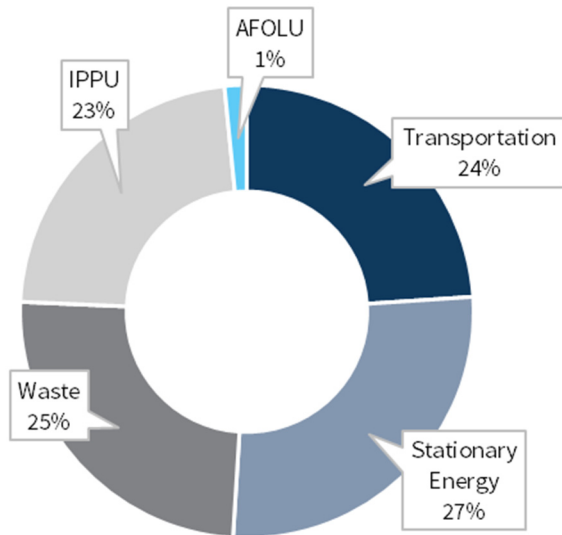


Figure 3-3: Residual 2045 Communitywide Greenhouse Gas Emissions with 2045 Climate Action Plan Implementation

Source: Appendix B: Emissions Forecasting and Reduction Methods.

LA County expects that new state regulations to be adopted in the next 25 years will further reduce GHG emissions and that technologies will be established and more commercially available over the next 25 years that would further reduce these residual emissions. To obtain carbon neutrality by 2045, it is highly likely that the following actions will need to occur in unincorporated Los Angeles County:

- Electrify 100 percent of buildings and facilities, including residential, commercial, industrial, and energy industries.
- Achieve zero (or near-zero) waste going to landfills.
- Use ZEVs for more than 95 percent of the County vehicle fleet, including light-duty passenger vehicles and heavy-duty trucks.
- Eliminate all oil and natural gas operations.
- Transition all refrigerants, fire suppressants, and consumer products used within the County to extremely low (or zero) global warming potential (GWP) substitutes.

- Replace all off-road equipment and off-road vehicles (including locomotives) with electric, green hydrogen,¹⁰ or other zero-emission engine technologies.
- Capture all fugitive wastewater treatment process emissions and convert to fuel.
- Eliminate nitrous oxide emissions from fertilizer application.
- Implement carbon removal and/or carbon capture and sequestration strategies to offset all remaining residual emissions.

If the residual emissions, shown in Figure 3-1, cannot be eliminated through new regulations or technologies, LA County will consider future implementation of carbon removal strategies (such as carbon capture and sequestration and direct air capture), along with future implementation of a carbon offsets/credits program, following completion of a feasibility study, to achieve carbon neutrality by 2045.

3.3 Strategies, Measures, and Actions

The following section provides an in-depth discussion of the strategies and GHG emissions reduction measures in the 2045 CAP, describing specific implementing actions, performance objectives, anticipated GHG emissions reductions, estimated cost impacts, and implementation responsibilities.

Measures and actions that have been quantified are identified with a ^Q superscript.

Although the 2045 CAP focuses on reducing unincorporated County emissions, six actions in the energy sector, seven actions in the transportation sector, and three actions in the waste sector specifically aim to reduce GHG emissions associated with LA County’s municipal operations. **Actions that are specifically designed to reduce emissions for LA County municipal operations are identified with an ^M superscript.**

For estimated up-front capital costs, the following key is used:

- \$: Less than 500,000 U.S. dollars (USD)
- \$\$: 500,000 to 2 million USD
- \$\$\$: 2 million to 15 million USD
- \$\$\$\$: 15 million to 150 million USD
- \$\$\$\$\$: More than 150 million USD

As noted in Chapter 1, in this document, the term “County” means the unincorporated areas of Los Angeles County; “Countywide” refers to Los Angeles County in its entirety, inclusive of both unincorporated areas and all 88 incorporated cities; and “LA County” refers to County of Los Angeles government.

¹⁰ Green hydrogen is hydrogen generated by renewable energy or from low-carbon power, and has significantly lower carbon emissions than traditional hydrogen, which is produced by steam reforming of natural gas.



Energy Supply (ES)

The source of energy used is essential to achieving LA County’s goal to reduce GHG emissions associated with energy supply and consumption. This category includes a range of strategies aimed at decarbonizing the energy used throughout the County. The approach combines eliminating all oil and gas extraction operations in the County, decarbonizing the energy supply, generating energy on-site through renewables, and load management and peak reductions.

Decarbonizing the energy supply provides multiple co-benefits for residents, employees, and employers. These benefits have not always reached BIPOC and disadvantaged communities. For example, residents of affordable housing and multifamily housing have not been well served by local renewable energy programs, such as rooftop solar, leading to cycles of disinvestment and potentially higher energy bills. Concurrently, many of these same residents are already extremely rent and utility burdened, and COVID-19 has exacerbated these problems. The lack of housing and high cost of living in the region mean that increased costs in household expenses could trigger displacement. New and innovative approaches are needed to bring the benefits of renewable energy to all residents while protecting and increasing affordable housing.

Energy Supply (ES) comprises the following strategy and measures:

STRATEGY 1: DECARBONIZE THE ENERGY SUPPLY

- Measure ES1: Develop a Sunset Strategy for All Oil and Gas Operations ^Q
- Measure ES2: Procure Zero-Carbon Electricity ^Q
- Measure ES3: Increase Renewable Energy Production ^Q
- Measure ES4: Increase Energy Resilience
- Measure ES5: Establish GHG Requirements for New Development



Energy Supply

Strategy 1: Decarbonize the Energy Supply

2045 VISION

Phase out oil and gas extraction and provide building energy needs without using fossil fuels

Strategy Description

Oil and gas extraction is widespread and contributes significant GHG emissions into the atmosphere. These emissions are difficult to monitor and control, so this strategy aims to phase out all oil and gas extraction operations in unincorporated Los Angeles County by 2045. LA County has initiated a process to prohibit all new oil and gas extraction wells in all zones and to designate all existing oil and gas extraction activities as nonconforming uses in all zones.

Decarbonizing the energy supply requires three complementary components: procuring clean renewable sources of energy, shifting building energy loads for heating and cooking to electricity or renewable fuels rather than fossil fuels, and reducing energy use through energy efficiency actions. The Clean Power Alliance (CPA) enabled LA County to transition to a low-carbon energy future at an accelerated pace. The CPA is a community choice aggregation program that offers participants the option to increase the amount of their electricity coming from renewable sources. LA County will procure electricity that is generated by 100 percent renewable sources from CPA.

LA County's strategy to shift to a renewables-based electricity supply ensures equitable access to affordable, local, and reliable energy sources. An effort to develop a comprehensive community energy map will identify the geographic opportunities to deploy these distributed energy resources in an equitable manner. Prioritizing distributed energy resources in wildfire-prone communities will provide an alternative to the costly infrastructure upgrades that would be required to maintain uninterrupted power service. Enabling community-shared solar will expand access to local renewable energy for renters and other potential customers.

Where appropriate, microgrids and smart thermostats and controls can be used to manage energy demand, including lowering peak energy demand and dynamically responding to grid conditions. Reducing peak energy demand limits the use of the dirtiest “peaker” plants, limits the need to construct new generation facilities, and reduces the likelihood of power outages due to excessive demand. Installing microgrids combined with solar generation and batteries is a key strategy to support both grid and building resilience. These strategies can help offset the additional demand on electricity supply associated with electrification and can protect buildings from power outages associated with fire and extreme weather events. These strategies can also enable buildings to act as grid assets to

support energy resilience, by dynamically optimizing use of renewable resources when they are most abundant.¹¹

Past and Current LA County Actions

- In March 2016, the LA County Board of Supervisors instructed the Department of Regional Planning (DRP) to amend Title 22, the Planning and Zoning Code for unincorporated Los Angeles County, to ensure that oil and gas facilities may no longer operate by right in the unincorporated County, and ensure that the regulations reflect best practices and current mitigation methods and technologies, minimize environmental impacts and protect sensitive uses and populations. In 2020 DRP updated the Oil Well Ordinance.
- In 2017, DRP amended the zoning code to support and facilitate responsible development of small-scale renewable energy systems and utility-scale renewable energy facilities.
- In 2017, the Board of Supervisors approved the creation of a community choice energy program for Los Angeles County known as the Clean Power Alliance. CPA began operating in 2018 and now serves 32 jurisdictions across Los Angeles and Ventura counties, representing 3 million residents. In 2019, all customers in the County were automatically enrolled in CPA's Clean Energy (50 percent renewable) tier. In October 2022, all customers will be automatically enrolled in the CPA's 100 percent renewable energy option.
- Starting in 2019, all residents and businesses in the County are receiving 50 percent renewable energy, plus an additional 20 percent of GHG-free power from hydroelectric sources.
- In September 2020, the Board of Supervisors passed a motion to prepare a comprehensive review of existing LA County policies, practices, and operations to ensure that there are appropriate backup systems to support County residents in times of emergencies including, at a minimum, a specific focus on equity. The report was published in February 2021.
- In September 2021, the Board of Supervisors voted to phase out oil and gas drilling and ban all new drill sites in unincorporated County areas. The phase-out would close over 1,600 active and idle oil and gas wells in the County. A timetable for the phase-out will be decided after LA County determines the fastest way to legally shut down the wells.
- In February 2022, the Board of Supervisors passed a motion to study the feasibility of establishing Zero Net Energy (ZNE) standards for major development projects and other large-scale development.
- In March 2022, the Board of Supervisors passed a motion to ensure the equitable decarbonization of buildings through a stakeholder engagement process, studying energy resource and infrastructure needs, and by seeking funding.

¹¹ As responsive assets, buildings can ramp energy use up or down, depending on the cost or carbon intensity of the utility generation source. This helps utilities ensure the balanced, flexible supply and demand of high levels of renewables needed to decarbonize the electricity system, resulting in resilient cities, communities, and regions. For more, see: <https://rmi.org/our-work/buildings/pathways-to-zero/grid-interactive-energy-efficient-buildings/>

- In April 2022, the Internal Services Department completed a feasibility study for energy resilience and microgrids at the East L.A. Civic Center.
- Starting in October 2022, customers in the unincorporated County will get 100 percent renewable energy—wind, solar, geothermal—from CPA, compared to the 50 percent clean energy they receive now. Most of the renewable energy will have been produced in California.

Alignment with State Initiatives

- SB 100: By 2045, 100 percent of electricity is sourced from zero-carbon resources
- California Energy Efficiency Strategic Plan
- CalGreen Code (Title 24 Building Code)
- RPS



Energy Supply

Strategy 1: Decarbonize the Energy Supply

MEASURE ES1: Develop a Sunset Strategy for All Oil and Gas Operations ^Q

ANNUAL GHG EMISSIONS

REDUCTIONS

By 2030: 28,368

By 2035: 40,178

By 2045: 52,148

(units = MTCO_{2e})

ESTIMATED COST

\$ to \$\$\$\$

PERFORMANCE

OBJECTIVES

Reduce oil and gas operations compared to 2015 levels by:

- 40 percent by 2030
- 60 percent by 2035
- 80 percent by 2045

DESCRIPTION

Develop a sunset strategy for all oil and gas operations that prioritizes disproportionately affected communities and develop a strategy for carbon removal.

IMPLEMENTING ACTIONS

For tracking metrics and implementation details, see Appendix E.

ES1.1—Collaborate with other local jurisdictions to develop a sunset strategy for all oil and gas operations that prioritizes disproportionately affected communities.

ES1.2—Develop a policy that requires the examination of all active, idle, and abandoned oil wells for fugitive emissions of GHGs. Coordinate with federal and state agencies conducting fugitive emissions data.

ES1.3—Develop a carbon removal strategy, including direct air capture and carbon and sequestration (CCS).



Energy Supply

Strategy 1: Decarbonize the Energy Supply

MEASURE ES2: Procure Zero-Carbon Electricity (Core) ^Q

ANNUAL GHG EMISSIONS

REDUCTIONS

By 2030: 477,188

By 2035: 317,915

By 2045: 0

(units = MTCO_{2e})

ESTIMATED COST

\$-\$\$

PERFORMANCE

OBJECTIVES

Participate in CPA’s Green Power option or SCE’s Green Rate option:

- 100 percent municipal participation by 2025
- 96 percent community participation by 2030 (approximately 4 percent opt-out rate)

DESCRIPTION

Supplying the County’s power demand with zero-carbon electricity¹² is critical to achieving significant GHG emissions reductions. The Clean Power Alliance (CPA) is a nonprofit and community choice energy provider that currently serves 32 communities across Southern California.

IMPLEMENTING ACTIONS

For tracking metrics and implementation details, see Appendix E.

ES2.1—Transition all LA County facilities within unincorporated areas to CPA’s 100% Green Power option, SCE’s 100% Green Rate option, or other available 100% renewable electricity service. ^M

ES2.2—Complete enrollment of the community in CPA’s 100% Green Power option or SCE’s Green Rate option.

¹² “Zero-carbon electricity” means energy resources that either qualify as “renewable” in the most recent Renewables Portfolio Standard (RPS) Eligibility Guidebook or generate zero GHG emissions on-site.



Energy Supply

Strategy 1: Decarbonize the Energy Supply

MEASURE ES3: Increase Renewable Energy Production^Q

ANNUAL GHG EMISSIONS REDUCTIONS

By 2030: 2,118

By 2035: 2,614

By 2045: 0

(units = MTCO_{2e})

ESTIMATED COST

\$-\$\$\$

PERFORMANCE

OBJECTIVES

Install rooftop solar photovoltaic (PV) on all existing multifamily residential buildings and existing commercial buildings:

- 5 percent by 2030
- 10 percent by 2035
- 20 percent by 2045

Install rooftop solar PV on all new multifamily residential buildings:

- 80 percent by 2030
- 85 percent by 2035
- 95 percent by 2045

Install rooftop solar PV on all new commercial buildings:

- 40 percent by 2030
- 50 percent by 2035
- 70 percent by 2045

Install 20,000 kilowatts of solar PV at LA County facilities by 2030.

DESCRIPTION

Expand local solar power generation on existing and new development and for LA County projects.

IMPLEMENTING ACTIONS

For tracking metrics and implementation details, see Appendix E.

ES3.1—Require rooftop solar PV for all new development.

ES3.2—Install rooftop solar PV at existing buildings.

ES3.3—Identify and install solar PV systems at existing viable LA County facilities and properties. ^M

ES3.4—Explore the feasibility to install community-shared solar facilities on County properties. ^M

ES3.5—Require and incentivize renewable energy in multifamily housing for both new development and existing buildings.



Energy Supply

Strategy 1: Decarbonize the Energy Supply

MEASURE ES4: Increase Energy Resilience

ANNUAL GHG EMISSIONS REDUCTIONS

Not quantified (supporting measure)

ESTIMATED COST

\$\$-\$\$\$

PERFORMANCE

OBJECTIVES

Achieve community electricity storage capacity equal to the communitywide 24-hour average usage by 2035/2045.

DESCRIPTION

Expand energy storage and microgrids throughout the community and for LA County operations.

IMPLEMENTING ACTIONS

For tracking metrics and implementation details, see Appendix E.

ES4.1—Develop a program to deploy community resilience hubs¹³ at scale.

ES4.2—Invest in energy storage and microgrids at critical LA County facilities through CPA’s Power Ready Program.^M

ES4.3—Develop a publicly accessible community energy map that identifies opportunities for deploying distributed energy resources and microgrids to improve energy resiliency.

ES4.4—Conduct feasibility studies to identify priority areas for solar and storage combined with building and community-scale microgrids and controls to support demand management and peak shaving to support grid resilience. Study implementation, costs, barriers, and obstacles. Adopt regulations that establish this use and standards for its development. Limiting peak energy demand can eliminate or reduce the use of high-carbon peaker plants.

ES4.5—Develop a Countywide program to promote energy efficiency and resilience measures in facilities providing critical community services.

¹³ According to the Urban Sustainability Directors Network, resilience hubs are “are community-serving facilities augmented to support residents, coordinate communication, distribute resources, and reduce carbon pollution while enhancing quality of life. Hubs provide an opportunity to effectively work at the nexus of community resilience, emergency management, climate change mitigation, and social equity while providing opportunities for communities to become more self-determining, socially connected, and successful before, during, and after disruptions.”



Energy Supply

Strategy 1: Decarbonize the Energy Supply

MEASURE ES5: Establish GHG Requirements for New Development

ANNUAL GHG EMISSIONS REDUCTIONS

Not quantified (supporting measure)

ESTIMATED COST

\$-\$\$

PERFORMANCE OBJECTIVES

All new development that does not require a General Plan amendment shall be consistent with the 2045 CAP.

DESCRIPTION

Develop requirements to ensure that new development is consistent with the 2045 CAP milestone targets for 2030 and 2035 and long-term aspirational goal for 2045. This includes a project review consistency checklist for new development to demonstrate consistency with the 2045 CAP. LA County will assess the feasibility of developing a GHG offsets/credit program to create a pathway toward achieving the aspirational 2045 goal of carbon neutrality. For more information, see Chapter 4, *Implementation and Monitoring*.

IMPLEMENTING ACTIONS

For tracking metrics and implementation details, see Appendix E.

ES5.1—Identify new requirements for new development, including reach codes,¹⁴ ordinances, and conditions of approval to reduce GHG emissions from energy use, transportation, waste, water, and other sources. Include affordable housing considerations in these requirements, and develop supporting measures (financial support, technical assistance, or other incentives) to defray potential additional first costs in order to maintain housing affordability.

ES5.2—Create a consistency review checklist for new development to demonstrate consistency with the 2045 CAP’s strategies, measures, and actions.

ES5.3—Evaluate a program for reducing GHG emissions for new developments that require General Plan amendments.

¹⁴ A “reach code” is a local building energy code that “reaches” beyond the state minimum requirements for energy use in building design and construction.



Transportation (T)

Activities within the transportation sector are responsible for the majority of GHG emissions in unincorporated Los Angeles County, as the dominant mode of transportation is vehicles that run on fossil fuels. Land use patterns developed over time—including the County’s road and highway networks, streetscapes, and parking infrastructure—have been designed to prioritize and promote the usage of cars and trucks. LA County will address transportation emissions by prioritizing public transportation, walking, biking, and active transit options, and other alternatives to single-occupancy trips. For trips requiring vehicles, LA County will focus on advancing zero-emission and near-zero-emission technologies.

Decarbonizing transportation provides many co-benefits for County residents, employees, and employers. Many of these benefits have not always reached BIPOC and disadvantaged communities. For example, residents of affordable housing and multifamily housing have not been well served by electric vehicle charging infrastructure and low-cost charging opportunities. This can lead to cycles of disinvestment and more expensive gas and electricity bills. The lack of housing and high cost of living in the County mean that increased costs in transportation expenses could lead to displacement. New and innovative approaches are needed to bring the benefits of electric vehicle charging infrastructure and ZEVs to all residents while protecting and increasing affordable housing.

Transportation (T) comprises the following strategies and measures:

STRATEGY 2: INCREASE DENSITIES AND DIVERSITY OF LAND USES NEAR TRANSIT

- Measure T1: Increase Density Near High-Quality Transit Areas ^Q
- Measure T2: Develop Land Use Plans Addressing Jobs/Housing Balance and Increase Mixed Use ^Q

STRATEGY 3: REDUCE SINGLE-OCCUPANCY VEHICLE TRIPS

- Measure T3: Expand Bicycle and Pedestrian Network to Serve Residential, Employment, and Recreational Trips ^Q
- Measure T4: Broaden Options for Transit, Active Transportation, and Alternative Modes of Transportation ^Q
- Measure T5: Limit and Remove Parking Minimums ^Q

STRATEGY 4: INSTITUTIONALIZE LOW-CARBON TRANSPORTATION

- Measure T6: Increase ZEV Market Share and Reduce Gasoline and Diesel Fuel Sales ^q
- Measure T7: Electrify County Fleet Vehicles ^q
- Measure T8: Accelerate Freight Decarbonization ^q
- Measure T9: Expand Use of Zero-Emission Technologies for Off-Road Vehicles and Equipment ^q



Transportation

Strategy 2: Increase Densities and Diversity of Land Uses Near Transit

2045 VISION

Increased housing opportunities with close and convenient access to destinations such as shopping and employment centers

Strategy Description

This strategy focuses on coordinating land use development that leads to outcomes associated with reduced VMT, such as increased densities near transit, jobs-housing balance, and strategically located land uses that can reduce travel distances for many trip purposes.

Past and Current LA County Actions

- As of 2021, LA County has adopted Transit Oriented District (TOD) plans for three unincorporated County communities: Willowbrook, West Carson, and West Athens–Westmont.
- In 2022, LA County updated its Housing Element to reduce regulatory barriers and provide incentives to promote the equitable distribution of sustainable housing development through programs that include but are not limited to the Rezoning Program, Residential Parking Program, Rent Stabilization Ordinance, and Affordable Housing and Sustainable Communities Program.

Alignment with State and Regional Initiatives

- Connect SoCal, SCAG’s Regional Transportation Plan/Sustainable Communities Strategy for achieving a 13 percent reduction in per capita passenger vehicle GHG emissions relative to 2005, as required by SB 375.



Transportation

Strategy 2: Increase Densities and Diversity of Land Uses Near Transit

MEASURE T1: Increase Density Near High-Quality Transit Areas ^Q

ANNUAL GHG EMISSIONS

REDUCTIONS

By 2030: 27,357

By 2035: 26,019

By 2045: 25,276

(units = MTCO_{2e})

ESTIMATED COST

\$-\$\$

PERFORMANCE

OBJECTIVES

Increase in residential density:

- Achieve a minimum of 20 dwelling units (DUs) per acre (maximum of 50 DUs per acre) for HQTAS
- Majority of residential and employment centers in unincorporated Los Angeles County are within 1 mile of an HQTAS
- 27 percent increase in DUs within HQTAS

DESCRIPTION

Increase housing opportunities that are affordable and near transit, to reduce VMT.

IMPLEMENTING ACTIONS

For tracking metrics and implementation details, see Appendix E.

T1.1—Incentivize residential and community-serving uses to be developed in high quality transit areas (HQTAs), while ensuring inclusion of vital public amenities, such as parks and active transportation infrastructure.

T1.2—Develop land use tools that will increase the production of a diversity of housing types, such as missing middle housing.



Transportation

Strategy 2: Increase Densities and Diversity of Land Uses Near Transit

MEASURE T2: Develop Land Use Plans Addressing Jobs-Housing Balance and Increase Mixed Use ^Q

ANNUAL GHG EMISSIONS

REDUCTIONS

By 2030: 39,184

By 2035: 37,267

By 2045: 36,204

(units = MTCO_{2e})

ESTIMATED COST

\$\$

PERFORMANCE

OBJECTIVES

By 2030, achieve a job density of 300 jobs per acre in HQTA areas

DESCRIPTION

Increasing density and the mix of land uses can help reduce single-occupancy trips, the number of trips, and trip lengths.

IMPLEMENTING ACTIONS

For tracking metrics and implementation details, see Appendix E.

T2.1—Develop community plans that will increase the percentage of residents who could live and work within the same community, and that could decrease VMT.



Transportation

Strategy 3: Reduce Single-Occupancy Vehicle Trips

2045 VISION

A proliferation of travel options that do not require personal vehicle ownership

Strategy Description

This strategy focuses on development of transportation networks that increase the accessibility, comfort, and convenience of active travel modes to help reduce trips made in single-occupancy vehicles.

Past and Current LA County Actions

- Throughout the County, 64 miles of bikeways have been created between 2012 and 2021, with 3.65 miles currently in progress. An additional 36 miles of bikeway are planned to be completed by 2025, with 18 miles scheduled to be completed thereafter.
- LA County is working with Metro on a transit program that prioritizes public transit by creating bus priority lanes, improving transit facilities, reducing transit-passenger time, and providing bicycle parking near transit stations.
- The Countywide Traffic Signal Synchronization Program, instituted in 1988, includes upgrading traffic signal infrastructure and timing to allow for signal synchronization, implementation of pedestrian and bicycle improvements, and improvement of transit operations through more consistent travel times.
- The Department of Regional Planning is currently working on a study to inform the update to parking standards for multifamily residential development with the goal of reducing barriers to investments in multifamily housing production, reducing the overall cost of housing, and helping to lower VMT. After the conclusion of the study, recommendations will be finalized and an ordinance will be prepared to amend the zoning code. Public hearings on the ordinance are anticipated in 2023.

Alignment with State and Regional Initiatives

- Connect SoCal, SCAG's Regional Transportation Plan/Sustainable Communities Strategy for achieving a 13 percent reduction in per capita passenger vehicle GHG emissions relative to 2005, as required by SB 375.



Transportation

Strategy 3: Reduce Single-Occupancy Vehicle Trips

MEASURE T3: Expand Bicycle and Pedestrian Network to Serve Residential, Employment, and Recreational Trips ^Q

ANNUAL GHG EMISSIONS

REDUCTIONS

By 2030: 2,955

By 2035: 2,811

By 2045: 2,730

(units = MTCO_{2e})

ESTIMATED COST

\$\$\$-\$\$\$\$

PERFORMANCE

OBJECTIVES

Increase bikeway miles:

- 500 percent by 2030

DESCRIPTION

Travel options that serve a variety of land uses and trip purposes can help shift some trips away from single-occupancy vehicles.

IMPLEMENTING ACTIONS

For tracking metrics and implementation details, see Appendix E.

T3.1—Create a more connected and safer bikeway network by expanding bikeway facilities and implementing protected and separated lanes.

T3.2—Implement and regularly update LA County's Pedestrian Action Plan, Bicycle Master Plan, Active Transportation Plans, and Vision Zero Action Plan.

T3.3—Enhance pedestrian and bicycle environments through energy efficient pedestrian-scale lighting and shading to promote active transportation. Build shade structures at major transit stops, such as those identified in Metro's Active Transportation Strategic Plan, prioritizing communities with high heat vulnerability. Develop and implement a Shaded Corridors Program.



Transportation

Strategy 3: Reduce Single-Occupancy Vehicle Trips

MEASURE T4: Broaden Options for Transit, Active Transportation, and Alternative Modes of Transportation ^Q

ANNUAL GHG EMISSIONS

REDUCTIONS

By 2030: 11,465

By 2035: 10,904

By 2045: 10,601

(units = MTCO_{2e})

ESTIMATED COST

\$-\$\$\$\$\$

PERFORMANCE

OBJECTIVES

- By 2030, double transit service hours from 560,000 to 1.12 million
- By 2030, install bus-only lanes and signal prioritization on 100 percent of all transit routes
- 75 percent of unincorporated County residents live within one-half mile of shuttle or mobility service

DESCRIPTION

Transit service, micro mobility services (such as bike-share, scooter-share, and drone deliveries), and access to these transportation options can help reduce VMT.

IMPLEMENTING ACTIONS

For tracking metrics and implementation details, see Appendix E.

T4.1—Expand and improve the frequency of service of County shuttles and explore new mobility services, such as micro transit,¹⁵ autonomous delivery vehicles, micro mobility, and on-demand autonomous shuttles.

T4.2—Install bus-only lanes and signal prioritization along major thoroughfares, and work with transit agencies and neighboring jurisdictions to plan and install full bus rapid transit infrastructure along priority corridors, as appropriate.

T4.3—Develop a transportation technology strategy to proactively address how evolving tech-enabled mobility options can support public transit.

T4.4—Set aside maintenance funds to ensure that public transit facilities, including stations and stops, are safe and clean to enhance the transit experience and increase ridership.

T4.5—Develop and implement a transportation demand management (TDM) ordinance that requires projects to incorporate measures such as subsidized transit passes and car share.

T4.6—Offer free transit passes for students, youth, seniors, people with disabilities, and low-income populations.

T4.7—Expand and improve LA County’s Telecommuting Policy, using data gathered through the alternative work program.

T4.8—Establish temporary and permanent car-free areas.

T4.9—Develop a VMT banking or exchange program.

¹⁵ Micro transit is public or private multi-passenger transportation services that serve passengers using dynamically generated routes; they provide transit-like service on a smaller, more flexible scale.



Transportation

Strategy 3: Reduce Single-Occupancy Vehicle Trips

MEASURE T5: Limit and Remove Parking Minimums

ANNUAL GHG EMISSIONS REDUCTIONS

Not quantified (supporting measure)

ESTIMATED COST

\$\$-\$\$\$

PERFORMANCE

OBJECTIVES

- Reduce parking stipulations to reduce parking supply and increase transit use
- Unbundle parking costs to reflect cost of parking
- Implement parking pricing to increase “Park-once” behavior

DESCRIPTION

Parking strategies such as parking maximums, unbundling parking, or market price parking can help reduce VMT.

IMPLEMENTING ACTIONS

For tracking metrics and implementation details, see Appendix E.

T5.1—Implement a comprehensive parking reform strategy, which should include, but not be limited to: elimination of minimum parking requirements for all new residential units, establishment of parking maximums within one-half mile of high-quality transit stops, creation and expansion of parking benefit districts, and incentives for developers to provide less than maximum allowable parking.



Transportation

Strategy 4: Institutionalize Low-Carbon Transportation

2045 VISION

100 percent of all vehicles in unincorporated Los Angeles County have zero carbon emissions

Strategy Description

Motorized vehicles that are needed for travel must transition to zero-carbon and near-zero-carbon technologies, such as electric vehicles (EVs) and ZEVs. Expanding access to charging infrastructure will address a key barrier to the adoption of EVs. LA County will work to provide access to clean transportation by developing programs that include e-bikes, zero-emission buses and shuttles, and electrified trains. LA County will also endeavor to install EV charging stations (EVCSs) at LA County properties and in the public right-of-way, require new development to install EVCSs, and develop incentives and requirements for existing buildings to install EVCSs.

This strategy also aims to reduce emissions from diesel- and gasoline- powered off-road equipment, including construction, landscaping, recreational, and commercial and industrial equipment. This strategy increases the use of electric-powered equipment by establishing a goal such that a portion of all equipment is electric-powered. Other technologies include green hydrogen fuel cell and natural gas.

Past and Current LA County Actions

- In 2008, Public Works (PW) began the implementation of a three-pronged sustainable pavement treatment approach.
- As of April 2022, LA County has deployed approximately 750 EV charging ports across LA County facilities to support the electrification of its fleet and to increase electric vehicle supply equipment (EVSE) access to employees and the public.
- In 2016, the EV Infrastructure Ordinance was adopted; this ordinance provides an expedited and streamlined permitting process for EV charging infrastructure.
- The Idling Reduction Ordinance, adopted in 2018, amended the zoning code to require signs in on-site loading areas to encourage vehicle idle reduction.
- In 2021, LA County installed 315 new PowerFlex-networked charging stations with advanced managed charging capability.
- In April 2021, the Board of Supervisors adopted a revised fleet policy that requires the purchase of ZEVs for LA County when replacing all LA County vehicles, to the extent that they are available and meet operational needs.

Alignment with State Initiatives

- Governor's EO B-48-15 (5 million ZEVs on California roads by 2030) and EO N-79-20 (100 percent of in-state sales of new passenger cars and trucks be zero-emission by 2035).



Transportation

Strategy 4: Institutionalize Low-Carbon Transportation

MEASURE T6: Increase ZEV Market Share and Reduce Gasoline and Diesel Fuel Sales (Core) ^Q

ANNUAL GHG EMISSIONS

REDUCTIONS

By 2030: 481,735

By 2035: 820,125

By 2045: 1,441,291

(units = MTCO_{2e})

ESTIMATED COST

\$-\$\$\$

PERFORMANCE

OBJECTIVES

Increase the total amount of light-duty vehicles in the County that are ZEVs to:

- 30 percent by 2030
- 50 percent by 2035
- 85 percent by 2045

Increase the sales of new light-duty vehicles in the County that are ZEVs:

- 60 percent by 2030
- 100 percent by 2035

DESCRIPTION

Increase the County’s ZEV market share and vehicle penetration to the maximum extent feasible. Set targets for reducing total gasoline and diesel vehicle fuel sales.

IMPLEMENTING ACTIONS

For tracking metrics and implementation details, see Appendix E.

T6.1—Develop a Zero Emission Vehicle Master Plan.

T6.2—Install EVCSs at existing buildings and right-of-way infrastructure (e.g., lamp poles) throughout unincorporated Los Angeles County.

T6.3—Require all new development to install EVCSs through a condition of approval/ordinance. Residential development must install EVCSs; nonresidential development must install EVCSs at a percentage of total parking spaces.

T6.4—Install EVCSs at LA County facilities and properties for public, employee, and fleet use, prioritizing locations in BIPOC and disadvantaged communities. Complete an assessment of EV charging locations, identifying gaps in publicly accessible stations for BIPOC and disadvantaged communities.

T6.5—Continue to pilot vehicle-grid integration applications at workplaces to maximize the benefits that daytime charging for plug-in electric vehicles (PEVs) can have on the grid, including demand response to reduce peak loads and energy storage during periods of renewable overproduction.

T6.6—Expand electric options for active transportation, such as electric scooters and e-bikes.

T6.7—Increase the use of green hydrogen vehicles. Use biomethane and biogas created from organic waste as a "bridge fuel" to achieve 100 percent green hydrogen and electric vehicles.



Transportation

Strategy 4: Institutionalize Low-Carbon Transportation

MEASURE T7: Electrify LA County Fleet Vehicles ^{Q M}

ANNUAL GHG EMISSIONS REDUCTIONS

By 2030: 29,743
 By 2035: 24,335
 By 2045: 12,351

(units = MTCO_{2e})

ESTIMATED COST

\$\$\$-\$\$\$\$

PERFORMANCE

OBJECTIVES

Electrify the LA County bus, shuttle, and light-duty vehicle fleets by 2030

Increase the total amount of light-duty vehicles in the LA County-owned fleet that are ZEVs to:

- 35 percent by 2030
- 60 percent by 2035
- 100 percent by 2045

DESCRIPTION

Electrify the LA County bus, shuttle, and light-duty vehicle fleets.

IMPLEMENTING ACTIONS

For tracking metrics and implementation details, see Appendix E.

T7.1—Electrify the LA County fleet, and partner with transit agencies for group purchasing and siting of shared charging and/or fueling infrastructure. ^M

T7.2—Electrify light-duty LA County fleet vehicles. ^M



Transportation

Strategy 4: Institutionalize Low-Carbon Transportation

MEASURE T8: Accelerate Freight Decarbonization ^Q

ANNUAL GHG EMISSIONS

REDUCTIONS

By 2030: 86,168

By 2035: 103,528

By 2045: 164,707

(units = MTCO_{2e})

ESTIMATED COST

\$-\$\$\$\$

PERFORMANCE

OBJECTIVES

Increase the total amount of medium- and heavy-duty vehicles in the County that are ZEVs to:

- 40 percent by 2030
- 60 percent by 2035
- 85 percent by 2045

Increase the total amount of medium- and heavy-duty vehicles in the LA County-owned fleet that are ZEVs to:

- 60 percent by 2030
- 80 percent by 2035
- 100 percent by 2045

Ensure that 100 percent of the drayage truck fleet is ZEV by 2035

DESCRIPTION

Incentivize and implement freight decarbonization technologies, specifically focusing on charging infrastructure.

IMPLEMENTING ACTIONS

For tracking metrics and implementation details, see Appendix E.

T8.1—Implement freight decarbonization technologies along highway corridors passing through unincorporated Los Angeles County communities through programs such as zero-emission delivery zones.

T8.2—Create an ordinance requiring new goods movement facilities to install alternative fueling infrastructure.

T8.3—Adopt Building Performance Standards for existing goods movement facilities and reach code requirements for major retrofits and renovations that require alternative fueling infrastructure for medium- and heavy-duty vehicles. Require goods movement facilities to install alternative fueling infrastructure for medium- and heavy-duty vehicles at the point of sale.

T8.4—Streamline permitting of ZEV charging and fueling infrastructure for medium- and heavy-duty vehicles.



Transportation

Strategy 4: Institutionalize Low-Carbon Transportation

MEASURE T9: Expand Use of Zero-Emission Technologies for Off-Road Vehicles and Equipment ^Q

ANNUAL GHG EMISSIONS

REDUCTIONS

By 2030: 8,373
 By 2035: 21,819
 By 2045: 42,567

(units = MTCO_{2e})

GHG BENEFIT-COST RATIO

\$-\$\$

PERFORMANCE

OBJECTIVES

Increase the total amount of off-road fleet and equipment in the County that are ZEVs to:

- 20 percent by 2030
- 50 percent by 2035
- 90 percent by 2045

DESCRIPTION

Prohibit the use of gas- and diesel-powered small (≤25 horsepower) off-road equipment and increase the use of zero-emission and near-zero-emission construction, agriculture, and manufacturing equipment.

IMPLEMENTING ACTIONS

For tracking metrics and implementation details, see Appendix E.

T9.1—Partner with the South Coast Air Quality Management District and Antelope Valley Air Quality Management District to increase the use of zero-emission and near-zero-emission construction, agriculture, and manufacturing equipment.

T9.2—Identify types of ZEV and green hydrogen equipment that are commercially available (e.g., forklifts, loaders, welders, saws, pumps, fixed cranes, air compressors, sweepers, aerial lifts, pressure washers) and require the use of these types of equipment on all new projects through an ordinance or conditions of approval.

T9.3—Require, to the maximum extent feasible, the use of zero-emission and near-zero-emission construction, agriculture, and manufacturing equipment for LA County projects. ^M



Building Energy and Water(E)

Buildings are central in LA County’s approach to reducing GHG emissions associated with energy supply and consumption. This category includes a range of strategies aimed at reducing energy use in buildings, decarbonizing the energy and materials used in buildings, and reducing water consumption. The approach combines increasing energy efficiency, electrifying buildings, and decarbonizing building materials.

These actions must apply to both new and existing buildings. A foundational first step for existing buildings is to track and report building energy and water use to raise awareness and highlight opportunities for savings, followed by retrofit programs for efficiency and decarbonization. Green building standards and net-zero energy incentives for new developments will significantly reduce GHG emissions. Scaling up energy efficiency programs and developing energy and emissions performance standards for existing and new buildings will reduce overall energy demand, avoiding costly new infrastructure and enabling an easier transition to renewable energy sources.

Water consumption in unincorporated Los Angeles County has a significant carbon footprint because energy is required to collect, treat, store, and convey water to homes and businesses from distant sources. By prioritizing water conservation programs, expanding LA County’s efforts toward water recycling and reuse, and promoting net zero water developments, the County will simultaneously reduce GHG emissions and lessen communitywide dependency on imported water sources.

Improving the environmental performance of buildings provides multiple co-benefits for occupants. These benefits have not always reached BIPOC and disadvantaged communities. Residents of affordable housing and multifamily housing, in particular, have not been well served by traditional energy retrofit programs, leading to ongoing cycles of disinvestment, higher energy bills, and less healthy indoor air quality. At the same time, many of these same residents are already extremely rent and utility burdened, and COVID-19 has exacerbated these problems. The lack of housing and high cost of living in the region mean that increased costs in household expenses could trigger displacement. New and innovative approaches are needed to bring the benefits of healthy, decarbonized, and resilient buildings to all residents while protecting and increasing affordable housing.

Building Energy and Water (E) comprises the following strategies and measures:

STRATEGY 5: DECARBONIZE BUILDINGS

- Measure E1: Transition Existing Buildings to All-Electric ⁹
- Measure E2: Standardize All-Electric New Development ⁹
- Measure E3: Other Decarbonization Actions

STRATEGY 6: IMPROVE EFFICIENCY OF BUILDING ENERGY USE

- Measure E4: Improve Energy Efficiency of Existing Buildings ⁹

STRATEGY 7: CONSERVE WATER

- Measure E5: Increase Use of Recycled Water and Gray Water Systems
- Measure E6: Reduce Indoor and Outdoor Water Consumption ⁹

What is Building Decarbonization?

Building Decarbonization is a framework for reducing GHG emissions associated with buildings.

Building emissions come from:**DIRECT SOURCES:**

- Combustion of fuels for heating and cooking (gas stoves, gas heaters).
- Gas leaks (gas lines in buildings, unlit pilot lights).
- Hydrofluorocarbon (HFC) leaks (from refrigerators and other compressor-based systems for space conditioning and water heating, during use and disposal).

INDIRECT SOURCES:

- Generation of the electricity used in buildings.

Ways to decarbonize buildings:

1. Replace gas-fueled appliances with efficient electric alternatives.
2. Continue decarbonizing electricity by growing the low-carbon share of the generation portfolio.
3. Foster energy efficiency through incentive programs, appliance standards, building standards, research, and financing.
4. Transition to using better refrigerants and reduce associated leakage
5. Grow distributed energy resources such as rooftop solar photovoltaic (PV) and onsite battery storage.
6. Decarbonize the gas system by displacing natural gas with renewable gas produced from carbon-free electricity or existing waste streams.
7. Give building owners and occupants incentives to shift their electricity use in response to the timing of energy costs, GHG emissions intensity, or electricity grid emergencies.



Building Energy and Water

Strategy 5: Decarbonize Buildings

2045 VISION

Zero use of fossil fuels to provide building energy needs

Strategy Description

As noted in Strategy 1, building decarbonization requires two complementary components: procuring clean, renewable sources of energy and shifting building energy loads for heating and cooking to electricity or renewable fuels rather than fossil fuels. In addition to renewable electricity purchased through the CPA over the grid, distributed, on-site renewable energy can be promoted in a variety of ways. Because grid-supplied energy is now cleaner than on-site natural gas use, building electrification and, to some extent, the use of renewable natural gas are key to decarbonization.

Past and Current LA County Actions

- In 2019, LA County adopted the 2020 County of Los Angeles Green Building Standards Code.
- In 2022, LA County updated its Housing Element to reduce regulatory barriers and provide incentives to promote the equitable distribution of sustainable housing development through programs that facilitate construction and maintenance of quality housing to enhance livability of neighborhoods.
- In February 2022, the LA County Board of Supervisors passed a motion to study the feasibility of establishing ZNE standards for major development projects and other large-scale development.
- In March 2022, the Board of Supervisors passed a motion to ensure the equitable decarbonization of buildings through a stakeholder engagement process, studying energy resource and infrastructure needs, and by seeking funding. The motion also directs PW, the Chief Sustainability Office, DRP, and other LA County departments to provide recommendations for an ordinance or building code changes that would phase out the use of natural gas equipment and appliances in all new residential and commercial construction and substantial renovations, where feasible, starting in 2023.

Alignment with State Initiatives

- California Energy Efficiency Strategic Plan
- CalGreen Code (Title 24 Building Code)
- RPS



Building Energy and Water Strategy 5: Decarbonize Buildings

MEASURE E1: Transition Existing Buildings to All-Electric (Core) ^Q

ANNUAL GHG EMISSIONS

REDUCTIONS

By 2030: 176,728

By 2035: 280,988

By 2045: 475,603

(units = MTCO_{2e})

ESTIMATED COST

\$\$\$\$\$

PERFORMANCE

OBJECTIVES

Electrify all existing residential buildings:

- 25 percent by 2030
- 40 percent by 2035
- 70 percent by 2045

Electrify all existing nonresidential buildings:

- 15 percent by 2030
- 25 percent by 2035
- 40 percent by 2045

Require Zero Net Energy (ZNE)¹⁶ for all major renovations:

- 50 percent by 2030
- 75 percent by 2035

DESCRIPTION

To achieve LA County's GHG emissions reduction targets, the decarbonization of the electrical grid must be combined with building electrification, shifting the energy load from fossil natural gas to cleaner sources. This measure aims to electrify existing buildings. Biomethane is another preferred alternative to fossil natural gas; however, existing opportunities for the widespread use of biomethane are currently limited.

IMPLEMENTING ACTIONS

For tracking metrics and implementation details, see Appendix E.

E1.1—Adopt Building Performance Standards for existing buildings and reach code requirements for major retrofits and renovations that require electric water and space heating. Require buildings to retrofit natural gas water and space heating to electric water and space heating at the point of sale.

E1.2—Increase alternatives to natural gas uses, such as for cooking, in existing buildings. Establish carbon intensity limits for existing nonresidential and residential buildings over a certain size.

E1.3—Adopt a ZNE ordinance for building renovations, based on certain criteria (such as commercial facilities with 10,000 square feet of additions). Adopt ZNE Building Performance Standards for certain buildings not undergoing major renovations or retrofits.

E1.4—Create a plan for phased electrification of LA County facilities. Phase out gas-powered infrastructure and appliances as they need replacement. ^M

¹⁶ “Zero net energy” is defined by the U.S. Department of Energy as follows: “An energy-efficient building where, on a source energy basis, the actual annual delivered energy is less than or equal to the onsite renewable exported energy.” U.S. Department of Energy. 2015. *A Common Definition for Zero Energy Buildings*, September 2015. Prepared by the National Institute of Building Sciences. Available: https://www.energy.gov/sites/prod/files/2015/09/f26/bto_common_definition_zero_energy_buildings_093015.pdf. Accessed in January 2021.

- 100 percent by 2045

Electrify all County facilities:

- 25 percent by 2030
- 40 percent by 2035
- 75 percent by 2045

E1.5—Create a comprehensive fund aggregation program to support energy efficiency, decarbonization, and resilience in new and existing affordable housing.

E1.6—Create an energy retrofit accelerator to provide a one-stop shop for guidance, technical support, training, and access to aggregated funds to support building owners and contractors. Target support to low-income communities and affordable housing.



Building Energy and Water
Strategy 5: Decarbonize Buildings

MEASURE E2: Standardize All-Electric New Development ^Q

ANNUAL GHG EMISSIONS REDUCTIONS

By 2030: 7,402
 By 2035: 12,529
 By 2045: 22,614

(units = MTCO_{2e})

ESTIMATED COST
 \$\$-\$\$\$

PERFORMANCE

OBJECTIVES

All new buildings will be all-electric beginning in 2025.

All new residential will be ZNE beginning in 2025 and all new nonresidential will be ZNE beginning in 2030.

DESCRIPTION

This measure aims to electrify all new buildings.

IMPLEMENTING ACTIONS

For tracking metrics and implementation details, see Appendix E.

E2.1—Adopt an ordinance requiring all new buildings to be fully electric with no natural gas hookups. Include affordable housing considerations in these requirements, and develop supporting measures (financial support, technical assistance, or other incentives) to defray potential additional first costs in order to maintain housing affordability.

E2.2—Adopt a ZNE ordinance for all new residential buildings built after 2025 and all new nonresidential buildings built after 2030. Include renter protections for affordable housing. Provide affordable housing set-aside to offset first cost.

E2.3—Adopt CALGreen Code Tier 1 green building standards and identify which Tier 2 standards could be adopted as code amendments.



Building Energy and Water
Strategy 5: Decarbonize Buildings

MEASURE E3: Other Decarbonization Actions

ANNUAL GHG EMISSIONS REDUCTIONS

Not quantified (supporting measure)

ESTIMATED COST

\$\$-\$\$\$

PERFORMANCE OBJECTIVES

Increase the proportion of biomethane in the utility natural gas mix to:

- 20 percent by 2030
- 30 percent by 2035
- 80 percent by 2045

Use negative-carbon concrete for all new construction.

Replace high-GWP refrigerants with low-GWP refrigerants:

- 15 percent by 2030
- 25 percent by 2035
- 50 percent by 2045

DESCRIPTION

Reduce the life-cycle carbon intensity of building materials and phase out the use of high-GWP refrigerants.

IMPLEMENTING ACTIONS

For tracking metrics and implementation details, see Appendix E.

E3.1—Work with utilities to incorporate increasing levels of biomethane into the natural gas mix.

E3.2—Adopt a concrete code for new construction that limits embodied carbon emissions; specify code requirements of carbon intensity limit for concrete.

E3.3—Adopt reach code requirements that include performance standards to limit the amount of embodied carbon associated with construction.

E3.4—Develop a refrigerant management program that establishes a phase-out timeline for high-GWP refrigerants in existing buildings, incentivizes industrial equipment replacement, and specifies requirements for new development to use low-GWP refrigerants.



Building Energy and Water

Strategy 6: Improve Efficiency of Existing Building Energy Use

2045 VISION

All buildings will be zero net energy users

Strategy Description

Increasing the energy efficiency of existing buildings reduces GHG emissions by decreasing the consumption of nonrenewable energy sources, including natural gas and electricity that is not 100 percent carbon-free. Energy efficiency improvements can be achieved through a variety of methods, including energy audits, benchmarking, appliance replacements and rebates, building retrofits, and consumer education. In addition to reducing GHG emissions, energy-efficient building improvements can lower energy bills, create local green jobs, and improve the longevity of existing buildings. LA County will improve the energy efficiency of existing buildings through coordination with agencies and organizations, as well as public outreach.

Past and Current LA County Actions

- In 2019, LA County Public Works adopted a Cool Roof Ordinance to amend Title 31 to mandate the installation of Tier 2 level cool roofing materials for all projects in which it has been proven to be cost effective.
- The Internal Services Department manages a portfolio of energy efficiency programs that support communities, local governments, commercial businesses, and residential and multifamily property owners. The Internal Services Department administers the Southern California Regional Energy Network (SoCalREN), which supports energy efficiency programs and achieved more than 16 million kilowatt-hours in electricity savings and more than 280,000 therms of natural gas savings in 2021.

Alignment with State Initiatives

- California Energy Efficiency Strategic Plan
- CalGreen Code (Title 24 Building Code)



Building Energy and Water

Strategy 6: Improve Efficiency of Existing Building Energy Use

MEASURE E4: Improve Energy Efficiency of Existing Buildings ^Q

ANNUAL GHG EMISSIONS REDUCTIONS

By 2030: 19,608
 By 2035: 41,388
 By 2045: 72,196

(units = MTCO_{2e})

ESTIMATED COST
 \$-\$\$\$

PERFORMANCE OBJECTIVES

Reduce building Energy Use Intensity below 2015 levels as follows:

- 15 percent for residential and industrial and 25 percent for commercial by 2030
- 25 percent for residential and industrial and 35 percent for commercial by 2035
- 35 percent for residential and industrial and 50 percent for commercial by 2045

DESCRIPTION

Retrofit existing building stock to reduce overall County energy use.

IMPLEMENTING ACTIONS

For tracking metrics and implementation details, see Appendix E.

E4.1—Adopt Building Performance Standards for energy efficiency in existing buildings. Require all buildings to perform energy efficiency retrofits at the point of sale. Expand and enhance the energy efficiency programs offered by the Southern California Regional Energy Network (SoCalREN). Include affordable housing considerations in these requirements, and develop additional renter protections and supporting measures (financial support, technical assistance, or other incentives) to limit the amount of first costs being passed on to low-income renters. (See Actions E1.5 and E1.6.)

E4.2—Adopt an energy efficiency ordinance for existing buildings, requiring all buildings over 20,000 square feet to benchmark and report their energy use and demonstrate their pathway to efficiency.

E4.3—Convert existing LA County–owned heat-trapping surfaces to cool or green surfaces. ^M



Building Energy and Water Strategy 7: Conserve Water

2045 VISION

Community water consumption that does not exceed the County's sustainable supply

Strategy Description

The GHG emissions associated with water consumption are the result of the electricity and natural gas used to pump, treat, and convey the water. This strategy aims to reduce GHG emissions by decreasing the total amount of water consumed, as well as the energy intensity of the water consumed.

Past and Current LA County Actions

- LA County continues to hold free Smart Gardening Program public workshops on topics such as composting, water-wise gardening, and organic gardening.
- LA County allocated \$300,000 for the Waterworks Districts' Water Customer Rebate program in Fiscal Year 2021–2022.
- The passage of Measure W in November 2018 created LA County's Safe Clean Water Program.
- In 2022, LA County updated its Housing Element to reduce regulatory barriers and provide incentives to promote the equitable distribution of sustainability in housing development through programs that include but are not limited to the Priority of Water and Sewer for Affordable Housing.

Alignment with State Initiatives

- SB 606 and AB 1668, requiring urban efficiency standards for indoor use, outdoor use, and water lost to leaks.



Building Energy and Water Strategy 7: Conserve Water

MEASURE E5: Increase Use of Recycled Water and Gray Water Systems

ANNUAL GHG EMISSIONS REDUCTIONS

Not quantified (supporting measure)

ESTIMATED COST

\$\$-\$\$\$

PERFORMANCE

OBJECTIVES

County demand met by recycled water, gray water, or potable reuse:

- 25 percent by 2030
- 50 percent by 2035
- 100 percent by 2045

DESCRIPTION

Increasing the use of alternative water sources (e.g., recycled water, gray water, indirect potable reuse) reduces the demand for water sources with higher energy and carbon intensities (e.g., imported water, groundwater).

IMPLEMENTING ACTIONS

For tracking metrics and implementation details, see Appendix E.

E5.1—Require dual waste piping to be installed in new residential developments to allow for future graywater irrigation systems.

E5.2—Require the use of recycled water and gray water for agricultural purposes where recycled water is available. Identify soil and water conservation best practices for agricultural uses. Work with LACSD and other water suppliers to assess the feasibility of new recycled water facilities for unserved communities.

E5.3—Require the use of recycled water and gray water for industrial purposes where recycled water is available. Identify water conservation best practices for industrial uses. Work with LACSD and other water suppliers to assess the feasibility of new recycled water facilities for unserved communities.

E5.4—Partner with LA County water districts and retail suppliers to explore the potential for widespread utilization of direct potable reuse through pilot projects.



Building Energy and Water
Strategy 7: Conserve Water

MEASURE E6: Reduce Indoor and Outdoor Water Consumption ^Q

ANNUAL GHG EMISSIONS

REDUCTIONS

By 2030: 10,660

By 2035: 15,235

By 2045: 15,046

(units = MTCO_{2e})

ESTIMATED COST

\$-\$\$

PERFORMANCE

OBJECTIVES

Reduce total water use to less than:

- 110 gallons per capita per day (GPCD) by 2030
- 100 GPCD by 2035
- 85 GPCD by 2045

DESCRIPTION

Reducing indoor and outdoor water consumption is essential as the state experiences longer and more severe droughts. Not only will water conservation improve regional resiliency, but it will also reduce GHG emissions through the reduction of energy consumption associated with the processing, treatment, and conveyance of water and wastewater.

IMPLEMENTING ACTIONS

For tracking metrics and implementation details, see Appendix E.

E6.1—Develop a net-zero water ordinance for new greenfield development. Develop a water conservation ordinance for new development (public and private).

E6.2—Adopt a water efficiency ordinance for existing buildings, requiring all buildings over 20,000 square feet to benchmark and report their water use and demonstrate their pathway to efficiency.

E6.3—Incentivize residents to replace water-intensive landscaping, such as grasses, with water-conserving landscaping through a new ordinance along with education and incentive programs.

E6.4—Implement strategies to improve water efficiency at LA County facilities.^M

E6.5—Integrate water-related programs into LA County’s affordable housing preservation program to protect the housing affordability of units and to keep the units fit for their purpose in a changing climate.



Waste (W)

LA County will reduce GHG emissions from waste in a manner that prioritizes overall environmental benefit. This starts with expanded efforts to reduce and reuse waste at the source. Incentives and educational programs will be used to increase awareness and bolster participation in recycling programs. Organic waste, which is responsible for the vast majority of GHG emissions in the waste sector, will be addressed through source reduction, donation of edible food, and composting. Organic waste will also be addressed through waste conversion technologies, such as anaerobic digestion and biomass conversion, which produce biogas that can be used to produce heat and electricity, pipeline gas, and other beneficial products such as compost and fertilizer. At wastewater treatment plants, biogas will be captured and converted into electricity.

Waste (W) comprises the following strategy and measures:

STRATEGY 8: MINIMIZE WASTE AND RECOVER ENERGY AND MATERIALS FROM THE WASTE STREAM

- Measure W1: Institutionalize Sustainable Waste Systems and Practices ^Q
- Measure W2: Increase Organic Waste Diversion ^Q



Waste

Strategy 8: Minimize Waste and Recover Energy and Materials from the Waste Stream

2045 VISION

Zero waste sent to landfill

Strategy Description

LA County will reduce GHG emissions from waste in a manner that prioritizes overall environmental benefit. This starts with expanded efforts to reduce and reuse waste at the source. Incentives and educational programs will be used to increase awareness and bolster participation in recycling programs. Organic waste, which is responsible for the vast majority of GHG emissions in the waste sector, will be addressed through source reduction, donation of edible food, and composting, as well as through waste conversion technologies such as anaerobic digestion and biomass conversion, which produce biogas that can be used to produce heat and electricity, pipeline gas, and other beneficial products like compost and fertilizer. At wastewater treatment plants, biogas will be captured and converted into electricity.

Past and Current LA County Actions

- The Conversion Technology Program aims to increase the current in-County capacity of waste diversion from 600 tons per day (tpd) to 3,000 tpd by 2035.
- In 2010, an ordinance was adopted prohibiting the distribution of single-use plastic carryout bags at certain stores and requiring the stores to charge 10 cents for each paper bag provided to a customer.
- In 2018, LA County Public Works launched the Food Donation Recovery and Outreach Program (Food DROP) to facilitate the recovery of edible food to feed those in need instead of being disposed.
- Public Works is in the process of updating the Construction and Demolition Debris Recycling and Reuse Ordinance to increase the construction and demolition debris recycling requirement from 50 to 70 percent for projects in the unincorporated County.
- In 2021, an ordinance was adopted requiring that single-use accessories (straws, utensils, condiment cups) be distributed to customers only upon request. In 2022, the Board of Supervisors passed a follow-up ordinance that limits the use of single-use plastic food service ware in the unincorporated County to reusable, recyclable, or compostable options.
- As of 2022, there are four landfill gas-to-energy facilities in the County, with a total installed (rated) renewable energy generation capacity of 96 megawatts.

Alignment with State Initiatives

- SB 1383, AB 341, and AB 1826



Waste

Strategy 8: Minimize Waste and Recover Energy and Materials from the Waste Stream

MEASURE W1: Institutionalize Sustainable Waste Systems and Practices (Core) ^Q

ANNUAL GHG EMISSIONS REDUCTIONS

By 2030: 54,367
 By 2035: 94,152
 By 2045: 113,165

(units = MTCO_{2e})

ESTIMATED COST

\$\$-\$\$\$

PERFORMANCE OBJECTIVES

Decrease overall per-capita waste disposal in landfills:

- 25 percent by 2030 (0.65 tons per capita per day)
- 30 percent by 2035 (0.61 tons per capita per day)
- 35 percent by 2045 (0.56 tons per capita per day)

Increase the total County waste diversion rate to:

- 80 percent by 2025
- 85 percent by 2030
- 90 percent by 2035
- 95 percent by 2045

DESCRIPTION

Undertake actions that result in sustainable waste systems. Responsible and sustainable waste practices are learned behaviors, which LA County can facilitate through outreach, education, and mandates. Increase diversion of recyclable materials and organics from landfills through ordinances, service improvements, education and outreach, and promotion of product stewardship and markets for material reuse. An increased diversion rate indirectly reduces the demand for virgin materials, which reduces the life-cycle carbon intensity of any resulting products. Through action taken at the LA County level, waste-conscious habits and thoughtful consumption can become the default.

IMPLEMENTING ACTIONS

For tracking metrics and implementation details, see Appendix E.

W1.1—Identify best practice waste pricing programs to reduce waste generation to the maximum extent feasible, including but not limited to differential prices for waste based on amount generated in the residential sector and reforms to tipping rate structures.

W1.2—Implement, enforce, and expand to the maximum extent feasible the single-use plastics ordinance.

W1.3—Increase the diversion requirements in LA County’s Construction and Demolition Debris Ordinance and allow the use of recycled construction materials in new projects.



Waste

Strategy 8: Minimize Waste and Recover Energy and Materials from the Waste Stream

MEASURE W2: Increase Organic Waste Diversion (Core)^Q

ANNUAL GHG EMISSIONS REDUCTIONS

By 2030: 54,487
 By 2035: 56,290
 By 2045: 59,802

(units = MTCO₂e)

ESTIMATED COST

\$-\$\$\$

PERFORMANCE OBJECTIVES

Maximize organic waste disposal reduction compared to 2014 levels:

- 75 percent by 2025
- 80 percent (340,000 tons) by 2030
- 85 percent (394,000 tons) by 2035
- 90 percent (433,000 tons) by 2045

DESCRIPTION

Provide services for diverting yard waste, food scraps, and compostable paper from landfills to beneficial uses, including compost, food rescue, and energy production.

IMPLEMENTING ACTIONS

For tracking metrics and implementation details, see Appendix E.

W2.1—Adopt a mandatory composting ordinance that requires all persons in the County, including residents, building owners, and tenants, to keep recyclables, compostables, and trash separated. Require organics generators to properly manage organic waste through this ordinance.

W2.2—Develop organic waste collection, management, and diversion programs for constituents in unincorporated communities and all LA County operations; establish a contamination monitoring plan for organic waste programs.

W2.3—Collaborate with the LA County Sanitation Districts and other waste and wastewater service providers to utilize unused anaerobic digestion capacity of existing wastewater treatment plants and solid waste facilities to generate vehicle fuel (electricity and/or biomethane) from newly diverted organic waste. Develop a strategy for using bioenergy created from recycled organic waste.

W2.4—Provide regional leadership for organic waste processing capacity planning and infrastructure development.

W2.5—Enhance and expand LA County's existing Food DROP food donation and redistribution program to divert edible food from landfills and make it available to food insecure communities.



Agriculture, Forestry, and Other Land Use (A)

The Agriculture, Forestry, and Other Land Use sector strategies focus on conservation and restoration of existing forest lands and urban forests to sequester carbon and support local ecosystems. These strategies promote clean water, air, and food, in addition to a reduced urban heat island effect. Preserving and supporting unincorporated Los Angeles County’s forests, parks, and working lands is essential to reducing climate change impacts, as well as protecting the communities, economies, and ecosystems that depend on the land.

Agriculture, Forestry, and Other Land Use (A) comprises the following strategies and measures:

STRATEGY 9: CONSERVE FORESTS AND WORKING LANDS

- Measure A1: Conserve Agricultural and Working Lands, Forest Lands, and Wildlands ^Q

STRATEGY 10: SEQUESTER CARBON AND IMPLEMENT SUSTAINABLE

AGRICULTURE

- Measure A2: Support Regenerative Agriculture
- Measure A3: Expand the County’s Tree Canopy and Green Spaces ^Q



Agriculture, Forestry, and Other Land Use

Strategy 9: Conserve Forests and Working Lands

2045 VISION

Achieve a net gain in carbon storage in the County's wildlands and working lands through management and restoration

Strategy Description

Forests, chaparral shrublands, and wetlands serve as carbon sinks that can sequester carbon dioxide that result from human activity. When these natural and working lands are converted to residential and other urbanized uses, that stored carbon dioxide is released into the atmosphere. Conserving and restoring these lands keeps carbon in the ground and provides a multitude of benefits, from maintaining biodiversity in the Significant Ecological Areas to preserving the character of the County's rural areas.

Past and Current LA County Actions

- In 2018, the Department of Regional Planning (DRP) amended the zoning code to allow selected accessory uses within utility rights-of-way, such as parks, open space, and limited agricultural uses, with development standards and streamlined review procedures.
- In 2019, DRP amended the zoning code to guide development to areas that would create the least impact on environmental resources on private properties.

Alignment with State Initiatives

- California 2030 Natural and Working Lands Climate Change Implementation Plan



Agriculture, Forestry, and Other Land Use

Strategy 9: Conserve Forests and Working Lands

MEASURE A1: Conserve Agricultural and Working Lands, Forest Lands, and Wildlands ^Q

ANNUAL GHG EMISSIONS

REDUCTIONS

By 2030: 8,953
 By 2035: 17,906
 By 2045: 26,858

(units = MTCO_{2e})

ESTIMATED COST

\$-\$\$

PERFORMANCE

OBJECTIVES

Reduce the amount of natural land converted for urbanized uses:

- 25 percent by 2030
- 50 percent by 2035
- 75 percent by 2045

Conserve natural lands that would otherwise be converted for urbanized uses:

- 53 acres annually by 2030
- 106 acres annually by 2035
- 159 acres annually by 2045

DESCRIPTION

Preserve, conserve, and restore agricultural lands, working lands, rangelands, forest lands, wetlands, and other wildlands in unincorporated Los Angeles County.

IMPLEMENTING ACTIONS

For tracking metrics and implementation details, see Appendix E.

A1.1—Develop an open space conservation and land acquisition strategy to conserve lands for carbon sequestration.

A1.2—Employ vegetation management of wildlands to reduce wildfire risk and prevent carbon loss in forest lands.



Agriculture, Forestry, and Other Land Use

Strategy 10: Sequester Carbon and Implement Sustainable Agriculture

2045 VISION

Farms and urban forests that sequester carbon, conserve water, and enhance biodiversity

Strategy Description

Agricultural practices can either strip the environment of its rich resources or work to maintain and utilize the resources in ways that benefit farms and the environment. Farming practices that increase biodiversity, enrich soils, improve watersheds, and enhance ecosystem services are known as regenerative agriculture practices. These practices can have positive impacts for the climate, reducing GHG emissions and supporting practices that are environmentally friendly. Additionally, adding tree canopy cover and green spaces back into developed areas can help sequester carbon and reduce the urban heat island effect.

Past and Current LA County Actions

- LA County adopted the Tree Planting Ordinance in 2016 to establish new tree planting requirements for projects to provide environmental benefits.
- The Tree Committee of LA County's Healthy Design Workgroup coordinates interdepartmental efforts to preserve, maintain, and expand the County's urban forest in low-income, tree-poor neighborhoods.
- In 2016, the Department of Regional Planning amended the zoning code to incentivize growing local foods on private property.
- In 2021, LA County was awarded \$1.5 million by the state to develop an Urban Forest Management Plan.

Alignment with State Initiative

- California 2030 Natural and Working Lands Climate Change Implementation Plan



Agriculture, Forestry, and Other Land Use

Strategy 10: Sequester Carbon and Implement Sustainable Agriculture

MEASURE A2: Support Regenerative Agriculture

ANNUAL GHG EMISSIONS REDUCTIONS

Not quantified (supporting measure)

ESTIMATED COST

\$-\$\$\$\$

PERFORMANCE

OBJECTIVES

Reduce the quantity of synthetic fertilizers used/applied

Increase in the number of acres of cover crops using regenerative agricultural techniques

DESCRIPTION

Promote agricultural practices that sequester carbon and restore soil quality, biodiversity, ecosystems health, and water quality.

IMPLEMENTING ACTIONS

For tracking metrics and implementation details, see Appendix E.

A2.1—Create fallow and field resting incentives to reduce bare-fallow land by adding cover crops and promoting crop rotation for active agricultural sites to improve soil quality and limit risks of nutrient erosion, pollutant runoff, and yield reduction. Create a carbon farming plan with the primary objectives of carbon removal and regenerative agriculture.

A2.2—Provide compost and/or organic or nonsynthetic fertilizer to farmers free of charge or at a discounted rate.



Agriculture, Forestry, and Other Land Use

Strategy 10: Sequester Carbon and Implement Sustainable Agriculture

MEASURE A3: Expand Unincorporated Los Angeles County's Tree Canopy and Green Spaces ^Q

ANNUAL GHG EMISSIONS

REDUCTIONS

By 2030: 3,540

By 2035: 7,080

By 2045: 14,160

(units = MTCO_{2e})

ESTIMATED COST

\$\$

PERFORMANCE

OBJECTIVES*

Plant trees:

- 5,000 by 2030
- 10,000 by 2035
- 20,000 by 2045

Increase tree canopy cover:

- 10 percent by 2030
- 15 percent by 2035
- 20 percent by 2045

** The performance objectives provided here serve as a general metric and may be refined upon completion of the Urban Forest Management Plan.*

DESCRIPTION

Create an Urban Forest Management Plan to plant trees, increase the unincorporated County's tree canopy cover, add green space, and convert impervious surfaces.

IMPLEMENTING ACTIONS

For tracking metrics and implementation details, see Appendix E.

A3.1—Create and implement an equitable Urban Forest Management Plan that prioritizes: (1) tree- and parks-poor communities; (2) climate- and watershed-appropriate and drought/pest-resistant vegetation; (3) appropriate watering, maintenance, and disposal practices; (4) provision of shade; and (5) biodiversity.

A3.2—Expand County tree planting both in the public right-of-way and on private property.

CHAPTER 4

Implementation and Monitoring

4.1 Implementation Plan

Reaching and maintaining carbon neutrality will require a strong commitment to implementation. Everyone has a role to play in shaping a healthy, sustainable, and climate-resilient future. Implementing the 2045 CAP will require coordination across LA County departments; collaboration with community partners, residents, and other stakeholders; identification of funding opportunities; and integration of 2045 CAP implementation with other LA County planning and administrative processes.

To ensure successful implementation of the 2045 CAP, LA County will do the following:

1. Create a 2045 CAP Implementation Team

The Chief Sustainability Office and DRP will develop a cross-departmental 2045 CAP implementation team to include representatives from LA County departments listed as lead or partner agencies for the 2045 CAP actions. The team will help LA County departments implement listed actions, identify funding, and monitor annual progress.

2. Prioritize Equity in Implementation and Monitoring

Implementation efforts will continue to prioritize equity.

The following actions will guide implementation of the 2045 CAP:

- (1) Engage in meaningful and inclusive public involvement that is anti-racist and inclusive.
- (2) Prioritize funding and action in frontline communities.
- (3) Design transportation and land use solutions to eliminate disproportionate burdens on frontline communities.
- (4) Partner with local and nonprofit organizations to assist low-income, disadvantaged, and vulnerable communities on information and resource access.

3. Confirm Funding Sources

Successful implementation will require a commitment of resources and the confirmation of additional funding sources. Funding efforts will include the following:

- **Grant opportunities.** Federal, state, and regional agencies and organizations provide grants and loans, as well as planning assistance, for investments in a variety of climate-related projects. Given the State of California's leadership on setting emissions reduction targets and in creating the Cap-and-Trade Program, numerous grant opportunities are offered by different state agencies. Through the Healthy Design Workgroup Grants Committee, LA County will continue to review grant opportunities to obtain additional funding that supports climate action implementation.
- **LA County General Fund:** Annual budgeting allocations fund departmental operations for staff resources to implement programs. Programs that need funding beyond staff resources are assessed through the annual budgeting and prioritization process. Additional funding may be secured through fee programs or discretionary budget allocations.
- **Federal, state, regional, and utility programs and incentives:** LA County will strongly encourage residents and businesses to participate in incentives that promote energy efficiency, water conservation, and the use of EVs.

As discussed in Chapter 3, funding sources for the six core measures have already been identified. These funding sources are presented in Table 3-3.

A list of potential partners, programs, and funding sources that would support 2045 CAP implementation is provided in **Appendix G**. Note that programs and funding sources for implementing GHG emissions reduction programs are developing rapidly and may change substantially from year to year.

4. Build Partnerships

Partnerships are critical to successful implementation of the 2045 CAP. Partners are listed in many of the 2045 CAP actions, and LA County will seek to continue to build additional partnerships and engage with stakeholders on an ongoing basis.

5. Monitor and Report

The 2045 CAP Implementation Team will prepare annual progress reports of the status of the strategies, measures, and actions. This includes community and municipal measures and actions. More information regarding this step is listed in Section 4.3.

4.2 Monitoring and Reporting

GHG Inventory and CAP Updates

The 2045 CAP is a dynamic document that will be monitored and evaluated for its effectiveness on an ongoing basis. Monitoring allows LA County to make timely adjustments to implementing actions as technologies, federal and state programs, and circumstances change. Flexibility in implementation is necessary to allow LA County to evolve its strategies. LA County will update the GHG emissions inventory and the CAP every five years.

Monitoring

LA County will report on the implementation progress of the 2045 CAP as part of the General Plan Annual Progress Report. In the first two years of implementation, LA County will identify where further efforts and additional resources may be needed. In this initial phase, LA County will identify the data sources needed to report on the effectiveness of implementation.

LA County will monitor each 2045 CAP measure and action using the metrics identified in Appendix E, *Implementation* (see Table E-1), subject to data availability. LA County will also track, measure, and improve the performance of measures and actions to reduce emissions from its operations, subject to data availability.

Tracking the metrics in **Table 4-1** will assist LA County in monitoring the community's progress in meeting climate strategies and goals. Many of these indicators will be tracked by the Chief Sustainability Office as part of implementation of the OurCounty Sustainability Plan or are reported by state or LA County agencies. The list of indicators will be assessed and revised periodically based on data availability.

Table 4-1: Tracking Metrics for Monitoring Progress of 2045 Climate Action Plan Implementation

STRATEGY	TRACKING METRICS
Strategy 1: Decarbonize the Energy Supply	<ul style="list-style-type: none"> • Number of oil and gas operations/wells closed • Emissions reductions achieved through oil and gas closures • Decommission dates and details (i.e., fuel consumption and GHG emissions) for Olive View Cogeneration Facility • CARB Pollution Mapping Tool data for natural gas leakage • Participation rates in CPA’s Green Power option or SCE’s Green Rate option • Renewable energy portfolio (percent share) • Grid emission factor • Rooftop solar PV installations for existing multifamily residential buildings and existing commercial buildings • Rooftop solar PV installations for new multifamily residential buildings • Rooftop solar PV installations for new commercial buildings • Kilowatts of solar capacity installed on LA County facilities • Total installed distributed energy resource capacity • Total community electricity storage capacity
Strategy 2: Increase Densities and Diversity of Land Uses Near Transit	<ul style="list-style-type: none"> • Commute mode share • Population residing within HQTAs (and DUs within HQTAs) • Jobs located within HQTAs • Residential density (DUs per acre) for new development • Daily VMT and vehicle trips
Strategy 3: Reduce Single-Occupancy Vehicle Trips	<ul style="list-style-type: none"> • Commute mode share • Bikeway miles • Pedestrian walkway miles • Total transit service hours • Miles of bus-only lanes constructed • Number of intersections with signal prioritization • Parking pricing information, including unbundling • Collisions involving pedestrians or bicyclists
Strategy 4: Institutionalize Low-Carbon Transportation	<ul style="list-style-type: none"> • EV, ZEV, and near-zero-emission vehicle registrations for light-, medium-, and heavy-duty vehicles, including transit fleets, LA County–owned fleet vehicles, and drayage trucks • Number of public and private EVCSs installed • Number of off-road equipment pieces electrified • Off-road vehicle and equipment fleet count, type, and fuel type

Table 4-1: Tracking Metrics for Monitoring Progress of 2045 Climate Action Plan Implementation (cont.)

STRATEGY	INDICATORS
Strategy 5: Decarbonize Buildings	<ul style="list-style-type: none"> • Number of existing buildings retrofitted with electric appliances (residential and nonresidential) • Number of new fully electric and ZNE buildings constructed (residential and nonresidential) • Total consumption of electricity and natural gas for buildings by sector • Proportion of biomethane in utility natural gas mix • Quantity of low-carbon concrete and materials used in new construction • Quantity of low-GWP refrigerants used/charged
Strategy 6: Improve Efficiency of Existing Building Energy Use	<ul style="list-style-type: none"> • Number of new buildings that meet 2022 Title 24 requirements (and future Title 24 requirements) • Number of buildings and homes retrofitted for energy efficiency • Total electricity and natural gas savings achieved through retrofits • Total consumption of electricity and natural gas for buildings by sector
Strategy 7: Conserve Water	<ul style="list-style-type: none"> • County demand met by recycled water, gray water, or direct potable reuse • Per capita water consumption • Number of buildings and homes retrofitted with water-efficient devices
Strategy 8: Minimize Waste and Recover Energy and Materials from the Waste Stream	<ul style="list-style-type: none"> • Annual waste tons to landfill and per-capita waste generation and landfiling rate • Landfill diversion rate and disposal tonnage • Total landfill emissions • Organic waste diversion rate and disposal tonnage • Annual quantity of organic waste treated in composting and anaerobic digestion facilities • Recycling diversion rate and disposal tonnage • Reported GHG emissions from waste-to-energy facilities (biogenic carbon dioxide and non-biogenic methane and nitrous oxide)
Strategy 9: Conserve Forests and Working Lands	<ul style="list-style-type: none"> • Acres of wildlands conserved • Acres of wildlands restored • Acres of farmlands conserved • Acres of farmlands restored • Acres of urban and peri-urban agriculture created
Strategy 10: Sequester Carbon and Implement Sustainable Agriculture	<ul style="list-style-type: none"> • Quantity of compost used as fertilizer • Quantity of organic and synthetic fertilizers used/applied • Increase in number of acres of cover crops using regenerative agricultural techniques • Number of new trees planted • Urban tree canopy area

Abbreviations: CARB = California Air Resources Board; County = the unincorporated areas of Los Angeles County; CPA = Clean Power Alliance; DU = dwelling unit; EV = electric vehicle; EVCS = electric vehicle charging station; GHG = greenhouse gas; GWP = global warming potential; HQTAs = high quality transit areas; LA County = County of Los Angeles government; PV = photovoltaic; SCE = Southern California Edison; VMT = vehicle miles traveled; ZNE = Zero Net Energy

4.3 CEQA

CEQA and the 2045 Climate Action Plan

CEQA and its implementing regulations (the CEQA Guidelines) require state and local government agencies to consider the environmental impacts of projects over which they have discretionary authority before taking action on those projects.

A Program Environmental Impact Report (EIR) is a type of EIR that evaluates a plan or program that has multiple components or actions that are related either geographically; as logical parts in the chain of contemplated actions; in connection with application of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program; or as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways (California Code of Regulations Title 14, Section 15168[a]). It evaluates the general impacts of the plan or program, but does not examine the potential site-specific impacts of the many individual projects that may be proposed in the future consistent with the plan. The Program EIR describes planned activities that would implement the 2045 CAP and addresses related environmental impacts comprehensively based on the information that was reasonably available at the time the environmental review process was initiated. The Program EIR is a “first-tier” document that anticipates later environmental review of specific projects.¹⁷

Later activities undertaken in furtherance of 2045 CAP measures and actions would be examined in light of the Program EIR to determine whether additional environmental review is needed. For example, if a later activity would have effects that are not examined in the EIR, then preparation of either a project-specific Negative Declaration or EIR could be appropriate. That later analysis may tier to the Program EIR as provided in CEQA Guidelines Section 15152. LA County would incorporate the mitigation measures developed in the Program EIR into later activities in furtherance of 2045 CAP measures and actions. Alternatively, if a DRP finds (pursuant to CEQA Guidelines Section 15162) that no subsequent Negative Declaration or EIR would be required, then LA County could approve the activity as being within the scope of the Program EIR, and no additional environmental review would be required.

Consistency Review Checklist

The 2045 CAP constitutes a qualified GHG emissions reduction plan under CEQA. Future projects may demonstrate consistency with the 2045 CAP (as a qualified GHG emissions reduction plan) if they are consistent with the General Plan, the 2045 CAP’s future growth projections, and the GHG emissions reduction measures. Projects consistent with the CAP would not require additional GHG emissions analysis

¹⁷ “Tiering” is defined in CEQA Guidelines Section 15385 as referring “to the coverage of general matters in broader EIRs (such as on general plans or policy statements) with subsequent narrower EIRs or ultimately site-specific EIRs incorporating by reference the general discussions and concentrating solely on the issues specific to the EIR subsequently prepared. Tiering is appropriate when the sequence of EIRs is from a...program EIR to a program, plan, or policy EIR of lesser scope or to a site-specific EIR.”

or mitigation under CEQA Guidelines Section 15183.5(b)(2), provided that the project's environmental document identifies 2045 CAP requirements that are applicable to the project, and, for those requirements that are not binding or enforceable, incorporates these requirements as mitigation measures.

The 2045 CAP Consistency Checklist (**Appendix F**) assists with determining project consistency with the 2045 CAP. The 2045 CAP Consistency Checklist provides individual projects the opportunity to demonstrate that they are reducing GHG emissions; it also ensures that future projects facilitated by the Draft 2045 CAP would achieve their proportion of emissions reductions consistent with the assumptions of the 2045 CAP. Project consistency with the 2045 CAP is demonstrated by incorporating the emissions reduction measures included in the 2045 CAP that apply to new projects.

Carbon Offsets/Credits Feasibility Study

Measure ES5, *Establish GHG Requirements for New Development*, assesses the feasibility of developing a GHG offsets/credits program that would enable LA County to achieve its long-term aspirational goal of carbon neutrality by 2045, in the event that the strategies and measures in the 2045 CAP are insufficient to attain LA County's emissions reduction targets and goals.

An offsets/credits program is not a 2045 CAP strategy, measure, or action currently proposed for implementation. It would be considered for potential implementation later, and only after completion of the feasibility study.

The potential offsets/credit program would be designed to be consistent with applicable CEQA case law requirements, including requirements that offsets be enforceable, real, permanent, quantifiable, verifiable, and additional. The potential offsets/credits program would provide clear, objective, and measurable performance standards for all allowable GHG offsets. For any potential future GHG offsets/credits program evaluated by LA County, LA County would prioritize implementation of offsets generated within or close to Los Angeles County.

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