



WRCOG | SUBREGIONAL CLIMATE ACTION PLAN

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Acknowledgements

The preparation of the Subregional Climate Action Plan was funded by a grant from Caltrans – Sustainable Communities grant, as well as additional funding from WRCOG.

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Glossary of Terms and Acronyms

TERM/ACRONYM	DEFINITION
AB 32	Assembly Bill 32, the California Global Warming Solutions Act of 2006 – Establishes a comprehensive program of regulatory and market mechanisms to achieve real, quantifiable, cost-effective reductions of greenhouse gases for the state of California. Makes the California Air Resources Board responsible for monitoring and reducing statewide greenhouse gas emissions, with a target to reduce emissions to 1990 levels by 2020.
ACC	Advanced Clean Cars – California’s program to regulate vehicle emissions for model years through 2025
Adjusted BAU	An adjusted emission forecast that includes the effects of state-wide emissions reductions measures such as updates to building energy standards and implementation of programs to decrease emissions from on-road vehicles
ATP	Active Transportation Plan
Baseline Inventory	The base year for assessment of GHG trends against which future progress can be measured for a single calendar year (e.g., 2010)
BAU	Business as usual – a scenario that assumes that no new local actions will be taken to reduce energy usage or associated greenhouse gas emissions from current and future residents and businesses within the City
CAP	Climate action plan
CAPTivate 1.0	2014 WRCOG Subregional Climate Action Plan
CalEPA	California Environmental Protection Agency
CalEnviroScreen	CalEnviroScreen – a mapping tool that helps identify California communities that are most affected by many sources of pollution and where people are often especially vulnerable to pollution’s effects
CALGreen	Refers to CALGreen component of the California Building Code; see California Building Code
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CAPCOA	California Air Pollution Control Officers Association – an association of air pollution control officers that represents all thirty-five local air quality control agencies in California
Cap-and-Trade	Cap-and-trade programs set the total amount of GHG emissions allowable for energy producers and large industrial facilities and allow covered sources to buy emissions allowances and carbon offsets to determine the least expensive path to compliance
CCA	Community Choice Aggregation – sometimes referred to as Community Choice Energy (CCE) – a type of energy supply program that allows cities and counties to aggregate the buying power of individual customers within a jurisdiction to secure alternative energy supplies
CCE	Community Choice Energy – sometimes referred to as Community Choice Aggregation (CCA)
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFCs	Chlorofluorocarbons
CH ₄	Methane
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent – a metric measure used to compare the emissions of various greenhouse gases based upon their global warming potential (GWP). The carbon dioxide equivalent for a gas is derived by multiplying the tons of the gas by the associated GWP factor. For example, the GWP factor for methane is 25. This means that emissions of 1 million metric tons (MT) of methane are equivalent to emissions of 25 million MTCO ₂ e.
Community-wide	Refers to all activities within a community or city’s geographic boundary

TERM/ACRONYM	DEFINITION
CPUC	California Public Utilities Commission
Demand Response	Mechanism for managing end-user electricity consumption in response to energy supply conditions, especially during summer periods when electricity demand on the California power grid is high
DOE	United States Department of Energy
EIR	Environmental impact report
ESA	Environmental Science Associates
EV	Electric vehicle – a vehicle that uses an electric battery to operate
FCEV	Fuel cell electric vehicle – a vehicle that is powered by hydrogen fuel cell technology
FHA	Federal Housing Administration
GHG	Greenhouse gas – a gas that causes heat to be trapped in the atmosphere, resulting in warming effects for Earth
gpcd	Gallons per capita per day
Green Building	Sustainable or “green” building is a holistic approach to design, construction, and demolition that minimizes the building’s impact on the environment, the occupants, and the community
Greenhouse Gas Inventory	A greenhouse gas inventory provides estimates of the amount of greenhouse gases emitted to and removed from the atmosphere by human activities. A city or county that conducts an inventory looks at both community emissions sources as well as emissions from government operations.
GWP	Global warming potential – a relative measure of how much heat a greenhouse gas traps in the atmosphere
HERO	Home Energy Renovation Opportunity – a program that helps homeowners improve their homes and save on utilities through energy- and water-efficiency upgrades
HFCs	Hydrofluorocarbons
HPS	High pressure sodium – a type of lamp commonly used for street lighting
ICLEI	International Council for Local Environmental Initiatives – an international association of local governments and national and regional local government organizations that have made a commitment to sustainable development
IOU	Investor-owned utility
IPCC	Intergovernmental Panel on Climate Change – a scientific intergovernmental body under the auspices of the United Nations
JPA	Joint Powers Agency/Authority
kWh	Kilowatt-hour – a unit of energy equivalent to 1 kilowatt (kW) of energy used for an hour. For example, if an appliance requires a kW of energy to function, leaving the appliance on for one hour would consume 1 kWh of energy.
LCFS	Low-carbon fuel standard – requires fuel providers in the state to decrease lifecycle fuel carbon intensity by 2030
LED	Light-emitting diode
LGOP	Local Government Operations Protocol
MPO	Metropolitan Planning Organization
Municipal	Refers to energy use and greenhouse gas emissions from City-owned and operated facilities and equipment
MTCO _{2e}	Metric tons of carbon dioxide equivalent
MWD	Metropolitan Water District
N ₂ O	Nitrous oxide
NOAA	National Oceanic and Atmospheric Administration
OPR	California Governor’s Office of Planning and Research

TERM/ACRONYM	DEFINITION
PACE	Property Assessed Clean Energy – WRCOG’s commercial PACE program offers long-term financing to commercial property owners for energy-efficient retrofits and renewable energy system installations. Financing is repaid through an assessment on property tax bills with up to 30-year terms.
PDC	Planning Directors’ Committee
PEV	Plug-in battery electric vehicle
PFCs	Perfluorocarbons
POU	Publically owned utility
PV	Photovoltaic – refers to method of converting solar energy into direct current electricity using semiconducting materials
RCTC	Riverside County Transportation Commission
REN	Regional Energy Network – a network intended to implement and administer energy-efficiency programs the current IOUs cannot or do not have the available resources to implement
Renewable Energy	Energy from sources that regenerate and are less damaging to the environment, such as solar, wind, biomass, and small-scale hydroelectric power
RNG	Renewable natural gas
RPS	California’s Renewable Portfolio Standard – requires utility providers to increase the portion of generated energy that comes from renewable sources
RPU	Riverside Public Utility
RTP/SCS	Regional Transportation Plan/Sustainable Community Strategy – a plan that identifies transportation projects across an entire region, with the aim of reducing vehicle trips and associated GHG emissions
RTPA	Regional Transportation Planning Agency
SB 32	California Senate Bill 32 – passed in 2016, expands upon AB 32 to mandate statewide GHG emissions reduction of 40 percent below 1990 levels by 2030
SB 97	Senate Bill 97 – requires the Governor’s Office of Planning and Research (OPR) to develop and adopt CEQA guidelines for the mitigation of GHG emissions
SB 100	Senate Bill 100 – passed in 2018, increases the California RPS requirement to 60 percent eligible renewables by 2030 and 100 percent by 2045
SB 350	Senate Bill 350 – requires California to (1) generate half of its electricity from renewable energy sources; (2) double energy efficiency for both electricity and natural gas end uses in all buildings by 2030; and (3) substantially improve the infrastructure for electric vehicle transportation
SB 375	Senate Bill 375 – enhances California’s ability to reach its AB 32 goals by planning more sustainable communities
SB 535	Senate Bill 535 – requires 25 percent of the Greenhouse Gas Reduction Funds to go to projects that provide benefits to disadvantaged communities, and requires CalEPA to identify such communities
SBCTA	San Bernardino County Transportation Authority
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SCG	Southern California Gas Company
SCS	Sustainable Community Strategy
SEEC	California State-Wide Energy Efficiency Collaborative
SF ₆	Sulfur hexafluoride – a powerful greenhouse gas
SGC	Strategic Growth Council

TERM/ACRONYM	DEFINITION
SLCP	Short-lived climate pollutant – a greenhouse gas that persists for a relatively short time in the atmosphere but has a significant atmospheric warming impact
SoCalGas	Southern California Gas Company
TDM	Transportation demand management, the application of strategies and policies to reduce travel demand
Title 24	California Code of Regulations Title 24 – also known as the California Building Standards Code (composed of 12 parts) – Title 24, Part 6, established California’s energy efficiency standards for residential and nonresidential buildings; see California Building Standards
TUMF	Transportation uniform mitigation fee
UWMP	Urban water management plan
U.S. EPA	United States Environmental Protection Agency
VMT	Vehicle miles traveled
WCE	Western Community Energy – WRCOG’s community choice aggregation program which offers local governments the opportunity to buy electricity directly from its source and offer it to the community at a competitive rate
WRCOG	Western Riverside Council of Governments – a joint powers authority consisting of 17 cities in Western Riverside County, the Eastern and Western Municipal Water Districts, the Morongo Band of Mission Indians, and the Riverside County Superintendent of Schools
WREP	Western Riverside Energy Partnership – a local government partnership between SCE, SoCalGas, and 14 jurisdictions in the WRCOG subregion, designed to achieve energy savings, reduce utility bills
ZNE	Zero net energy – for buildings, use of no more energy over the course of a year than can be generated onsite through renewable resources such as solar, wind, or geothermal power
ZEV	Zero-emissions vehicle



CHAPTER 1

Introduction and Background

Purpose

This Climate Action Plan update (CAP update) for the Western Riverside Council of Governments (WRCOG) subregion provides participating jurisdictions with a framework for reducing their **greenhouse gas (GHG) emissions** consistent with targets and mandates established by the State of California. The CAP update builds from the original subregional CAP that WRCOG adopted in 2014, commonly known as CAPtivate.

The WRCOG subregion is a diverse area of 2,035 square miles, exhibiting a variety of socioeconomic conditions, infrastructure types, neighborhood compositions, geographies, and character. More than two million people live, work, and recreate in Western Riverside County. WRCOG has a strong legacy of collaboration among its member agencies (see **Figure 1-1**) and innovation in implementing programs that are environmentally, economically, and socially beneficial to the subregion. WRCOG has long been a leader in promoting sustainability through its adopted Sustainability Framework, Western Riverside Energy Partnership (WREP), HERO Program - an energy efficiency and water conservation financing program, and Western Riverside County Clean Cities Coalition (CCC). The original CAPtivate project grew out of those efforts and focused on alignment with the State's Global Warming Solutions Act of 2006 (also known as Assembly Bill [AB] 32), which called for statewide GHG emissions to be reduced to 1990 levels by the year 2020. With the passing of Senate Bill [SB] 32 in 2016, the State has updated its emissions target to 40 percent below 1990 levels by the year 2030. Accordingly, this CAP update

establishes a 2030 target for the WRCOG subregion and provides a foundation for participating jurisdictions to demonstrate consistency with this target by adopting and implementing local actions to reduce emissions.

FIGURE 1-1 WRCOG Subregion

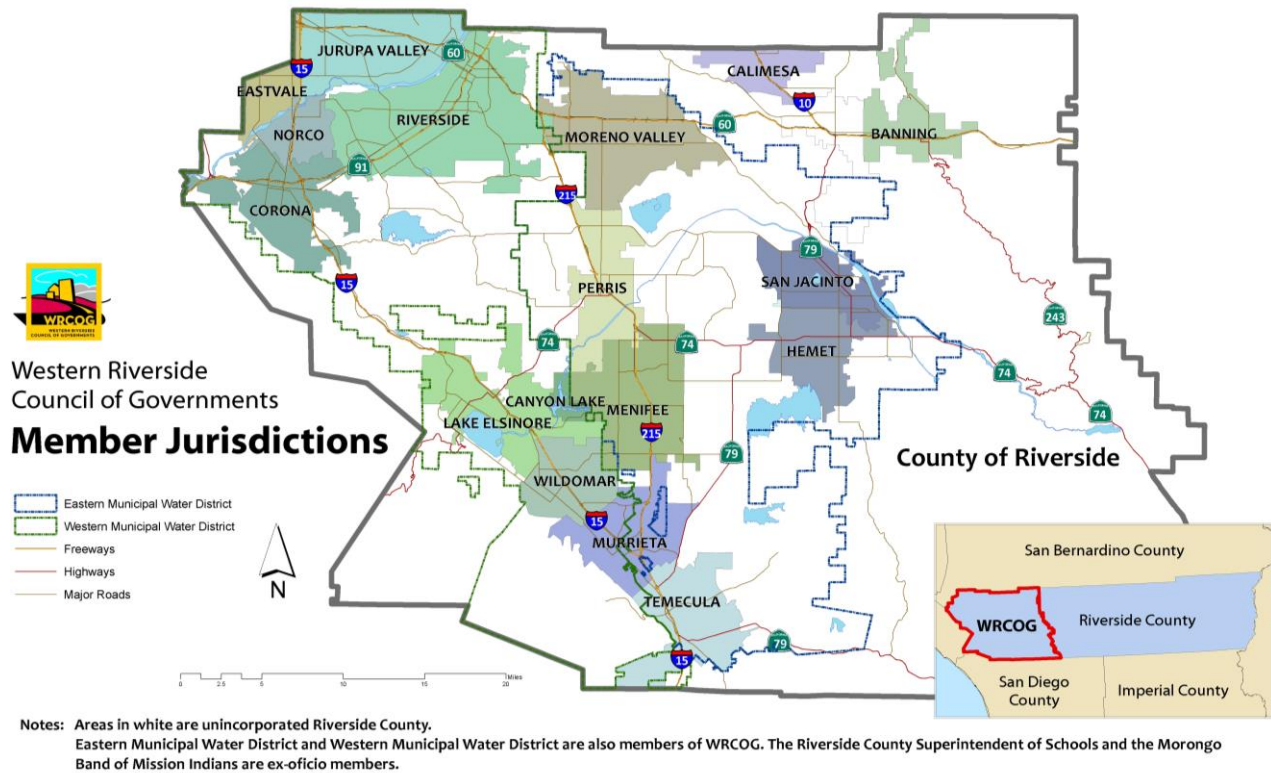


Table 1-1 identifies the thirteen jurisdictions participating in this Subregional CAP effort, twelve of which also took part in the 2014 effort. The cities of Riverside and Hemet are now pursuing climate action planning independent of the WRCOG subregional effort, while the cities of Beaumont, Lake Elsinore and Menifee are new participants in the subregional CAP. Table 1-1 also identifies the eight WRCOG member jurisdictions that have developed, or are in the process of developing a local CAP independent of the subregional CAP update. Notably, the cities of Riverside and Perris used the WRCOG’s CAPtivate project as a foundation to develop a customized local CAP.

AB 32 directed California to reduce statewide GHG emissions to 1990 levels by 2020, while SB 32 mandates a 40 percent reduction below 1990 levels by 2030. Several initiatives at the state level are helping the subregion reduce GHG emissions, but they alone will not be sufficient to meet the 2030 target. This CAP assesses the impact that state and regional actions will have on GHG emissions reduction and provides a roadmap for individual communities in the subregion to achieve additional reductions through local actions.

TABLE 1-1 WRCOG Member Participation in the Subregional CAP

MEMBER	PARTICIPATED IN 2014 SUBREGIONAL CAP (CAPTIVATE)	PARTICIPATING IN 2021 SUBREGIONAL CAP	INDEPENDENTLY DEVELOPED, OR IN- PROGRESS CAP	MUNICIPALLY OWNED UTILITY ^a
Banning	●	●		●
Beaumont		●	●	
Calimesa	●	●		
Canyon Lake	●	●		
Corona			●	●
Eastvale	●	●		
Hemet	●			
Jurupa Valley	●	●		
Lake Elsinore		●	●	
Menifee		●	●	
Moreno Valley			●	●
Murrieta			●	
Norco	●	●		
Perris	●	●		
Riverside	●		●	●
San Jacinto	●	●		
Temecula	●	●		
Wildomar	●	●		
County of Riverside			●	

Note:

a – Municipally-owned utilities provide energy and/or water and wastewater services to their communities and pursue individual efficiency and sustainability efforts.

The release of GHGs into the atmosphere is the direct and indirect result of everyday activities as residents and businesses use energy in their homes and offices, travel to work, generate waste, and use water. Local governments also emit GHGs as they perform essential services and operate buildings, vehicles, street lights, traffic signals, water systems, and wastewater plants. Strategies in this CAP to reduce such emissions include increasing energy efficiency in buildings and facilities, utilizing renewable energy sources, increasing vehicle fuel efficiency and transitioning to zero-emission vehicles (ZEVs), supporting alternative modes of transportation, reducing waste generation, and reducing water consumption. In addition to addressing climate change, reducing GHG emissions often provides co-benefits such as reducing energy and transportation costs for residents, businesses, and local governments; creating green jobs and supporting advancement of green technologies and industries; improving air quality and the overall health of residents; and making the community a more attractive place to live and locate a business.

Summary of Engagement Activities

The process of updating the CAP involved community engagement with stakeholder outreach that focused on three key goals:

- Inform public officials, community partners, and residents about the purpose of the CAP update;
- Gather community feedback to inform the CAP update; and
- Share analysis and recommendations regarding regional and local GHG reduction strategies.

Table 1-2 provides a brief summary of the targeted stakeholder outreach, including purpose and description. A detailed summary of outreach and engagement activities and findings can be found in **Appendix B**.

TABLE 1-2 Summary of Targeted Stakeholder Outreach

PURPOSE	DESCRIPTION
Engage with planning directors across the Western Riverside County region (e.g., notify, invite, and attend meetings)	• 19 members attended planning director's meeting and responded to a 2-page questionnaire • Qualitative input was provided evaluating previous CAP efforts and outlining existing priorities, type of support needed, and resources available for the CAP update
Engage with vulnerable population groups (e.g., living or working in these communities)	• Partnered with Riverside University Health System to invite public health organizations, community "leaders," and vulnerable population groups • Hosted 3 focus groups: youth, community leaders and nonprofit organizations, public agency staff and/or board members
Survey the community across the Western Riverside County region	• 114 responses to virtual community survey • 103 complete responses • Survey report of results presented at WRCOG's Planning Directors Committee meeting
Build community capacity by raising awareness of the CAP update, identifying co-benefits, and promoting participation of public leaders and people from the community	• Developed FAQ sheet • Distributed online survey to 400+ public health and climate partners • Created a CAP update website to inform partners and community members about the process

Table 1-3 provides a high-level summary of key themes from across all engagement activities, including engagement with planning directors and community members. Four key themes emerged as opportunities for WRCOG to support member jurisdictions: shared priorities among planning directors and community members, improved messaging, building partnerships/support, and suggestions for implementation.

TABLE 1-3 Summary of Key Findings from Engagement

TOPIC	THEMES
Shared Priorities	• <i>Energy measures focused on efficient retrofits and energy efficient construction</i> • <i>Expanding recycling programs and collection of compost and organics</i> • <i>Local water conservation</i> • <i>Local food and agriculture/community gardens</i>
Improve Messaging	• <i>Connect GHG reduction to economic growth and COVID-19 Pandemic recovery strategies</i> • <i>Directly address the community and environmental impacts of the logistics and goods movement industries</i> • <i>Focus on co-benefits of climate solutions, links to public health, and improvements to air and water quality</i>
Build Partnerships/Support	• <i>Educate City Council members and other decision makers on strategies to address climate hazards</i> • <i>Appeal with science (not politicians and elected officials)</i> • <i>Partner with trusted community messengers to engage with the public</i> • <i>Secure funding for implementation and provide guidance on the adoption and implementation</i>
Suggestions for Implementation	• <i>Ensure alignment with regional and state plans (e.g., Regional Transportation Plan / Sustainable Communities Strategy, Regional Housing Needs Allocation)</i> • <i>Dedicated staffing support for policy development and CEQA review</i>

Document Organization

The WRCOG Subregional CAP update includes a mix of State, regional, and local programs and policies that reduce GHG emissions, including many that are already being implemented across the subregion. The CAP update incorporates applicable best practices from jurisdictions throughout the State, as well as anticipated policy and market trends that are expected to help reduce emissions through the year 2030 and beyond. The resulting GHG reduction measures were included based on their GHG-reduction potential, cost-benefit characteristics, funding availability, and feasibility of implementation. The level of implementation of each measure was determined by each community. This CAP update presents the results collectively for the subregion, and individually for participating jurisdictions, noting where regional collaboration and partnership will facilitate local implementation.

This Subregional CAP is organized into four main chapters, followed by an appendix containing individualized climate action plans for the thirteen participating jurisdictions:

- **Chapter 1, Introduction:** Describes the purpose of the CAP, places the CAP in the context of current climate change science and policy, summarizes climate science and climate change vulnerabilities in the subregion, describes relevant existing regional sustainability efforts and accomplishments, and discusses the CAP's relationship to the California Environmental Quality Act (CEQA).
- **Chapter 2, Emissions Inventory, Forecast, and Target:** Describes the emissions inventory process and results, forecasted business-as-usual emissions for the subregion, and the adopted emissions reduction target for the Subregional CAP update.
- **Chapter 3, Reduction Measures:** Describes and quantifies the State, regional and local measures included in the CAP that will be implemented to make progress toward subregional and local reduction targets.

- **Chapter 4, Implementation:** Provides a monitoring and reporting schedule including a summary of regional and local implementation responsibilities, a summary of objectives associated with each local measure, a list of potential funding sources, and an equity checklist for use in implementing local climate actions. This chapter also describes the emissions tracking tool designed to assist WRCOG and participating jurisdictions with monitoring the subregion's progress, and initial guidance on how participating jurisdictions can use their locally adopted climate action plans to streamline CEQA review of future development projects.
- **Appendix A:** Contains individualized climate action plans for each of the thirteen participating jurisdictions, including the jurisdiction's GHG inventory, forecast, target, and a summary of the GHG reductions expected from implementation of State, regional, and local measures
- **Appendix B:** Community and Stakeholder Engagement Activities
- **Appendix C:** Subregional Greenhouse Gas Inventory Report
- **Appendix D:** Greenhouse Gas Quantification Methods
- **Appendix E:** Transportation Emissions Quantification Methods

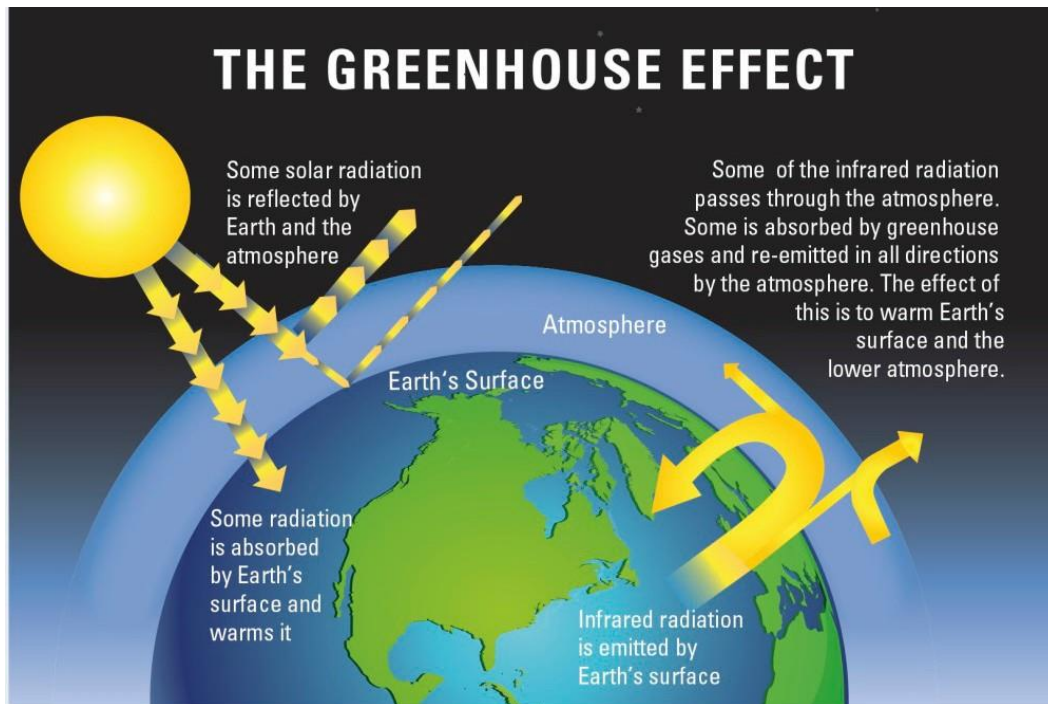
Climate Science

Climate change is described as a significant and lasting change in the planet's weather patterns over a long time period. The science of global climate change is well-established. According to the Intergovernmental Panel on Climate Change (IPCC), "Warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, and sea level has risen."¹ Regional changes in climate, particularly temperature increases and changing precipitation patterns, are already affecting natural systems worldwide, and will have widespread impacts on water availability, food production, ecosystem biodiversity, and human health. These changes are having significant impacts to the health, economy and environment of the WRCOG subregion and beyond.

The greenhouse effect is a natural phenomenon whereby GHGs trap heat in the atmosphere and regulate the Earth's temperature (**Figure 1-2**). This natural effect is responsible for maintaining a habitable climate, but over the last century human activities have greatly increased atmospheric concentrations of greenhouse gases. This increase of human-generated GHG emissions, which has accelerated since the mid-20th century, is a primary cause of climate change. Atmospheric concentrations of GHG emissions now far exceed the average of the past several thousand years. Land use changes, burning of fossil fuels, and agricultural practices have all contributed to this observed increase. Global climate models clearly show that human activity is having an effect on global temperatures.

¹ IPCC, *Climate Change 2014: Synthesis Report*. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, 2014. Available at: <https://www.ipcc.ch/report/ar5/syr/>.

FIGURE 1-2 The Greenhouse Effect



The most prevalent GHGs are carbon dioxide (CO₂) and water vapor. Other important GHGs are methane (CH₄), nitrous oxide (N₂O), chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). These gases are emitted through a variety of natural processes and human activities, as follows:

- CO₂ and N₂O are byproducts of fossil fuel combustion;
- N₂O is associated with agricultural operations, such as fertilization of crops;
- CH₄ is commonly created by off-gassing from agricultural practices (e.g., manure from cows), anaerobic composting, and landfills;
- CFCs were widely used as refrigerants, propellants, and cleaning solvents; their production has been mostly eliminated by international treaty, but past emissions remain in the atmosphere due to their long lifespan;
- HFCs are now used as a substitute for chlorofluorocarbons in refrigeration and cooling; and
- PFCs and SF₆ emissions are common byproducts of industries such as aluminum production and semi-conductor manufacturing.

By the end of the 21st Century, GHGs in the atmosphere are expected to exceed known levels going back more than one million years. Climate models cited by the IPCC predict that global surface temperature change for the end of the 21st century is projected to likely exceed 1.5°C and is more likely than not to exceed 2°C.² Climate dynamics are complex, and predictions about our future climate include a level of uncertainty. Even so, current observations are consistent with modeling predictions and in many cases prove that the models are conservative.

² IPCC, *Fifth Assessment Report (AR5)*. Available at: <https://www.ipcc.ch/report/ar5/syr/>.

An expanding body of scientific research supports the theory that human activity is a major contributor to observed increases in atmospheric CO₂ and other GHGs. In 2018, a consortium of U.S.-based science organizations led by the National Oceanic and Atmospheric Administration (NOAA) released its fourth comprehensive National Climate Assessment, indicating that global annually averaged surface air temperature has increased by about 1.8°F (1.0°C) over the last 115 years (1901–2016), representing the warmest period in the history of modern civilization. The report concludes, based on extensive evidence, that it is extremely likely that human activities, especially emissions of greenhouse gases, are the dominant cause of the observed warming since the mid-20th century, stating “For the warming over the last century, there is no convincing alternative explanation supported by the extent of the observational evidence.”³

Climate Change Effects

While the effects of climate change are expected to vary regionally, the following global effects are anticipated:⁴

- Higher maximum temperatures and more hot days over most land areas;
- Higher minimum temperatures, fewer cold days, and frost days over most land areas;
- Reduced diurnal temperature range over most land areas;
- Increased heat index over land areas; and
- More intense precipitation events.

Many secondary effects are anticipated to result from climate change in California, including: loss in snow pack; sea level rise and inundation of coastal areas; increased flooding of low-lying areas; more extreme heat days per year; high ozone days; increased incidence of large forest fires and associated smoke that can impact large areas; and more frequent and severe drought years.

In collaboration with the San Bernardino County Transportation Authority (SBCTA), WRCOG recently completed the Resilient IE project, identifying extreme heat, diminishing air quality, drought, human health hazards, landslides, severe weather, wildfire, and more agricultural pests and diseases as the most likely and impactful climate change-related hazards in the subregion.⁵ Climate change vulnerability assessments conducted for that project conclude that the following vulnerabilities will be the most significant in western Riverside County over the next 80 years:⁶

- Persons experiencing homelessness and seniors are vulnerable to more exposures than other groups of people.
- Railways and energy delivery systems are the most vulnerable infrastructure.
- Drought, flooding, and wildfires can disrupt wastewater treatment plants and water delivery systems.
- Meadows and marshes, montane coniferous forest, and riparian scrub are the most vulnerable biological resources.
- Agricultural pests and diseases, drought, extreme heat, floods, and severe weather threaten agricultural land.
- Wildfires create more vulnerabilities than any other exposure.

³ U.S. Global Change Research Program, *Fourth National Climate Assessment (NCA4)*, Volume 1, 2018. Available at: <https://science2017.globalchange.gov/>.

⁴ IPCC, *Fourth Assessment Report: Climate Change (AR4)*, 2007. Available at: http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_synthesis_report.htm.

⁵ WRCOG, *Western Riverside Adaptation and Resiliency Strategy: Part 1, Vulnerability Assessment*, 2020. Available at: <https://wrcog.us/285/Resilient-IE>.

⁶ SBCTA and WRCOG, *Resilient IE Toolkit*, 2020. Available at: <https://wrcog.us/285/Resilient-IE>.

The [Resilient IE Adaptation and Resiliency Strategy](#) documents the type of extreme climate events and population health risks that the subregion will face. Additional Resilient IE resources include: subregional vulnerability assessments and adaptation strategies; city-level data on climate-related transportation hazards and emergency evacuation; a transportation infrastructure guidebook; and a regional climate adaptation and resiliency element template.

Resilient IE aims to integrate climate adaptation and mitigation efforts to help broaden the focus of climate action planning. The Inland Southern California Climate Collaborative, a network launched as part of Resilient IE, is one example of how San Bernardino, Riverside, and Imperial counties are coming together to advance equity and build resilience across the broader region. For local jurisdictions across the subregion, ensuring inclusive processes that center community needs and priorities can maximize the benefits of climate actions among disadvantaged communities. These types of solutions not only require municipal and regional agency staff, but also inclusive, cross sector strategies that bring together community partners and address the root causes of broader inequities.

Health and Equity Considerations

California and the Inland Empire are already experiencing the effects of a changing climate. These impacts are projected to worsen, even with only moderate increases in GHG emissions. Climate change will continue to expose people, infrastructure, buildings and property, and ecosystems to a wide range of stress-inducing and hazardous situations.

Climate change is a global health emergency that is impacting communities across the region today – from extreme heat days that can directly cause illness and deaths, to longer and more severe droughts that threaten water supply, to raging wildfires that destroy property and worsen air quality. As communities across the Inland Empire confront these unprecedented hazards, they are also facing the very real threat of poorer health outcomes, alongside economic loss, environmental risk, and deepening social and racial inequities.

While climate change affects everyone, not all populations are impacted equally. People of color, immigrants, older adults, and lower-income populations experience increased sensitivity to extreme climate events and a reduced capacity to adapt, including homes subject to flooding, communities with limited access to air conditioning, fewer trees, and limited mobility during emergency evacuations. Climate change will act as a stress multiplier for disadvantaged populations, exacerbating existing health, financial, housing, and food security issues. Local and regional efforts to mitigate and adapt to climate risks play a critical role in building and supporting resilience across the region.

Public health infrastructure faces potential direct effects, including hospitals, community health agencies, and mental health facilities located in areas of elevated fire risk. These effects could reduce access to effective public health services during extreme climate events, further increasing the vulnerability of the subregion, particularly among disadvantaged populations.

The Co-benefits of Climate Action

Adopting a co-benefits approach to addressing climate change can offer many beneficial outcomes for jurisdictions across the region. A co-benefit approach enhances the positive impacts of climate action that go beyond reducing GHG emissions, providing an opportunity for partnerships and increased regional support for climate action. By using energy more efficiently, harnessing renewable energy to power our buildings, improving access to sustainable transportation modes, recycling our

waste, conserving water, and building local food systems, we can keep dollars in our local economy, create new green jobs, and improve public health and community quality of life. The following discussion summarizes important co-benefits that jurisdictions can achieve by implementing local GHG reduction measures. Note that these categories in many respects are interrelated and that many climate action co-benefits do not fit neatly into a single category.



Resilience. A resilient community is committed to a thriving future for all residents and businesses. The ability to survive, adapt, and grow regardless of future shocks and stresses requires an investment in policies and actions that protect our most vulnerable populations. Climate actions that revitalize communities, diversify regional economies, and provide benefits to vulnerable populations help increase local resilience to climate change. Social equity can be enhanced by ensuring that communities most vulnerable to climate change effects are given priority for green jobs, healthy local food, energy-efficient homes and affordable, efficient transportation.



Health. Taking action to address climate change can have significant public health benefits. Historically, communities facing elevated health risks have been disproportionately burdened by pollution from industry and highways, and lack adequate access to safe housing, health services, and economic opportunity. Many actions to reduce emissions – such as electrifying transportation, planting trees, and creating walkable and bikeable neighborhoods – also help residents in the Western Riverside County region have access to clean air, water, open space, and other resources that are crucial to their well-being.



Economy. Investments in a low-carbon future can spur economic growth, create jobs, and reduce overall costs for businesses and residents across the region. Money spent on home insulation; lighting retrofits; solar panels; electric vehicle infrastructure, and the engineering, design, and construction of more sustainable communities creates local jobs and helps dollars in the region's economy. Aligning clean energy investments with local jobs programs and inclusion strategies for contracting can lead to equitable economic outcomes while helping transition the region to a clean energy future. For individuals, using less energy in our homes, buildings and vehicles means lower energy and transportation bills for residents, business and government.



Resources. Reducing GHG emissions from combustion of fossil fuels helps protect and improve the air we breathe and the environment in which we live. Sustaining the values and functions of our habitat is an essential strategy that can simultaneously reduce emissions, sequester carbon and strengthen our ability to adapt to a changing climate. Healthy watersheds and ecosystems are an integral part of a sustainable Western Riverside County. Promoting policies that include stewardship of public lands, protection of diverse ecosystems, and development of urban forests improves community resilience, leads to cleaner air and water, and lowers carbon emissions. These actions can also lead to healthier communities, improve the ability of residents to access including parks, open space, and nature. Actions in the CAP will also help reduce reliance on fossil fuel resources, which may become increasingly inaccessible or more expensive over time due to regulations and market forces.



Mobility. Investing in programs and infrastructure that promotes low-carbon mobility leads to reductions in GHGs from transportation while benefiting public health. Walkable and bikeable neighborhoods help reduce noise and air pollution and provide healthier, more active lifestyle options for our residents.

Regulatory Context

Many strategies for monitoring and addressing climate change have emerged at the international, national, and state levels. California remains a leader in the effort to reduce GHG emissions through mitigation and adaptation strategies. With the Global Warming Solutions Act (AB 32 and SB 32), California is the first state in the U.S. to mandate GHG emissions reductions across its entire economy. To meet its statewide target, California has been developing policy and passing legislation that seeks to control emissions of gases that contribute to climate change. These have included regulatory approaches such as mandatory reporting for significant sources of GHG emissions and caps on emission levels, as well as market-based mechanisms, such as cap-and-trade. Voluntary local actions are also increasing, such as conducting emissions inventories, implementing practices to reduce emissions, and purchasing offsets and renewable energy certificates. While many local actions are currently voluntary, there is more emphasis being placed on monitoring and reporting emissions to demonstrate the effectiveness of policies and local consistency with state reduction goals. The following section highlights the primary state legislation and guidance related to this CAP.

State Legislation and Guidance

AB 32 and SB 32, collectively known as the Global Warming Solutions Act of 2006, direct public agencies in California to support the statewide goal of reducing GHG emissions to 40 percent below 1990 levels by 2030. Preparing a CAP supports SB 32 at the local level. While compliance with SB 32 is not a requirement for local jurisdictions, demonstrating consistency with statewide reduction goals can significantly assist WRCOG jurisdictions with CEQA review of new development, and help them qualify for incentives such as grant funding. Efforts to address climate change, reduce consumption of resources, and improve energy efficiency led by state legislation or programs are briefly described below.

Executive Order S-3-05

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order (EO) S-3-05, which identified the California Environmental Protection Agency (CalEPA) as the lead coordinating state agency for establishing climate change emission reduction targets in California, and established the following GHG emission reduction goals:

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

California Global Warming Solutions Act (AB 32 and SB 32)

The California Global Warming Solutions Act (AB 32) of 2006 required statewide GHG emissions to be reduced to 1990 levels by 2020. In 2016, the California State Legislature amended the Global Warming Solutions Act with the adoption of SB 32, establishing a new GHG emissions reduction target of 40 percent below 1990 levels by 2030. A companion bill, AB 197, includes provisions to ensure the benefits of state climate policies reach into disadvantaged communities. In response to SB 32 and the 2030 GHG reduction target, CARB developed *California's 2017 Climate Change Scoping Plan*, adopted in December 2017.⁷ The 2017 Scoping Plan Update's strategy for meeting the 2030 GHG target incorporates the full range of legislative actions and state-developed plans that have relevance to the year 2030. These include extending the state Cap-and-Trade Program

⁷ California Air Resources Board, *The 2017 Climate Change Scoping Plan Update*, January 2017. Available at: https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf.

through 2030; increasing the Low Carbon Fuel Standard (LCFS) to 18 percent; improved vehicle, truck and freight movement emissions standards; increasing renewable energy; improving energy efficiency; and strategies to reduce methane emissions from agricultural and other wastes by using it to meet the State’s energy needs.

California’s Cap-and-Trade Program

The State’s cap-and-trade program is a key strategy for helping California reduce its GHG emissions and achieve its 2030 statewide target. A cap-and-trade program sets the total amount of GHG emissions allowable for energy producers and large industrial facilities, and allows covered sources to buy emissions allowances and carbon offsets to determine the least expensive path to compliance. Altogether, the emissions covered by the cap-and-trade program total 80 percent of all GHG emissions in California.

SB 375 – Sustainable Communities and Climate Protection Act of 2008

SB 375, also known as the Sustainable Communities and Climate Protection Act of 2008, aims to reduce GHG emissions by linking transportation funding to land use planning. It requires the state’s metropolitan planning organizations (MPO) to create a Sustainable Communities Strategy (SCS) in their regional transportation plans (RTP) for the purpose of reducing urban sprawl. Under SB 375, CARB established regional targets for GHG emissions reductions from passenger vehicle use for each MPO. The regional reduction target for the Southern California Association of Governments (SCAG) region, which is the MPO with jurisdiction over the WRCOG subregion, is 19 percent per capita by 2035 from 2005 levels. In September 2020, SCAG adopted its current SCS, which demonstrates how the region will achieve the GHG emissions reduction targets set by CARB.

Advanced Clean Cars (ACC) and the California Mobile Source Strategy

The federal Clean Air Act ordinarily preempts state regulation of motor vehicle emission standards; however, California is allowed to set its own standards with a federal waiver from the USEPA, granted in 2009. California currently regulates vehicle emissions for model years through 2025 with CARB’s Advanced Clean Cars (ACC) program. The program includes components to reduce smog-forming pollution, reduce GHG emissions, promote clean cars, and provide the fuels for clean cars. The ZEV component requires manufacturers to produce increasing numbers of ZEVs and plug-in hybrid electric vehicles (PHEV) in the 2018 to 2025 model years.

In May 2016, CARB released the updated Mobile Source Strategy that demonstrates how the State can simultaneously meet air quality standards, achieve GHG emission reduction targets, decrease health risk from transportation emissions, and reduce petroleum consumption through 2030 by transitioning to ZEVs, updating transit systems and reducing vehicle miles traveled. The Mobile Source Strategy calls for 1.5 million ZEVs (including plug-in hybrid electric, battery-electric, and hydrogen fuel cell vehicles) by 2025 and 4.2 million ZEVs by 2030. It also calls for GHG reductions from medium-duty and heavy-duty vehicles and increased deployment of zero-emission delivery trucks.

Renewables Portfolio Standard

California’s Renewables Portfolio Standard (RPS) requires retail sellers of electricity, including investor-owned utilities, publicly owned utilities (POUs), and community choice aggregators, to provide a minimum percentage of their supply from eligible renewable sources. SB 350 (2015) requires retail sellers and publicly owned utilities to procure 50 percent of their electricity from eligible renewable energy resources by 2030. Most recently, SB 100, signed by Governor Brown in 2018, increases the RPS requirement to 60 percent eligible renewables by 2030 and 100 percent by 2045.

Senate Bill 350

The Clean Energy and Pollution Reduction Act of 2015 (SB 350) has several provisions in addition to the RPS that has been superseded by SB 100, as noted above. Most important to local governments, SB 350 requires statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas final end uses of retail customers by January 1, 2030.

California Building Code

Title 24, of the California Code of Regulations, Part 6 sets forth California's energy efficiency standards for residential and nonresidential buildings and was established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically (typically every three years) to allow for the consideration and inclusion of new energy efficiency technologies and methods. The current standards (2019), made effective on January 1, 2020, require new residential building to install rooftop solar photovoltaic (PV) systems. The next iteration of the energy standard, which will go into effect January 2023, will include new prescriptions and performance standards for building electrification.

The California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), commonly referred to as the CALGreen Code, requires new residential and commercial buildings to comply with mandatory measures under five topical areas: planning and design; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; and environmental quality. CALGreen also provides voluntary tiers and measures that local governments may adopt which encourage or require additional measures in the five green building topics.

Senate Bill 535 – Greenhouse Gas Reduction Fund and Disadvantaged Communities

SB 535 (2012) requires the CalEPA to identify disadvantaged communities, and requires that 25 percent of all funds allocated pursuant to an investment plan for the use of state moneys collected through the Cap and Trade program be allocated to projects that benefit disadvantaged communities and at least 10 percent of the 25 percent to be spent on projects located in disadvantaged communities.

Regional Plans and Programs

The regional initiatives described below contribute to the development and success of this CAP. Many of these programs are administered by WRCOG and several are conducted by other regional entities in partnership with WRCOG.



Southern California Association of Governments Regional Transportation Plan and Sustainable Communities Strategy

SCAG is the regional planning agency for Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties, and serves as a forum for regional issues relating to transportation, the economy, community development, and the environment. SCAG serves as the federally designated MPO for the Southern California region and is the largest MPO in the U.S.

Connect SoCal, adopted in 2020, is SCAG’s latest Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), a long-range visioning plan that balances future mobility and housing needs with economic, environmental and public health goals. Under SB 375, all of California’s MPOs must prepare an SCS as a component of their RTP. The RTP serves as a long-range transportation plan that is developed and updated by SCAG every four years. Connect SoCal provides a vision for the development of transportation facilities throughout the region based on growth forecasts and economic trends through the year 2045. Connect SoCal identifies areas within the region sufficient to house near-term and long-term growth, support a diverse economy and can reach the regional GHGs from autos and light-duty trucks by 8 percent per capita by 2020, and 19 percent by 2035 (compared to 2005 levels).

SCAG worked with Riverside County partners to develop Connect SoCal, including the Riverside County Transportation Commission (RCTC), elected officials and local jurisdictions. The plan includes \$48.7 billion in transportation investments specific to Riverside County, and incorporates all the projects RCTC identified as local priorities. Connect SoCal builds upon and expands land use and transportation strategies established over several planning cycles to increase mobility options and achieve a more sustainable growth pattern. It charts a path toward a more mobile, sustainable and prosperous region by making connections between transportation networks, between planning strategies and between the people whose collaboration can improve the quality of life in the SCAG region. The SCS does not mandate future land use policies for local jurisdictions, but rather provides a foundation of regional policy upon which local governments can build. WRCOG and its member jurisdictions partner with SCAG and are active members in the development and implementation of the RTP/SCS.



Sustainability Framework for Western Riverside County

WRCOG’s Sustainability Framework (Framework) is a subregional planning effort that establishes, implements, and continuously refines an overarching sustainability plan for the communities in Western Riverside County. The Framework aims to: initiate a dialogue about the importance of sustainability in the region; provide a vision and goals to guide local action and regional collaboration; define more immediate short-term goals that can contribute to the longer-term vision

of the Framework; and define indicators, benchmarks, and targets that provide a measure of the effectiveness of Framework programs and policies. The Framework acts as a “living” document and contains goals and actions applying to economic development, education, public health, transportation, water and wastewater, energy, and the environment. WRCOG is currently conducting an update to the document to ensure WRCOG and the subregion continues to evolve in sustainability. This update will be completed in fall 2021.



Western Riverside County Clean Cities Coalition

The Western Riverside County Clean Cities Coalition (Coalition) is a voluntary local government and industry partnership that aims to reduce the consumption of petroleum fuels and improve air quality in the WRCOG subregion. The Coalition works to mobilize local stakeholders toward expanding the use of ZEVs and other alternative fuel vehicles (AFV), promoting local idle reduction measures, and

strengthening local AFV fueling infrastructure. The governments of Western Riverside County have taken leadership roles in the Coalition, coordinating efforts between government and industry to recognize the value of partnership in achieving air quality, energy efficiency, economic development, and transportation goals, while advancing the clean air and energy efficiency goals of the national Clean Cities program administered by the U.S. Department of Energy (DOE).

WRCOG Commercial-PACE

Established under the guidance of AB 811 (2008), WRCOG's Property Assessed Clean Energy (PACE) Program provides financing to commercial property owners for the installation of energy efficient, renewable energy, water conservation, seismic strengthening, and fire hardening improvements on existing and new construction properties. Financing is repaid through an assessment on property tax bills with up to 30-year terms, based on the useful life of the products. In the WRCOG subregion, PACE financing is offered through several C-PACE providers, including Greenworks Lending, Twain Financial Partners, and CleanFund.



Western Riverside Energy Partnership

WREP is a local government partnership that has been in existence since 2010. The Partnership has consisted between Southern California Edison (SCE), Southern California Gas Company (SCG), and all of WRCOG's member jurisdictions in the subregion. WREP was designed to achieve energy savings, reduce utility bills, and enhance the level of comfort in municipal, commercial, and residential buildings. WREP promotes energy efficiency by increasing community awareness and participation in energy efficiency, demand response and self-generation programs. The WREP partners includes the Cities of Banning, Beaumont, Calimesa, Canyon Lake, Corona, Eastvale, Hemet, Jurupa Valley, Lake Elsinore, Menifee, Moreno Valley, Murrieta, Norco, Perris, Riverside, San Jacinto, Temecula, and Wildomar. Since its inception, WREP has achieved an electric savings of over 20 million kilowatt-hours (kWh) and a gas savings of over 60,000 therms at local government facilities. The WREP effort uses funding provided by California utility ratepayers and is administered by SCE and SoCalGas under the auspices of the California Public Utilities Commission.

Regional Energy Network

WRCOG, in collaboration with its partners Coachella Valley Association of Governments and San Bernardino Council of Governments, recently filed a business plan for a new Regional Energy Network (REN), a model authorized by the California Public Utilities Commission (CPUC) for administering energy efficiency programs outside the traditional IOU-administered partnerships. RENs are intended to implement and administer energy efficiency programs the current IOUs cannot or do not have the available resources to implement. RENs provide a greater level of local control in the development and implementation of programs that are specific to local needs. Due to their ability to create and implement programs, RENs have more access to funding to implement regional programs at the local level than what current LGPs have within their funding cycle.

If approved by the CPUC, the Inland Regional Energy Network (I-REN) would be the fourth REN in the state and aim to support the Inland Empire within the programmatic sectors of Workforce Education & Training, Codes & Standards, and Public to assist with meeting the state's energy efficiency goals. I-RENs mission would be to actively participate in California's Clean Energy initiatives and build a stronger cleaner energy economy and community. Through this mission, I-REN will connect residents, businesses, and local governments to a wide range of energy efficiency resources to increase energy savings and equitable access through San Bernardino and Riverside Counties.



Healthy Communities

WRCOG and its member jurisdictions are engaged in numerous efforts and initiatives to promote healthy communities, including participating in the Riverside County Health Coalition (RCHC). The RCHC is a collaboration of public and private sectors, school districts, community businesses, local and regional organizations

and community members committed to policy development and advocacy, environmental change and community empowerment for healthy lifestyles in Riverside County. This initiative includes a focused partnership effort with local governments to integrate healthy communities into the local planning and policy-making process.



Transportation Uniform Mitigation Fee

WRCOG's Transportation Uniform Mitigation Fee (TUMF) was implemented in 2003 as one of the largest multi-jurisdictional fee programs in the nation. TUMF makes improvements to the regional transportation system and provides transportation demand management through funds from new development, ensuring that development mitigates for increases in traffic volumes created by new development. TUMF is a 32-year program that provides subregional transportation and infrastructure benefits to local agencies in Western Riverside County. The program is expected to raise \$4.2 billion, and 1.64% is allocated to the Riverside Transit Agency (RTA) for transit improvements. To mitigate the impacts of transportation construction projects, WRCOG allocates 1.59% of TUMF funds collected to the RCA to purchase habitat for the MSCHP.

Existing Local Efforts

Existing policies and programs throughout the subregion reduce GHGs through energy conservation, renewable energy development, solid waste reduction, commute reduction, and the expansion of the urban forest. Several energy programs are managed by WRCOG, SCE, SCG, Riverside Public Utilities (RPU), Banning Electric Utility, and the County of Riverside. These programs include financing for building energy retrofits and renewable energy projects, energy efficiency retrofit rebates, smart metering and smart grid technologies, and various energy efficiency education and outreach campaigns.

Some jurisdictions have building code requirements to implement and expand upon the CALGreen Code, or policies to streamline energy efficiency and renewable energy permitting. Many are improving the efficiency of public realm lighting, including street lights, traffic lights, parking lot lighting and outdoor commercial lighting, and their water and wastewater conveyance and treatment facilities.

Policies to reduce solid waste include waste collection billing policies through municipalities or their contracted waste haulers, food scrap and compostable paper diversion outreach, lumber scrap diversion ordinances and outreach, yard waste collection, recycling outreach campaigns and voluntary waste audits, landfill methane capture, and food waste biodigestion programs in Norco and Riverside.

Policies that reduce GHG emissions from potable water conveyance focus on reducing water demand through consumer behavior pricing, water conservation education, and landscape irrigation efficiency. Some jurisdictions have adopted ordinances requiring the installation of certain water conservation measures at properties before selling or renovating properties. Some jurisdictions are also seeking to expand recycled water deliveries.

Existing transportation policies focus on enhancing pedestrian and bicycle amenities and facilities alongside the expansion and improvement of transit systems, but also include various transportation demand management programs to reduce single-occupancy vehicle miles traveled (VMT) during commute hours. Several jurisdictions have policies supporting the expansion of the urban forest, and some have mandatory shade tree planting requirements that also reduce building energy. Finally, many jurisdictions are actively expanding mixed-use developments and transit-oriented developments to encourage people to drive less, and enrich the character and economic vitality of their communities.

Relationship to the California Environmental Quality Act

In 2007, state lawmakers identified the need to analyze GHG emissions in the CEQA process through the adoption of SB 97. The bill required Governor's Office of Planning and Research (OPR) to develop, for adoption by the Natural Resources Agency, amendments to the CEQA Guidelines that clarified several points about the analysis and mitigation of GHG emissions. Aside from establishing the need for lead agencies to analyze and mitigate for a project's potentially significant impacts relating to GHG emissions, the amendments, which became effective in 2010, also provided that a lead agency may streamline the analysis of GHG emissions for projects that follow a programmatic GHG emissions reduction plan, or climate action plan, meeting certain criteria.

A CEQA analysis for a CAP, like for other long-term planning documents, may offer streamlining benefits to future implementing projects, as long as specific criteria are met. CEQA provides several ways for a project-level evaluation to rely on programmatic environmental review of climate impacts, including "tiering" (CEQA Guidelines § 15385 tiering), use of master EIRs, and incorporation by reference (CEQA Guidelines § 15183.5(a)). Streamlining is a way for lead agencies to reduce project-level environmental review by ensuring robust evaluation at the programmatic level. Projects that are consistent with a CAP, for example, may be found to cause a less than significant GHG impact under CEQA. (CEQA Guidelines § 15064(h)(3)).

More information on CEQA and the use of CAPs for streamlining project-level environmental review is provided in Chapter 4.

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CHAPTER 2

Emissions Inventory, Forecast, and Target

A jurisdiction's greenhouse gas (GHG) inventory serves multiple purposes. It quantifies the GHG emissions resulting from activities taking place throughout the community by residents, businesses, and local governments, and it creates an emissions baseline against which the jurisdiction can set emissions reduction targets and measure future progress. It also provides an understanding of where GHG emissions originate and allows a jurisdiction to develop effective policies, strategies, and programs to reduce emissions.

In the process of updating the Subregional Climate Action Plan (CAP), community inventories were developed for all jurisdictions in the WRCOG subregion, for the years 2010 and 2017, to quantify GHG emissions resulting from the community and government operations. These "community-wide inventories" encompass the GHG emissions resulting from activities taking place within each jurisdiction's boundaries, where the local government has jurisdictional authority, in addition to some activities taking place outside the boundaries that support activities in the jurisdiction (for example, solid waste sent to landfill areas outside the boundaries). The inventories include emissions from the following sectors: residential energy, non-residential energy, on-road transportation, off-road equipment, rail, solid waste, water, wastewater, and agriculture.

For the purposes of the Subregional CAP, inventory data was compiled for the 13 participating jurisdictions to establish a 2010 baseline inventory and a 2017 inventory update that provides a more current emissions accounting. The jurisdictions participating in the Subregional CAP update are the cities of Banning, Beaumont, Calimesa, Canyon Lake, Eastvale, Jurupa Valley, Lake Elsinore, Menifee, Norco, Perris, San Jacinto, Temecula, and Wildomar.

Inventory Development Process

The 2010 and 2017 emissions inventories were developed using guidance from the U.S. Community Protocol for Accounting and Reporting of GHG Emissions (Community Protocol), which was developed by Local Governments for Sustainability (ICLEI). The Community Protocol provides a standardized set of guidelines and methods to assist local governments with quantifying and reporting GHG emissions associated with community-wide activities. As such, emissions in a community GHG inventory include those that derive from sources located within the jurisdiction and from activities by community members for which the local government has significant influence to mitigate. This generally includes activities taking place within the City’s geopolitical boundary where the local government has jurisdictional authority, as well as community-related emissions taking place outside of City limits that are attributable to community activities (e.g., electricity generation for use by City residents).

In general, inventories provide an estimate of current emissions using the best available data and methods at the time the inventory was completed. As data collection and estimation methodologies evolve, future inventories may incorporate emission sources that were not captured previously or use newer approaches to estimate emissions. Indeed, this was the primary rationale for updating the 2010 baseline inventories as part of the Subregional CAP update.

For the WRCOG community inventory, emissions are categorized into sectors based on their source(s), as described in **Table 2-1**. Note that emissions from municipal operations are included within the community inventory sectors and typically constitute a very small percentage of overall emissions. Jurisdictions that choose to quantify the emissions associated with their operations typically use the Local Government Operations Protocol (LGO Protocol), accounting for the emissions sources the municipality owns or operates and has operational control over, such as government buildings, vehicles, and other municipally-owned equipment and services. While the overall community inventory is the basis for GHG reduction efforts in the Subregional CAP, LGO inventories (where available) provide a closer look at what changes a local jurisdiction can make to its own operations to reduce emissions.

TABLE 2-1 Community GHG Inventory Sectors

COMMUNITY INVENTORY SECTOR	DESCRIPTION
Residential Energy	Electricity and natural gas used in homes for heating and cooling
Non-Residential Energy	Electricity and natural gas used in commercial and industrial buildings for daily operations and heating/cooling. This sector includes municipal government buildings
Large Industrial Facilities	Natural gas and other fuels used by large industrial facilities
On-Road Transportation	Gasoline, diesel, and natural gas fuels used by on-road passenger vehicles and trucks
Off-Road Equipment	Gasoline, diesel, and other fuels used by vehicles and portable equipment in construction, mining, industry, and agriculture
Rail	Freight rail and commuter rail (i.e., Metrolink)
Solid Waste	Disposal of solid waste in landfills causes anaerobic decomposition, which results in GHG emissions (CH ₄)
Wastewater	Emissions associated with the treatment of community industrial, residential, and commercial wastewater.
Water	Emissions associated with the treatment, conveyance, and distribution of potable and non-potable water.
Agriculture	Emissions from enteric fermentation from livestock, manure management, and crop fertilization on a regional scale.

Subregional Emissions Profile

To develop a full accounting of GHG emissions across the entire subregion, inventories were compiled for all WRCOG jurisdictions.⁸ Inventory data was first aggregated from several existing sources, including the 2010 baseline inventories developed for the participants in the 2014 Subregional CAP, as well as several inventories that had been developed independently by non-participating jurisdictions. For 2017, new community inventories were developed for all WRCOG jurisdictions using a common set of methodologies and data sources. The 2010 inventories were then updated as needed to add the sectors not included in the original Subregional CAP (i.e., off-road equipment, freight rail, commuter rail, water, and agriculture). In addition, several adjustments were made to the 2010 inventories to ensure methodological consistency across the two inventory years. This included new VMT modeling and solid waste emissions estimates for 2010 that match the methodologies used to develop the 2017 inventories. It also included backcasting of water and wastewater emissions from 2017 due to unresolved questions about methods and available data for 2010. A full report on the subregional inventory update, including emissions summary tables for each jurisdiction, is included as **Appendix C**. The methods and data sources used for the inventory update can be found in **Appendix D**.

Table 2-2 profiles GHG emissions across the entire subregion for the years 2010 and 2017, broken down by sector. The results show that total emissions, excluding large stationary sources covered under Cap and Trade, decreased by approximately 14 percent from 2010, with the largest reduction coming from the non-residential energy sector, which decreased by approximately 26 percent, or 740,116 metric tons of carbon dioxide equivalent per year (MTCO₂e). For both years, the transportation sector contributed nearly half of the region's emissions, at approximately 44 percent. The combined energy sectors made up another 44 percent of emissions in 2010 and 39 percent of emissions in 2017. Residential energy and non-residential energy emissions decreased by approximately 20 and 26 percent, respectively, between the inventory years. In terms of emission trends, large industry was the anomalous sector, increasing by nearly 1,000 percent from 2010 to 2017. This is due to the addition of eight large industrial facilities to the region's mandatory reporting list as determined by the California Air Resources Board (CARB).

Table 2-2 includes emissions from the region's large stationary sources that are regulated by the CARB under the state's Cap and Trade program, which requires that power generators, refineries, and other large stationary emitters that emit more than 25,000 MTCO₂e reduce their emissions over time in line with the California Global Warming Solutions Act of 2006 (AB 32).⁹ With CARB as the enforcing agency, local and regional governments generally do not have jurisdictional authority over these sources. For this reason, local jurisdictions with large stationary sources typically remove those sources from their baseline GHG inventory and business-as-usual (BAU) forecast when developing a climate action plan in order to focus on sources over which they have jurisdictional control or influence. Thus, Table 2-2 presents one emissions total for the Subregion that is inclusive of these sources and one that excludes them.

⁸ Note: The Morongo Band, Eastern Municipal Water District, and Western Municipal Water District did not participate in the Subregional CAP or contribute a GHG inventory to this effort, so they are not represented here.

⁹ Collectively, these sources represent approximately 85 percent of the state's total emissions.

TABLE 2-2 WRCOG Subregion – 2010 and 2017 Community GHG Emissions by Sector (MTCO₂e)

SECTOR	2010 EMISSIONS	2017 EMISSIONS	2017 % OF TOTAL	2010–2017 % CHANGE
On-Road Transportation	5,468,974	4,831,298	44.1%	-11.7%
Residential Energy	2,740,057	2,196,196	20.0%	-19.8%
Non-Residential Energy	2,839,875	2,099,759	19.2%	-26.1%
Solid Waste	453,701	586,687	5.4%	29.3%
Off-Road Equipment	417,427	532,816	4.9%	27.6%
Agriculture	322,410	251,803	2.3%	-21.9%
Large Stationary Sources ^a	15,909	170,723	1.6%	973.1%
Water	213,224	162,430	1.5%	-23.8%
Wastewater	97,158	79,485	0.7%	-18.2%
Freight Rail	36,658	36,036	0.3%	-1.7%
Commuter Rail	9,262	13,704	0.1%	48.0%
TOTAL – With Large Stationary Sources b	12,614,655	10,960,936	100.0%	-13.1%
TOTAL – Without Large Stationary Sources b	12,598,746	10,790,213		-14.4%

Notes:

a – In 2017, there were nine facilities within the WRCOG region that were regulated under Cap and Trade: 3M Corona, All American Asphalt, and Dart Container Corporation of California in Corona; Pacific Clay Products in Lake Elsinore; SDG&E Compressor Station in Moreno Valley; Sierra Aluminum Company and University of California, Riverside in Riverside; and Infineon Technologies Americas Corp and Pechanga Resort and Casino in Temecula. Of these nine facilities, only one was reported in 2010, the Dart Container Corporation of California.

b – Totals may not add up due to rounding.

Figure 2-1 provides a breakdown of the WRCOG Subregion’s 2017 emissions by sector, showing transportation and energy emissions as the two biggest contributors to the inventory. Residential energy and non-residential energy contribute roughly the same amount of CO₂e annually, making up 20 and 19 percent of the total, respectively. The wastewater, freight rail, and commuter rail sectors each make up less than 1 percent of the region’s total emissions and are combined and reflected on the graph as “Other.”

Figure 2-2 provides a breakdown of 2017 emissions by sector but excludes the large stationary source, freight rail, and agriculture sectors, as these emissions are not effectively addressed through action at the regional or local levels. This chart differs only slightly from Figure 2-1, in that exclusion of the three sectors slightly increases the relative contribution of the remaining sectors. Wastewater and commuter rail emissions each remain below 1 percent of the region’s total.

FIGURE 2-1 WRCOG Subregion – 2017 Community Emissions by Sector

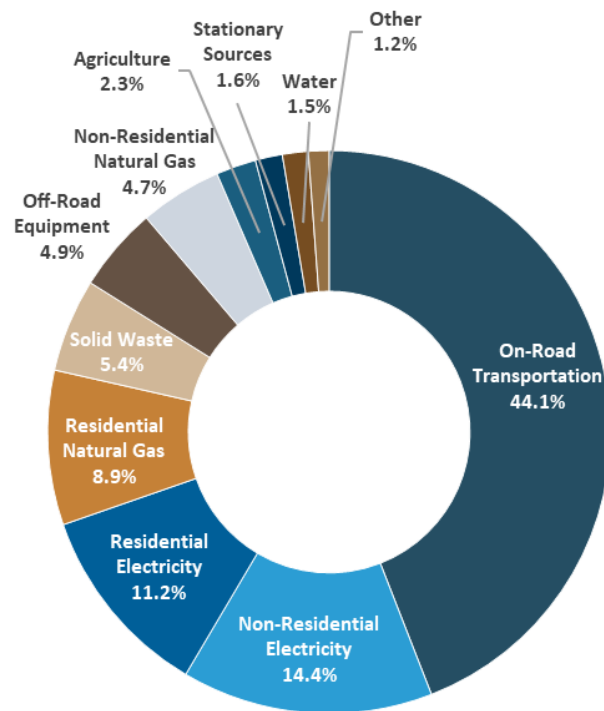
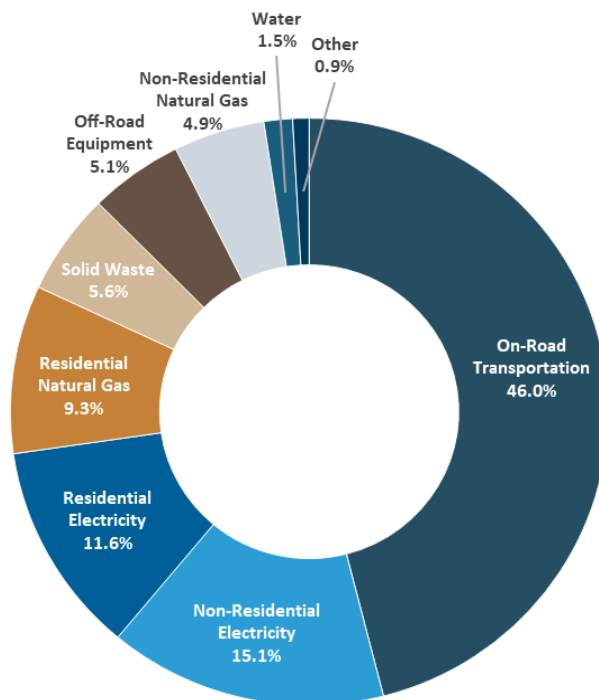


FIGURE 2-2 WRCOG Subregion – 2017 Community Emissions by Sector, Excluding Large Stationary Sources, Freight Rail, and Agriculture



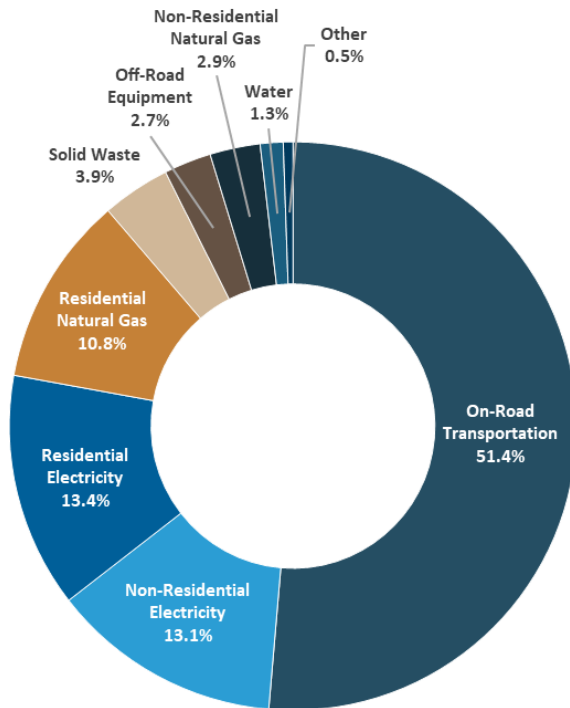
Inventory for Subregional CAP

The inventory used for the Subregional CAP update (Subregional CAP Inventory) is a subset of the total emissions described above, representative of the 13 participating jurisdictions and excluding emissions from large stationary sources, freight rail, and agriculture.

Baseline Inventory (2010)

The baseline GHG inventory for the 13 jurisdictions participating in the CAP totals 3,615,811 MTCO₂e. **Table 2-3** provides a breakdown of the 2010 baseline inventory by jurisdiction and by sector. Emissions from the transportation sector accounted for 1,857,367 MTCO₂e, or 51 percent of the participating jurisdictions' emissions, followed by the residential energy sector, which generated 874,892 MTCO₂e, or 24 percent of the total, and the non-residential energy sector, which produced 578,616 MTCO₂e, equivalent to 16 percent of the total. **Figure 2-3** provides a breakdown of total baseline emissions by sector.

FIGURE 2-3 WRCOG Subregional CAP – 2010 Baseline Community Emissions by Sector



Inventory Update (2017)

The 2017 GHG inventory update for the 13 participating jurisdictions totals 3,454,042 MTCO₂e. **Table 2-4** provides a breakdown of the 2017 inventory update by jurisdiction and by sector. Emissions from the transportation sector accounted for 1,726,513 MTCO₂e, or 50 percent of the total emissions in the subregion, followed by the residential energy sector, which generated 812,269 MTCO₂e, or 24 percent of the total, and the non-residential energy sector, which produced 535,539 MTCO₂e, representing 16 percent of the total.

TABLE 2-3 WRCOG Subregional CAP Baseline Inventory (2010) - Community Emissions by Sector (MTCO₂e)

CITY	RESIDENTIAL ELECTRICITY	NON- RESIDENTIAL ELECTRICITY	RESIDENTIAL NATURAL GAS	NON- RESIDENTIAL NATURAL GAS	ON-ROAD TRANSPORTATION	WATER	SOLID WASTE	WASTEWATER	OFF-ROAD EQUIPMENT	COMMUTER RAIL	TOTAL
Banning	65,714	60,887	28,282	5,702	89,221	2,517	6,884	1,300	4,537	0	265,042
Beaumont	31,555	27,479	24,544	4,743	111,081	2,838	7,160	3,371	2,183	0	214,953
Calimesa	6,821	6,560	8,090	1,055	33,234	1,371	1,731	1,080	3,873	0	63,815
Canyon Lake	17,102	1,981	123	121	30,841	562	2,052	1,111	87	0	53,981
Eastvale	34,050	25,035	33,208	4,535	105,121	3,880	6,263	453	2,011	0	214,556
Jurupa Valley	54,242	84,033	50,469	13,427	275,050	6,936	23,018	844	15,047	0	523,067
Lake Elsinore	39,646	32,868	27,802	6,740	220,284	2,855	12,993	784	5,425	0	349,396
Menifee	56,820	26,890	47,890	6,962	250,645	5,431	13,319	757	5,631	1,158	415,503
Norco	21,325	22,387	17,266	5,474	113,563	2,968	11,189	2,643	11,148	0	207,963
Perris	36,228	46,049	31,752	9,695	168,086	3,409	16,201	652	10,649	1,024	323,745
San Jacinto	30,434	23,524	28,874	7,484	87,200	3,300	8,033	369	3,381	0	192,599
Temecula	67,011	107,509	71,793	34,501	293,270	9,054	25,844	1,134	30,822	0	640,938
Wildomar	22,401	9,710	21,450	3,264	79,771	2,021	5,836	3,123	2,677	0	150,252
Total	483,349	474,911	391,543	103,705	1,857,367	47,140	140,524	17,620	97,470	2,182	3,615,811

TABLE 2-4 WRCOG Subregional CAP Inventory Update (2017) - Community Emissions by Sector (MTCO₂e)

City	Residential Electricity	Non-Residential Electricity	Residential Natural Gas	Non-Residential Natural Gas	On-Road Transportation	Water	Solid Waste	Wastewater	Off-Road Equipment	Commuter Rail	Total
Banning	74,708	72,327	23,664	6,036	83,028	2,193	8,044	1,309	4,696	0	276,005
Beaumont	24,063	19,494	29,563	6,033	90,778	2,949	10,483	3,818	4,280	0	191,462
Calimesa	6,423	5,266	7,271	856	30,732	1,207	2,096	1,136	4,323	0	59,311
Canyon Lake	13,332	1,716	105	0	10,080	482	2,268	1,123	154	0	29,259
Eastvale	33,411	22,290	31,306	4,276	109,791	3,737	9,929	491	5,181	0	220,413
Jurupa Valley	48,114	70,426	43,266	11,511	267,875	6,048	23,018	854	22,791	0	493,902
Lake Elsinore	36,217	30,025	28,795	6,981	179,488	2,846	15,948	836	8,600	0	309,738
Menifee	53,098	25,433	50,347	8,139	206,056	5,268	16,941	822	10,168	1,825	378,097
Norco	17,337	21,329	14,220	6,057	108,448	2,583	9,599	2,627	16,609	0	198,809
Perris	32,297	43,901	29,820	8,212	172,013	3,098	22,820	683	14,282	1,516	328,640
San Jacinto	27,023	18,274	26,005	4,260	109,065	3,002	10,617	389	4,426	0	203,062
Temecula	55,848	91,743	65,936	38,832	274,387	8,478	30,211	1,179	43,756	0	610,370
Wildomar	20,461	9,248	19,638	2,873	84,771	1,889	7,117	3,412	5,563	0	154,973
Total	442,332	431,473	369,937	104,066	1,726,513	43,782	169,090	18,679	144,830	3,341	3,454,042

Figure 2-4 provides a breakdown of total 2017 emissions by sector, while **Figure 2-5** provides a comparison of 2017 emissions against the 2010 baseline. As compared to 2010, emissions from the 13 participating jurisdictions decreased approximately 5 percent by 2017, an overall reduction of 161,770 MTCO₂e. The 2020 target identified in the 2014 WRCOG Subregional CAP was a 15 percent reduction from the 2010 baseline. Based on the 2017 inventory, the 13 jurisdictions participating in this CAP update are approximately one-third of the way to the targeted 15 percent reduction with three years left until the target year. Collectively for the CAP participants, sectoral contribution to overall emissions was largely consistent between the two inventory years. However, the emission trends over time varied across the sectors. Emissions from the two largest contributing sectors, transportation and energy, each decreased by approximately 7 percent. For transportation, this represents a reduction of 130,855 MTCO₂e, and for the energy sector, it is a reduction of approximately 105,700 MTCO₂e. The other sectors, each making up less than 5 percent of total emissions, saw greater change between 2010 and 2017. Emissions from the solid waste sector and the off-road equipment sector increased by approximately 20 percent and 49 percent, respectively. For the solid waste sector, this is likely due to a change in data collection methodology at the data source. Emissions from commuter rail (i.e., Metrolink), while a small contributor to total emissions, increased by 53 percent.

FIGURE 2-4 WRCOG Subregional CAP – 2017 Community Emissions by Sector

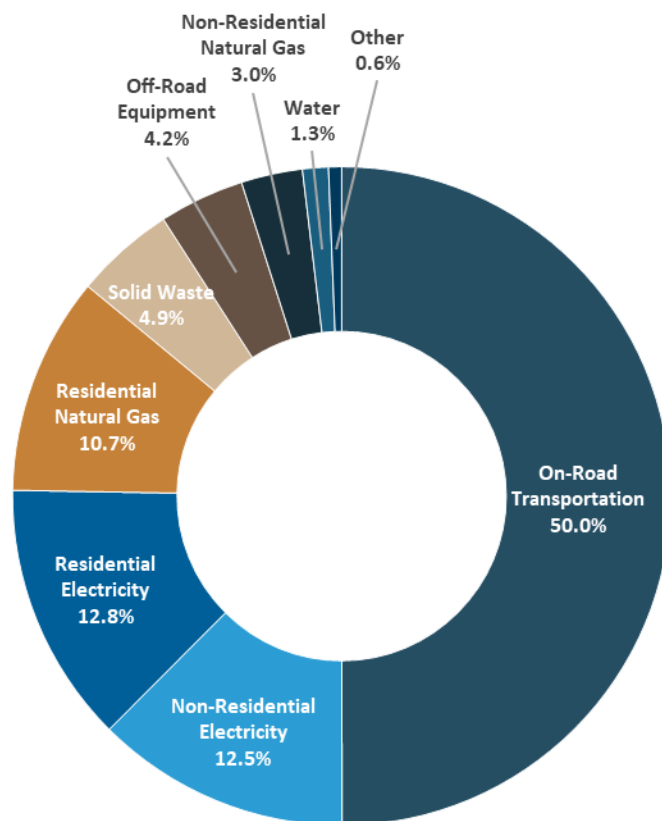
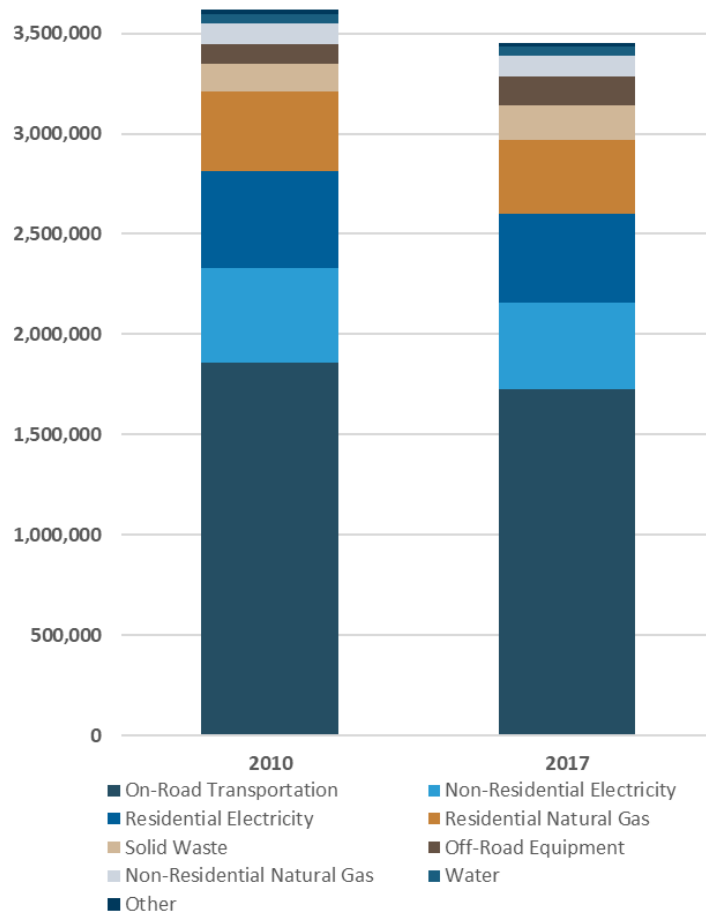


FIGURE 2-5 WRCOG Subregional CAP – 2010 vs. 2017 Community Emissions by Sector Comparison

Total community emissions in 2017 for each participating jurisdiction are summarized in **Figure 2-6**, sorted by highest to lowest. In general, higher total emissions correlate with higher populations, but average commute distances, average age of building stock, and the electric utility serving the area are also major contributing factors. **Figure 2-7** shows 2017 community emissions by service population for each jurisdiction, also sorted highest to lowest. Service population is the total number of residents and jobs in each community; it can be useful for measuring progress as per-unit reduction of GHGs and comparing emissions between jurisdictions without penalizing a jurisdiction for its growth. In 2017, emissions ranged from 2.3 MTCO₂e per service population in Canyon Lake to 6.5 MTCO₂e per service population in Banning.

FIGURE 2-6 2017 Community Emissions by Jurisdiction (MTCO₂e)

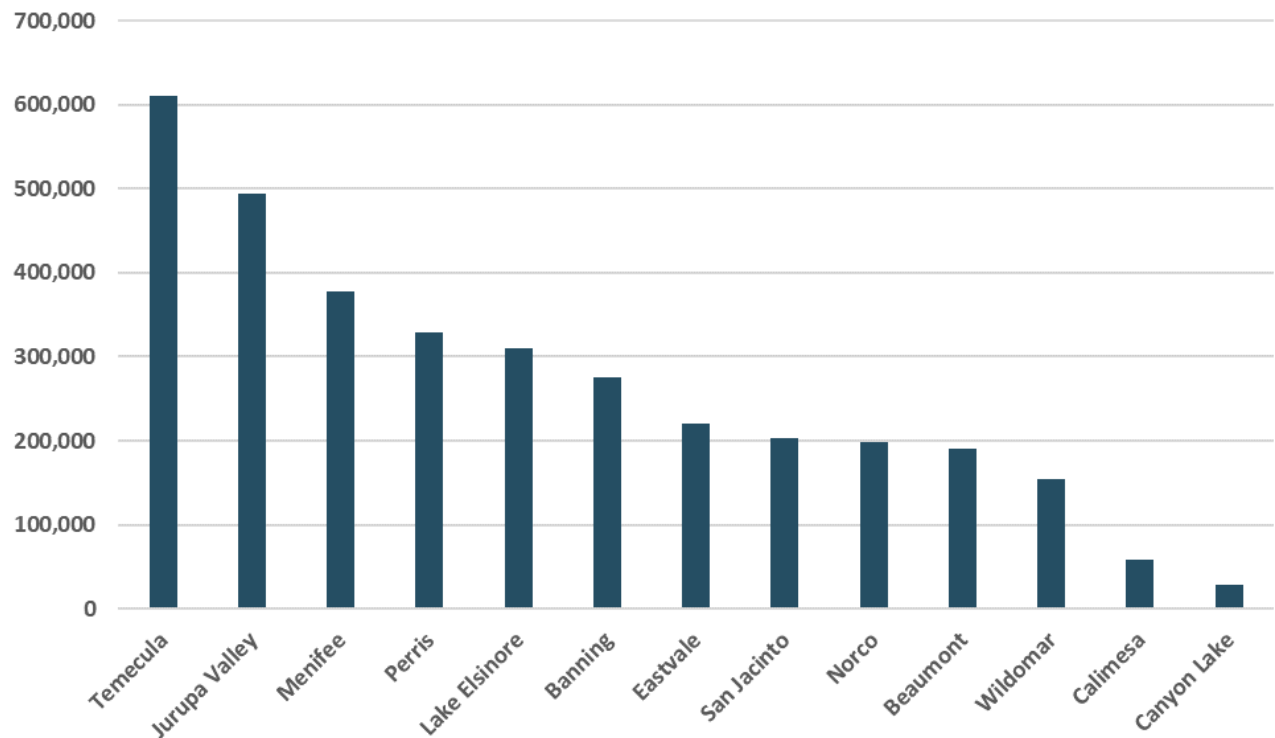
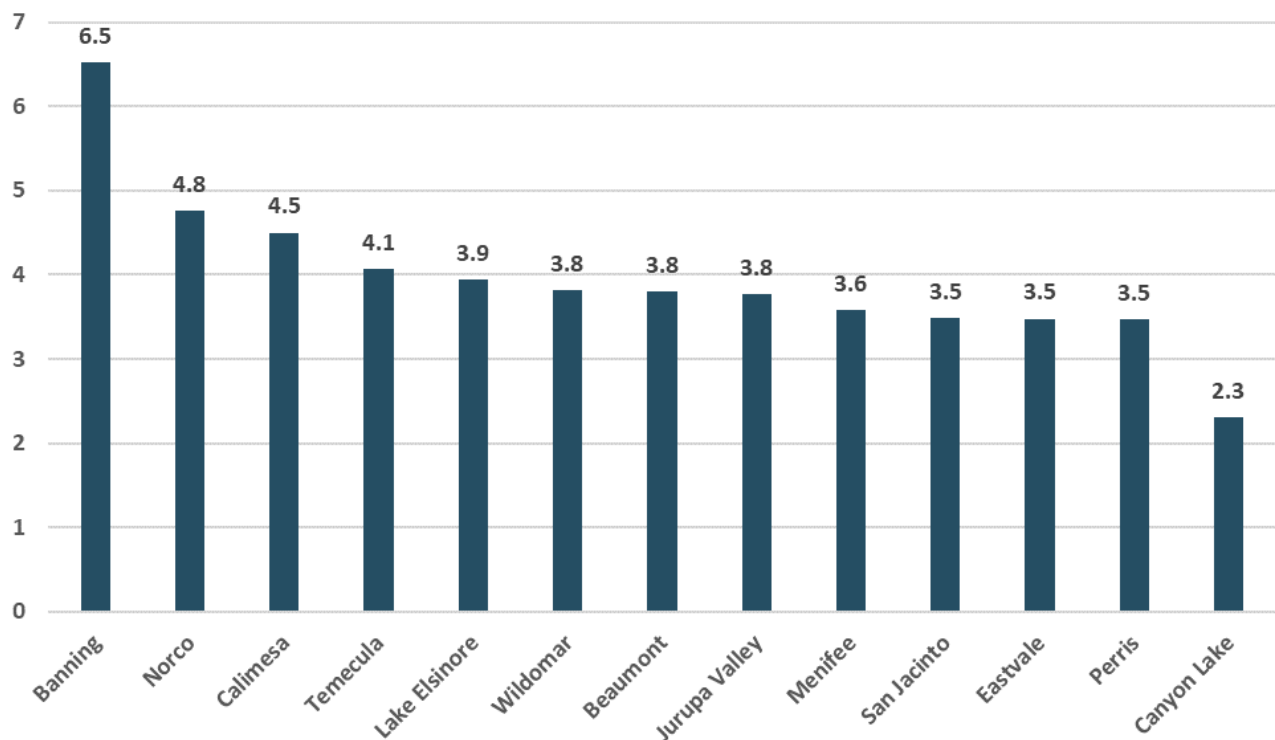
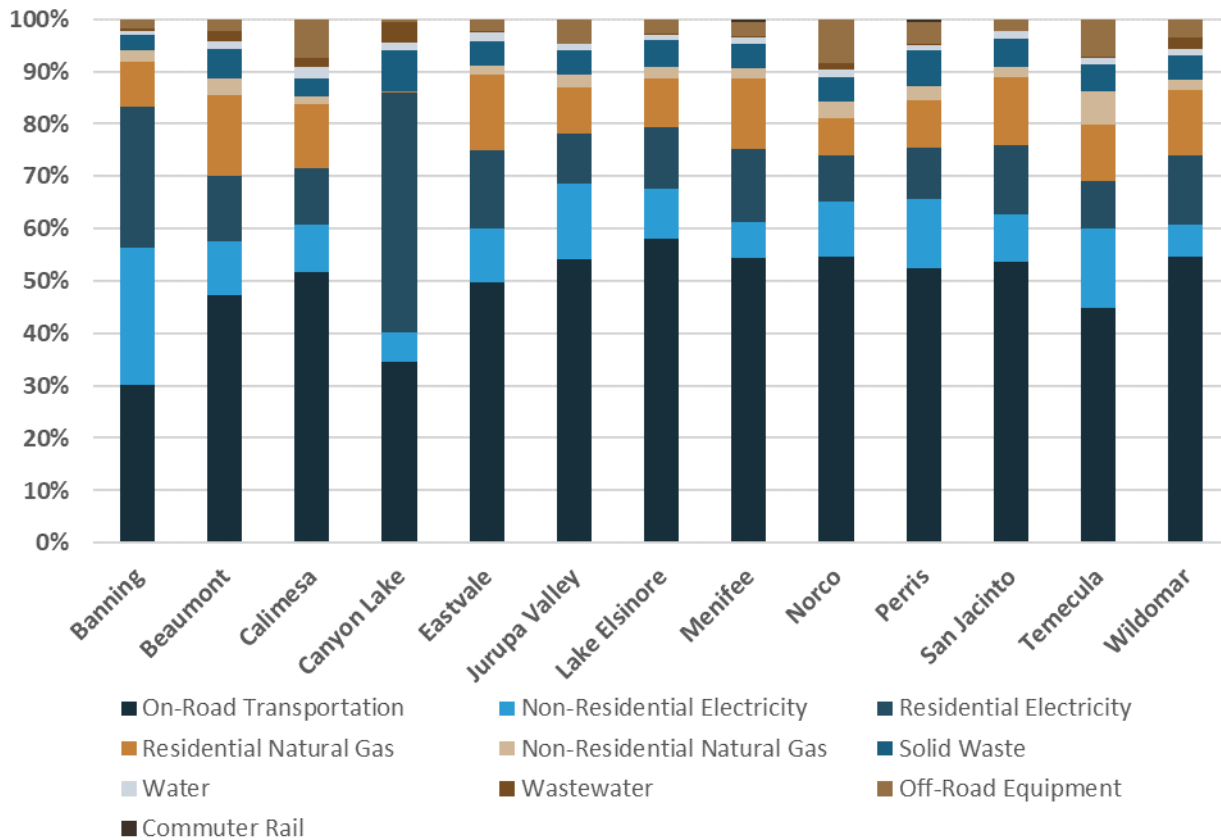


FIGURE 2-7 2017 Community Emissions per Service Population by Jurisdiction (MTCO₂e/SP)



The 2017 GHG Inventory by sector for each participating jurisdiction is shown in **Figure 2-8**. The transportation sector is the largest contributor to emissions in each jurisdiction, followed for most jurisdictions by residential energy, non-residential energy, and solid waste. For Temecula, non-residential energy makes up a larger share of emissions than residential energy.

FIGURE 2-8 2017 Community Emissions by Jurisdiction by Sector



Emissions Forecast

The Subregional CAP emissions forecast establishes projections for the future years 2030 and 2050 under “business-as-usual” (BAU) conditions. BAU emissions are GHG emissions that would take place in the absence of state, regional, and local actions designed to reduce emissions over time. In the absence of such actions, if the WRCOG subregion were to continue historic trends of vehicular and rail travel, energy consumption, water consumption, agriculture, and waste/wastewater generation and disposal, the resulting emissions would be considered business-as-usual.

BAU emissions forecasts were developed using estimates for population, household, and employment growth within each participating city.¹⁰ Socioeconomic data used for the subregional analysis, including forecasts for 2030 and 2050, is summarized in **Table 2-5**.

¹⁰ Socioeconomic data is from the Riverside County Traffic Analysis Model (RivTAM).

TABLE 2-5 WRCOG Subregional CAP Participants – Socioeconomic Data

METRIC	2010	2017	2030	2050
Population	647,621	708,623	853,830	1,077,238
Households	199,456	212,509	266,750	350,186
Employment	120,821	173,724	235,264	329,904
Service Population	768,442	882,347	1,089,094	1,407,142

Forecasts of transportation emissions were adjusted to account for known highway infrastructure investments in the Subregion, including the expanding network of highway express lanes that link Western Riverside County with neighboring counties. The Interstate 15/State Route 91 Express Lanes Connector, as proposed and constructed by the Riverside County Transportation Commission (RCTC), will link the future I-15 Express Lanes currently under construction to the SR-91 Express Lanes, and be operational by 2023. The I-15 Toll Express Lanes from State Route-60 (SR-60) to Cajalco Road is currently under construction and the anticipated opening year is early 2021. Known congestion pricing initiatives were also considered in the forecast, including a planned expansion of the toll lanes on SR-91, as were the “truck climbing” lanes on State Route-60 (SR-60), currently under construction and funded by RCTC.

Table 2-6 presents community BAU emissions forecasts by sector for 2030 and 2050, for the participating jurisdictions. Transportation is expected to contribute the largest share of emissions through 2050. Under BAU conditions, the relative contributions from each sector are expected to be similar in 2030 and 2050. **Figure 2-9** shows the breakout of community BAU emissions by sector for the year 2030.

TABLE 2-6 WRCOG Subregional CAP – Projected Business-As-Usual Community Emissions by Sector (MTCO₂e)

SECTOR	2030 BAU EMISSIONS	% OF TOTAL	2050 BAU EMISSIONS	% OF TOTAL
On-Road Transportation	2,223,617	49.7%	3,020,916	50.3%
Residential Energy	1,026,409	22.9%	1,346,671	22.4%
Non-Residential Energy	727,827	16.3%	1,014,622	16.9%
Solid Waste	202,770	4.5%	254,585	4.2%
Off-Road Equipment	178,137	4.0%	224,116	3.7%
Water	89,079	2.0%	112,789	1.9%
Wastewater	23,121	0.5%	29,955	0.5%
Commuter Rail	4,028	0.1%	5,086	0.1%
Total	4,474,988	100.0%	6,008,739	100.0%

Note: Totals may not add up due to rounding.

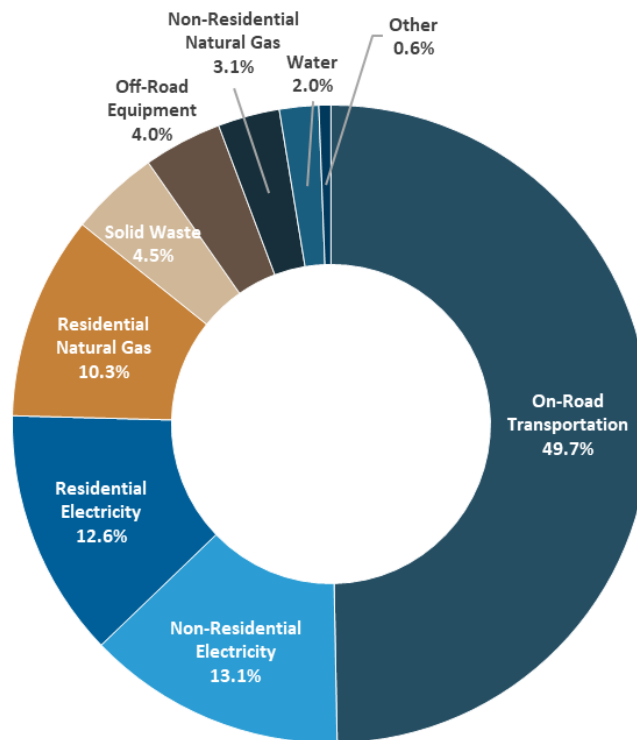
FIGURE 2-9 WRCOG Subregional CAP – 2030 Community Emissions Business-As-Usual Forecast by Sector (MTCO₂e)

Table 2-7 breaks down the BAU forecasts of community emissions by sector. Overall, BAU emissions are expected to increase 30 percent from 2017 to 2030, and nearly 75 percent from 2017 to 2050. Note that the BAU forecasts do not include the large stationary source, freight rail, or agriculture emissions listed in Table 2-2 since the local jurisdictions do not have control over those sources.

TABLE 2-7 Business-As-Usual Emissions by Sector for Participating Jurisdictions (MTCO₂e)

SECTOR	2010	2017	2030	2050	2017–2030 % CHANGE	2017–2050 % CHANGE
On-Road Transportation	1,857,367	1,726,513	2,223,617	3,020,916	28.8%	75.0%
Residential Energy	874,892	812,269	1,026,409	1,346,671	26.4%	65.8%
Non-Residential Energy	578,616	535,539	727,827	1,014,622	35.9%	89.5%
Solid Waste	140,524	169,090	202,770	254,585	19.9%	50.6%
Off-Road Equipment	97,470	144,830	178,137	224,116	23.0%	54.7%
Water	47,140	43,782	89,079	112,789	103.5%	157.6%
Wastewater	17,620	18,679	23,121	29,955	23.8%	60.4%
Commuter Rail	2,182	3,341	4,028	5,086	20.6%	52.2%
Total	3,615,811	3,454,042	4,474,988	6,008,739	29.6%	74.0%

Emissions Reduction Target

In local and regional planning for GHG emissions reduction, it is common to describe an efficiency metric that divides total emissions in the planning area by its “service population,” which is the sum of the number of jobs and the number of residents. The use of efficiency metrics to evaluate emissions trends and consistency with California’s statewide GHG targets is supported by the California Air Resources Board (CARB) in its 2017 Climate Change Scoping Plan Update, which outlines the State’s plan to achieve a statewide target of 40 percent below 1990 levels as required by Senate Bill 32 (SB 32). The Scoping Plan states that “it is appropriate for local jurisdictions to derive evidence-based local per capita goals based on local emissions sectors and population projections that are consistent with the framework used to develop the statewide per capita targets.”¹¹ An efficiency target accounts for a jurisdiction’s size in terms of population and employment and does not penalize it for economic growth, particularly if that growth is energy efficient. This approach supports the intent of SB 32 to accommodate population and economic growth in California, while also achieving a lower rate of GHG emissions and meeting the statewide target for 2030. It is also consistent with case law regarding the evaluation of GHG emission impacts under the California Environmental Quality Act (CEQA).¹²

The WRCOG Subregional CAP update establishes a community-wide reduction target for 2030 of 50 percent below baseline emissions (2010), consistent with CARB’s Scoping Plan¹³ and guidance from the OPR.¹⁴ **Table 2-8** shows the derivation of WRCOG’s 2030 efficiency target, based on emissions, population and jobs data for participating jurisdictions.

TABLE 2-8 Derivation of 2030 Efficiency Metric for WRCOG Subregional CAP

DATA/METRIC	AMOUNT ^a
Baseline Subregional Emissions (MTCO ₂ e) ^b	3,615,811
2010 Population ^c	647,621
2010 Employment ^c	120,821
2010 Service Population (SP)	768,442
2010 (Baseline) GHG Efficiency Metric (MTCO ₂ e/SP) ^d	4.71
2030 GHG Efficiency Metric Target (MTCO₂e/SP)	2.36
2030 GHG Emissions Target (Total MTCO₂e)	2,570,262

Notes:

a – Numbers represent the 13 jurisdictions participating in the WRCOG Subregional CAP update.

b – Includes land use sector emissions from Table 2-3.

c – Population and employment data from RivTAM.

d – GHG Efficiency Metric = emissions divided by service population (residents + jobs).

The Subregional CAP target for community GHG emissions in 2030 is 2.36 MTCO₂e per service population (MTCO₂e/SP), equivalent to 50 percent below the 2010 efficiency metric of 4.71 MTCO₂e/SP. Using the 2030 estimated service population of

¹¹ California Air Resources Board (CARB), *California’s 2017 Climate Change Scoping Plan*, November 2017, p. 100.

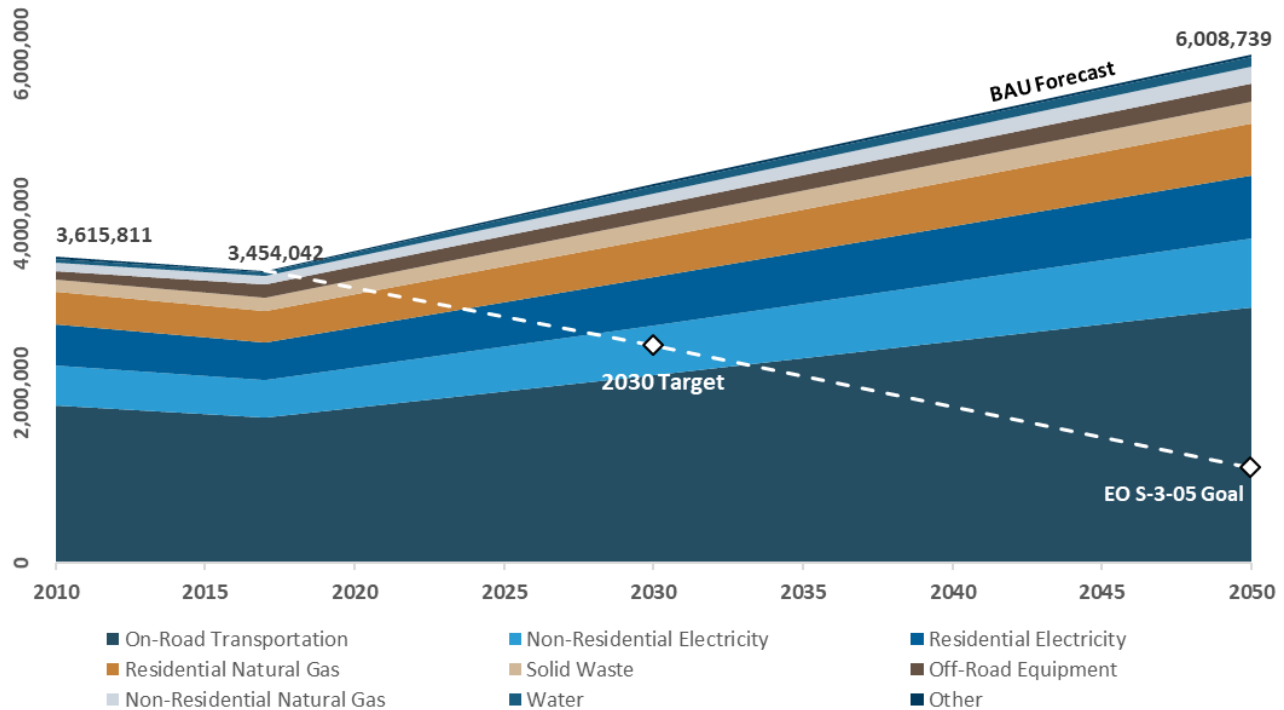
¹² In *Center for Biological Diversity v. California Department of Fish and Wildlife and Newhall Land and Farming* (2015), also known as the “Newhall Ranch” case, the California Supreme Court acknowledged GHG efficiency metrics as a superior approach for CEQA evaluation of and use projects, based on the recognition that California population will continue to grow, while at the same time GHG emissions must be reduced.

¹³ In its 2017 Climate Change Scoping Plan Update, CARB recommends that local governments adopt a GHG reduction target consistent with the State’s commitment to reach 40 percent below 1990 levels by 2030, as established by Senate Bill 32. Accounting for growth that has occurred since 1990, this is approximately equivalent to 50 percent below 2010 levels.

¹⁴ Governor’s Office of Planning and Research, *General Plan Guidelines*, Chapter 8: Climate Change, 2017, p. 222–233.

1,089,094 (from Table 2-5) this efficiency target is equivalent to an absolute emission target of 2,570,262 MTCO₂e by 2030, which is approximately 42 percent below the 2030 BAU emissions forecast of 4,474,988, depicted graphically in **Figure 2-10**. The Subregional CAP does not establish a reduction target for 2050; however, as can be seen in Figure 2-10, the 2030 target puts the WRCOG Subregion on a trajectory that is in line with the State’s long-term goal established by Executive Order (EO) S-3-05, recognizing that the manner in which technologies, regulations, and markets develop between now and then will greatly affect the emissions trajectory and the role that local governments must play in meeting that target.

FIGURE 2-10 WRCOG Subregion–Community GHG Business-As-Usual Forecasts and Reduction Target for 2030



The 2030 reduction target selected by each participating jurisdiction, as presented in their individual plans in Part 2, is derived in the same manner as the subregional target outlined above, resulting in an efficiency target that is equivalent to 50 percent below the local jurisdiction’s 2010 emissions per service population.

As further described in the following chapters, achieving the subregion’s 2030 target is dependent on the successful implementation of State and regional measures, as well as the collective effort of all participating jurisdictions in taking local action to reduce emissions. State and regional measures will be monitored by WRCOG over time through preparation of an annual memorandum documenting program implementation and performance. Local jurisdictions will be expected to follow suit and submit an annual report to WRCOG regarding the implementation of their local reduction measures. This will be complemented by a subregional community inventory for the participating jurisdictions that WRCOG updates every 3 to 5 years, to quantitatively compare progress against plan. Following each annual report, WRCOG and the participating jurisdictions may adjust or otherwise modify the strategies to achieve the reductions needed to reach the subregional target. Such adjustments could include more prescriptive measures, reallocation of funding to more successful programs, and modifications to the 2030 BAU emissions projection and reduction target based on revised population, housing, and employment growth estimates.



CHAPTER 3

Reduction Measures

The emissions projections described in Chapter 2 illustrate the need for the subregion to implement strategies to reduce greenhouse gas (GHG) emissions by 2030 and beyond. WRCOG jurisdictions have a long history of working collectively through WRCOG toward common objectives, and have successfully demonstrated commitment to reduce energy and water consumption, solid waste, and vehicle miles traveled (VMT) through existing programs like the HERO Program, the Western Riverside County Clean Cities Coalition, and the Transportation Unified Mitigation Fee (TUMF).

This chapter discusses how participating jurisdictions are uniting to meet shared GHG emissions reduction goals. The approach offers flexibility to jurisdictions to participate at a level that is feasible and practical for each community.

Process and Overview

The process of updating the Subregional Climate Action Plan (CAP) included ongoing coordination and information sharing among participating jurisdictions. The WRCOG Planning Directors' Committee (PDC) served as the primary technical working group. The PDC met regularly over the course of eighteen months to discuss the CAP update and provide feedback. Perspectives from jurisdictions participating in this CAP and those in the subregion who had already prepared a CAP were shared. In addition, WRCOG staff met individually with each participating jurisdiction to review emissions inventories, discuss potential emissions reduction measures and participation levels, and review the Draft CAP. Finally, regular presentations were

made to the WRCOG Public Works Committee, Technical Advisory Committee, and Executive Committee to keep jurisdictional staff, management officials, and elected leaders informed.

Updating the Previous CAP

The Subregional CAP update builds on the foundation of GHG measures that were developed for the 2014 CAPtivate project. As with the previous effort, several proposed measures apply to participating jurisdictions uniformly, because they respond to adoption of a state law (e.g., the Low Carbon Fuel Standard) or result from programs administered at the discretion of a utility serving multiple jurisdictions (e.g., utility rebates). For other, more discretionary measures that are implemented locally, participating jurisdictions have voluntarily committed to a participation level that could be implemented in their community. These levels—categorized and referred to for the purposes of this CAP as High, Medium and Low—generally range from programs that a jurisdiction may promote through its website or outreach campaigns (Low level), to programs that could be codified through local ordinances (High level). Medium and High levels have the benefit of achieving higher GHG reductions using fewer programs and often with less administrative burden to the jurisdiction. However, Low level programs offer greater flexibility to determine how GHG reduction measures best fit individual projects. Maximum participation in each measure was encouraged, but jurisdictions were also encouraged to participate at a level that could be realistically achieved by 2030.

Why a “subregional” Climate Action Plan?

Developing a subregional CAP encourages input and coordination among participating jurisdictions. A subregional CAP uses consistent methodologies and allows jurisdictions to collaboratively implement regionally-effective measures. This creates economies of scale and may lead to lower administrative costs and greater publicity of incentives. It also demonstrates that WRCOG member jurisdictions can continue to work effectively towards common goals.

Reduction measures are organized into major economic sectors, similar to the emissions inventory: Energy; Transportation and Land Use; Water and Wastewater; and Solid Waste.

Measuring Progress

Monitoring emissions and reporting reductions will be necessary to validate the success of the measures or to identify measures that are not achieving anticipated reductions. Recommending steps for monitoring CAP implementation, including metrics for monitoring the progress of individual measures, are provided in Chapter 4. In addition, participating jurisdictions are encouraged to work with WRCOG to re-inventory local government and community-wide emissions on a regular basis to demonstrate and validate progress.

Community Benefits

CAP measures have benefits that go beyond reducing GHG emissions. As outlined in Chapter 1, many measures that reduce GHG emissions can also increase community resilience, improve public health; increase economic prosperity of the subregion; reduce energy use and preserve natural resources. The following icons are used to identify co-benefits that jurisdictions can achieve by implementing local GHG reduction measures:



Climate Equity

As actions are taken to reduce GHG emissions and move towards a more sustainable low-carbon future, it is important to do so in ways that ensure the fair distribution of the costs and the benefits of climate action and resilience efforts. Taking action on climate should not make existing disparities worse and, ideally, should reduce disparities in public health, housing, infrastructure, transportation, the economy and local jobs, food systems, ecosystems, and public spaces.

Climate action can help address longstanding health, environmental and social disparities, such as the exposure of many disadvantaged populations to air pollution from industrial sites and major freeways. A goal of equitable climate action planning is to reduce GHG emissions while enhancing the ability of all people to thrive in a community without toxic pollution, poor air quality, environmental degradation, or lack of access to opportunity. An Equity Checklist, included in Chapter 4, provides a step-by-step guide to incorporating climate equity considerations into the process of implementing local climate actions, to address socio-economic aspects of sustainability and reduce the disparities and unequal burdens faced by a local jurisdiction's most vulnerable populations.

Achieving the 2030 Target

Detailed descriptions of the State, regional, and local GHG reduction measures included in the CAP are provided in the following sections. Through the implementation of these measures, WRCOG is targeting regional emissions in 2030 to be 2.36 MTCO₂e/SP, equivalent to 50 percent below the 2010 efficiency metric of 4.71 MTCO₂e/SP. As explained in Chapter 2, this efficiency target is equivalent to an absolute emission target of 2,570,262 MTCO₂e by 2030, which is approximately 1,904,726 (43 percent) below the 2030 BAU emissions forecast of 4,474,988, as shown **Figure 3-1**. The CAP also looks beyond 2030 to set a long-term goal of reducing GHG emissions 83% below 2010 baseline emissions by 2050, in order to align with State-established goals established by the Governor's Executive Orders (EO) S-3-05 and B-55-18.

Through state and regional measures implemented at the subregion level, participating jurisdictions are expected to reduce 2030 emissions by 1,309,642 MTCO₂e, representing 69 percent of the reductions needed to reach the 2030 target, as illustrated in Figure 3-1 and summarized in **Table 3-1**. Local measures implemented by participating jurisdictions in their communities would contribute an additional 257,663 MTCO₂e per year, nearly enough for the Subregional CAP's participating jurisdictions as a whole to reach the 2030 target. On a city-by-city basis, four participating jurisdictions (Banning, Beaumont, Canyon Lake, and

Lake Elsinore) have committed to enough local action to achieve their city-specific GHG reduction targets, as indicated in **Table 3-2** and in the individual City summaries provided in **Appendix A**. The other participants will need to strengthen their GHG reduction commitments in order to reach their targets, in future CAP updates.

FIGURE 3-1 WRCOG Subregion GHG Reductions Achieved Through State, Regional, and Local Measures (MTCO₂e)

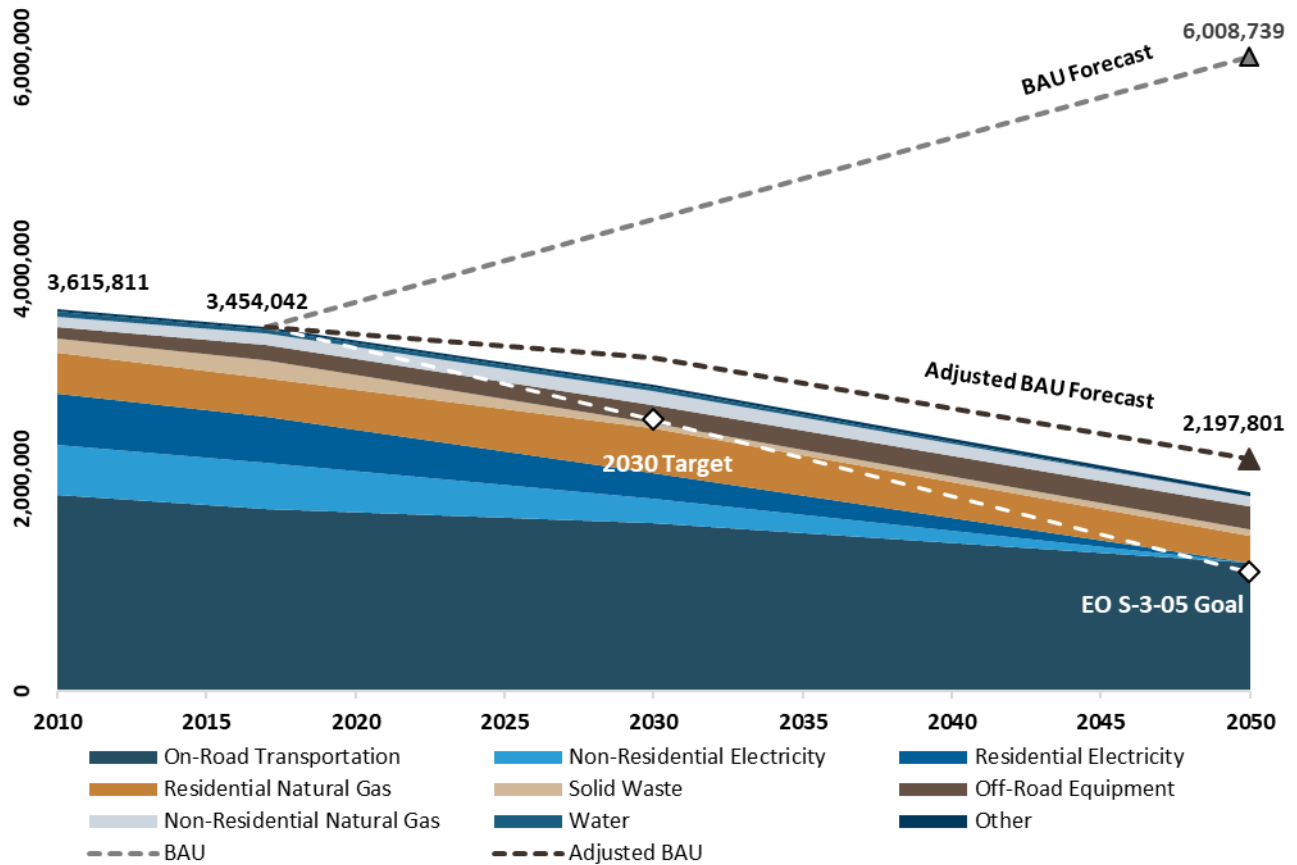


TABLE 3-1 WRCOG Subregion 2030 GHG Reductions Achieved through State, Regional, and Local Measures (MTCO₂e)

CATEGORY	2030 REDUCTIONS	PERCENT CONTRIBUTION
State Measures	1,209,035	77%
Regional Measures	100,606	6%
Local Measures	257,663	16%
Total Reductions	1,567,305	100%

TABLE 3-2 Summary of Planned GHG Emissions Reductions by 2030, by Participating Jurisdiction (MTCO₂e)

JURISDICTION	PLANNED 2030 REDUCTIONS	REDUCTIONS NEEDED TO MEET 2030 TARGET	EXPECT 2030 GHG TARGET TO BE MET?
Banning	242,389	187,466	Yes
Beaumont	90,549	83,557	Yes
Calimesa	30,772	38,605	No
Canyon Lake	12,397	348	Yes
Eastvale	77,887	117,248	No
Jurupa Valley	187,159	275,357	No
Lake Elsinore	146,367	136,204	Yes
Menifee	149,831	181,706	No
Norco	73,078	109,913	No
Perris	147,808	206,400	No
San Jacinto	106,789	150,557	No
Temecula	241,352	322,455	No
Wildomar	60,929	91,334	No
Subregional CAP Total^a	1,567,306	1,904,726	No

Note:

a – Totals may not add up due to rounding.

State Measures

Emissions reductions at the state level are primarily achieved through regulations, such as efficiency standards for passenger vehicles, reduction in carbon content of transportation fuels, and minimum renewable energy supply requirements for utilities. In addition, California’s regulations mandate water conservation and waste diversion from landfills.

Measures regulated and implemented by the State and federal government achieve reductions without additional action by local communities. That is, even if VMT within the subregion remain constant over time, resulting GHG emissions would decrease because as new vehicles are purchased, they would in general be more GHG-efficient than those they replace.

State and federal programs typically require action at the local level in order to be successful. For example, the California Green Building Standards Code (CALGreen and the Title 24, Part 6 energy standards) requires, at a minimum, that new buildings and renovations in California meet certain design standards. New residential and commercial buildings must meet certain baseline efficiency and sustainability standards. These baselines are

What is a metric ton of CO₂e?

GHG emissions are reported as metric tons (MT) of CO₂e. Emitting 1 MTCO₂e is equal to the following:

- 113 gallons of gasoline
- 41 propane cylinders used for home barbecues
- Six weeks’ worth of energy used in a house

In contrast, reducing 1 MTCO₂e would require:

- Growing 16 tree seedlings for 10 years
- Recycling 680 pounds of waste instead of throwing it away

Note: Equivalencies are approximate and are adapted from the U.S. EPA’s Greenhouse Gas Equivalencies Calculator: <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>.

established through locally-adopted building codes and will result in GHG reductions. Additional voluntary building code provisions, known as Tier 1 and Tier 2 requirements, can be adopted locally, providing even greater energy savings and emissions reductions.

Table 3-3 lists the state measures included in the Subregional CAP and provides a breakdown of the GHG reduction potential for these measures by the year 2030.

TABLE 3-3 2030 Reductions for Participating Jurisdictions Achieved through State Measures (MTCO₂e/yr)

STATE MEASURES BY SECTOR		2030 REDUCTION POTENTIAL
 Energy		
SE-1	Renewables Portfolio Standard (RPS)	475,686
SE-2	California Building Energy Efficiency Standards (Title 24, Part 6)	69,799
 Transportation and Land Use		
ST-3	Pavley/Advanced Clean Cars; Low Carbon Fuel Standard (LCFS)	497,709
 Solid Waste		
SR-1	State Recycling and Waste Diversion Mandates	157,391
 Water and Wastewater		
SW-1	Water Conservation Mandates	8,450
Total State Reductions		1,209,035

Note: Totals may not add up due to rounding.



STATE MEASURE SE-1:

Renewables Portfolio Standard

Mandates for utilities to source their power from renewable sources.

2030 GHG Reduction Potential: 475,686 MTCO₂e/yr

Through a series of increasingly stringent bills first enacted in 2002, California has placed requirements on electric utilities to procure a portion of their energy from renewable sources. The standard, known as the Renewables Portfolio Standard (RPS), applies to investor-owned utilities, publicly-owned utilities, electricity service providers, and community choice aggregators. Therefore, all electricity-providing utilities servicing Western Riverside County (SCE, Riverside Public Utility, and Banning Electric Utility) must meet these targets:

- 33% of retail sales from renewables by 2020
- 44% of retail sales from renewables by 2024
- 52% of retail sales from renewables by 2027
- 60% of retail sales from renewables by 2030
- 100% of retail sales from renewables by 2045

Meeting these goals will lead to reduced GHG emissions associated with electricity, as more electricity will be generated by sources with zero or lower carbon intensity.

Community Benefits:





STATE MEASURE SE-2:

California Building Energy Efficiency Standards (Title 24, Part 6)

Mandatory energy efficiency standards for buildings.

2030 GHG Reduction Potential: 69,799 MTCO₂e/yr

Building energy efficiency standards are designed to ensure new and existing buildings achieve energy efficiency and preserve outdoor and indoor environmental quality. California’s building energy efficiency standards (Title 24, Part 6) are listed in the California Code of Regulations. These standards began in 1978 and are updated every 3 years, generally become more stringent with respect to efficiency requirements. They are generally enforced through locally-adopted building codes and inspection processes. Over the next decade the Title 24 standards are expected to implement the goals of the California Energy Efficiency Strategic Plan, to achieve zero net energy (ZNE) performance for all new low-rise homes constructed after 2020, and for all new commercial buildings constructed in or after 2030. The latest adopted standards (2022), which become effective January 1, 2023, reduce energy use in new single family, multifamily, and nonresidential buildings. They encourage installation of efficient electric heat pumps, establish electric-ready requirements for new homes, expand solar photovoltaic and battery storage standards, and update efficiency measures for lighting, building envelope, and HVAC systems.

Community Benefits:





STATE MEASURE ST-1:

Pavley and Low Carbon Fuel Standard

Requirements for vehicles to use cleaner fuels.

2030 GHG Reduction Potential: 497,709 MTCO₂e/yr

In 2002, California adopted AB 1493, referred to as “Pavley 1,” which directed CARB to develop fuel-efficiency standards for passenger vehicles in California by 2005. Through a series of rulings, CARB and the federal government agreed on federal standards that began in 2009 and increased through 2016. In January 2012, CARB approved the Advanced Clean Cars Program, an emissions-control program for model year 2017 through 2025. The program combines the control of smog, soot, and GHGs with requirements for greater numbers of zero-emission vehicles. By 2025, when the rules will be fully implemented, the new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.

Building from Pavley 1, Executive Order S-1-07, known as the Low Carbon Fuel Standard (LCFS), requires the carbon-intensity of California’s transportation fuel to be reduced by at least 10% by 2020. In September 2018, CARB extended the LCFS program to 2030, making significant changes to the design and implementation of the Program including a doubling of the carbon intensity reduction target to 20 percent by 2030.

The Advanced Clean Cars program also requires car manufacturers to offer for sale an increasing number of zero-emission vehicles (ZEVs) each year, including battery electric, fuel cell, and plug-in hybrid electric vehicles. In December 2012, CARB adopted regulations allowing car manufacturers to comply with California’s GHG emissions requirements for model years 2017–2025 through compliance with the US EPA’s GHG requirements for those same model years.

Community Benefits:





STATE MEASURE SR-1:

Recycling and Waste Diversion Mandates

Mandatory requirements to divert organics and solid waste from the landfill waste stream.

2030 GHG Reduction Potential: 157,391 MTCO₂e/yr

Recycling or reusing materials rather than disposing them in landfills reduces GHG emissions in several ways: Using recycled materials rather than raw materials reduces the need to harvest and transport new raw construction materials, as recycled materials can be locally repurposed and reused; Products that are repaired or reused, or designed to last longer, avoid the emissions associated with the harvesting of virgin materials and manufacturing of new products; Composting organic waste keeps it from decomposing anaerobically in landfill to create methane, and compost helps build healthy soil and plants, which in turn serve as reservoirs for carbon that would otherwise result in GHG emissions released into the atmosphere.

- Several regulations are in place that help to reduce GHG emissions associated with solid waste.
- SB 1383 sets a statewide goal to divert at least 75% of organic waste from landfills by 2025, including the recovery of 20% of edible food waste for human consumption;
- AB 341 established a statewide goal of 75 percent recycling through source reduction, recycling, and composting by 2020, and requires commercial businesses, multi-family dwellings with 5 or more units, and public entities that generate 4 cubic yards or more of waste per week to have a recycling program in place.
- AB 1826 requires businesses and multi-family complexes that generate 2 or more cubic yards of solid waste, recycling, and organic waste combined per week to arrange for organics collection services. This includes schools, hospitals, stores, restaurants, for-profit or nonprofit organizations, as well as residential dwellings with 5+ units.
- CALGreen, the state's Green Building Standards Code, requires jurisdictions to divert a minimum of 65% of the construction waste generated during most new construction projects.

Local haulers and the agencies they serve support these policies through pricing structures that incentive recycling and waste diversion, organics diversion outreach, lumber scrap diversion ordinances and outreach, yard and food waste collection, landfill methane capture, and food waste biodigestion programs.

Community Benefits:





STATE MEASURE SW-1:

Water Conservation Mandates

State requirement to reduce urban per capita water use.

2030 GHG Reduction Potential: 8,450 MTCO₂e/yr

In Southern California, energy costs and GHG emissions associated with the transport, treatment, and delivery of water from outlying regions are high, providing the region with extra incentive to reduce water consumption. While water conservation is accounted for as a state measure, it will be up to local water retailers, local governments, and water users to meet these targets.

California Assembly Bill 1668 and Senate Bill 606, passed after the drought of 2012 – 2017, require urban and agricultural water suppliers to enact new urban efficiency standards for indoor use, outdoor use, and water lost to leaks. The new laws apply to water agencies operating in Western Riverside County, including Eastern Municipal Water District (EMWD), Western Municipal Water District (WMWD), Elsinore Valley Municipal Water District, Jurupa Community Services District, Rancho California Water District, Riverside Public Utilities, and the City of Corona. The indoor water use standard, set by the State Water Resources Control Board (SWRCB), is 55 gallons per person per day (GPCD) until January 2025, decreasing to 50 GPCD in January 2030. An outdoor water use standard will be adopted by June 2022. The standards are not enforceable on individual water users – water agencies must meet them by averaging across all their customers.

Regional Urban Water Management Plans provide strategies and create incentives to achieve these targets through regional and local action. Many water retailers offer resources that incentivize purchase of high-efficiency appliances and provide information on best management practices, landscaping, and the use of recycled and gray water systems. Local participation is necessary to realize water use reductions end-user implementation strategies typically include water conservation education, tiered pricing (i.e., pricing water according to the amount consumed), water-efficient landscape requirements for water and irrigation management and plant selection, and incentives where some utilities pay for turf grass removal and replacement with efficiently-irrigated landscaping. Some jurisdictions have adopted ordinances requiring the installation of certain water conservation measures at properties before selling or renovating properties. Others are seeking to expand recycled water deliveries, and promote rainwater collection or graywater system use.

Community Benefits:



Regional Measures

Regional programs are those developed or administered at a level of government above the local jurisdiction but below the State. These programs often are more responsive to local context than statewide programs. They require local participation but do not require local administration to achieve GHG reductions.

For example, WRCOG administers the Transportation Uniform Mitigation Fee (TUMF) Program. The TUMF Program establishes a funding source to mitigate the cumulative regional transportation impacts of new development on regional arterials. TUMF fees are collected at the local jurisdiction, and WRCOG works with its member jurisdictions to identify priority projects to fund using fee revenues in order to reduce transportation impacts caused by development. Facilitating movement on roads, by encouraging non-motorized transportation, increasing access to transit, or easing congestion on critical roadways may lead to GHG reductions. Therefore, TUMF can fund projects that meet this objective. Because the project relies on locally-collected fees, available funding depends on the economic vitality and development opportunities in the region.

A number of other transportation-related programs and projects under the primary control of the Riverside Transit Agency (RTA), Riverside County Transportation Commission (RCTC), California Department of Transportation (Caltrans), and other transportation entities can be implemented to reduce GHG emissions. The long-term planning of major transportation infrastructure is not under the participating jurisdictions' direct control; however, jurisdictions participate in subregional transportation planning decisions in a way that benefits the subregion. Local jurisdictions are in direct control of land uses, which can dictate how future transit is shaped. Individuals also play an important role in how they choose to move throughout the subregion; therefore, while individual jurisdictions do not implement these programs, local input is critical to the success of these programs. Additional projects anticipated to result in GHG reductions include Metrolink expansion, express lanes, congestion pricing, goods movement, high frequency transit service, California High Speed Rail, and electric vehicle infrastructure implementation.

Table 3-4 lists the regional measures included in the Subregional CAP along with estimated total annual GHG reductions associated with the 13 participating jurisdictions in the year 2030.

TABLE 3-4 2030 Reductions for Participating Jurisdictions Achieved through Regional Measures (MTCO₂e/yr)

REGIONAL MEASURES BY SECTOR		2030 REDUCTION POTENTIAL
	Transportation	
RT-1	Metrolink Expansion	1,834
RT-2	Telecommuting	25,110
RT-3	Regional Zero Emission Vehicle (ZEV) Initiatives	73,662
Total Regional Reductions		100,606

Note: Totals may not add up due to rounding.



REGIONAL MEASURE RT-1: Metrolink Expansion

Additional Metrolink transit service provided to Western Riverside County.

2030 GHG Reduction Potential: 1,834 MTCO₂e/yr

Identified in Metrolink's 10 Year Strategic Plan, service on the Metrolink Perris Valley Line will be increased in Western Riverside County, allowing for alternative transportation, reducing VMT and GHG emissions in Western Riverside County. Service along this route is expected to increase to 23 trains per weekday by 2025.

Metrolink has projected that travelers from the Perris Valley corridor will represent a growing share of Metrolink trips at all Riverside County stations, from approximately 3,000 in 2001 to about 11,700 in 2030 (a 390 percent increase). This increase in ridership will provide an alternative to single-occupancy vehicles, which in turn will reduce the GHG emissions of the region.

Community Benefits:





REGIONAL MEASURE RT-2: Telecommuting

Reducing the vehicle miles traveled associated with commuting by encouraging telecommuting practices.

2030 GHG Reduction Potential: 25,110 MTCO₂e/yr

Telecommuting has increased considerably over the past decade. Telecommuting reduces GHG emissions directly by removing vehicle trips, and provides the added benefit of reducing idling and congestion-related emissions from the vehicles remaining on the road. This strategy reflects the regional share of transportation demand management (TDM) strategies that may be implemented on a regional level given the high degree of out-commuting that occurs in Western Riverside County.

Between 2017 and 2020, telecommuting dramatically increased in the WRCOG region, primarily as a reaction to the COVID-19 pandemic. Regional telecommuting is unlikely to remain at the level experienced during COVID-19 but is now seen as a more viable option for some workers in the WRCOG region than before 2020. It is expected that regionally, telecommuting will increase to higher levels by 2030 compared to 2017. The region's IE Commuter program, a partnership between Riverside County Transportation Commission (RCTC) and San Bernardino County Transportation Authority (SBCTA) provides support, resources and incentives to individuals and employers for telework programs. With teleworking becoming increasingly viable for companies and for workers, this program is likely to expand, and other programs in the region may also develop.

Community Benefits:





REGIONAL MEASURE RT-3:

Regional Zero Emission Vehicle (ZEV) Initiatives

Facilitate ZEV use by providing necessary infrastructure.

2030 GHG Reduction Potential: 73,662 MTCO₂e/yr

Zero-emissions vehicles (ZEVs) include plug-in battery vehicles (PEVs) and hydrogen fuel cell vehicles (FCEVs). The availability of new vehicle models, improved battery storage, and increased availability of vehicle charging infrastructure, coupled with incentives such as carpool lane access stickers, federal tax credits, and state and air district rebates have contributed to an expanding market for ZEVs.

California leads the nation in transitioning to electric vehicles, accounting for nearly half of the nation's sales in recent years. The State's strong policy framework, combined with availability of rebates, new vehicle models, improved battery storage, and increased availability of vehicle charging infrastructure, have pushed the total ZEV population (battery-electric, plug-in hybrids, and fuel cell electric vehicles) to nearly 2 percent of all vehicles on the road, according to the California Energy Commission.¹

The ZEV transition is expected to accelerate, bolstered by Governor Newsom's recent Executive Order N-79-20 to halt all sales of fossil fueled-vehicles by 2035, and a new Federal administration that has announced its intention to greatly expand the electric vehicle charging infrastructure throughout the country. Meanwhile, ZEVs are becoming more affordable and desirable to consumers. The emergence of companies like Tesla are pushing the boundaries of innovation, and some of the largest vehicle manufacturers, including General Motors, Volvo and Ford, have announced commitments to stop selling fossil-fueled vehicles in the coming years.

The Western Riverside County Clean Cities Coalition works with vehicle fleets, fuel providers, community leaders, and other stakeholders to promote advanced vehicle technologies in transportation and to develop the tools and infrastructure needed to expand the use of ZEVs. The Coalition is part of the national Clean Cities network, administered by the U.S. Department of Energy. According to data collected by the Coalition and the California Energy Commission (CEC),¹⁵ the uptake of ZEVs in Riverside County exceeds the statewide average. The Coalition is helping with this ZEV transition by:

- Expanding local alternative fueling infrastructure through permit streamlining.
- Creating Federal Alternative Fuel Corridors along major highways that help attract investment in ZEV charging infrastructure
- Providing an online Alternative Fuel Station Locator map
- Developing ZEV guidebooks and best practices for WRCOG's member jurisdictions
- Tracking legislation and funding opportunities

¹⁵ CEC, 2021. Zero Emission Vehicle and Infrastructure Statistics. Available at: <https://www.energy.ca.gov/data-reports/energy-insights/zero-emission-vehicle-and-charger-statistics>

Community Benefits:



Zero-Emissions Trucks

Southern California is a major hub for goods movement, an essential part of the regional and state economies. In Western Riverside County, where many large warehouses and distribution facilities are located, the trucks that move these goods contribute large quantities of GHG emissions. The State, along with SCAG and South Coast AQMD, is addressing this challenge through various plans, programs and mandates that are supporting greater penetration of zero- and low-emission trucks in the region.

In June 2020, CARB passed its Advanced Clean Trucks (ACT) Regulation to transition trucks from diesel to electric over the next two decades. Between 2024 and 2035, the Advanced Clean Trucks Program will transition 75% of delivery trucks and vans, 55% of smaller trucks like the Ford F250, and 40% of the larger, semi tractors sold in the state to zero emission trucks. By 2045 every new truck sold in California will be zero-emission.

In July 2020, 15 states and Washington, D.C., signed a memorandum of understanding to work toward a goal of 100% of medium- and heavy-duty zero-emissions vehicle sales by 2050.

With goods movement expected to be a major component of the region's economy for the foreseeable future, these initiatives are vital contributors to the WRCOG Subregion's GHG reduction goals.

Local Measures

While federal, state, and regional measures are critical to meet emission reduction goals, choices made by each local government, resident, and business owner will determine the Subregion’s ability to achieve the overall emissions reduction target. Through outreach campaigns, incentives, zoning changes, and ordinances, local communities can achieve additional reductions identified in this CAP.

Measure Descriptions

A general description of each measure is provided along with the implementing actions that constitute the High, Medium or Low participation level that each jurisdiction will take to implement the measure. Jurisdictions are listed by level of participation.

GHG Reductions

The GHG reduction potential of each measure is quantified based on the assumption that past trends would continue into the future (e.g., population and jobs growth, energy consumption), VMT modeling using the Riverside County Traffic Analysis Model (RIVTAM), and standard methods and assumptions recommended by the State (e.g., CAPCOA).¹⁶ For voluntary programs, the level of participation anticipated by each jurisdiction was developed using case studies and evidence of success with similar programs.

Table 3-5 lists the local measures included in the Subregional CAP along with estimated total annual GHG reductions associated with the 13 participating jurisdictions in the year 2030.

¹⁶ California Air Pollution Control Officers Association Report titled Quantifying Greenhouse Gas Mitigation Measures (CAPCOA), 2010

**TABLE 3-5 2030 Reductions for Participating Jurisdictions
Achieved from Local Measures (MTCO₂e/yr)**

LOCAL MEASURES BY SECTOR		2030 REDUCTION POTENTIAL
	Energy	
LE-1	Expand Local Renewable Energy Production	53,947
LE-2	Community Choice/Utility Renewable Electricity	142,846
LE-3	Improve Energy Efficiency of Existing Buildings	16,528
LE-4	Building & Appliance Electrification	2,146
LE-5	Traffic & Street Light Upgrades	3,641
LE-6	Shade Trees	Not Quantified
	Transportation	
LT-1	Bicycle Infrastructure Improvements	4,139
LT-2	Pedestrian Infrastructure Improvements	11,637
LT-3	Carshare & Carpool Programs	1,053
LT-4	Parking Pricing & Limited Requirements	11,250
LT-5	Increase Transit Service & Frequency	947
LT-6	Traffic Signal Coordination	2,332
LT-7	Increase Housing Density	N/A
LT-8	Increase Land Use Diversity	N/A
LT-9	Transit-Oriented Development	2,050
LT-10	Local ZEV Programs	1,954
LT-11	Subsidized Transit	3,194
	Solid Waste	
LS-1	Zero Waste Initiatives	Not Quantified
	Water & Wastewater	
LW-1	Increase Recycled Water Use	Not Quantified
	Agriculture	
LA-1	Local Agriculture & Community Gardens	Not Quantified
Total Local Reductions		257,663

Note: Totals may not add up due to rounding.



LOCAL MEASURE LE-1:

Expand Local Renewable Energy Production

Increase solar PV installations on new and existing buildings.

2030 GHG Reduction Potential: 53,947 MTCO₂e/yr

Renewable energy resources—such as solar, wind, biomass, hydropower, and landfill gas—reduce GHG emissions by replacing fossil fuels. Renewables also reduce emissions of conventional air pollutants, such as sulfur dioxide, that result from fossil fuel combustion. In addition, renewable energy can create jobs and open new markets for the local economy, and can be used as a hedge against price fluctuations of fossil fuels. Local governments using renewable energy can demonstrate leadership, helping to spur additional renewable energy investments in their region.

This measure focuses on the installation of distributed, small-scale solar PV systems in existing buildings. PV installations on new buildings are accounted for in State Measure SE-2 (2019 California Building Energy Efficiency Standards).

PARTICIPATION LEVEL	ACTIONS & PARTICIPATING CITIES	2030 GHG REDUCTION POTENTIAL (MTCO ₂ e/YR)
HIGH	Existing building PV installation rates: Residential and non-residential – 30% of existing buildings <i>No jurisdictions are participating at this level.</i>	N/A
MEDIUM	Existing building PV installation rates: Residential and non-residential – 20% of existing buildings <i>Temecula</i>	20,122
LOW	Existing building PV installation rates: Residential and non-residential – 10% of existing buildings <i>Banning, Beaumont, Calimesa, Lake Elsinore, Perris, and San Jacinto</i>	33,825

Community Benefits:



Renewable Natural Gas

Renewable natural gas (RNG) is produced from organic waste that is diverted from landfills, livestock and dairy farms, and waste water treatment plants. It can also be produced from plant materials such as forest and agriculture waste. RNG is a pipeline-quality gas that is fully interchangeable with traditional natural gas. The use of RNG adds to the fuel supply while lowering its carbon intensity. It can also result in local air quality benefits when compared to flaring or generating electricity on-site. One industry foundation estimates that RNG has the potential to supply up to a third of US natural gas consumption.¹⁷

Currently, most RNG produced in the U.S. is used in the transportation and power generation sectors. California's Low Carbon Fuel Standard (LCFS) provides a financial incentive to use RNG as a transportation fuel, while the state's renewables portfolio standard (RPS) allows RNG to generate qualifying renewable energy credits when it is used to produce electricity. State Measures SR-1 and ST-1 account for these GHG reduction benefits.

RNG has the potential to heat homes and fuel household appliances, but the regulatory framework is not yet in place to support that. Meanwhile, Southern California Gas company has committed to providing 20 percent of its product as RNG by the year 2025. SoCalGas has submitted a motion for the CEC to approve an RNG tariff that would allow residential and commercial customers to choose to purchase RNG similar to the way they can purchase renewable electricity.

¹⁷ American Gas Foundation. *Renewable Sources of Natural Gas: Supply and Emissions Reduction Assessment*. December, 2019. Available at: <https://gasfoundation.org/2019/12/18/renewable-sources-of-natural-gas/>



LOCAL MEASURE LE-2:

Community Choice/Utility Renewable Energy

Go beyond State mandates for renewables content of grid electricity.

2030 GHG Reduction Potential: 142,846 MTCO₂e/yr

As described in the State Measure SE-1, the Renewables Portfolio Standard (RPS) applies to investor-owned utilities (IOUs), publicly-owned utilities (POUs), electricity service providers, and community choice electricity (CCE) programs. To comply with the legislation, utilities and CCE programs in California must procure a minimum of 60 percent of their retail electricity sales from qualifying renewable sources by 2030, and 100 percent by the end of 2045.

Western Community Energy, which for several years operated as the region's CCE program, ceased operation in 2021 and is no longer offering renewable electricity to local governments and their community members. However, Southern California Edison (SCE) customers, including those formerly served by WCE, can enroll in SCE's Green Rate program (currently offering 50% and 100% renewable options) to ensure their electricity comes from renewable sources. Enrollment is voluntary and is done at the individual customer account level. As a conservative approach, potential reductions resulting from participation in SCE's Green Rate program are not quantified as a regional measure.

The City of Banning is served by Banning Electric Utility, a publicly owned utility (POU), which has an 80 percent renewables goal for 2025 and a 100 percent renewables goal for the year 2030.

CITY	ACTIONS & COMMITMENTS	2030 GHG REDUCTION POTENTIAL (MTCO ₂ e/YR)
BANNING	100% of electricity customers being supplied with 100% carbon-free electricity.	142,846
ALL OTHERS	Individual accounts can enroll in SCE's Green Rate program, which currently offers 50% and 100% renewable options.	N/A

Community Benefits:





LOCAL MEASURE LE-3:

Improve Energy Efficiency of Existing Buildings

Financing and rebates for residents and business owners to make energy efficiency, renewable energy, and water conservation improvements.

2030 GHG Reduction Potential: 16,528 MTCO₂e/yr

Southern California Edison (SCE), Southern California Gas Company (SCG), Riverside Public Utilities (RPU), and the Banning Electric Utility provide energy to customers in the subregion. Each utility offers a selection of rebates and other incentives to assist property owners (residential and commercial) with the installation of energy- and water-saving products. The following list provides a sample of the types of programs that are typically available:

- Benchmarking and retrocommissioning
- Energy audits at time of property transfer
- Energy efficient appliance rebate program
- Education and technical assistance to reduce lighting and plug loads
- Low-income weatherization
- Whole house retrofit program; typically targeting older buildings

PARTICIPATION LEVEL	ACTIONS & PARTICIPATING CITIES	2030 GHG REDUCTION POTENTIAL (MTCO ₂ e/YR)
HIGH	City actively partnering with utilities; provides matching funds or incentives. Residential and non-residential reduction: • 50% reduction in electricity and natural gas use, compared to 2017 <i>No jurisdictions are participating at this level.</i>	N/A
MEDIUM	City is proactive with policy support, community education, and utility programs. Residential and non-residential reduction: • 25% reduction in electricity and natural gas use, compared to 2017 <i>San Jacinto</i>	1,582
LOW	Residential and non-residential reduction (default option): • 15% reduction in electricity and natural gas use, compared to 2017 <i>Banning, Beaumont, Calimesa, Canyon Lake, Eastvale, Jurupa Valley, Lake Elsinore, Menifee, Norco, Perris, Temecula, and Wildomar</i>	14,946

Community Benefits:





LOCAL MEASURE LE-4:

Building and Appliance Electrification

Transition energy use away from fossil natural gas to clean electricity and renewable natural gas.

2030 GHG Reduction Potential: 2,146 MTCO₂e/yr

Natural gas is used by buildings for space heating, water heating, and cooking (particularly in commercial kitchens). The heating of buildings alone generates 20 to 30% of the GHG emissions in California, and the state's long-term for reducing emissions recognizes that the use of natural gas for this purpose must be greatly reduced. This measure focuses on building electrification, but increasingly there may be opportunities for using renewable natural gas (RNG) to replace fossil natural gas. For new buildings and major renovations, cities can require or promote electrification of homes and businesses through its local building code. For existing buildings, cities can promote electrification of household appliances and heating systems through education and financial incentives. SCE offers electrification assistance programs, including their [Induction Range Lending Program](#); their [Foodservice Technology Center](#) (FTC) for energy-efficient, electric foodservice equipment; and their [appliance rebates](#).

PARTICIPATION LEVEL	ACTIONS & PARTICIPATING CITIES	2030 GHG REDUCTION POTENTIAL (MTCO ₂ e/YR)
HIGH	Existing Buildings: 40% of residential fossil natural gas use replaced 20% of non-residential fossil natural gas use replaced <i>No jurisdictions are participating at this level.</i>	N/A
MEDIUM	Existing Buildings: 20% of residential fossil natural gas use replaced 10% of non-residential fossil natural gas use replaced <i>No jurisdictions are participating at this level.</i>	N/A
LOW	Policy support, promotion, community education. Existing Buildings: 10% of residential fossil natural gas use replaced 5% of non-residential fossil natural gas use replaced <i>Menifee and Norco</i>	2,146

Community Benefits:





LOCAL MEASURE LE-5:

Traffic and Street Light Upgrades

Replace traffic signals and street light fixtures with LEDs or other high efficiency bulbs.

2030 GHG Reduction Potential: 3,641 MTCO₂e/yr

Similar to many household light fixtures, traffic lights have traditionally been illuminated with inefficient incandescent bulbs. Street lights have commonly used high-pressure sodium (HPS) bulbs, which also produce light inefficiently. However, the WRCOG subregion has begun the transition to newer, more efficient lighting technology, such as light-emitting diodes (LEDs), which last significantly longer than traditional incandescent or HPS bulbs, and use much less energy to perform the same task. For over 11 years, WRCOG has had a program in place to help its jurisdictions install LEDs in their traffic signals and upgrade street light fixtures to accommodate LEDs or other high-efficiency bulbs to lower municipal utility costs and reduce maintenance costs associated with bulb replacement. Many jurisdictions have participated, generally at the 75-100% level. Over 53,000 lights have been upgraded since the program's inception.

PARTICIPATION LEVEL	ACTIONS & PARTICIPATING CITIES	2030 GHG REDUCTION POTENTIAL (MTCO ₂ e/YR)
HIGH	90% of older units retrofitted to high efficiency (e.g., LED) <i>Eastvale, Lake Elsinore, Menifee, Perris, San Jacinto, Temecula, and Wildomar</i>	3,349
MEDIUM	75% of older units retrofitted to high efficiency (e.g., LED) <i>Beaumont, Calimesa, Jurupa Valley, and Norco</i>	292
LOW	50% of older units retrofitted to high efficiency (e.g., LED) <i>No jurisdictions are participating at this level.</i>	N/A

Community Benefits:





LOCAL MEASURE LE-6: Shade Trees

Strategically plant trees to reduce the urban heat island effect.

2030 GHG Reduction Potential: Not Quantified

Planting additional trees in urban environments has a number of benefits, including lowering peak-load energy demands during the hottest months, enhancing the visual aesthetic of a community, and naturally sequestering carbon dioxide. Properly selected and located shade trees can help keep indoor temperatures low, thereby reducing air conditioner demands and utility costs. Trees can also provide shade for parking lots and other paved areas, reducing the urban heat island effect communitywide.

PARTICIPATION LEVEL	ACTIONS & PARTICIPATING CITIES	2030 GHG REDUCTION POTENTIAL (MTCO ₂ e/YR)
HIGH	40% increase in tree canopy/tree count, or for each city equate to X number of trees planted. <i>San Jacinto and Temecula</i>	Not Quantified
MEDIUM	20% increase in tree canopy/tree count, or for each city equate to X number of trees planted. <i>Eastvale</i>	Not Quantified
LOW	10% increase in tree canopy/tree count, or for each city equate to X number of trees planted. <i>Banning, Beaumont, Calimesa, Jurupa Valley, Lake Elsinore, Menifee, Norco, Perris, and Wildomar</i>	Not Quantified

Community Benefits:





LOCAL MEASURE LT-1:

Bicycle Infrastructure Improvements

Expand on-street and off-street bicycle infrastructure, including bicycle lanes and bicycle trails.

2030 GHG Reduction Potential: 4,139 MTCO₂e/yr

Improve bicycle infrastructure through implementation of a Bicycle Master Plan, Active Transportation Plan, Safe Routes to School Plan and/or similar program. Developing bike-oriented plans will provide the template for high-quality bike infrastructure to local jurisdictions. The planning process will allow jurisdictions to refine improvements to meet the needs and address the context of their communities, and should incorporate best practices for bike facility design, identify the location and prioritization of improvements, discuss funding sources.

Expand Bike Share programs and construct bicycle facilities such as bike lanes, bike parking, and end of trip facilities such as showers, changing rooms, and lockers. By providing more bicycle lanes and better connections between existing bicycle lanes, participating jurisdictions can increase the viability of bicycling as an emission-free commute option. Several participating jurisdictions have adopted or are preparing bicycle master plans. Implementing these plans will increase alternative transportation options in the sub-region and can reduce vehicle miles traveled and congestion for vehicles. Community health benefits from increased bicycling include improved air quality and exercise.

PARTICIPATION LEVEL	ACTIONS & PARTICIPATING CITIES	2030 GHG REDUCTION POTENTIAL (MTCO ₂ e/YR)
HIGH	50% increase (since 2017) in new bike facilities. Zoning code has been amended to require all new developments to include bike parking. City has launched an educational campaign to encourage biking. <i>Eastvale, Menifee, Perris, San Jacinto, Temecula, and Wildomar</i>	2,729
MEDIUM	25% increase (since 2017) in new bike facilities. Zoning code has been amended to require large developments to include bike parking. <i>Banning, Beaumont, Calimesa, Jurupa Valley, and Lake Elsinore</i>	1,324
LOW	The City has created a new or updated an existing Bicycle Master Plan, Active Transportation Plan, Trails Master Plan, or other bicycle-oriented plan. <i>Norco</i>	86

Community Benefits:





LOCAL MEASURE LT-2:

Pedestrian Infrastructure Improvements

Expand and improve pedestrian infrastructure, including sidewalks, crosswalks, and pedestrian signals.

2030 GHG Reduction Potential: 11,637 MTCO₂e/yr

Improve pedestrian infrastructure through implementation of an Active Transportation Plan, Safe Routes to School Plan and/or similar plan. As with bicycle infrastructure, developing pedestrian-oriented plans will provide the template for high-quality pedestrian infrastructure to local jurisdictions. The planning process will allow jurisdictions to refine improvements to meet the needs and address the context of their communities, and should incorporate best practices for bike facility design, identify the location and prioritization of improvements, discuss funding sources.

Through implementation of the plans, construct sidewalks, crosswalks, curb ramps, pedestrian signals, or pedestrian crossings, and create pedestrian only spaces within public areas.

PARTICIPATION LEVEL	ACTIONS & PARTICIPATING CITIES	2030 GHG REDUCTION POTENTIAL (MTCO ₂ e/YR)
HIGH	Through implementation of an ATP or other programs, there are no major gaps in the pedestrian network Citywide. <i>Eastvale, Perris, Temecula, and Wildomar</i>	5,750
MEDIUM	Through implementation of an ATP or other programs, some gaps in the pedestrian network have been filled through construction of sidewalks, crosswalks, curb ramps, pedestrian signals, or pedestrian crossings. <i>Banning, Calimesa, Jurupa Valley, Lake Elsinore, Menifee, Norco, and San Jacinto</i>	5,769
LOW	The City has created a new or updated an existing Active Transportation Plan, Safe Routes to School Plan, Trails Master Plan, or other pedestrian-oriented plan. <i>Beaumont</i>	117

Community Benefits:





LOCAL MEASURE LT-3:

Car Share and Carpool Programs

Provide access to car-share and carpool programs to reduce dependence on single-occupancy vehicles.

2030 GHG Reduction Potential: 1,053 MTCO₂e/yr

People employed, residing, or attending a community college or university within a jurisdiction have access to a shared fleet of vehicles on as-needed basis and/or a carpool matching service. The shared fleet of vehicles and carpool programs could be provided by private institutions or companies as a service to its employees, residents, or students. Access to car share and carpool programs provides an alternative to owning a vehicle or driving a single-occupancy vehicle for some trip purposes. This measure can be particularly effective on college, hospital, or large office campuses and compliments transit-oriented-development.

PARTICIPATION LEVEL	ACTIONS & PARTICIPATING CITIES	2030 GHG REDUCTION POTENTIAL (MTCO ₂ e/YR)
HIGH	5% of residents, employees, and students in the City have a car share program at their residence, workplace or school. <i>No jurisdictions are participating at this level.</i>	N/A
MEDIUM	3% of residents, employees, and students in the City have a car share program at their residence, workplace or school <i>Banning and Temecula</i>	460
LOW	1% of residents, employees, and students in the City have a car share program at their residence, workplace or school. <i>Beaumont, Calimesa, Canyon Lake, Eastvale, Jurupa Valley, Lake Elsinore, Menifee, Norco, Perris, San Jacinto, and Wildomar</i>	593

Community Benefits:





LOCAL MEASURE LT-4:

Parking Pricing and Limited Requirements

Price public parking in central business districts/employments centers/retail centers; Amend zoning codes to reduce requirements for vehicle parking in new development projects.

2030 GHG Reduction Potential: 11,250 MTCO₂e/yr

Limiting parking requirements for new development in certain areas may encourage alternative individual transportation choices, but caution should be taken to minimize the resulting incentive to travel to more distant locations with plenty of parking. This can be accomplished by:

- Eliminating (or reducing) minimum parking requirements;
- Creating maximum parking requirements; and
- Implementing shared parking.

Limiting parking requirements would encourage modes of transportation other than single-occupancy vehicles, thereby reducing VMT and GHG emissions. If these alternative transportation modes include walking and biking, mobility and health benefits would also be realized.

PARTICIPATION LEVEL	ACTIONS & PARTICIPATING CITIES	2030 GHG REDUCTION POTENTIAL (MTCO ₂ e/YR)
HIGH	Pricing strategy implemented by pricing all central business district/employment center/ retail center on-street parking. Zoning code amended to not require parking minimums or to institute parking maximums. Designated parking required for carpool vehicles at new non-residential development. <i>No jurisdictions are participating at this level.</i>	N/A
MEDIUM	Zoning code is amended to reduce parking minimums or institute parking maximums at residential and commercial developments. Designated parking required for carpool vehicles at new non-residential development. <i>Banning, Beaumont, Lake Elsinore, and San Jacinto</i>	9,540
LOW	Zoning code is amended to reduce parking minimums or institute parking maximums at residential developments. <i>Calimesa, Menifee, and Temecula</i>	1,711

Community Benefits:





LOCAL MEASURE LT-5:

Increase Transit Service and Frequency

Collaborate with regional transit providers to increase transit service and frequency provided in the subregion.

2030 GHG Reduction Potential: 947 MTCO₂e/yr

Collaborate with local and regional transit providers to increase volume and frequency of transit service in the subregion, including more implementation of bus rapid transit (BRT). Local jurisdictions should coordinate with the local and regional transit providers during major planning efforts and project approvals and should provide and condition local infrastructure such as bus pull-outs where appropriate. Cities can also encourage the use of transit by providing or improving bus shelters, and by providing real time schedules that make it easier and more efficient for riders to use transit services.

PARTICIPATION LEVEL	ACTIONS & PARTICIPATING CITIES	2030 GHG REDUCTION POTENTIAL (MTCO ₂ e/YR)
HIGH	At least three additional (since 2017) fixed-route bus corridors in the City have headways of 15 minutes or less. <i>No jurisdictions are participating at this level.</i>	N/A
MEDIUM	At least two additional (since 2017) fixed-route bus corridors in the City have headways of 15 minutes or less. <i>Banning, Eastvale, Perris, Temecula, and Wildomar</i>	906
LOW	At least one additional (since 2017) fixed-route bus corridor in the City has headways of 15 minutes or less. <i>Calimesa, Jurupa Valley, Lake Elsinore, Menifee, and Norco</i>	41

Community Benefits:





LOCAL MEASURE LT-6:

Traffic Signal Coordination

Incorporate technology to synchronize and coordinate traffic signals along local arterials.

2030 GHG Reduction Potential: 2,332 MTCO₂e/yr

Traffic signal coordination describes a method of timing groups of traffic signals along an arterial to provide smooth movement of traffic with minimal stops. This technique reduces motorist stops and delays, lowers the amount of fuel need to move a certain distance, and reduces GHG emissions. Signal coordination also lessens congestion and resulting tail pipe emissions, which reduces GHG emissions and improves air quality.

PARTICIPATION LEVEL	ACTIONS & PARTICIPATING CITIES	2030 GHG REDUCTION POTENTIAL (MTCO ₂ e/YR)
HIGH	Coordinate traffic signals on an additional 50% (since 2017) of arterial roads. <i>Eastvale, Lake Elsinore, and Menifee</i>	1,102
MEDIUM	Coordinate traffic signals on an additional 25% (since 2017) of arterial roads. <i>Banning, Jurupa Valley, and Wildomar</i>	574
LOW	Coordinate traffic signals on an additional 10% (since 2017) of arterial roads. <i>Beaumont, Perris, San Jacinto, and Temecula</i>	657

Community Benefits:





LOCAL MEASURE LT-7:

Increase Housing Density

Increase the density of planned housing units within the city.

2030 GHG Reduction Potential: 0.198 MTCO₂e/SP/yr

The addition of housing generally results in a net increase in vehicle trips and total transportation emissions for a city. To help attenuate this increase, planners should focus on providing higher density and infill housing in VMT-efficient locations, such as mixed-use specific plan areas, downtowns, and high-quality transit areas in order to reduce daily household VMT. Most participating jurisdictions have identified portions of their communities where future higher-density development is desirable. This measure complements Local Measures LT-7 and LT-8 that promote land use diversity and transit-oriented development. The GHG reduction benefit of this measure is quantified using a service population efficiency metric as it generally does not contribute to a decrease in total transportation emissions.

PARTICIPATION LEVEL	ACTIONS & PARTICIPATING CITIES	2030 GHG REDUCTION POTENTIAL (MTCO ₂ e/YR)
HIGH	Zoning code and Land Use plan are modified to accommodate 30% more (since 2017) residential units in the city. <i>Beaumont, San Jacinto, and Temecula</i>	0.059
MEDIUM	Zoning code and Land Use plan are modified to accommodate 15% more (since 2017) residential units in the city. <i>Banning, Calimesa, Eastvale, Jurupa Valley, Lake Elsinore, and Perris</i>	0.134
LOW	Zoning code and Land Use plan are modified to accommodate 5% more (since 2017) residential units in the city. <i>Menifee</i>	0.004

Community Benefits:



Jobs, Housing, and the Climate Connection



The WRCOG subregion has experienced rapid growth in population and jobs in recent decades, and that trend is expected to continue. Meanwhile, California faces a severe housing affordability crisis spurred by a mounting supply shortage. State housing officials estimate that an average of 180,000 homes must be built annually to keep pace with demand due to the rising cost of construction and loss of redevelopment dollars,¹⁸ among many other reasons. Governor Newsom has proposed that California strive to build 3.5 million homes by 2025, an average of 500,000 new homes per year.

Compared to more urbanized areas along the coast, housing costs in Western Riverside County are relatively affordable. This market dynamic is one big factor underlying the region's growth in recent decades. As a growing number of Californians are priced out of the housing market in major job centers like Los Angeles, they seek homes further and further from where they work. The resulting sprawl covers up farmland and open space, clogs freeways and increases overall VMT in the region.

New housing, because it represents more people going about their daily lives, generally increases the VMT in local communities, and by extension its GHG emissions. However, if done sustainably, new housing can result in a reduction in transportation related GHG emission on a per capita basis, which is consistent with the goals of the Sustainable Communities Act and the California Air Resource Board. Building housing at higher densities, or at more dwelling units per acre, and building housing in VMT-efficient locations results in more total VMT but reduces the local and regional VMT per capita. The extent to which this can be done varies by location, implementation level, and other factors that influence the efficiency of travel such as access to transit and jobs-housing balance.

Along these lines, local measures LT-7, LT-8, and LT-9 support sustainable housing development and encourage climate-smart growth. VMT-efficient development is essential for meeting aggressive GHG targets given the WRCOG Subregion's expected growth in the coming years and decades. To keep transportation emissions in check, growth should be focused in areas that support the use of public transit and foster a walkable and bikeable environment, reducing the reliance on fossil fuels. Vehicle trip frequency and distance are reduced by living in higher density, multi-family housing that has proximity to shopping, schools, and job centers. Similarly, living near regional transit and transportation facilities helps reduce VMT associated with commuting.

¹⁸ https://www.hcd.ca.gov/policy-research/plans-reports/docs/sha_final_combined.pdf



LOCAL MEASURE LT-8:

Increase Land Use Diversity

Provide for a variety of development types and uses.

2030 GHG Reduction Potential: 0.210 MTCO₂e/SP/yr

This measure focuses on improving the jobs-housing balance by increasing land-use diversity. In areas where a mix of land uses is most appropriate (downtown area, specific plan, corridor plans, etc.), cities are providing for a variety of development types and uses to enable shorter trips for shopping and entertainment.

Development can occur in many forms, ranging from single-family homes on large plots of land to multi-family housing with high vertical construction for residential areas, and single-use to multi-use zoning for commercial properties. While land development choices are typically made at the household or business level, recent studies show that individuals are more frequently demanding higher-density, multi-use regions that are more walkable. Most participating jurisdictions have identified portions of their communities where future higher-density development is desirable. Such development reduces both VMT and GHGs, as individuals can accomplish many tasks in a single mixed-use area. This also can improve community health by encouraging bicycling and walking, improve air quality by reducing tailpipe emissions, and increase the community's sense of place.

For the WRCOG subregion, mixed-use development is classified as having at least three of the following features either on-site or within 0.25 miles:

- Residential development
- Retail development
- Park
- Open space
- Office

The GHG reduction benefit of this measure is quantified using a service population efficiency metric as it generally does not contribute to a decrease in total transportation emissions.

PARTICIPATION LEVEL	ACTIONS & PARTICIPATING CITIES	2030 GHG REDUCTION POTENTIAL (MTCO ₂ e/YR)
HIGH	Zoning code and Land Use plan are modified to accommodate 30% more (since 2017) employees in City. Multiple mixed-use districts or Specific Plan areas which incorporate housing, office, retail, and school uses are planned. <i>Beaumont</i>	0.052
MEDIUM	Zoning code and Land Use plan are modified to accommodate 15% more (since 2017) employees in City. A mixed-use district or Specific Plan area which incorporates housing, office, retail, or school uses is planned. <i>Banning, Eastvale, Jurupa Valley, and San Jacinto</i>	0.070
LOW	Zoning code and Land Use plan are modified to accommodate 5% more (since 2017) employees in City. <i>Calimesa, Lake Elsinore, Menifee, Norco, Perris, and Temecula</i>	0.089

Community Benefits:





LOCAL MEASURE LT-9:

Transit-Oriented Development

Place new developments in close proximity to transit services.

2030 GHG Reduction Potential: 2,050 MTCO₂e/yr

Place new residential or commercial developments in close proximity to high-quality transit services and provide design features that support active transportation and facilitate first-mile/last-mile solutions. High-quality transit would be defined as a Metrolink station or a fixed-route bus with headways of 15 minutes or less during peak commute hours.

PARTICIPATION LEVEL	ACTIONS & PARTICIPATING CITIES	2030 GHG REDUCTION POTENTIAL (MTCO ₂ e/YR)
HIGH	50% of new development within the City is located within ½-mile of high-quality transit. <i>No jurisdictions are participating at this level.</i>	N/A
MEDIUM	30% of new development within the City is located within ½-mile of high-quality transit. <i>Banning and Jurupa Valley</i>	1,604
LOW	10% of new development within the City is located within ½-mile of high-quality transit. <i>Beaumont, Eastvale, Perris, and Temecula</i>	446

Community Benefits:





LOCAL MEASURE LT-10: Local ZEV Programs

Provide charging stations and other support for zero emission vehicles (ZEVs).

2030 GHG Reduction Potential: 1,954 MTCO₂e/yr

Support the regional uptake of zero emission vehicles (ZEVs) through local expansion of supporting infrastructure, including EV charging and hydrogen refueling stations. Promote designated parking for fuel-efficient and carpool vehicles at new non-residential development.

Adopt a comprehensive neighborhood program to accommodate off-street paths and on-street facilities of designated space for Neighborhood Electric Vehicles (NEVs) and supporting infrastructure. NEVs emit fewer GHGs than traditional passenger vehicles and reduce local air pollution. NEVs generally are used in areas with speed limits of 35 miles per hour or less for relatively short (less than 30 miles) trips.

PARTICIPATION LEVEL	ACTIONS & PARTICIPATING CITIES	2030 GHG REDUCTION POTENTIAL (MTCO ₂ e/YR)
HIGH	Install new EV charging stations at public parking facilities. Amend zoning code to require designated parking for EVs and fuel-efficient vehicles at new non-residential development. Adopt a NEV Plan in at least one residential area. <i>Banning and Menifee</i>	603
MEDIUM	Install new EV charging stations at public parking facilities. Amend zoning code to require designated parking for EVs and fuel-efficient vehicles at new non-residential development. <i>Beaumont, Calimesa, Eastvale, Jurupa Valley, Lake Elsinore, Perris, San Jacinto, Temecula, and Wildomar</i>	1,262
LOW	Install new EV charging stations at public parking facilities. <i>Canyon Lake and Norco</i>	89

Community Benefits:





LOCAL MEASURE LT-11: Subsidized Transit

Decrease the cost of transit by providing subsidies.

2030 GHG Reduction Potential: 3,194 MTCO₂e/yr

Increase access to transit by providing free or discounted passes to residents, employees, and/or students. Free or discounted transit passes could be provided by private institutions or companies as a service to its employees, residents, or students. Reducing the cost of transit promotes transit ridership as an alternative to single-occupancy vehicles, thereby reducing VMT and GHG emissions.

PARTICIPATION LEVEL	ACTIONS & PARTICIPATING CITIES	2030 GHG REDUCTION POTENTIAL (MTCO ₂ e/YR)
HIGH	Provide subsidized or discounted transit passes to 3% of residents, students, and employees living, working, or going to school in the community. <i>No jurisdictions are participating at this level.</i>	N/A
MEDIUM	Provide subsidized or discounted transit passes to 2% of residents, students, and employees living, working, or going to school in the community. <i>Banning, San Jacinto, and Temecula</i>	3,131
LOW	Provide subsidized or discounted transit passes to 1% of residents, students, and employees living, working, or going to school in the community. <i>Beaumont, Eastvale, Jurupa Valley, Norco, and Wildomar</i>	62

Community Benefits:



Emerging Trends in Transportation

Mobility for everyone is being redefined. The following disruptive trends have changed mobility choices over the past five years and will change our mobility options into the future. These trends are changing how people choose to move and, in many instances, are increasing accessibility to more travel options while decreasing the cost to travel. However, it is too soon to say with certainty what their impact on emissions will be due to rapidly evolving policies and market forces. Some of these trends have become more accessible to a larger portion of people in recent years, but others have yet to be implemented in real-world conditions. A lack of historical data makes it difficult to assess their impact.

- **Transportation Network Companies (TNCs)**, also called a ride-hailing service, includes companies like Uber and Lyft that provide on-demand rides for passengers with mobile apps or websites. TNCs tend to increase demand for curb space but can decrease the demand for parking.
- **Autonomous vehicles (AVs)** are vehicles that are capable of driving with limited or no human involvement. There are six levels of autonomy (0-5) that range from issuing warnings and momentary interventions with the human driver to a fully automated machine which requires no human involvement to operate.
- **Bikeshare** services operate like car sharing services in that consumers can rent from a shared bicycle fleet. Bike sharing services typically do not charge a monthly membership fee and can be either docked (at set stations where one picks up and drops off a bike) or dockless (bikes are picked up wherever the last user dropped them off).
- **Micromobility (Electric scooters and bikes)** are powered by an electric motor to propel riders along streets and up hills. E-bikes can travel up to 20 mph and e-scooters have a top speed of 15 mph. In the United States, e-bikes and e-scooters sharing services are typically dockless and have expanded rapidly since the first launch of e-bike service in 2017 and e-scooter service in 2018.
- **Microtransit** is defined as a privately-operated transit system, which in many cases mirrors the operations of public transit agencies along select routes. Microtransit operators can be highly flexible, tailoring their operations to match short-term or long-term changes in travel behavior.
- **Mobility as a Service (MaaS)** facilitates trip planning, payment and multimodal travel, so users can plan, hail or access, and pay for trips all in one place. Some MaaS platforms exist today and are others currently being developed.



LOCAL MEASURE LS-1: Zero Waste Initiatives

Support the State’s mandates and strive for zero waste.

Supporting Measure (Not Quantified)

Approximately 5% of the Subregion’s 2017 emissions inventory is attributable to the landfilling of solid waste, where the organic fraction of the waste decomposes into methane, a powerful GHG. As noted in State Measure SW-1, it is important to divert organics from landfills to avoid the production of methane, but diverting other materials from landfills through recycling programs is also beneficial in that it reduces the life cycle emissions associated with the harvesting of virgin materials. And products that are repaired or reused, or designed to last longer, avoid the emissions associated with the manufacturing of new products.

Zero Waste is a set of principles focused on waste prevention that encourages the redesign of resource life cycles to maximize material recycling and product reuse. While recognizing that zero waste in a literal sense is not practically achievable, some cities across the country have demonstrated that the key zero waste principles of *reduce, reuse, and recycle* can be put to maximum effect to achieve diversion rates of 80 to 90 percent, which goes beyond the State of California’s 75% diversion mandate for municipal solid waste. Many cities throughout California have in place ordinances to achieve diversion rates of 90% or more, and “zero waste” plans in place to achieve those targets. Such plans typically include strategies to expand or improve existing recycling and composting facilities; various regulations and incentives to reduce total waste disposed by residents, businesses, and institutions; programs to educate the public on zero waste strategies; and policies regarding manufacturer product stewardship and markets for material reuse.

The potential GHG reduction benefit of this measure is not quantified as there are no participating jurisdictions currently committed to exceeding the State’s waste diversion mandates, as described in State Measure SR-1.

Community Benefits:





LOCAL MEASURE LW-1:

Increase Recycled Water Use

Expanding the available water supply through water recycling and reuse infrastructure.

Supporting Measure (Not Quantified)

This measure supports expanding the available water supply through water reclamation (recycling) and water reuse infrastructure. Water reclamation is reusing treated wastewater for beneficial purposes such as agricultural and landscape irrigation, industrial processes, toilet flushing, and replenishing a ground water basin (referred to as ground water recharge). Gray water is reusable wastewater from residential, commercial and industrial bathroom sinks, bathtubs, showers, and clothes washing equipment drains that is treated onsite, and then reused, typically for landscape irrigation.

Cities can help improve water recycling and reuse infrastructure by expanding purple pipe networks, and they can help conserve the water supply by upgrading water infrastructure and conveyance systems to minimize leaks and prevent waste.

Cities can support the use of graywater and rainwater catchment systems by streamlining the permitting process, offering rebates and incentives for installation of these systems, and providing information at the permitting counter for developers, business owners, and homeowners. Rainwater catchment systems collect runoff from roofs or other non-permeable surfaces, which is then redirected to a cistern or containment mechanism. Rainwater gardens may also be constructed that direct rainwater into a deep pit or larger reservoir with percolation, or it can be collected from dew or fog with nets or other tools. Rainwater can then be used for gardens, livestock, irrigation, or domestic use with proper treatment, and indoor heating for houses.

EMWD offers rebates for rain barrels and cisterns, through its partnerships with Metropolitan Water District (MWD) and the SoCal Water\$mart program.

The potential GHG reduction benefit of this measure is not quantified as it is supportive of the State's wider efforts to conserve water, as described by State Measure SW-1.

Community Benefits:





LOCAL MEASURE LA-1:

Local Agriculture & Community Gardens

Support local farms, community gardens, and sustainable food production.

Supporting Measure (Not Quantified)

This measure supports local farms, community gardens, and sustainable food production. Our diets and the decisions we make as individual consumers about the food we purchase have a big impact on our “carbon footprint.” Globally, approximately one-third of GHG emissions result from the food system, when accounting for importation, refrigeration, deforestation, and other food system processes. Although a community GHG inventory does not directly account for emissions from agricultural activities occurring outside the City, choosing more sustainably produced food yields benefits for individuals and the community at large. Eating locally-produced, fresh food, and choosing vegetarian options, has the dual benefit of lowering GHG emissions associated with food production while improving community health.

Growing food locally and distributing it through local channels like farmers’ markets, rather than importing it from distant lands, can reduce emissions because less fuel is required for transporting food to the consumer. Local food production also has the co-benefits of creating local jobs and enhancing resilience, and can improve health if sustainable organic farming and production methods are used. But more influential to the carbon footprint of food is what we eat and when we eat it – for example, eating seasonal vegetables vs. meat. Certain foods require more energy and fossil fuel inputs than others, making it possible to reduce emissions by choosing foods that have a lower GHG intensity.

Recent studies indicate that transitioning toward more plant-based diets that are in line with standard dietary guidelines could reduce global GHG emissions by up to 70% by 2050. Also important is how food is farmed or and produced. Factors related to meat and dairy production include the energy inputs involved in rearing farm animals and the methane output from those animals. Factors related to fruit, vegetable and grain farming include the use of nitrogen-based fertilizers, soil tilling techniques, and the energy used for water pumping and irrigation. Organic farming generally produces foods with a lower carbon footprint than conventional farming but also tends to use more land per kilogram of food produced. Due to all of these factors it is a complex endeavor to accurately estimate the GHG emissions associated with the foods we consume.

Community Benefits:





CHAPTER 4

Implementation

This chapter covers important aspects of implementing the GHG reduction measures laid out in Chapter 3 and tracking progress towards meeting GHG reduction targets. Translating strategies and actions into actual emission reductions requires development of programs, local government staff time to promote and track the various measures, and effective systems for tracking and monitoring their implementation.

Implementation of regional and local measures will require collaboration and coordination between WRCOG, local governments, local communities, regional organizations, and other government agencies to ensure that programs are well-managed and cost-effective. Community involvement is an essential component of the CAP implementation process, as many strategies depend on active participation by residents and businesses. Local governments can make a concerted effort to develop and strengthen community education and awareness through various promotional efforts, through web sites and social media.

The implementation steps and considerations described herein are not specific to WRCOG or any individual jurisdiction, but represent the approach that WRCOG or any jurisdiction might take, based on the steps other California communities have taken to implement a CAP. These are suggested, not required, and are intended to guide WRCOG and its members in implementation planning for the future.

Regional Administration

WRCOG will continue to provide staffing and administrative support at the subregional level, particularly in implementing subregional programs such as the Transportation Uniform Mitigation Fee (TUMF), HERO Program, Western Riverside Energy Partnership (WREP) and Clean Cities Coalition. WRCOG will also work to align these programs, and future subregional initiatives, with the goals established in this CAP, where applicable. However, implementation of the local measures will depend on each participating jurisdiction. WRCOG recommends that participating jurisdictions appoint a “CAP coordinator” to oversee the successful implementation and tracking of local GHG reduction strategies. The local CAP coordinator would primarily be responsible for coordinating across municipal departments to gather data, report on progress, track completed projects, and ensure that scheduling and funding of upcoming projects is discussed at key meetings. Some jurisdictions may wish to have the coordinator work primarily as part of the development review process for new projects (i.e., Planning Department staff). The coordinator may be existing staff and does not necessarily require a dedicated full-time position.

Table 4-1 describes the potential responsibilities for WRCOG staff and local CAP coordinators.

TABLE 4-1 Climate Action Plan Implementation Responsibilities

WRCOG	JURISDICTIONS/CAP COORDINATORS
Secure financing to implement GHG reduction measures (i.e., grants)	Secure long-term financing to implement GHG reduction measures
Coordinate meetings among member jurisdictions, regional partners and stakeholders	Coordinate meetings amongst local community stakeholders
Serve as the external communication hub to regional climate action organizations including California Air Resources Board (CARB), South Coast Air Quality Management District (SCAQMD), Southern California Association of Governments (SCAG)	Serve as the communication hub to the community and local stakeholders
Conduct public outreach to inform the community of the subregion’s reduction planning efforts	Submit annual reports to governing bodies
Develop a protocol for monitoring the effectiveness of emissions reduction programs	Utilize tool developed by WRCOG to report and document emission reduction progress
Establish guidelines and develop a tool for reporting and documenting emissions reduction progress	
Submit annual reports to the WRCOG Executive Committee and member agency governing bodies	
Develop a protocol for utilizing the real-time information collected through the verification process to modify and revise existing reduction programs	
Track state and federal legislation and its applicability to member jurisdictions	

In general, the goal in implementing the CAP is not to create new administrative tasks or new staff positions, but rather to leverage existing programs and staff to the maximum extent feasible. Local governments should seek to incorporate GHG planning and long-term reductions into their existing procedures, institutional organization, reporting and long-term planning; this is a process that will be unique to each jurisdiction.

Implementation Objectives

WRCOG will track State measures, facilitate implementation of the regional measures, and track and monitor emission reduction progress for the Subregion as a whole. When feasible, WRCOG will act as the convener and assist in identifying funding, establishing partnerships, and synergizing local contributions to implementing regional measures. Ultimately, each participating jurisdiction will be responsible for implementing local actions to reduce emissions, and the success of many measures will depend on public participation. Tasks that require active promotion may require updates to the WRCOG and jurisdictions’ websites, distribution of physical promotional materials, and other active outreach activities. WRCOG and its members will develop programs to reach the public, including public forums, workshops, and meetings; these programs will be administered with the intent to foster an open public input and commenting process. Collaboration and coordination with transportation agencies (e.g., Riverside Transit Agency (RTA), Riverside County Transportation Commission [RCTC]) will be essential to improving and increasing transit ridership, and enhancing mobility and transportation efficiency through better planning.

Further, coordination with external agencies and the private sector is critical for the success of many strategies, including utility companies for energy conservation and renewable energy programs, waste haulers for waste reduction actions, local water purveyors for water saving actions, and other local jurisdictions for work-sharing partnerships designed to take advantage of the common goals across Western Riverside County. Dependence on outside agency participation is mentioned explicitly in the strategy descriptions; WRCOG, its member jurisdictions, and partner stakeholders will continue to explore strategies for collaboration.

Regional Measures

Table 4-2 provides a summary of the Subregional CAP’s regional measures along with their key objectives. Chapter 3 provides a detailed description of each measure, jurisdictional participation, progress indicators, and community benefits.

TABLE 4-2 Implementation of Regional Measures

REGIONAL MEASURE		KEY OBJECTIVES
RT-1	Metrolink Expansion	Expand Metrolink transit service provided in Western Riverside County
RT-2	Telecommuting	Reduce the vehicle miles associated with commuting by encouraging telecommuting practices
RT-3	Regional Zero Emission Vehicle (ZEV) Initiatives	Facilitate electric vehicle use by providing necessary infrastructure

Local Measures

As outlined in Chapter 3, participating jurisdictions generally subscribe to a participation level (High, Medium, or Low) for each of the following local measures, representing varying levels of commitment to the key objectives listed in **Table 4-3**. The measurable objectives associated with the different participation levels are outlined for each local measure in Chapter 3.

TABLE 4-3 Implementation of Local Measures

LOCAL MEASURES BY SECTOR		MEASURABLE OBJECTIVE(S)
Energy		
LE-1	Expand Local Renewable Energy Production	Increase solar PV installations on new and existing buildings
LE-2	Community Choice/Utility Renewable Electricity	Expand participation in utility or community choice renewable electricity offerings
LE-3	Improve Energy Efficiency of Existing Buildings	Reduce the use of electricity and natural gas in existing buildings
LE-4	Building & Appliance Electrification	New buildings: Increase the amount of “all electric” new construction; Existing buildings: replace the use of natural gas with electricity
LE-5	Traffic & Street Light Upgrades	Replace traffic signals and street light fixtures with LEDs or other high efficiency bulbs
LE-6	Shade Trees	Increase the tree canopy/tree count
Transportation		
LT-1	Bicycle Infrastructure Improvements	Expand bike facilities; Amend zoning code to require large developments to include bike parking
LT-2	Pedestrian Infrastructure Improvements	Fill gaps in the pedestrian network through construction of sidewalks, crosswalks, curb ramps, pedestrian signals, or pedestrian crossings
LT-3	Carshare & Carpool Programs	Increase the availability of car share programs throughout the community, including schools and workplaces
LT-4	Parking Pricing & Limited Requirements	Amend zoning code to limit parking at residential and commercial developments. Require designated parking for carpool vehicles at new non-residential development.
LT-5	Increase Transit Service & Frequency	Increase the number of fixed-route bus corridors that have headways of 15 minutes or less
LT-6	Traffic Signal Coordination	Increase the number of coordinated traffic signals for the city’s arterial roads.
LT-7	Increase Housing Density	Modify the city’s zoning code and land use plan to accommodate more residential units.
LT-8	Increase Land Use Diversity	Modify the zoning code and Land Use plan to accommodate more employees in City; Plan for a mixed-use district or Specific Plan area that incorporates housing, office, retail, or school uses
LT-9	Transit-Oriented Development	Locate more new development within ½-mile of high-quality transit
LT-10	Local ZEV Programs	Install new EV charging stations at public parking facilities; Amend zoning code to require designated parking for EVs and fuel-efficient vehicles at new non-residential development;
LT-11	Subsidized Transit	Provide subsidized or discounted transit passes to residents, students, and employees living, working, or going to school in the community.
Solid Waste, Water & Wastewater, and Agriculture		
LS-1	Zero Waste Initiatives	Increase the percent of organic waste diverted from landfills Increase the total waste diverted from landfills
LW-1	Increase Recycled Water Use	Increase the volume of recycled water used to irrigate parks, golf courses outdoor landscaping
LA-1	Local Agriculture & Community Gardens	Increase the number of local community gardens and farmer’s markets Increase the use of locally produced compost in community gardens and local agriculture

Equity Checklist

The following equity checklist was created to help local jurisdictions identify and take steps to identify, protect, and prioritize resources for disadvantaged communities when implementing local climate actions. This checklist offers broad recommendations that can be used in policy development and plan implementation to improve equitable outcomes in local communities.

Step 1 – Identify if disadvantaged communities will benefit and/or be impacted by implementation of local climate action:

- Use **data and mapping tools** to identify disadvantaged communities, including [CalEnviroScreen 3.0](#), [Healthy Places Index](#), [Regional Opportunity Index](#), [Riverside County SHAPE Portal](#) (health data), [Resilient IE](#) (vulnerability assessment, community vulnerability profiles).
- Evaluate whether or not the disadvantaged communities were **engaged in the process** to define and prioritize the climate action.
- Use a **variety of activities** to engage with disadvantaged communities, including low-income populations, communities of color, limited-English speaking residents, and people with disabilities.
- Review [Resilient IE Adaptation and Resiliency Strategy](#) to identify **specific issues** that impact disadvantaged communities and strategies to integrate as part of climate mitigation and adaptation efforts.
- Conduct **meaningful community engagement**, including reaching out to disadvantaged communities, building relationships with community-based groups, addressing language barriers, being flexible about opportunities for people to get involved, and getting feedback about what works well (or doesn't).

Step 2 – Identify how each climate action promotes equitable outcomes:

- Identify the **geographic area / scope of climate action implementation**. Using the results of Step 1, determine if there are disadvantaged communities in the area.
- Review how the climate action **promotes equitable outcomes** by asking:
 - How does the policy or implementation action impact outcomes by race?
 - Are there specific health outcomes for disadvantaged communities?
 - Does the action result in disproportionate impacts?
 - Does the climate action have unintended equity outcomes?
- Develop specific actions to ensure that the **needs of disadvantaged communities** are prioritized and met (e.g., financial incentives, capacity building, jobs, etc.) by asking:
 - What implementation steps can be used to ensure disadvantaged communities benefit from the climate action?
 - What proportion of the budget or program implementation is earmarked for disadvantaged communities?
 - What implementation steps can be used to increase local capacity, including through hiring, training, or education opportunities?
 - Can equity outcomes be improved by shared decision-making?

Step 3 – Tracking and Implementation:

- Ensure **accountability and transparency** with community members on a regular basis, identifying clear milestones and use of resources.
- **Evaluate impact** of programs and policies to support local measures, including opportunities for regular community feedback.
- Designate **resources** to address potential unintended consequences.

FIGURE 4-1 Climate Equity Checklist Example

Measure	Geographic Area/Scope of Implementation	Disadvantaged Communities	Potential Impacts and/or Benefits for Vulnerable Groups	Equitable Implementation Actions
Community Engagement Strategies:				

Additional resources:

- [OPR Resilience Guidebook Equity Checklist](#)
- [USDN Guide to Equitable Community-Driven Climate Preparedness Planning](#)

Tracking and Monitoring

Regular monitoring is important to ensure programs are functioning as they were originally intended. Early identification of effective strategies and potential issues will enable WRCOG and its member jurisdictions to make informed decisions on future priorities, funding, and scheduling. Moreover, monitoring provides concrete data to document the Subregion’s progress in reducing GHG emissions. WRCOG will coordinate with participating jurisdictions to gather implementation data and will prepare an annual memorandum documenting the Subregional CAP’s implementation and performance. Following each annual report, WRCOG and the participating jurisdictions may adjust or otherwise modify the strategies to achieve the reductions needed to reach the Subregional target:

- **State and Regional Measures:** WRCOG will be responsible for tracking State and regional measures. The Climate Action Plan Tracking Tool (see below) will be used by WRCOG to track State and Regional GHG reduction measures in the Subregional CAP.
- **Local Measures:** Participating jurisdictions will each be responsible for tracking implementation of their local GHG reduction measures. On an annual basis, each jurisdiction will record the status of each local measure and submit the results to WRCOG using the WRCOG Climate Action Plan Tracking Tool (see below).

- **GHG Inventory Updates and Reporting:** Tracking of individual reduction measures will be complemented by a Subregional community inventory for the participating jurisdictions that WRCOG will update every 3 to 5 years, to quantitatively compare subregional progress against plan. This will entail collecting data at the jurisdictional level for each of the primary inventory sectors (electricity and natural gas, vehicle miles traveled, solid waste, wastewater, and water), and evaluating progress towards local and subregional targets. WRCOG will compile the results from each participating jurisdiction, and prepare an annual report documenting the Subregional CAP's implementation and performance, including estimates of the progress made by each participating jurisdiction towards their 2030 target.

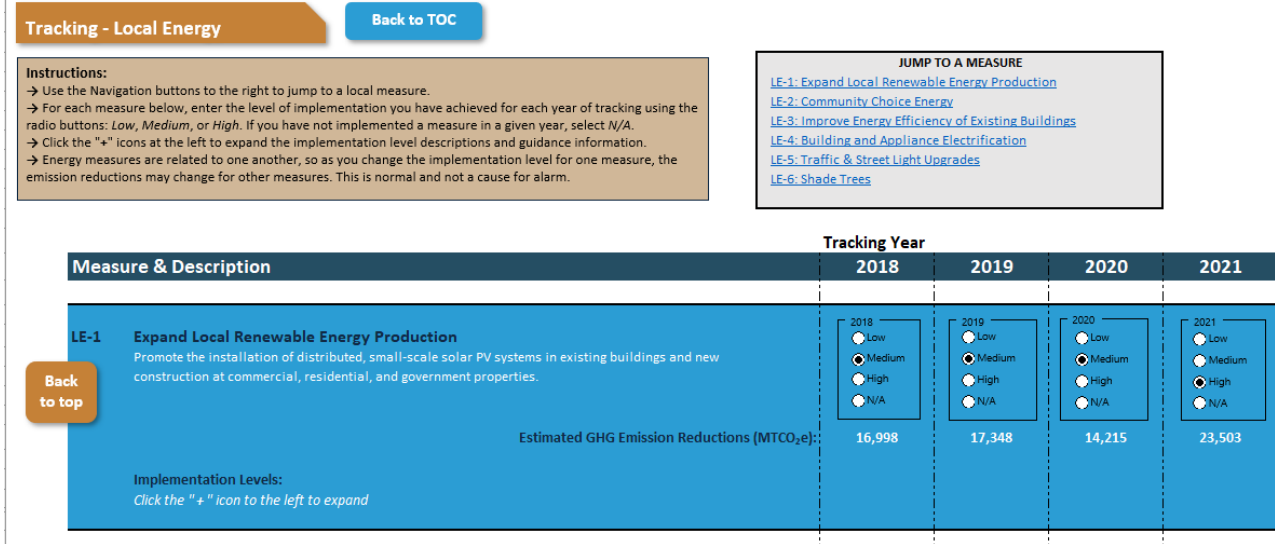
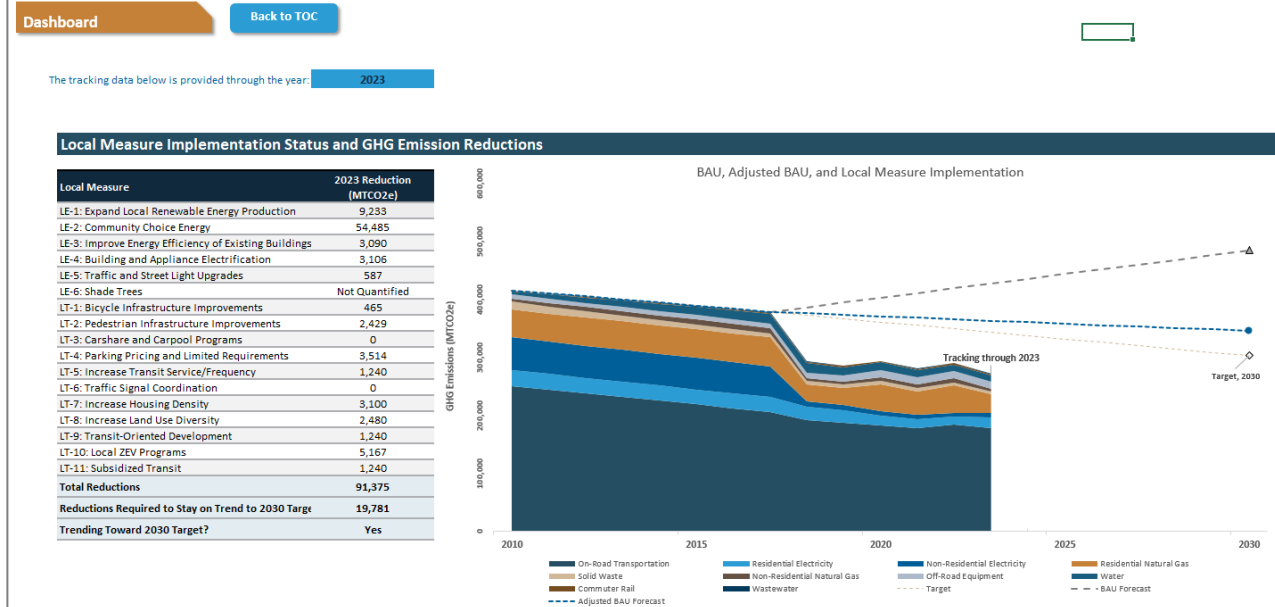
WRCOG Tracking Tool

The Climate Action Plan Tracking Tool allows participating jurisdictions to monitor and report on the effectiveness of their GHG reduction measures over time. The Tracking Tool can also store program details, track implementation and performance indicators, and measure progress for each participating jurisdiction.

The Tracking Tool is designed in Microsoft Excel and is easy to use. It is consistent with the methods used to develop the 2010 baseline inventory, the 2017 inventory update, and the BAU emissions forecasts for 2030 and 2050. It provides the ability to track the performance of each GHG reduction measure included the Subregional CAP, to help increase institutional understanding of GHG planning issues.

Using the Tracking Tool does not require data collection or a comprehensive understanding of GHG accounting and the CAP's reduction measures themselves. The Tracking Tool includes simple "checkbox-style" user inputs for each measure, where the user merely checks a box to indicate the level of implementation (low, medium, high, or N/A). A summary description of each measure is provided, including how each level of implementation is defined from a city-staff perspective, and guidance for deciding which level should be checked.

The Tracking Tool estimates GHG reductions based on user input, and includes a dashboard of figures and graphics to clearly illustrate the progress of the GHG reduction efforts being implemented by the jurisdiction. Sample screenshots from the Tracking Tool are included below as **Figure 4-2**.

FIGURE 4-2 WRCOG Climate Action Plan Tracking Tool**Western Riverside Council of Governments Climate Action Plan -- Tracking Tool****Western Riverside Council of Governments Climate Action Plan -- Tracking Tool**

Funding Mechanisms

The GHG reduction strategies in this document were formulated with an understanding that WRCOG and member jurisdictions have limited staff time and financial resources to implement them. The costs for implementation include the creation or promotion of voluntary programs, continuing administration of those programs, coordination and outreach with other government agencies and businesses, and—in some cases—exploration or study of potential legislative or regulatory mechanisms not yet codified. A few strategies require up-front capital expenditures by local agencies. WRCOG and member jurisdictions will use a combination of staff time, grant funding, direct spending, and collaboration with other agencies and organizations to achieve CAP goals. This section presents a summary of funding and financing options (Table 4-4) available at the time this document was prepared.

Some funding sources are not necessarily directed towards a jurisdiction, but to a larger regional agency such as WRCOG, SCAG, a Joint Powers Authority (JPA), or a waste services provider serving multiple jurisdictions. WRCOG and its members should continually monitor private and public funding sources for new grant and rebate opportunities and to better understand how larger agencies are accessing funds that can be used for GHG reductions at the local level. Leveraging financing sources is one of the most important roles WRCOG and a local government can play in helping the community to implement many of the GHG reduction measures.

TABLE 4-4 Potential Funding Sources to Support CAP Implementation

PROGRAM	DESCRIPTION
Federal Programs	
Energy Efficient Mortgages	The Federal Housing Administration (FHA) offers an Energy Efficient Mortgage Loan program that helps current or future homeowners save money on their utility bills by enabling borrowers who might not otherwise qualify for conventional loans on affordable terms to finance energy efficient improvements with their FHA mortgage. Qualified homebuyers or homeowners are automatically pre-approved for an additional 5-15 percent of their approved loan to do energy-efficient repairs to their home without adding to their debt-to-income ratio. The EEM program recognizes that an energy-efficient home will have lower operating costs, making it more affordable for the homeowner.
ENERGY STAR® Portfolio Manager®	Portfolio Manager is a free tool supported by the United States Environmental Protection Agency (U.S. EPA) that measures a building's energy performance and compares it to other similar buildings. It allows building owners and managers to track energy use and verify improvements. Approximately 40 percent of U.S. commercial building space is benchmarked in Portfolio Manager — making it the industry-leading benchmarking tool.
Low Income Home Energy Assistance Program (LIHEAP)	LIHEAP is a federal program administered by U.S. Department of Health and Human Services that provides assistance to eligible low-income households to manage and meet their immediate home heating and/or cooling needs. LIHEAP offers several of services to help low-income households meet their home energy needs.
Moving Ahead for Progress in the 21st Century (MAP-21)	Federal funding through the MAP-21 program is administered through the state and regional governments. MAP-21 funding is administered through Caltrans, MPOs (SCAG in Southern California) and RTPAs (RCTC in Riverside County). Most of the funding programs are transportation versus recreation oriented, with an emphasis on reducing auto trips and providing an intermodal connection. In most cases, MAP-21 provides matching grants of 50 to 100 percent.
Safe Routes to Schools	Safe Routes to Schools is an international movement focused on increasing the number of children who walk or bike to school by funding projects that remove barriers to doing so. These barriers include a lack of infrastructure and non-infrastructure projects, safety, and limited programs that promote walking and bicycling. In California, two separate Safe Routes to School programs are available at both the state and federal level, and both programs fund qualifying infrastructure projects.

PROGRAM	DESCRIPTION
U.S. Department of Energy (DOE)	The Federal government including DOE provides grants and other financial incentives to local governments for renewable energy installations. Information regarding programs is available at http://www.grants.gov .
United States Department of Housing and Urban Development	The City implements their Home Improvement Program which supports the implementation of energy efficient upgrades to qualifying low-to-moderate income households in owner-occupied single-family homes. The program is funded by the Department of Housing and Urban Development (HUD) through allocation of the HOME Investment Partnerships Program (HOME) formula grants.
WaterSense	WaterSense is a voluntary partnership program sponsored by the U.S. EPA, is both a label for water-efficient products and a resource for helping residents and businesses save water.
State Programs	
CalFire	The CAL FIRE Urban and Community Forestry Program focuses on use of trees and associated vegetation to provide multiple benefit solutions and to mimic the functions of natural forests in neighborhoods. CAL FIRE offers grants to eligible applicants on an annual basis, as funding permits. These grants are designed to assist communities to create or implement multi-benefit projects with a focus on GHG emissions and providing benefits to disadvantaged communities.
California Air Resources Board (CARB)	CARB offers several grants, incentives, and credits programs to reduce on-road and off-road transportation emissions. Residents, businesses, and fleet operators can receive funds or incentives depending on the program. - California Vehicle Rebate Program (CVRP) provide up to \$7,000 for recipients to purchase or lease a new plug-in hybrid electric vehicle (PHEV), battery electric vehicle (BEV) or a fuel cell electric vehicle (FCEV). The CRVP prioritizes low-income recipients. - The Car Sharing and Mobility Options program provides funding for bike share options in low-income areas. - The Carl Moyer Program provides funding to replace older heavy-duty diesel vehicles and equipment with cleaner technologies, primarily in environmental justice and low income communities - Clean Vehicle Assistance program provides grants and affordable financing to help California residents with gross household incomes less than or equal to 400 percent of the federal poverty level to purchase a new or used hybrid or electric vehicle. - The \$1 billion Proposition 1B Goods Movement Emission Reduction Program is a partnership between CARB and local agencies, air districts, and seaports to quickly reduce air pollution emissions and health risk from freight movement along California's trade corridors. - The Lower-Emission School Bus Program provides funds to purchase new buses to replace old, high-emitting public school buses - Air Quality Improvement Program (AB 118) is a voluntary incentive program administered by the Air Resources Board to fund clean vehicle and equipment projects, research on biofuels production, and the air quality impacts of alternative fuels, and workforce training.
California Climate Investments	CCI uses proceeds from the Cal-and-Trade program to facilitate comprehensive and coordinated investments throughout California to further the State's climate goals. Through funding from the Greenhouse Gas Reduction Fund (GGRF), CCI offers the following incentive programs - The California Vehicle Rebate Program provides funding for recipients to purchase or lease a new PHEV, BEV, or FCEV. - The Clean Vehicle Assistance Program provides grants and affordable financing to help low-income Californians purchase a new or used hybrid or electric vehicle. - Various programs promoting clean energy and energy efficiency
California Department of Community Services and Development	The Low Income Weatherization Program (LIWP) supports owners and residents to lower utility costs, save energy, and reduce GHG emissions from multifamily properties. The LIWP is funded by the California Department of Community Services and Development and covers approximately 30-100 percent of energy efficiency upgrade costs for low-income residents within disadvantaged communities. The program also provides free property assessments, design assistance, and contractor coordination.

PROGRAM	DESCRIPTION
California Department of Fish and Wildlife (CDFW)	The CDFW implements a number of programs to support green infrastructure, parks, urban forestry and agriculture; and ultimately reduce GHG emissions. - Funding opportunities for multi-benefit ecosystem restoration and protection projects under both Proposition 1 and Proposition 68. Funding focuses on planning, implementation, and acquisition projects across multiple priorities. - The Wetlands Restoration for Greenhouse Gas Reduction Program restores wetland ecosystems to provide essential services to California's people, wildlife, and fish. Wetlands have high carbon sequestration rates that can sequester carbon for decades. This program is part of California Climate Investments (CCI).
California Department of Resources Recycling and Recovery (CalRecycle)	CalRecycle grant programs allow jurisdictions to assist public and private entities in management of waste streams. Incorporated cities and counties in California are eligible for funds. Program funds are intended to: - Reduce, reuse, and recycle all waste - Reduce landfill disposal of organics, including food waste - Encourage development of recycled-content products and markets - Protect public health and safety and foster environmental sustainability
California Department of Transportation (CalTrans)	Caltrans offers funding programs to support implementation of bicycle and pedestrian infrastructure: - The Active Transportation Program (ATP) funds bike and pedestrian infrastructure projects, educational and promotional efforts, safe routes to school projects, and active transportation planning. The state awards half of the funds through a competitive grants process. Forty percent goes to metropolitan agencies to distribute and ten percent goes to rural areas. At least 25% of all funds must benefit residents in disadvantaged communities. - Sustainable Communities Grants to encourage local and regional planning that further state goals related to sustainability, preservation, mobility, safety, innovation, economy, health, and social equity. - The Strategic Partnerships Grants help to identify and address statewide, interregional, or regional transportation deficiencies on the State highway system in partnership with Caltrans. This program also funds transit-focused planning projects that address multimodal transportation deficiencies. - Transportation Development Act (TDA) Article 3 (SB 821) funding, also known as the Local Transportation Fund (LTF), which is used by cities for the planning and construction of bicycle and pedestrian facilities.
California Energy Commission (CEC)	The CEC funds both the California Capital Access Program (CalCAP) and the California Electric Vehicle Infrastructure Project (CALEVIP) program that provide incentives for installation of vehicle charging infrastructure. The CEC provides loan programs through the Energy Conservation Assistance Act (ECAA) that support energy efficiency and energy generation projects. - The ECAA-Ed program provides zero-interest rate loans to public school districts, charter schools, county offices of education, and state special schools. - The ECAA Low-Interest Loans program provides one percent interest loans to local governments, special districts, public colleges and universities, public care institutions, and public hospitals for energy retrofits and some new construction projects.
California Natural Resources Agency	The Natural Resources Agency offers a variety of grant and loan programs within its departments and conservancies. Programs include but are not limited to the following: - The Urban Greening Grant Program funds projects that reduce GHG emissions by sequestering carbon, decreasing energy consumption, and reducing vehicle miles traveled. - The Environmental Enhancement & Mitigation Program funds projects that contribute to mitigation of the environmental effects of transportation facilities. These include urban forestry projects designed to offset vehicular emissions of carbon dioxide. - The Urban Green Infrastructure Program provides funding for multibenefit green infrastructure investments in or benefitting disadvantaged or severely disadvantaged communities.
California State Transportation Agency (CalSTA)	The Transit and Intercity Rail Capital Program (TIRCP) was created by Senate Bill 862 to provide grants from the state's Greenhouse Gas Reduction Fund (GGRF) to fund transformative capital improvements that will modernize California's intercity, commuter, and urban rail systems, and bus and ferry transit systems. The aim is to reduce GHG emissions by reducing congestion and vehicle miles traveled throughout California

PROGRAM	DESCRIPTION
Energy Upgrade California	Energy Upgrade California is a statewide program that educates California residents about opportunities to manage energy-use, identify clean-energy options, and find rebates and incentives to increase energy-efficiency. The program is supported by the CPUC, CEC, various utilities, regional energy networks, Community Choice Aggregation, businesses, nonprofits, and local governments. The Gateway Cities Energy Leader Partnership offers assistance in understanding this program and finding contractors who can assess and complete projects that are funding-eligible. Funding is provided by investor-owned energy utility customers under the auspices of the CPUC and the CEC.
Strategic Growth Council (SGC)	The Affordable Housing and Sustainable Communities Program (AHSC) is administered by the SGC and implemented by the Department of Housing and Community Development (HCD). The AHSC Program funds land-use, housing, transportation, and land preservation projects to support infill and compact development that reduce GHG emissions. Funding for the AHSC Program is provided from the GGRF. The Transformative Climate Communities (TCC) Program funds community-led development and infrastructure projects that achieve major environmental, health, and economic benefits in California's most disadvantaged communities. Funded by California's Cap-and-Trade Program, TCC empowers the communities most impacted by pollution to choose their own goals, strategies, and projects to enact transformational change – all with data-driven milestones and measurable outcomes. SGC's Urban Greening Grant Program funds urban greening projects and plans that reduce energy consumption, conserve water, improve air and water quality, and provide other community benefits. These funds assist entities in developing a master urban greening plan that will ultimately result in projects to help the State meet its environmental goals and the creation of healthy communities. These funds also assist entities to preserve, enhance, increase or establish community green areas such as urban forests, open spaces, wetlands and community spaces (e.g., community gardens).
Regional Programs	
Metropolitan Water District of Southern California (MWD)	SoCal Water\$mart program is a partnership between the MWD and its 26 member agencies throughout Southern California to fund home and business rebates.
South Coast Air Quality Monitoring District (SCAQMD)	For the year 2018, AB 617 provided SCAQMD with \$10.7 million in funding for SCAQMD to develop community emissions reduction plans, conduct community monitoring and analysis, and implement BARCT for facilities in the Cap and Trade program. With the passage of AB 617, the SCAQMD expects to receive \$107.5 million in new funding for eligible projects under the Carl Moyer Program, to replace older heavy-duty diesel vehicles and equipment with cleaner technologies, primarily in environmental justice and low income communities. The SCAQMD and the Mobile Source Air Pollution Reduction Review Committee (MSRC) provides Clean Transportation Funding to support a variety of emission reduction programs including the Replace Your Ride Program and the Residential Electric Vehicle Charging Incentive Program. SCAQMD assists businesses with variety of financial incentives to reduce emissions through Vehicle and Engine Upgrade Programs which include grants for incremental funding, subsidies, or vouchers, with many designed to promote voluntary introduction of new technologies on an accelerated schedule The SCAQMD offers multiple rebates to incentivize energy efficient upgrades and improve air quality within the region. • The Electric Lawnmower Rebate Program offsets the costs of purchasing an electric lawnmower. Participants can purchase a new electric lawnmower, turn in their old gasoline lawnmower to an approved dismantler for permanent destruction, and then receive a rebate based on the purchase price of the new electric lawnmower. • The CLEANair Furnace Rebate Program is implemented by Electric & Gas Industries Association (EGIA), that provides rebates to residents who purchase and install a compliant furnace that meets the SCAQMD Rule 1111 NOx emission limit.

PROGRAM	DESCRIPTION
Southern California Association of Governments (SCAG)	SCAG provides a variety of services to assist local jurisdictions with implementing bicycle infrastructure and to encourage the community to use active modes of transportation. • The Sustainable Communities Program provides direct technical assistance to jurisdictions to complete planning and policy efforts that enable implementation of the Regional RTP/SCS. • SCAG's Go Human program is a community outreach and advertising campaign with the goals of reducing traffic collisions in Southern California and encouraging people to walk and bike more. This program is funded by grants from the California Office of Traffic Safety, the California Active Transportation Program, the Mobile Source Air Pollution Reduction Review Committee, and other local sponsors. The program encourages active transportation through education, advocacy, information sharing, and events.
Southern California Edison (SCE)	SCE offers tools and resources that enable residential customers and businesses to manage costs, reduce energy usage, and get payment assistance, including: • The Energy Savings Assistance program is available to certain homeowners and renters who receive electric services through a residential meter and have an SCE account. • For businesses, SCE offers Continuous Energy Improvement, a free consulting service. • The Mobile Home Upgrade program offers no-cost energy conservation evaluations by an energy specialist to identify opportunities for energy reduction and savings on electricity bills. The program also offers energy efficiency installations and improvements and is available to mobile homes or mobile home communities that have an active SCE service account. • The Direct Install Program for businesses to reduce energy costs. Under this program, businesses receive an energy efficiency evaluation and installation of energy efficient equipment including LED lights, fluorescent lighting, hi-bay lighting, refrigeration, and LED signs. • SCE offers special electric vehicle Time-of-Use rate plans that offer reduced rates when customers charge during off-peak hours. • SCE customers can join SCE's Green Rate or Community Renewables Program to tap into the power of the sun through new renewable energy options, without having to install their own solar panels. • SCE's Home Efficiency Guide provides information regarding home energy use and conservation opportunities. The Home Efficiency Guide emphasizes the benefits of electric appliances including increased energy efficiency, energy bill reduction, improvements to indoor air quality, and overall environmental benefits.
Southern California Gas Company (SoCal Gas) / Sempra Energy	SoCalGas offers programs to single-family residential, multi-family residential and commercial customers to identify energy efficiency improvements that save money and energy. Cities can join a Local Government Partnership with SoCalGas to gain access to increased rebates and incentives, free facility audits, and assistance for community outreach/events. These programs are funded by California utility customers under the auspices of the CPUC. • The Energy Savings Assistance Program (ESAP) program provides weatherization services to low-income households served by SCE who meet the CARE program income guidelines. • The Comprehensive Mobile Home Program offers no-cost energy conservation evaluations and energy efficiency installations such as low-flow showerheads and faucet aerator. The program also provides natural gas energy efficiency improvements such as duct tests and seal of HVAC systems. • The Commercial Direct Install (CDI) program offers long-term energy savings to qualifying customers. Through the CDI program, a trained energy efficiency representative will evaluate energy and water use to identify areas for businesses to save energy and water. • The Residential Direct Install program has no income requirements and is available to renters and homeowners living in single-family and multifamily dwellings. This no-cost program provides energy improvements to eligible customers to help make their homes more comfortable and help conserve energy, which could lead to lower utility bills. • The SoCalGas Marketplace is an online tool that features incentives for energy-efficient home appliances and consumer electronics. • SoCalGas offers a special residential Natural Gas Vehicle (NGV) billing rate for customers who choose this option. Refueling your NGV at home on this rate may yield a lower refueling cost compared with using a public station.

PROGRAM	DESCRIPTION
Private and Non-governmental Support	
Community-based non-profits	Community-based non-profits should be considered as resources for direct and indirect support, including funding, for program activation and operations. For example, GRID Alternatives Inland Empire helps provide access to clean, renewable solar energy to low income families and hands-on job training to help workers enter the solar industry
Private investors	Private investors may provide funding to local governments. For example, energy service companies can finance the up-front investments in energy efficiency, reimbursed by the local government over a contract period. Private companies may finance solar power installations, and then recoup their investment by selling the resulting power to the building owner.
Independent Energy Purchase/Solar Services Model	Local governments can finance solar PV system purchases and installations at no upfront cost by signing a long term power purchase agreement with a developer and agreeing to host a PV system at its facility. The developer pays for the design, construction and installation of the system, often arranging third party financing. The investor who provides the upfront capital and owns the project receives returns from payments from the host developer. The host's payments are at a predetermined fixed price and are assessed much like a monthly utility payment. The local government, as host, benefits from the fixed income price payments, reduced peaked energy costs and reduced GHG emissions all at no upfront cost.

Additional Considerations

In addition to pursuing the funding options above and monitoring the availability of others, WRCOG and its member jurisdictions may take the following steps to inform decisions related to the cost of GHG reduction measures.

- **Perform and refine cost estimates:** Cost estimates for local reduction measures should be performed to identify the cost-effectiveness of each measure to inform and guide the implementation process. This analysis will likely be based on a variety of participation, per-unit and other assumptions. As programs are developed, cost estimates should be refined and updated over time with more precise implementation-level data.
- **Integrate GHG measures into existing city budget and Capital Improvement Plan (CIP):** Certain capital improvements, particularly those identified in Energy and Land Use/Transportation Measures, may need to be added to the city's CIP and facility master plan programs, as well as those of the city utility enterprises and other public agencies (such as transit agencies) that have control for project implementation. For CIPs completely under the city's control, new projects would need to be assessed for consistency with a city's local CAP or adherence to some minimum energy efficiency standard similar to that achieved by the local plan.
- **Adopt or update ordinances and/or codes:** Some local reduction measures may represent a continuation of recently enacted ordinances, while others would require new ordinances. WRCOG will develop a "plug and play" implementation toolkit of model general plan, zoning and building code amendments and other programs to help facilitate the GHG reduction and climate adaptation measures outlined in the Subregional CAP. The model "best practices and programs" aspect of the toolkit will include, but not be limited to, those related to energy, water, land use, transportation, stormwater management, building reuse, and waste reduction. The policies and model codes of the toolkit will be drafted so they can be easily integrated into a jurisdiction's planning process.
- **Pursue outside funding sources:** A range of funding from state and federal agencies has been identified. WRCOG and local jurisdictions should pursue these and other emerging funding sources as a part of implementation efforts.
- **Implement and direct preferred city funding sources:** While city funding sources are limited in most cities, the city, when financially able, as a part of its budget process, could appropriate funding from general sources or make

changes in its fee schedules, utility rates, and other sources as needed to support funding the implementation of the GHG reduction measures.

- **Create monitoring/tracking processes:** Local reduction measures will usually require program development, tracking, and/or monitoring. WRCOG will develop a tool to enable member jurisdictions to report their progress on a regular basis. GHG emissions reduction and adaptation measures could be sorted based on implementation timing, responsible agency, and level of success/completion. By allowing specific tasks to be checked off once each phase of the CAP is completed, jurisdictions will be able to save time reviewing reports, tracking data manually, and verifying that measures are fully completed. Each proposed measure included in the CAP will be built-in the database with information such as:
 - Program;
 - Responsibility;
 - Cost;
 - Potential funding sources;
 - Priority; and
 - Timeframe
- **Identify economic and health indicators to consider future funding options:** Identification and monitoring of economic and health indicators and trends, such as home prices, energy prices cost per kWh on solar installations, unemployment rates, or real wage increases, can guide the potential for funding local reduction measures through different financing mechanisms. WRCOG will work with the County of Riverside and other regional agencies to identify and develop measurable health outcome indicators for each CAP measure. Indicators will be used to identify health co-benefits of the CAP, establish priorities, develop target resources, create benchmarks, and track progress towards community objectives.

Reducing GHG Emissions after 2030

In order to assess whether implementing this CAP achieves the state's long-term climate goals, one must look beyond 2030 to see whether the emissions reduction measures included for the 2030 milestone set the subregion on the trajectory toward meeting the longer-term goals established by the State of California. SB 32 contains no post-2030 reduction target nor provides CARB with the authority to mandate compliance with a post-2030 target. SB 375, while it contains requirements for SCAG to promote reductions in the passenger and light duty vehicle sector, does not contain mandatory requirements for local jurisdictions to reduce their GHG emissions overall.

Governor Schwarzenegger's Executive Order (EO) S-3-05 calls for an 80 percent reduction below 1990 GHG emissions levels by 2050, and Governor Brown's Executive Order EO B-55-18 from 2018 commits California to total, economy-wide carbon neutrality by 2045. However, executive orders are only binding on state agencies, and do not represent a legal mandate for local governments or the private sector. Nevertheless, these orders represent reduction targets that are based on current scientific understanding of the reductions needed to avoid the worst effects of climate change resulting from human-caused GHG emissions. The 2050 target in EO-S-03-05 is equivalent to a 2050 statewide target of about 85 million metric tons of carbon dioxide equivalent (MTCO₂e) (total emissions), as compared to the 1990 level of 427 million MTCO₂e.

The state has met the 2020 target established by AB 32 and is on track to achieve significant reductions by 2030 and 2050. However, it is clear that we cannot achieve the longer term targets unless we find even greater efficiencies and low-carbon alternatives to powering our industries, homes, businesses, and transportation systems.

Climate protection must be compatible with economic growth for successful implementation of GHG reduction strategies in California. CARB's Climate Change Scoping Plan Update of 2017 emphasizes clean energy, end-use efficiencies and wide-scale electrification of transportation to lower the state's emissions, outlining a mix of incentives and programs designed to smooth California's transition to a low-carbon economy. The 2017 Scoping Plan Update points to the critical need for rapid market penetration of new technologies that help accomplish these goals.

Full implementation and expansion of CARB's Scoping Plan to increase efforts beyond 2030 and expansion of the strategies studied in this Subregional CAP could put the subregion on a path toward achieving these required long-term reductions. While the specific measures needed to meet the 2050 goal are too far in the future to define in detail, one can examine the level of achievement that would be needed to keep the region on track toward that goal. The measures needed to achieve longer-term targets are logical extensions of the programs recommended in the CARB Scoping Plan at the state level and the measures included in this CAP at the local level. By building on planned state efforts during this period and ramped up efforts in the local building energy and transportation (and other) sectors on the part of local governments, the subregion can be on track to reach longer term goals.

CEQA Considerations

Under the California Environmental Quality Act (CEQA), the effects of GHG emissions are considered a potentially significant environmental impact. In addressing climate change, CEQA provides a useful mechanism for local agencies to evaluate the environmental effects of new development, but may also create inefficiencies for both agency staff and applicants through repetitive assessments of small projects on an individual basis, rather than considering cumulative effects of future development and determining needed mitigation up front. The CEQA Guidelines recognize this, and include a provision for streamlining the analysis of projects that are consistent with a comprehensive plan for the reduction of GHG emissions.

CEQA Guidelines Section 15183.5(b) allows lead agencies to analyze and mitigate the significant effects of GHG at a programmatic level, such as in a general plan or a separate GHG reduction plan, so that later project-specific environmental documents may tier from that programmatic review. Projects consistent with a so-called "qualified" GHG reduction plan (i.e., CAP) may be considered to have a less than significant impact with respect to GHG emissions. To be considered qualified, a CAP or similar GHG reduction plan must meet the following conditions:

- (A) Quantify GHG emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area;
- (B) Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable;
- (C) Identify and analyze the GHG emissions resulting from specific actions or categories of actions anticipated within the geographic area;
- (D) Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;

- (E) Establish a mechanism to monitor the plan's progress toward achieving the level and to require amendment if the plan is not achieving specified levels;
- F) Be adopted in a public process following environmental review.

A qualified CAP is one that demonstrates with a high degree of certainty that a jurisdiction's emissions will be reduced over time in a manner consistent with State reduction targets. Recent CEQA case law¹⁹ makes it clear that tiering from a "qualified" local GHG reduction plan²⁰ provides the most defensible method of achieving CEQA clearance for new development projects with respect to GHG emissions. The GHG emissions reduction plan can be either a stand-alone CAP or it can be integrated directly into the general plan. Regardless of approach, the plan should be consistent with the general plan and its growth projections.

WRCOG is seeking funding to help participating jurisdictions prepare the environmental documentation needed to adopt their local CAP and utilize streamlining benefits. A Program EIR for Subregional CAP may be possible, which could then enable local governments to develop a CEQA approach for their local CAP and set performance metrics for future project impacts that cannot be analyzed at the program level. A development project could demonstrate consistency with a local CAP if it is consistent with the CAP assumptions regarding the amount and type of future development, and is consistent with the GHG reduction measures identified in the CAP. Projects consistent with the CAP, including conformance with any performance measures applicable to the project, would not require additional GHG emissions analysis and mitigation under CEQA Guidelines Sections 15064(h) and 1513.5(b)(2).²¹ However, a project applicant can always choose to demonstrate compliance with the SB 32 target by preparing an individual project analysis that calculates GHG emissions as part of their CEQA documentation.

¹⁹ *Center for Biological Diversity v. California Department of Fish and Wildlife*, 2015.

²⁰ Meet the requirements for tiering project CEQA analysis off the CAP, as defined in CEQA Guidelines section 15183.5(b)(1).

²¹ If there is substantial evidence that the effects of a particular project may be cumulatively considerable, notwithstanding the project's compliance with the CAP, CEQA requires that an EIR be prepared.