SANDAG

San Diego Regional Priority Climate Action Plan

MARCH 1, 2024

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The PCAP was developed by SANDAG with key analytical support from the Energy Policy Initiatives Center (EPIC) at the University of San Diego School of Law. The PCAP was also developed in partnership with several local governments, regional agencies, and Tribal Nations (see Interagency Coordination and Community and Stakeholder Engagement sections), and through contributions of dozens of community-based organizations, environmental organizations, equity organizations, and other stakeholder groups.

List of Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AR5	Fifth Assessment Report (By IPCC)
CARB	California Air Resources Board
CBO	Community-Based Organization
CCAP	Comprehensive Climate Action Plan
CEJST	EPA's Climate and Economic Justice Screening Tool
CMAQ	Congestion Mitigation & Air Quality Improvement
CPRG	Climate Pollution Reduction Act
EPA	U.S. Environmental Protection Agency
EPIC	Energy Policy Initiatives Center
EV	Electric Vehicle
FSP	Freight Signal Prioritization
GHG	Greenhouse Gases
GWP	Global Warming Potential
IPCC	International Panel on Climate Change
LIDAC	Low-Income and Disadvantaged Communities
MSA	Metropolitan Statistical Area
MTS	San Diego Metropolitan Transit System
NCTD	North County Transit District
PCAP	Priority Climate Action Plan
QAPP	Quality Assurance Project Plan
RDF	Regional Decarbonization Framework
SANDAG	San Diego Association of Governments
SCS	Sustainable Communities Strategy
SDAPCD	San Diego County Air Pollution Control District
SIS	Smart Intersection Signals
VMT	Vehicle Miles Traveled
ZEV	Zero-Emissions Vehicle

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Executive Summary

The San Diego region is situated in the southwest corner of the United States and shares a border with Mexico, giving it a dynamic binational economy. The region is home to 3.3 million residents and has a rich diversity of peoples and cultures, including 17 federally recognized Tribal Nations with jurisdiction over 18 reservations – the most of any county in the United States (U.S.). The consequences of climate change are increasingly affecting this unique region year after year, with sea level rise, more frequent and severe weather events, and wildfires.

Widespread regional action and coordination are necessary to implement the climate mitigation measures necessary to significantly reduce the emission of greenhouse gases (GHGs) into the atmosphere that are driving the climate crisis. This Priority Climate Action Plan (PCAP) was informed by data and deep knowledge of local communities across the San Diego region to identify actionable strategies and measures to reduce regional GHG emissions by 2030.

The San Diego Association of Governments (SANDAG) prepared the PCAP in accordance with the U.S. Environmental Protection Agency's (EPA) guidance for Phase 1 of the Climate Pollution Reduction Grant (CPRG) Program. The scope of the San Diego Regional PCAP comprises the San Diego-Chula Vista-Carlsbad Metropolitan Statistical Area (MSA) and covers San Diego County. The PCAP includes actions that will significantly reduce GHG emissions, that can be implemented before 2030, and that benefit low-income and disadvantaged communities (LIDACs) in the San Diego region.

Due to historic disinvestment and under-resourcing, many LIDACs in the San Diego region are disproportionately impacted by and have a compromised ability to adapt to the effects of climate change. The PCAP prioritizes actions that will benefit LIDACs in the San Diego region vulnerable to climate impacts to ensure they are not left behind in the transition to a decarbonized transportation, building, and energy future.

While stakeholders in the region are working to reduce GHG emissions from all sectors, the PCAP focuses on specific measures where stakeholders and partners have the authority and jurisdiction for implementation. As such, the focus of GHG reduction strategies in the PCAP is in the transportation, building energy, energy supply, and water sectors.

Transportation - With transportation representing over 50% of emissions – the largest source of GHG emissions in the San Diego region – it is critical to increase zero-emission vehicle (ZEV) adoption, increase public transit use, and expand active transportation opportunities.

Building Energy - On-site fossil fuel combustion in buildings provides energy for space heating, water heating, cooking, and other functions, which accounts for 12% of GHG emissions in the San Diego region. Switching to high-efficiency electric appliances and equipment will both improve indoor air quality and reduce the GHG emissions from buildings as the electric grid continues its transition to 100% renewable resources.

Clean Energy - Electricity emissions account for about 20% of the San Diego region's GHG emissions. Increasing onsite clean energy supply through solar and battery storage will help reduce GHG emissions, provide localized energy redundancy to the grid, and accelerate the electrification of the transportation and building energy sectors.

Water - Water sector emissions occur during extracting, treating, transferring, and distributing water to the region's communities, businesses, and agricultural lands. More efficient treatment of stormwater and wastewater reduces the need for imported potable water and decreases GHG emissions associated with treating and storing wastewater.

The San Diego Regional PCAP builds on the climate leadership of many partner agencies, including for instance the Climate Action Plans (CAPs) adopted by local jurisdictions and the Regional Decarbonization Framework (RDF) developed by the County of San Diego. It also draws on the knowledge in communities gathered through stakeholder engagement and assessments from SANDAG's past Regional Plans. The result is a PCAP that recognizes the need for not only significantly lessening of GHG emissions, but also reducing the emission of harmful air pollutants which are overburdening many communities. To support the transition to a decarbonized economy, it also highlights the importance of addressing workforce development needs and providing technical assistance, particularly in LIDACs to ensure effective deployment of and participation in GHG reduction programs. SANDAG is committed to continued coordination with other climate, housing, transportation, and equity efforts to advance this vision for near-term climate action in the region.

Introduction

Climate change is already impacting the San Diego region, where communities are experiencing more severe and deadly climate-related events that require more rigorous and accelerated actions. These events include wildfires, sea level rise, extreme heat, extreme drought, and dangerous levels of flooding and storm surges, among other impacts. Historic disinvestment and under-resourcing have left many low-income and disadvantaged communities in the San Diego region overburdened by the impacts of climate change and with fewer resources to cope with or adapt to these impacts. As communities face more extreme weather events and threats to public health, nearly all local jurisdictions in the region have adopted local climate action plans (CAPs) to reduce climate pollution and plan for the impacts of a changing climate.

California has a statutory goal to reduce anthropogenic (man-made) greenhouse gas (GHG) emissions by at least 85% below 1990 levels and achieve carbon neutrality by 2045. Through this EPA grant, SANDAG aims to accelerate the San Diego region's achievement of federal, state, and local climate goals, prioritize GHG reductions that can be achieved before 2030, and provide maximum benefits to low-income and disadvantaged communities (LIDACs). This Priority Climate Action Plan (PCAP) outlines measures to significantly reduce GHG emissions over the next 5 years that respond to the local context and balance diverse needs across the region. The PCAP is focused on creating and fostering opportunities to work together at every scale to make quick and efficient progress on reducing GHG emissions.

SANDAG serves as both a metropolitan planning organization (MPO) and a council of governments for the San Diego region. The agency works with local governments and organizations to address regional issues including transportation, air quality, energy, economic development, goods movement, public health, public safety, and housing, while ensuring that these services and benefits are distributed equitably. SANDAG is governed by a Board of Directors made up of elected officials from the region's 18 city councils (cities of Carlsbad, Chula Vista, Coronado, Del Mar, El Cajon, Encinitas, Escondido, Imperial Beach, La Mesa, Lemon Grove, National City, Oceanside, Poway, San Diego, San Marcos, Santee, Solana Beach, and Vista) and the County Board of Supervisors. Additionally, representatives from Imperial County, Caltrans, the U.S. Department of Defense, the Port of San Diego, San Diego County Water Authority, San Diego Metropolitan Transit System, North County Transit District, the San Diego County Regional Airport Authority, the Southern California Tribal Chairmen's Association, and Mexico serve on the Board of Directors as advisory members.

This PCAP builds on SANDAG's nearly 15-year history of collaboration with local jurisdictions to advance climate action planning. SANDAG has provided tools and resources to aid local governments in climate action and adaptation planning such as the Regional Climate Action Planning (ReCAP) Framework, Climate Action Data Portal, and Regional Resilience Framework. It covers the San Diego-Chula Vista-Carlsbad Metropolitan Statistical Area (MSA) and encompasses the entire county of San Diego, referred to as the "San Diego region" in this PCAP.

Climate Pollution Reduction Grant Overview

The U.S. Environmental Protection Agency (EPA) Climate Pollution Reduction Grant (CPRG) program provides $5 billion in grants to states, local governments, Tribes, and territories to develop and implement ambitious plans for reducing GHG emissions and other harmful air pollutants. Authorized under Section 60114 of the Inflation Reduction Act, this two-phase program provides $250 million for noncompetitive planning grants (including the PCAP) and approximately $4.6 billion for competitive implementation grants.

This historic and unprecedented climate investment will significantly reduce GHG emissions and air pollutants, providing public health benefits to communities most vulnerable to the impacts of climate change. By providing resources to plan for and implement measures that will reduce near-term GHG emissions – particularly those that will benefit low-income and disadvantaged communities (LIDACs) – the CPRG program will enable regions to take aggressive action now to combat climate change. SANDAG identified the tremendous positive impact that participation in this program could have for the San Diego region in terms of moving forward critical near-term climate mitigation efforts that significantly reduce GHGs. The agency recognized that the region was well positioned to deliver on near-term programs and projects, given the strong track record of regional collaboration on climate action, and was awarded a $1 million regional planning grant which the Board of Directors accepted in September 2023. The Planning grants require three deliverables over four years:

- Priority Climate Action Plan (PCAP), due March 1, 2024.
- Comprehensive Climate Action Plan (CCAP), due in July 2025.
- Status Report at the end of the grant period, due in July 2027.

Implementation grants are made available by the EPA's CPRG program through a competitive process where eligible applicants may only apply for funding to implement measures included in an applicable PCAP.

Priority Climate Action Plan Overview

The San Diego Regional PCAP leverages past and ongoing climate action planning by local governments, Tribal Nations, regional agencies, and SANDAG; with a focus on measures that can be implemented before 2030 to reduce GHG emissions and advance climate and pollution reduction goals.

The PCAP is different from a typical CAP as it focuses on near-term priorities that can cover one or more emissions sectors and can rely on existing GHG inventories, measures, and actions from adopted plans in the region. The PCAP also focuses on measures and actions that will maximize benefits to LIDACs.

Scope of the Priority Climate Action Plan

The San Diego Regional PCAP covers the San Diego-Chula Vista-Carlsbad MSA and encompasses the entire county of San Diego. It outlines GHG reduction measures in the transportation, building energy, energy supply, and water sectors. These measures were identified as top priorities by stakeholders through input from local governments, regional agencies, Tribal Nations, community-based organizations, and environmental and equity stakeholder groups. Most local governments and community groups identified transportation and buildings as their top two priorities. These priorities align with the emissions data from the most recent regional GHG inventory, as almost 50% of GHG emissions in the San Diego region come from the transportation sector, followed by electricity, and natural gas from buildings.

While many local governments, Tribal Nations, and agencies are actively working to reduce GHG emissions from all sectors, this PCAP focuses on specific measures that SANDAG and partner agencies have the authority and jurisdiction to implement and are confident that implementation can be achieved before 2030 if awarded PCAP implementation funding. The GHG reduction measures in the PCAP will inform the development of a regional implementation grant proposal to be submitted to EPA by April 1, 2024.

After the PCAP, SANDAG will begin the development of the Comprehensive Climate Action Plan (CCAP), which will include an updated regional GHG inventory, forecast, and reduction measures for all emissions sectors. More information on the CCAP can be found in the Next Step sections.

Approach to Developing the Priority Climate Action Plan

To prepare the PCAP, SANDAG first assessed all past and ongoing relevant climate-planning activities in the region both at SANDAG and conducted by other local jurisdictions and agencies.

SANDAG has been coordinating climate action planning efforts in the San Diego region for years. In 2016, SANDAG began offering climate action planning services to its member agencies (local governments) and developed a framework for the development, implementation, and update of local CAPs. SANDAG's coordination enabled the development of CAPs that reflect a consistent approach to quantifying GHG emissions.

In addition to assisting local agencies, SANDAG developed a Sustainable Communities Strategy (SCS) as part of the adopted 2021 Regional Plan that outlines how regional GHG emissions will be reduced through the implementation of SANDAG programs, policies, and projects.

SANDAG contracted the Energy Policy Initiatives Center (EPIC) at the University of San Diego to assist with multiple components of the CPRG planning grant including preparation of the Quality Assurance Project Plan (QAPP) and quantification of the GHG emissions reductions for the PCAP measures. EPIC is a research center of the University of San Diego School of Law that studies energy policy issues affecting California and the San Diego region. The mission of EPIC is to increase awareness and understanding of energy and climate-related policy issues

by conducting research and analysis to inform decision-makers and educate law students. EPIC has been a trusted resource for quantifying local and regional GHG inventories for many years. They developed the first San Diego Regional GHG Inventory in 2008, prepared the regional GHG inventories for SANDAG's last three Regional Plans, and conducted the data gathering and analysis for many of the local government CAPs in the region.

EPIC developed the 2016 GHG Inventory for San Diego region used in the PCAP. To the extent possible, they followed the same methods used in developing the 2012 GHG emissions inventory as were used for San Diego Forward: The 2015 Regional Plan.[1] The 2016 GHG inventory includes 15 categories of emissions calculated based on the U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions and California Air Resources Board (CARB) California statewide GHG inventory methodology. Building on past community and stakeholder outreach efforts, EPIC also worked closely with the SANDAG team on the refinement of priority measures that would achieve significant GHG reductions for the PCAP. EPIC developed processes to gather data needed from local jurisdictions to develop the GHG emissions reduction quantification calculations. They then quantified the GHG emissions reductions by measure through 2030 and 2050 using local data and evaluated the impact of local, state, and federal regulations on the eligibility of these reductions as part of the CPRG program, per EPA guidance.

Equity

Another key element of the approach to developing the PCAP is equity. SANDAG strives to advance regional equity goals through every project and plan, and, in 2021, published the following "Commitment to Equity" statement:

> *We hold ourselves accountable to the communities we serve. We acknowledge we have much to learn and much to change, and we firmly uphold equity and inclusion for every person in the San Diego region. This includes historically underserved, systemically marginalized groups impacted by actions and inactions at all levels of our government and society.*
>
> *We have an obligation to eliminate disparities and ensure that safe, healthy, accessible, and inclusive opportunities are available to everyone. The SANDAG equity action plan will inform how we plan, prioritize, fund, and build projects and programs; frame how we work with our communities; define how we recruit and develop our employees; guide our efforts to conduct unbiased research and interpret data; and set expectations for companies and stakeholders that work with us.*
>
> *We are committed to creating a San Diego region where every person who visits, works, and lives can thrive.*

[1] https://www.sandag.org/-/media/SANDAG/Documents/PDF/regional-plan/2015-regional-plan/2015-regional-plan-appendix-d.pdf

Several sections throughout this PCAP illustrate this value, particularly the community and stakeholder engagement described below as well as the LIDAC Benefits Analysis. Based on SANDAG's commitment to equity and input gathered through outreach and engagement, the PCAP reflects community priorities. It also aligns with the Justice40 Initiative, the federal government's goal of having 40% of the overall benefit of certain Federal investments flow to disadvantaged communities that have been marginalized by underinvestment and are overburdened by pollution.[2]

Building on Regional Climate Action Progress

The PCAP draws on the climate action efforts of several partner agencies in the region. For instance, many local jurisdictions, regional agencies, Tribal Nations, and other public entities have developed CAPs and are responsible for their implementation. Nearly all – 18 out of 19 – municipal governments in the San Diego region have adopted CAPs that they are using to guide local planning efforts (see Table 1). Tribal Nations in the region have also produced climate resilience reports, such as the Manzanita Band of the Kumeyaay Nation's Tribal Resilience Project. Another important advancement for climate action in the region was the development of the Integrated San Diego Regional Decarbonization Framework (RDF) by the County of San Diego, a science-based, holistic approach to guide the region's decarbonization efforts. The purpose of the RDF is to provide a coordinated response to climate change, which includes pathways to decarbonize the region and achieve zero carbon emissions. Decarbonization involves reducing the gases in the atmosphere that trap heat. The goal is to achieve a balance of the carbon cycle in nature so that the planet stops warming.[3]

Table 1: Climate Action Plans by Jurisdiction

Jurisdiction	Climate Action Plan
Carlsbad	Yes
Chula Vista	Yes
Coronado	Yes
Del Mar	Yes
El Cajon	Yes
Encinitas	Yes
Escondido	Yes
Imperial Beach	Yes
La Mesa	Yes
Lemon Grove	Yes
National City	Yes
Oceanside	Yes
Poway	No
San Diego	Yes

[2] https://www.whitehouse.gov/environmentaljustice/justice40/
[3] https://www.sandiegocounty.gov/content/sdc/sustainability/regional-decarbonization.html

Jurisdiction	Climate Action Plan
San Marcos	Yes
Santee	Yes
Solana Beach	Yes
Vista	Yes
County of San Diego	Yes

To ensure the PCAP is reflective of the region's goals and priorities, SANDAG has held monthly interagency coordination meetings with PCAP stakeholders starting in July 2023. The following entities have been engaged in the PCAP planning process:

Local Governments

- City of Carlsbad
- City of Chula Vista
- City of Coronado
- City of Del Mar
- City of El Cajon
- City of Encinitas
- City of Escondido
- City of Imperial Beach
- City of La Mesa
- City of Lemon Grove
- City of National City
- City of Oceanside
- City of Poway
- City of San Diego
- City of San Marcos
- City of Santee
- City of Solana Beach
- City of Vista
- County of San Diego

Regional Agencies

- California Department of Transportation (Caltrans), District 11
- Metropolitan Transportation System (MTS)
- North County Transit District (NCTD)
- Port of San Diego
- San Diego County Air Pollution Control District
- San Diego County Water Authority (SDCWA)
- East County Advanced Water Purification Joint Powers Authority
- San Diego County Regional Airport Authority
- San Diego Community Power/ San Diego Regional Energy Network (SDREN)

Tribal Governments

The Pala Band of Mission Indians and the La Jolla Band of Luiseño Indians were awarded planning grants from EPA to develop Tribal PCAPs. The planning grant led by the Pala Band of Mission Indians was on behalf of the Pala Band of Mission Indians, Jamul Indian Village of California, Viejas Band of Kumeyaay Indians, and La Posta Band of Mission Indians.

SANDAG coordinated PCAP development with Tribal governments through the agency's Interagency Technical Working Group on Tribal Transportation Issues (Tribal Technical Working Group) which includes representation from all 17 sovereign Tribal Nations in the region, as well as through the agency's Tribal Task Force that convenes regional agencies and the planning staff from Tribal governments. Moreover, the Manzanita Band of the Kumeyaay Nation and the La Posta Band of Mission Indians participated in SANDAG's interagency meetings with local governments and agencies to develop the San Diego Regional PCAP.

The project team also reviewed the Intraregional Tribal Transportation Strategy (ITTS) that was updated in 2021.[4] The ITTS is the result of a collaborative effort between SANDAG and the Southern California Tribal Chairmen's Association (SCTCA) to address the tribal transportation needs in the San Diego region in an effective and innovative way. The ITTS includes priority projects identified by Tribal governments. For the PCAP, SANDAG reviewed these projects to identify opportunities for collaboration on near-term GHG reduction measures.

Additionally, in October 2023, SANDAG participated in the Tribal/U.S. EPA Region 9 Annual Conference hosted by the Viejas Band of Kumeyaay Indians at the Viejas Casino and Resort. In November 2023, SANDAG hosted a Tribal Symposium, which was a joint meeting with Tribal Technical Working Group and SANDAG Borders Committee. In February 2024, staff presented the draft San Diego Regional PCAP to the Tribal Technical Working Group.

State Government

At the state level, CARB received a CPRG planning grant for the state of California. Throughout the development of this plan, SANDAG and CARB staff have met on a regular basis to facilitate effective coordination and ensure that measures covered in both PCAPs meet state and regional needs and that future implementation of measures in these PCAPs is not duplicative. Specifically, CARB staff participated in the first Climate Table workshop described below, and SANDAG staff have attended state workshops and coordination meetings, in addition to individual meetings with CARB.

[4] https://www.sandag.org/-/media/SANDAG/Documents/PDF/projects-and-programs/borders-and-interregional-collaboration/tribal-governments/final-intraregional-tribal-transportation-strategy-2021-update-2022-03-01.pdf

Community and Stakeholder Engagement

SANDAG leveraged relationships with local jurisdictions, regional agencies, Tribal governments, and community-based organizations to build upon recent climate-related outreach and engagement that has taken place in the region. The goal of this approach was to value and utilize the input community members have already provided, and to reduce any undue burden on community members by learning from their previous feedback. SANDAG gathered outreach reports from several local jurisdictions associated with CAP development as well as outreach and engagement materials from Tribal nations and other public agencies. SANDAG reviewed these materials and used relevant information to develop the Outreach and Engagement Plan.[5]

The Outreach and Engagement Plan lists key stakeholders, establishes messaging for the PCAP, CCAP, and Status Report, and identifies five strategies for SANDAG to use throughout the duration of the CPRG. The strategies are:

1. Leverage existing relationships and activities to conduct equity-focused community outreach and engagement.
2. Gather public input on climate action planning to document community-defined priorities and inform the development of the PCAP, CCAP, and Status Report.
3. Collaborate with interagency stakeholders to build and maintain relationships.
4. Engage Tribal governments in the region to understand the climate needs of their communities and identify opportunities for alignment.
5. Consult with Non-Governmental Organizations (NGOs) and advocacy groups who are involved in climate planning in the San Diego region to leverage their expertise.

Based on these strategies, the project team presented updates on the PCAP to Community-Based Organizations (CBOs) through SANDAG's CBO partner network, which represents various underserved and underrepresented communities throughout the San Diego region.[6] The CBOs were engaged at both SANDAG Social Equity Working Group meetings and CBO Outreach Team meetings, where they received updates on the process of developing the PCAP as well as its content. SANDAG also conducted outreach and engagement to numerous equity and environmental nonprofit organizations through two Climate Table workshops that focused on gathering input on the priority GHG reduction measures to include in the PCAP. These workshops served as listening sessions and community sharing sessions for regional stakeholders, including a mix of local governments, CBOs, nonprofit organizations, Tribal governments, and more. At the first workshop on December 6, 2023, SANDAG provided an overview of the PCAP and facilitated discussions about the building and transportation sectors, as well as considerations for prioritizing different types of programs and projects to reduce GHG emissions. The second workshop, held on January 25, 2024, covered a broader set of PCAP measures, including energy efficiency, energy supply, vehicle miles traveled (VMT) reduction, building electrification, and transportation

[5] https://www.sandag.org/-/media/SANDAG/Documents/PDF/projects-and-programs/environment/climate/priority-climate-action-plan/outreach-engagement-plan.pdf
[6] https://www.sandag.org/-/media/SANDAG/Documents/PDF/meetings-and-events/working-groups/social-equity/cbo-membership-map.pdf

electrification. SANDAG received over 100 comments with project ideas, potential agencies/organizations responsible for implementation, and other feedback on the PCAP at this workshop.

Across the two Climate Table workshops, there were clear, reoccurring themes that have informed the GHG reduction measures and actions in this PCAP. For example, the most frequent comments were requests for broader incentives for transportation and building electrification, increasing active transportation options, and expanding programs that have already been successfully implemented, such as transit incentive programs and neighborhood micromobility services. Additionally, participants continually stressed the importance of prioritizing equity in project development and implementation, especially through investments in education, outreach, technical assistance, and workforce development. Summary reports for both Climate Table workshops are included in Appendix A, along with a full list of all community and stakeholder outreach conducted. Ultimately, the measures included in this PCAP reflect the input gathered through this community and stakeholder engagement process.

San Diego Metropolitan Statistical Area Context

The PCAP covers the San Diego-Chula Vista-Carlsbad MSA and encompasses the entire county of San Diego, referred to as the "San Diego region" in this PCAP. It is one of the most populated MSAs in the nation, home to more than 3.3 million people and that number is expected to grow. Part of the region's challenge is to accommodate this population growth while preserving the natural environment, reducing GHG emissions, and adapting and building resilience to climate change. The San Diego region is home to diverse landscapes, politics, economies, languages, cultures, and a dynamic binational economy. It enjoys a special place on the North American continent. Located in the southwest corner of the United States, the region's 70-mile coastline stretches from the Mexican border in the south to Marine Corps Base Camp Pendleton in the north (see Figure 1 below). To the west is the Pacific Ocean, and to the east lies mountains, the Anza-Borrego Desert, and Imperial County's agricultural fields. The region also has the largest number of military personnel in the country; in addition to Camp Pendleton, bases include Miramar Marine Corps Air Station, Marine Corps Recruit Depot San Diego, North Island Naval Base, Naval Base Point Loma, Naval Base San Diego, and U.S. Coast Guard Station San Diego.

A Binational Region

The shared border with Mexico and close ties between the San Diego and Tijuana metropolitan areas are unique features of the region. For many people in the San Diego and Baja California, Mexico areas, cross-border travel is essential for visiting friends and relatives, shopping, receiving medical care, working, vacationing, and going to school. The San Ysidro border crossing is the busiest Land Port of Entry in the Western Hemisphere, with an average of 70,000 vehicles and 20,000 pedestrians entering the San Diego region each day.[7] The historic, familial, cultural, linguistic, culinary, and educational connections between people on both sides of the border have grown stronger by the economic ties between the two regions. Mexico is California's number one trading partner, fueling commerce and economic opportunity throughout a binational region that encompasses the Tijuana and San Diego metropolitan areas.

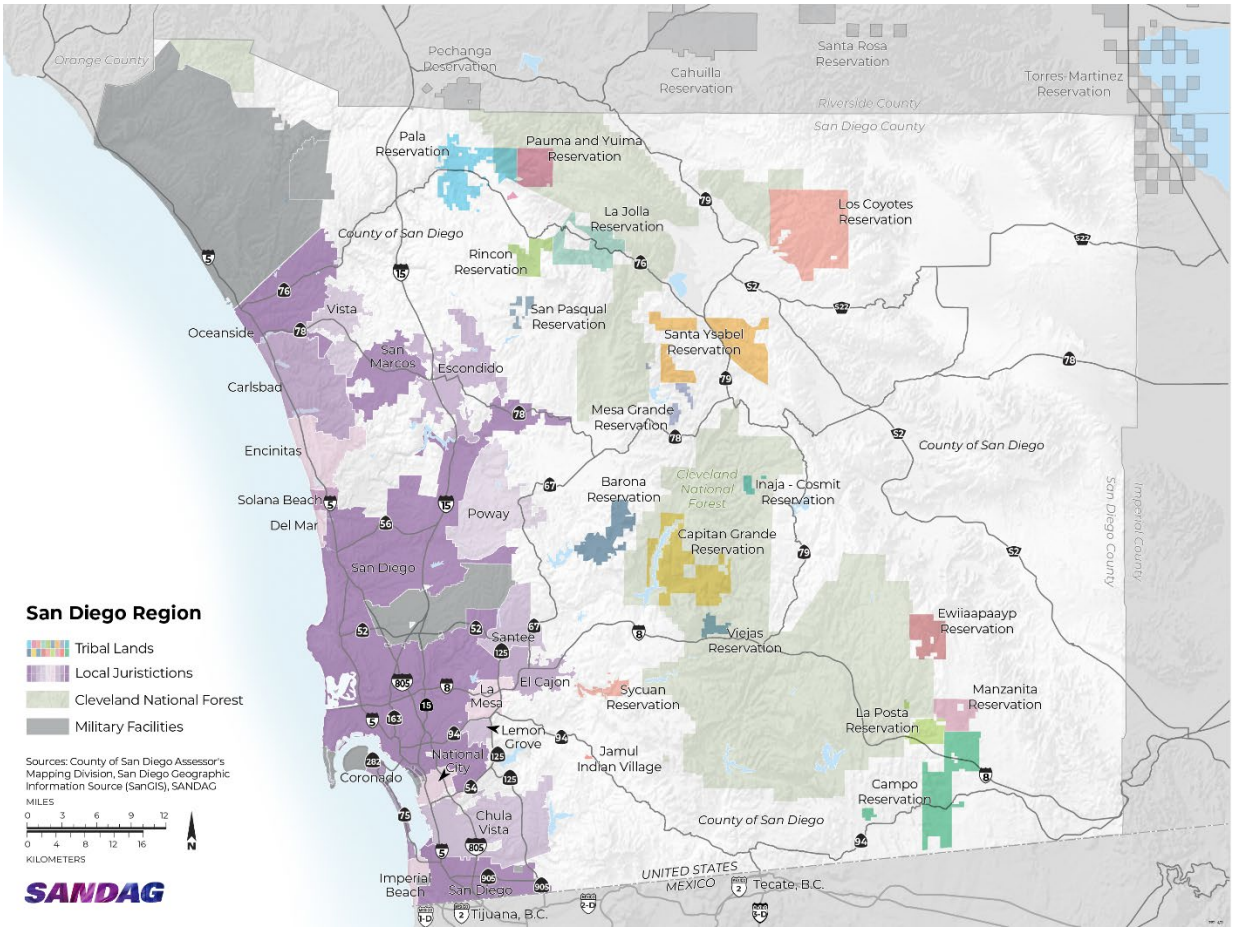
The San Diego Region's Native American Heritage

The San Diego region has been inhabited for at least 12,000 years. Before Europeans arrived, Native Americans thrived in the region by harvesting food from the sea; maximizing resources in inland, mountain, and desert landscapes throughout the year; and establishing close bartering relationships among different geographic groups to sustain themselves. Some of our region's most prominent roadways found their origins in ancient trade routes connecting Tribal groups. Today the Kumeyaay, Cupeño, Cahuilla, and Luiseño comprise the four most prominent ethno-linguistic groups of Native Americans that span the region. There are 17 sovereign Tribal Nations with jurisdiction over 18 reservations, the most in any county in

[7] https://www.gsa.gov/about-us/gsa-regions/region-9-pacific-rim/land-ports-of-entry/san-ysidro-land-port-of-entry

the United States. Conservation efforts by individuals, advocacy groups, government agencies, businesses, and other organizations in our region have often found their inspiration in the region's Native American culture and history. Governmental agencies, meanwhile, have increasingly sought the partnership and knowledge of Tribal communities to better plan for development and increased mobility, conservation, equity, and environmental sustainability.

Figure 1. San Diego Regional Map



Priority Climate Action Plan Elements

Greenhouse Gas Inventory

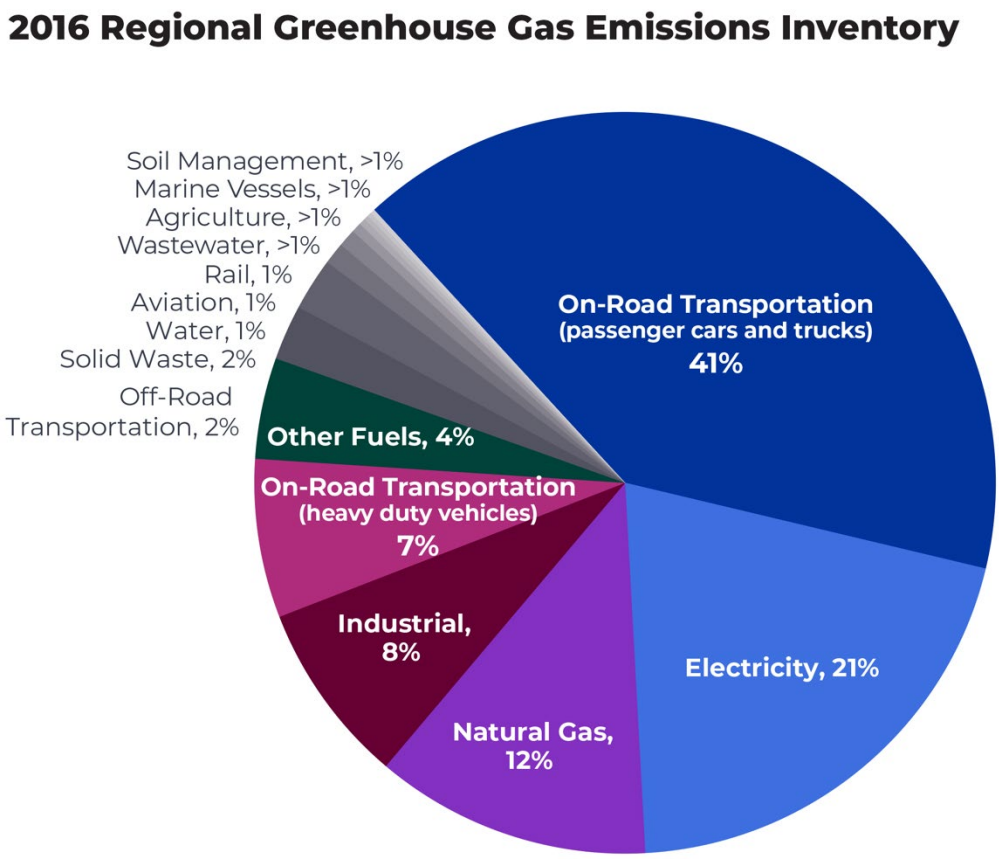
2016 Regional Inventory

A GHG inventory is a tool that is used to quantify the heat-trapping gases released within a defined boundary over the course of a year. SANDAG has published a regional GHG inventory as part of its last 3 Regional Transportation Plans (Regional Plans), beginning in 2011, and most recently for our 2021 Regional Plan and associated Environmental Impact Report. SANDAG contracted with the Energy Policy Initiatives Center (EPIC) at the University of San Diego (USD) to prepare these regional GHG inventories and methodology reports detailing how each inventory and forecast to 2050 were estimated.

The 2016 Greenhouse Gas Emissions Inventory for the San Diego Region (see Appendix B) is the most recently published and currently adopted regional GHG inventory which SANDAG completed as part of its 2021 Regional Plan. The San Diego regional GHG inventory will be updated periodically; the next update to the GHG inventory will be completed in 2025. The inventory includes 15 categories of emissions based on the U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions and the California Air Resources Board (CARB) statewide (California) GHG inventory methodology. Appendix B provides the full 2016 GHG Inventory methodology for all sectors shown below in Figure 2. The inventory identifies contributions by each sector so that strategies can be put in place to monitor and reduce emissions in the near- and long-term.

The 2016 inventory found that transportation was the largest contributor to GHG emissions, accounting for over 50% of emissions for the San Diego region. Passenger cars and trucks accounted for 41%, heavy-duty vehicles 7%, and off-road transportation 2%. The second largest contributing sector in the region is electricity, representing 21% of total emissions. The combustion of natural gas from buildings accounts for 12% of total emissions in the region.

Figure 2. 2016 Regional Greenhouse Gas Emissions Inventory from SANDAG's 2021 Regional Plan



The 2016 Inventory provides background on individual sources and assumptions, a summary of the results, as well as the methodology used to develop and calculate the emissions by category. The primary GHGs included in this document are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O); others are included where data is available. Each GHG has a different capacity to trap heat in the atmosphere, known as its global warming potential (GWP), which is normalized relative to CO_2 and expressed in carbon dioxide equivalents (CO_2e).

Methodology for Emissions Calculations

The inventory was prepared by EPIC at the University of San Diego. EPIC used the global warming potential values from the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5). The methods used to quantify regional GHG emissions in the 2016 inventory are consistent with state and national best practices and meet CPRG requirements. Regional emissions were calculated by EPIC using several different data sources. The detailed methodology, including data sources and supporting documentation, can be found in Appendix B.

Table 2. Summary of 2016 Greenhouse Gas Inventory

Greenhouse Gas Emissions (Million Metric Tons [MMT] CO_2e)	
Emissions Category	**2016**
Passenger Cars and Light-Duty Vehicles	10.4
Electricity	5.3
Natural Gas	3.1
Industrial	2.1
Heavy-Duty Trucks and Vehicles	1.8
Other Fuels	1.1
Off-Road Transportation	0.62
Solid Waste	0.59
Water	0.24
Aviation	0.21
Rail	0.11
Wastewater	0.07
Agriculture	0.05
Marine Vessels	0.05
Soil Management	0.05
Total	**26**

MMT – million metric tons.

Greenhouse Gas Reduction Measures

The following table identifies priority measures that would reduce GHG emissions, would benefit LIDACs, and put the San Diego region on an accelerated path toward decarbonization. These measures were identified as top priorities through input from local governments, regional agencies, Tribal Nations, community-based organizations, and environmental and equity stakeholder groups. Measures focus on reducing emissions from transportation (vehicle and rail electrification programs, and VMT reduction programs), buildings (residential and municipal building energy efficiency and electrification programs), energy (solar and battery storage programs) and the water and wastewater systems (wastewater and energy recovery project). These measures illustrate the near-term vision for climate pollution reduction in the San Diego region.

Table 3. Greenhouse Gas Reduction Measures and Actions

Greenhouse Gas Reduction Measures and Actions	
Program	**Description**
Transportation	
T.1. Increase Adoption of Zero-Emission Vehicles	
T-1.1 Zero-Emission Light-Duty Vehicle Incentive Program*	Implement a regional light-duty zero-emission vehicle (ZEV) incentive program with an emphasis on low- and moderate-income populations in coordination with the Air Pollution Control District (SDAPCD).
T-1.2 Zero-Emission Medium and Heavy-Duty Vehicle Incentive Program*	Implement an incentive program for electric trucks in coordination with SDAPCD and the Port of San Diego (Port).
T-1.3 Electric Bus Program	Implement an incentive program for transit operators and school districts for electric buses in coordination with SDAPCD.
T-1.4 Zero-Emission Vehicles in Municipal Fleets*	Implement a regional incentive program to fund fleet electrification for local governments, Tribal governments, and public agencies in coordination with SDAPCD.
T-1.5 Zero-Emission Rail*	Provide funding to the North County Transit District (NCTD) to electrify rail cars for use on the Sprinter Line.
T.2. Increase Zero-Emission Vehicle Charging Infrastructure	
T-2.1 Public Light-Duty Zero-Emission Vehicle Charging Infrastructure Program*	Implement an incentive program for local governments, Tribal governments, and public agencies to install public and fleet charging stations in coordination with SDAPCD.
T-2.2 Zero-Emission Medium and Heavy-Duty Vehicle Charging Infrastructure Program*	Implement an incentive program to purchase and install publicly accessible truck and/or bus charging stations in coordination with SDAPCD, the Port, and transit operators.
T.3 Expand Active Transportation Opportunities	

Greenhouse Gas Reduction Measures and Actions	
Program	**Description**
T-3.1 Active Transportation Program*	Implement a grant program for local governments and Tribal governments to construct bike lanes in underserved areas and provide direct funding to SANDAG to construct bike lanes that complete the regional bike network.
T.4. Increase Use of Public Transit	
T-4.1 Transit Incentive Programs*	Extend the Youth Opportunity Pass (YOP) pilot program to provide free transit to all youth aged 18 and under in coordination with the San Diego Metropolitan Transit System (MTS) and NCTD. Restart the Try Transit pilot program to provide free 30-day transit passes to commuters to take transit instead of driving to work.
T-4.2 Bus Rapid Transit Projects*	Provide direct funding to implement up to 3 new rapid bus routes with more frequent service that move people faster by making fewer stops, using designated bus lanes (where needed), and green light priority at intersections to travel quicker through traffic.
T-4.3 Flexible Fleets Program*	Implement a regional program that enables local governments and Tribal governments to utilize on-demand transportation services in local communities to provide affordable transportation choices for all users while helping to reduce air pollution and congestion. Flexible Fleets include micromobility, rideshare, microtransit and last mile delivery.
T.5 Improve Transportation System Efficiency	
T-5.1 Freight Signal Prioritization Project*	Implement smart intersection signals (SIS) for freight traffic between the Port's two marine terminals, Tenth Avenue Marine Terminal and National City Marine Terminal as part of Harbor Drive 2.0 and in coordination with the SANDAG Advancing Border Connectivity Project. Freight Signal Prioritization (FSP) technology evaluates real-time traffic conditions and gives signal priority to trucks traveling along designated freight routes to reduce tailpipe emissions and truck idling and increase fuel and trip efficiency.
Building Energy Use	
B.1 Improve Energy Efficiency in Buildings	
B-1.1 Municipal Energy Efficiency Program	Implement a regional municipal energy efficiency program to undertake energy-saving and bill-reducing projects at local government, Tribal government, and public agency sites.

Greenhouse Gas Reduction Measures and Actions	
Program	**Description**
B-1.2 Residential Energy Efficiency Program	Implement a regional residential energy efficiency program that saves energy, reduces energy bills, and prioritize program offerings in LIDACs.
B-1.3 Non-Residential Energy Efficiency Program	Implement regional non-residential energy efficiency programs that prioritize GHG reductions, outreach, technical assistance, and incentives in LIDACs.
B.2 Electrify Buildings	
B-2.1 Municipal Building Electrification Program*	Through SDREN, implement a regional program to provide technical assistance, financial incentives, and replace municipal gas storage water heaters, boilers, and traditional HVAC systems with heat pump and other advanced electrification technologies.
B-2.2 Residential Building Electrification Program*	Through SDREN, develop a regional program to provide technical assistance, financial incentives, and potentially direct installation to replace residential gas storage water heaters and traditional HVAC systems with residential heat pump technologies, with an emphasis on LIDACs.
B-2.3 Non-Residential Building Electrification Program	Develop a regional program to provide technical assistance and financial incentives to replace nonresidential gas storage water heaters and traditional HVAC systems with heat pump water technologies, with an emphasis on LIDACs.
Clean Energy	
CE.1 Increase Solar and Energy Storage	
CE-1.1 Municipal Solar and Energy Storage	Develop a regional program to support local government, Tribal government, and public agency solar and storage projects.
CE-1.2 Solar and Storage on Residential Buildings*	Through SDREN, implement a regional program to provide technical assistance, financial incentives, and partnerships with industry to install residential solar and storage systems, with an emphasis on LIDACs.
CE-1.3 Solar and Storage on Non-Residential Buildings	Implement a regional non-residential program that prioritizes outreach, technical assistance, and solar and energy storage incentives in LIDACs.
Water	
W.1 Improve Water and Wastewater System Efficiency	

Greenhouse Gas Reduction Measures and Actions	
Program	**Description**
W-1.1 Wastewater and Energy Recovery Project*	Support implementation of the East County Advanced Water Purification (AWP) Project to provide new, local, and sustainable drinking water supply through the development of a water, wastewater, and energy recovery project. The project is managed through a Joint Powers Authority (JPA) including County of San Diego, Padre Dam Municipal Water District, City of El Cajon, and Helix Water District.

* Programs listed with an asterisk are further detailed in the section below.

Also, please note that for the geographic location of many projects listed, the term "regional" is used to refer to San Diego County in addition to the 17 sovereign Tribal Nations.

Greenhouse Gas Reduction Measure Details

The following section further details the measures in Table 3 that were listed with an asterisk, which will be evaluated for inclusion in the proposal that SANDAG will submit on behalf of the San Diego region to the EPA CPRG's competitive implementation grant program for PCAP measures. To put the region in the best position to be selected for implementation funding, the team will weigh the multiple factors that will be considered by the EPA in evaluating whether to fund the proposal, such as the cumulative GHG reductions, cost-effectiveness, benefits to LIDACs, and potential for transformative impact. Measures listed in Table 3 *without* an asterisk are not further detailed below but were included in the PCAP to recognize the priorities voiced by stakeholders but that may not be eligible or competitive for various reasons for the EPA CPRG implementation grants. For instance, energy efficiency programs were described in Table 3 above, because many regional stakeholders voiced the need for residential and commercial energy efficiency programs, especially for LIDACs. However, it was not described in more detail in the section below because the SDREN already has an application under review at the California Public Utilities Commission (CPUC) for $120 million in program funds to implement regional energy efficiency programs. For each measure below, programs and projects have an associated implementing agency with both the capacity and authority to implement the measure before 2030. GHG reduction estimates are included for both 2030 and 2050, as well as a high-level implementation schedule and milestones, geographic location, metrics for tracking progress, and described benefits to LIDACs. More information about the methodology for the GHG quantifications and further technical background is provided in Appendix C. Measures would be delivered through regional programs or direct project funding.

Transportation

Transportation represents over 50% of GHG emissions – the largest source of emissions in the San Diego region. To reduce emissions at a scale that will make a difference, it will be critical to implement measures that will increase zero-emission vehicle (ZEV) adoption, increase public transit use, and expand active transportation opportunities.

T-1 Increase Adoption of Zero-Emission Vehicles

A key action to reduce GHG emissions and improve overall health impacts in the region is to accelerate the adoption of ZEVs. ZEVs use cleaner sources of power such as electricity and hydrogen, and unlike vehicles that use internal combustion engines to burn fossil fuels, ZEVs do not produce harmful exhaust gases such as CO_2 and ozone. ZEV technologies are becoming more popular and affordable, with new models appearing on the roads every year. ZEVs include battery electric vehicles and hydrogen fuel cell vehicles and come in the form of passenger vehicles, light- and medium-duty vehicles (e.g., pickup trucks and delivery vehicles), and heavy-duty vehicles (e.g., semi-trucks and buses). The region will prioritize increased adoption of clean transportation by supporting and incentivizing access to ZEVs. This measure includes the following ZEV adoption-related programs:

T-1.1: Zero-Emission Light-Duty Vehicle Incentive Program

Implement a regional light-duty ZEV incentive program with an emphasis on low- and moderate-income populations in coordination with the SDAPCD.

Estimated GHG Emissions Reductions by 2030: 238,000 MT CO_2e

Estimated GHG Emissions Reductions by 2050: 615,000 MT CO_2e

Implementing Agency: SANDAG in coordination with the SDAPCD

Authority To Implement: SANDAG has the authority to implement incentive programs. SANDAG has already received grant funding to research and design a regional light-duty ZEV incentive program.

Implementation Schedule and Milestones: In Year 1, conduct targeted outreach and engagement to LIDAC communities and launch the program. Continue incentive processing and distribution of funds through Year 5.

Geographic Location: Regional with an emphasis on low-income and disadvantaged communities.

Tracking Metric(s): Number of applications/incentives requested, number of zero-emission vehicle purchases/leases supported by incentives, percentage of funds distributed to LIDACs, number of outreach and engagement events.

Benefits to LIDACs: The light-duty ZEV incentive program would focus specifically on supporting ZEV adoption in LIDACs to reduce GHG emissions and improve air quality and public health in these areas. The proposed program would also include an outreach and education component to empower LIDACs with financial literacy tools and resources to inform potential ZEV adopters about the benefits and considerations when purchasing a ZEV.

T-1.2 Zero-Emission Medium and Heavy-Duty Vehicle Incentive Programs

Expansion of the Zero-emission Truck Pilot program to provide incentives to purchase or lease zero-emission trucks.

Estimated GHG Emissions Reductions by 2030: 29,000 MT CO_2e

Estimated GHG Emissions Reductions by 2050: 76,000 MT CO_2e

Implementing Agency: SDAPCD in coordination with the Port of San Diego

Authority To Implement: SDAPCD has the authority to administer incentives for infrastructure for mobile equipment through existing incentive programs. The Port has the authority to incentivize the acquisition of zero-emission trucks pending Board approval.

Implementation Schedule and Milestones: In Year 1, establish funding agreements. Operate program, including application processing and contracts for projects in Years 2-4. Trucks in service starting in Year 3.

Geographic Location: Regional with a focus on disadvantaged communities that are Portside (Port of San Diego Marine Cargo Terminals) and along the International Border (Otay Mesa and San Ysidro communities).

Tracking Metric(s): Number of trucks purchased.

Benefits to LIDACs: There are numerous communities near the Port of San Diego and U.S./Mexico international border that are recognized as LIDACs due to the disproportionate amount of GHG emissions, diesel particulate matter, and $PM_{2.5}$ resulting from heavy-duty freight operations. By increasing the number of zero-emission freight vehicles through incentives, the program will reduce air pollution and improve public health in these LIDACs.

T-1.4: Zero-Emission Vehicles in Municipal Fleets

Implement a regional incentive program to fund fleet electrification for local governments, Tribal governments, and public agencies in coordination with SDAPCD.

Estimated GHG Emissions Reductions by 2030: 29,000 MT CO_2e

Estimated GHG Emissions Reductions by 2050: 75,000 MT CO_2e

Implementing Agency: SANDAG in coordination with SDAPCD

Authority To Implement: SANDAG has the authority to implement incentive programs.

Implementation Schedule and Milestones: Subset of light duty zero-emission vehicle incentive program, the municipal program will launch in Year 1 and operate through Year 5. Conduct outreach and engagement to local governments, Tribal governments, and public agencies in Year 1.

Geographic Location: Regional

Tracking Metric(s): Number of project applications, number of vehicles purchased, number of Tribal/LIDAC applications, amount budget reserved/expended.

Benefits to LIDACs: Like the residential light-duty ZEV incentive program described above, a ZEV incentive program for municipal fleets will support ZEV adoption. Given that municipal fleets travel throughout the region, LIDACs could see improved air quality and public health from reduced GHG emissions of municipal fleet vehicles. Program would be available to Tribal governments in the region, which are designated as disadvantaged communities.

T-1.5: Zero-Emission Rail

Provide funding to NCTD for the transition to electric rail cars for use on the Sprinter Line.

Estimated GHG Emissions Reductions by 2030: 11,000 MT CO_2e

Estimated GHG Emissions Reductions by 2050: 75,000 MT CO_2e

Implementing Agency: NCTD

Authority To Implement: NCTD has the authority to implement the procurement process for electric rail cars.

Implementation Schedule and Milestones: In Year 1, conduct market outreach and procurement process. In Year 2, complete vehicle and infrastructure design and start of construction. Year 3, continued construction and the start of testing and commissioning. Year 4, first vehicle begins operation, and in Year 5 second vehicle begins operations. Both vehicles in consistent operation by Year 5.

Geographic Location: New zero-emission trains would operate along the length of the SPRINTER line,[8] roughly parallel to State Route (SR) 78, passing through Areas of Persistent Poverty and Historically Disadvantaged Communities[9] in the cities of Oceanside, Vista, San Marcos, and Escondido.

Tracking Metric(s): Number of vehicles in service; number of trips completed by those vehicles, rail ridership.

Benefits to LIDACs: As mentioned in the project location above, rail electrification would benefit LIDACs in Oceanside, Vista, San Marcos, and Escondido that exist along the East-West railway corridor. Electrification of railways leads to reductions in GHG emissions and diesel particulate matter, which improves air quality and public health in these communities.

[8] https://gonctd.com/wp-content/uploads/2023/09/NCTD-System-Map-Only-October-2023.pdf
[9] https://www.transportation.gov/RAISEgrants/raise-app-hdc

T-2 Increase Zero-Emission Vehicle Charging and Fueling Infrastructure

As the region transitions from fossil-fuel based vehicles to ZEVs, it is critical that ZEV charging and fueling infrastructure is simultaneously prioritized. In conjunction with measure T-1, this measure supports the deployment of additional ZEV charging and fueling infrastructure throughout the region. Past EV charging infrastructure programs have supported the installation of charging and fueling stations, but gaps remain, notably in LIDACs, for drivers without access to home charging, and for the nascent medium- and heavy-duty vehicles market. Increasing ZEV charging and fueling stations enables a faster transition to ZEVs, and addresses drivers' concerns about range and access to charging.

T-2.1 Public Light-Duty EV Charging Infrastructure Program

Implement an incentive program to install workplace, public, and/or fleet charging stations in coordination with SDAPCD and build on the previous regional EV charger program that ends in 2025.

Estimated GHG Emissions Reductions by 2030: 8,000 MT CO_2e

Estimated GHG Emissions Reductions by 2050: 20,000 MT CO_2e

Implementing Agency: SANDAG in coordination with the SDAPCD

Authority To Implement: SANDAG has authority to implement incentive programs. SANDAG has co-funded and oversees an existing EV charging infrastructure incentive program and would take lessons learned to implement this proposed program.

Implementation Schedule and Milestones: In Year 1, develop updated program. Launch by Year 2 and conduct outreach. Accept applications through Year 4 and continue processing applications and complete charger installations in Year 5. Conduct review of applications, distribution of incentive funds, and performance monitoring through the program.

Geographic Location: Regional

Tracking Metric(s): Number of chargers funded/installed, number of chargers installed in LIDACs.

Benefits to LIDACs: Approximately 40% of San Diegans live in multi-family housing and only 55% of housing is owner-occupied in the region, making it difficult for many to have access to home charging—a key factor in replacing a gas-powered vehicle with a ZEV. Increased access to public and workplace chargers, as well as charging at public facilities, will enable more drivers in LIDACs to switch to ZEVs, which also improves air quality and public health.

T-2.2 Medium and Heavy-Duty EV Charging Infrastructure Program

Implement an incentive program to purchase and install heavy-duty charging infrastructure as an expansion of SDAPCD's local incentive program.

Estimated GHG Emissions Reductions by 2030: 4,000 MT CO_2e

Estimated GHG Emissions Reductions by 2050: 10,000 MT CO_2e

Implementing Agency: SDAPCD

Authority To Implement: SDAPCD has the authority to administer incentives for infrastructure for mobile equipment through existing incentive programs.

Implementation Schedule and Milestones: In Year 1, establish a funding agreement. In Years 2-4, accept applications and contracts for projects. In Years 3-5 install charging infrastructure.

Geographic Location: Regional with a focus on Portside and International Border communities within the San Diego region.

Tracking Metric(s): Number of installations, increase adoption of zero-emission trucks.

Benefits to LIDACs: Heavy-duty vehicle electrification is key to improving air quality and public health in communities disproportionately burdened by GHG emissions, diesel particulate matter, and $PM_{2.5}$ resulting from freight and other heavy-duty vehicle operations. By transitioning these vehicles to electric technologies, LIDACs in the Portside area, near the U.S./Mexico international border, and throughout the region will benefit from reduced air pollution. Additionally, incentivizing the deployment of EV charging infrastructure supports workforce development, especially for electricians and other trade careers. For example, many EV infrastructure incentive programs require Electric Vehicle Infrastructure Training Program (EVITP) certification for electricians. Incorporating funding and opportunities to receive this training helps to advance the local workforce.

T-3 Expand Active Transportation Opportunities

Biking, walking, and micromobility options help residents and visitors live healthier lifestyles and provide a broader array of travel options. Bikes, pedestrian-friendly spaces, and shared bike services have transformed the idea of personal mobility in recent years. Constructing and expanding these centers of activity to a broad regional network including smart roadways, makes riding a bike a safer and more convenient form of transportation for everyday travel. The following program will help expand the region's bike network and contribute to GHG reduction goals.

T-3.1 Active Transportation Program

Implement a regional grant program for local governments and Tribal governments to build facilities that promote multiple travel choices and increase connectivity to transit, schools, retail centers, parks, work, and other community gathering places. Program to be based on SANDAG's previously funded Active Transportation Grant Program. Additionally, provide direct funding to SANDAG to construct bike lanes that connect the regional bike network.

Estimated GHG Emissions Reductions by 2030: 34,000 MT CO_2e

Estimated GHG Emissions Reductions by 2050: 182,000 MT CO_2e

Implementing Agency: SANDAG

Authority To Implement: SANDAG has authority to implement grant programs for local jurisdictions to construct active transportation infrastructure. SANDAG also has the authority to design and construct bike lanes in coordination with local jurisdictions as part of the regional bike network.

Implementation Schedule and Milestones: Year 1, develop grant program and issue call for projects, review applications, make recommendations for funding, and award grants. In Years 2-5, subrecipients complete their projects and provide final deliverables and performance measures. For SANDAG bikeway construction, on a rolling basis, projects will go out to bid, and construction to be completed by Year 5.

Geographic Location: Regional, with an emphasis on projects located in the safety focus network and/or in LIDACs for the grant program.[10]

Tracking Metric(s): Number of miles of bike facilities implemented by type (Class I through Class 4), and number of users post-construction compared to pre-construction for grant program. "Before and after" data for mobility, access, safety, and experience. Outreach to LIDAC communities for SANDAG bikeway construction projects.

Benefits to LIDACs: The SANDAG bikeway construction projects intersect or facilitate a network connection to LIDACs in the cities of San Diego, Vista, Oceanside, and La Mesa. Access to biking infrastructure provides more transportation choices to communities, offers healthier mobility options, and can replace trips that would otherwise be done with cars. Additionally, bike lanes provide more protection for cyclists, improving public health, safety, and quality of life.

T-4 Increase Use of Public Transit

Public Transit, including bus and rail systems and microtransit, are essential to a transportation future in which people can move around the region efficiently and safely while reducing the impact of vehicle miles traveled on the environment. Significant progress has been made in recent years to expand the light rail system and bus routes, advance alternatives to driving alone, and promote the benefits of using public transit. In May of 2022, SANDAG launched the Youth Opportunity Pass (YOP) pilot program which provides fare-free public transportation to all youth ages 18 and under on all transit services in the region operated by MTS and NCTD. The YOP has been a successful pilot, nearly doubling the average number of monthly riders and tripling the number of youths regularly riding transit, with disadvantaged communities and routes near schools seeing the largest increases in youth ridership[11]. However, the program currently relies on temporary funding; so SANDAG, MTS and NCTD must work to identify a renewable funding source that will continue the program and support the creation of any additional incentive programs to increase public

[10] Safety focus network to be finalized in 2024 as part of SANDAG's Vision Zero Action Plan.
[11] https://www.sandag.org/-/media/SANDAG/Documents/PDF/projects-and-programs/regional-initiatives/transit-equity-pilot/youth-opportunity-pass/yop-comprehensive-program-report.pdf

transit ridership in the region.

Flexible Fleets is another program that has been introduced to the region that aims to reduce single-occupancy vehicles. Flexible Fleets offer a variety of on-demand services through shared vehicles, including microtransit, bikeshare, scooters, and other modes of transportation that will connect people to transit and make travel easy. Microtransit options can include smaller electric shuttles or neighborhood electric vehicles that are used for pooled trips within a community. Although the region has successfully obtained a limited amount of funding to launch pilots, funding is needed to supplement some of the underfunded services, continue successful pilots, and introduce new service areas throughout the region.

T-4.1 Transit Incentives Program

Extend the Youth Opportunity Pass (YOP) pilot program to provide free transit to all youth aged 18 and under in coordination with MTS and NCTD. Restart the Try Transit pilot program to provide free, 30-day transit passes to commuters to take transit instead of driving to work.

Estimated GHG Emissions Reductions by 2030: 11,000 MT CO_2e

Estimated GHG Emissions Reductions by 2050: 11,000 MT CO_2e

Implementing Agency: SANDAG, in coordination with MTS and NCTD for YOP; SANDAG for Try Transit program.

Authority To Implement: Implementing agencies have the authority to implement. SANDAG has co-funded and oversees the YOP program in coordination with transit agencies. Additionally, SANDAG has historically funded and managed the Try Transit program.

Implementation Schedule and Milestones: In Year 1, extend Youth Opportunity Pass program within six months of receiving funding, restart Try Transit program as offering in the Sustainable Transportation Program, hold outreach events in transit-oriented areas within three months of receiving funding. In Years 2-5, continue operation of programs and monitor program performance.

Geographic Location: Regional, with Youth Opportunity Pass Program outreach focused on LIDACs in partnership with Title I schools & nonprofit community organizations. Try Transit Program's focus is on residents living in LIDACs in transit-oriented development areas.

Tracking Metric(s): Number of transit trips taken, and survey reports of program users for both transit incentive programs. For the Youth Opportunity Pass, also track the number of active youth transit accounts and Try Transit surveys to capture user intent to continue use of public transit.

Benefits to LIDACs: These programs provide direct access to transit for people belonging to LIDACs who may not be able to afford personal vehicles or other transportation options. This program also enables people to choose to use transit for a trip in place of a personal vehicle, which reduces GHG emissions and improves air quality. Transit incentive programs also enable youth and other community members' connections to school, medical care, workplaces, etc., fostering educational attainment, public health, and workforce development and/or growth.

T-4.2 Bus Rapid Transit Project(s)

Provide direct funding to implement up to 3 new rapid bus routes that would provide more frequent transit service that moves people faster by making fewer stops, using designated bus lanes (where needed), and green light priority at intersections to travel quicker through traffic.

Estimated GHG Emissions Reductions by 2030: 71,000 MT CO_2e

Estimated GHG Emissions Reductions by 2050: 240,000 MT CO_2e

Implementing Agency: SANDAG

Authority To Implement: SANDAG has authority to implement BRT project through planning, design, and construction of BRT infrastructure in coordination with transit agencies.

Implementation Schedule and Milestones: Initial route planning already underway to be completed in first 1-2 years (depending on route). Project implementation is to occur in Years 2-4 with completion by Year 5. Bus service to start by Year 5.

Geographic Location: Routes under consideration would operate in the cities of San Diego, El Cajon, Santee, Poway, San Marcos, Escondido, Carlsbad; and unincorporated Ramona in the County of San Diego.

Tracking Metric(s): Ridership, farebox recovery, improved trip times, transit network connections

Benefits to LIDACs: The cities listed above include many of the LIDACs in the San Diego region, and as mentioned above, some of these community members may rely on transit due to the expense of owning a personal vehicle or other reasons. Improvements to transit through bus rapid projects not only improve the user experience and quality of life for LIDAC riders but can entice other residents to choose transit. Rapid bus projects reduce VMT and GHG from single occupancy vehicles and improve air quality and public health. Additionally, the project supports workforce development through job creation as more drivers, maintenance workers, etc. are needed to operate the new routes.

T-4.3 Flexible Fleets Program

Implement a regional program that enables local governments and Tribal governments to utilize on-demand transportation services in local communities to provide affordable transportation choices for all users while helping to reduce air pollution and congestion.

Flexible Fleets include micromobility, rideshare, microtransit, and last-mile delivery.

Estimated GHG Emissions Reductions by 2030: 300 MT CO_2e

Estimated GHG Emissions Reductions by 2050: 300 MT CO_2e

Implementing Agency: SANDAG

Authority To Implement: SANDAG has the authority to implement Flexible Fleets throughout the region in coordination with local jurisdictions, including planning and management of the project.

Implementation Schedule and Milestones: In Year 1, launch program, and continue operation through final year.

Geographic Location: Regional with priority for expansion in low-income and disadvantaged communities.

Tracking Metric(s): Number of flexible fleet services launched, number of community projects, number of trips provided, trip replacement from single occupancy vehicles (VMT reduction).

Benefits to LIDACs: This program prioritizes affordable transportation options for residents in LIDACs to reach different areas of their communities more easily, including transit stations, commercial centers, medical offices, etc. Enabling this connection to transit and other amenities supports access for those in LIDACs who rely on public transit and helps reduce VMT. In turn, this reduces GHG emissions and improves air quality and public health in these communities. Additionally, the implementation of more Flexible Fleets supports workforce development through job creation in LIDACs where drivers, maintenance, etc. are needed to support the fleets.

T-5 Improve Transportation System Efficiency

Technology serves as a backbone to the transportation system. A variety of tools and strategies can be used to improve the San Diego region's transportation system efficiency with the goal of ensuring people and goods safely arrive at their destination in a timely manner and with reduced environmental impacts. As a border region that experiences heavy freight traffic, it is important to implement technology investments that support streamlined approaches to improving traffic conditions for all while reducing tailpipe emissions.

T-5.1 Freight Signal Prioritization Project

Implement smart intersection signals (SIS) for freight traffic between the Port of San Diego's two marine terminals, Tenth Avenue Marine Terminal and National City Marine Terminal, as part of Harbor Drive 2.0 project, and in coordination with the SANDAG Advancing Border Connectivity Project. Freight Signal Prioritization (FSP) technology evaluates real-time traffic conditions and gives signal priority to trucks traveling along designated freight routes to reduce tailpipe emissions and truck idling and increase fuel and trip efficiency.

Estimated GHG Emissions Reductions by 2030: 2,000 MT CO_2e

Estimated GHG Emissions Reductions by 2050: 10,000 MT CO_2e

Implementing Agency: Multi-Agency Effort via Memorandum of Agreement that includes Caltrans, City of San Diego, Port of San Diego, and SANDAG

Authority To Implement: The project would be implemented by a multi-agency effort (listed above) via an established Memorandum of Agreement as part of Harbor Drive 2.0.

Implementation Schedule and Milestones: FSP is an unfunded component of a larger freight corridor project called Harbor Drive 2.0 that is anticipated to be completed in 2028. Technology needs will be informed by the Advancing Border Connectivity Pilot that is anticipated to be completed in June 2026.

Geographic Location: Cities of San Diego and National City; Regional

Tracking Metric(s): Reduction in the number of collisions, number of freight/commercial vehicle driver interactions, improved travel times, increased fuel economy by reducing stops and idling at traffic signals, and reduced GHG emissions

Benefits to LIDACs: Freight Signal Prioritization at the Port of San Diego directly benefits Portside communities (San Diego and National City) that are designated LIDACS due to their disproportionate air pollution burden caused by nearby trucking operations. As described above, FSP reduces truck idling and tailpipe emissions including GHGs and particulate matter, benefiting these LIDACs through improved air quality and public health.

Building Energy

On-site fossil fuel combustion from natural gas in buildings provides energy for space heating, water heating, cooking, and other functions. Natural gas accounts for about 12% of regional GHG emissions. Switching to high-efficiency electric appliances and equipment can reduce the GHG emissions from fossil fuel combustion while improving indoor air quality. As the renewable energy content powering the electric grid increases to 100% by 2045, the transition to electric appliances and equipment further supports regional decarbonization.

B-2 Electrify Buildings

Gas burning appliances contribute to poor indoor air quality, negatively impact human health and emit GHG emissions. Incentives can be provided to building owners and occupants to encourage the transition from older gas appliances to new, high-efficiency electric equipment and appliances that reduce emissions and improve indoor air quality.

B-2.1 Municipal Building Electrification Program

Through the San Diego Regional Energy Network (SDREN)[12] implement a regional program for local governments, Tribal Nations, and public agencies to provide technical assistance and financial incentives to replace municipal gas storage water heaters, boilers, and traditional HVAC systems with heat pump and other advanced electrification technologies.

Estimated GHG Emissions Reductions by 2030: 13,000 MT CO_2e

Estimated GHG Emissions Reductions by 2050: 49,000 MT CO_2e

Implementing Agency: SDREN

Authority To Implement: SDREN has the authority to implement incentive programs and provide technical assistance.

Implementation Schedule and Milestones: The program will launch in Year 1, with continued incentive processing and distribution through Year 5.

Geographic Location: Regional

Tracking Metric(s): Number of buildings retrofitted, number of equipment installations, number of Tribal/LIDAC applications.

Benefits to LIDACs: Municipal building electrification applies to all types of municipal-owned, publicly accessible buildings including those in LIDACs. This program would improve air quality in and around these buildings, supporting public health in LIDACs.

B-2.2 Residential Building Electrification Program

Through SDREN, develop a regional program to provide technical assistance, financial incentives, and potentially direct installation to replace residential gas storage water heaters and traditional HVAC systems with residential heat pump water technologies, with an emphasis on low-income and disadvantaged communities.

Estimated GHG Emissions Reductions by 2030: 31,000 MT CO_2e

Estimated GHG Emissions Reductions by 2050: 122,000 MT CO_2e

Implementing Agency: SDREN

Authority To Implement: SDREN has the authority to implement incentive programs and provide technical assistance.

Implementation Schedule and Milestones: The program will launch in Year 1, with continued incentive processing and distribution through Year 5. Targeted outreach and engagement to low-income and disadvantaged communities beginning year 1.

[12] SDREN is led by San Diego Community Power and the County of San Diego with representation countywide. SANDAG collaborated with San Diego Community Power as an implementing agency through SDREN.

Geographic Location: Regional, including Tribal communities.

Tracking Metric(s): Number of residential buildings and homes retrofitted, number of equipment installations, dollar amount distributed to LIDACs.

Benefits to LIDACs: The residential building electrification program would directly benefit LIDACs by providing incentives, technical assistance, and in some cases, direct install of electric home appliances to reduce GHG emissions around their homes. This program could also support workforce development for trade workers in the region who can install electric appliances in retrofitted buildings. Lastly, this program could also result in energy cost savings and other economic benefits for residents.

Clean Energy

Electricity emissions account for 21% of the region's GHG emissions. Transitioning to clean onsite energy sources will help reduce emissions and ensure that the electrification of the transportation and building energy sectors also rely on clean energy.

CE-1 Increase Solar and Energy Storage

Generating onsite renewable energy through solar and storage reduces demand on the electric grid, expands access to reliable clean energy sources, and reduces GHG emissions. Increasing onsite solar energy generation and storage also expands the green economy, reduces utility bills, and improves energy resilience.

CE-1.2 Solar and Storage on Residential Buildings

Through SDREN, implement a regional program to provide technical assistance, financial incentives, and partnerships with the solar/storage industry to install residential solar and storage systems, with an emphasis on low-income and disadvantaged communities.

Estimated GHG Emissions Reductions by 2030: 67,000 MT CO_2e

Estimated GHG Emissions Reductions by 2050: 215,000 MT CO_2e

Implementing Agency: SDREN

Authority To Implement: SDREN has the authority to implement incentive programs and provide technical assistance.

Implementation Schedule and Milestones: The program currently exists as a pilot project of San Diego Community Power, the Lead Program Administrator of SDREN. The program will launch in Year 1, with continued incentive processing and distribution through Year 5. Targeted outreach and engagement to low-income and disadvantaged communities beginning in Year 1.

Geographic Location: Regional, including Tribal communities.

Tracking Metric(s): Number of systems installed, dollar amount distributed to LIDACs.

Benefits to LIDACs: Through this program, which specifically targets LIDACs, residents would benefit from energy cost savings resulting from the use of solar and storage systems. Additionally, this program supports workforce development in the region as the demand for electricians and other workers involved in solar and storage installations increases.

Water

Water sector emissions occur during extracting, treating, transferring, and distributing water to the region's communities, businesses, and agricultural lands. Delivering water to the San Diego region and treating it are very energy-intensive processes. While direct water emissions account for only 1% of overall regional GHG emissions, water is integral to human life, and it is critical to ensure equitable access to clean water and increase cleaner water reuse.

W-1 Improve Water and Wastewater System Efficiency

More efficient treatment of stormwater and wastewater reduces the need for imported potable water and decreases emissions associated with treating and storing wastewater while providing valuable co-benefits, including reducing ocean discharge, and adding to the region's water supply.

W-1.1 Wastewater and Energy Recovery Project

Support implementation of the East County AWP Project to provide new, local, and sustainable drinking water supply through the development of a water, wastewater, and energy recovery project. The project is managed through a Joint Powers Authority (JPA) including County of San Diego, Padre Dam Municipal Water District, City of El Cajon, and Helix Water District.

Estimated GHG Emissions Reductions by 2030: 15,000 MT CO_2e

Estimated GHG Emissions Reductions by 2050: 77,000 MT CO_2e

Implementing Agency: Padre Dam MWD

Authority To Implement: The East County AWP JPA has regulatory authority to implement the project. Padre Dam MWD is implementing the project on behalf of the JPA.

Implementation Schedule and Milestones: AWP pipelines, pump station upgrades are anticipated to be completed in Year 2. The Water Recycling Facility, Solids Handling Facility, AWP Facility, Energy Recovery Facilities, regional pipeline, and upgrades to the existing force main are anticipated to be completed in Year 3.

Geographic Location: The project will benefit communities in the East County of San Diego. The facilities will be in the City of Santee.

Tracking Metric(s): Gallons of wastewater treated locally, kW of energy recovered.

Benefits to LIDACs: LIDACs in East County will benefit from this project through water and wastewater improvements due to the reduced GHG emissions, as well as potential energy cost savings derived from the energy recovery aspect of the project. Additionally, it may support workforce development through job creation and/or training in relation to the project facilities.

Benefits Analysis

SANDAG, partner agencies, and stakeholders in the San Diego region recognize the importance of not only reducing GHGs that are driving climate change, but also reducing air pollutants that are negatively impacting public health, particularly in LIDAC communities. Sectors such as transportation, buildings, and energy, which account for the majority of GHG emissions, are also the source of many harmful air pollutants. Implementing measures to reduce emissions in these sections will have significant co-benefits to air quality and human health. In the transportation sector, for example, medium- and heavy-duty vehicles emit diesel particulate matter, a known carcinogen. PCAP measures, such as incentives to replace these gas-powered vehicles with electric alternatives, will reduce GHG emissions while accelerating actions to reduce harmful air pollutants in overburdened LIDACs. These measures will build on efforts of partner agencies already underway in the region including the SDAPCD's Regional Air Quality Strategy (RAQS), Community Emissions Reduction Plan in Portside Environmental Justice Neighborhoods, and International Border Communities San Ysidro and Otay Mesa Community Emissions Reduction Program. A full assessment of air pollutant reductions for each measure is forthcoming and will be developed for the CCAP.

Low-Income and Disadvantaged Communities Benefits Analysis

LIDACs in the San Diego region are disproportionately impacted by several climate impacts, including extreme heat, flooding, coastal erosion, drought, and wildfires. The historic heavy rainfall that the region experienced in January 2024 and subsequent flooding in LIDAC communities was a stark example of this. While most residents across the San Diego region experienced some amount of rainfall during the storm, for many residents in LIDAC communities, the effects were disastrous. The storm resulted in three deaths and damage or destruction to more than 800 homes in the San Diego region.[13] The storm was especially damaging in southeast San Diego, an area with a high concentration of LIDACs. Due to historic disinvestment and under-resourcing, many LIDACs have a compromised ability to combat and recover from the effects of climate change. Communities hit hardest by the January 2024 flooding are still feeling its effects. In response to the devastation left by the storm, President Biden approved a Major Disaster Declaration through FEMA to provide much-needed assistance to San Diego communities impacted by the storm.[14]

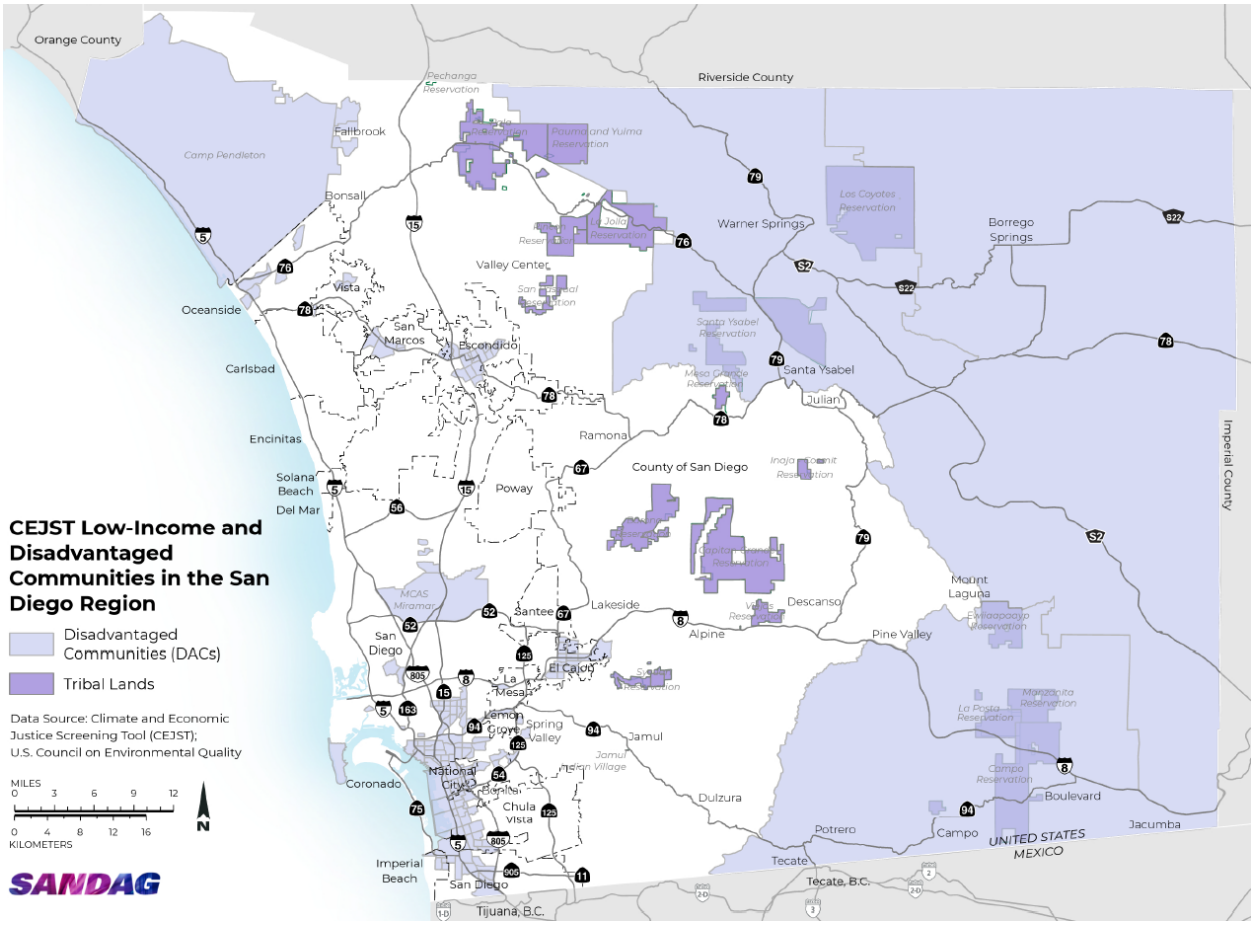
[13] https://www.sandiegouniontribune.com/news/public-safety/story/2024-02-19/biden-approves-major-disaster-federal-funding-san-diego-storm
[14] https://www.fema.gov/press-release/20240220/president-joseph-r-biden-jr-approves-major-disaster-declaration-california

As exemplified by the recent storm, not all communities are impacted the same way by climate risks. The severity and types of climate change impacts vary across communities in the region, as does the ability to cope with these burdens. This section addresses the importance of addressing these inequities and engaging with communities to implement measures that are responsive to the diverse needs of and contexts in LIDACs in the region.

Identifying Low-Income and Disadvantaged Communities and Climate Risks

SANDAG used the U.S. Council on Environmental Quality's Climate and Economic Justice Screening Tool (CEJST) to identify LIDACs in the San Diego region. Both CEJST and the U.S. EPA's Environmental Justice Screening Tool (EJScreen) were used to assess climate risks and burdens on these LIDACs. In total, there are 159 census tracts designated as low-income and/or disadvantaged across the San Diego region (for the full list of LIDAC census tracts, see Appendix C). Figure 3 below spatially shows the location of the San Diego region LIDAC census tracts. This represents 25% of all census tracts in the region. Notably, all census tracts that include land within the boundaries of 17 Federally Recognized Tribes are also identified in the map and considered disadvantaged by CEJST.[15] The San Diego region is also home to several military bases, which are also identified as LIDACs by CEJST.

Figure 3. CEJST Low-Income and Disadvantaged Communities in the San Diego Region



[15] https://screeningtool.geoplatform.gov/en/methodology

The CEJST tool organizes various criteria into categories of burden, including data on climate change, energy, health, housing, legacy pollution, transportation, water and wastewater, and workforce development. While there are specific datasets that fall within each of these categories, all are based on demographic, socioeconomic, and/or environmental indicators which are compared to the tract's income level. For instance, a census tract is considered disadvantaged by CEJST if the community is at or above the 90th percentile for an environmental indicator, such as proximity to hazardous waste facilities, in addition to being at or above the 65th percentile for low-income.

Categories of Burdens

According to CEJST, housing, and workforce development are by far the most common categories of burden for LIDACs in the San Diego region. Table 4 below illustrates the conditions that result in housing and workforce development burdens, respectively.

Table 4. CEJST Housing and Workforce Development Burdens

CEJST Burden	If the census tract is/has:	And:	Then the census tract is:
Housing Burden	- Historic underinvestment - At or above the 90th percentile for housing cost OR lack of green space OR lack of indoor plumbing OR lead paint	- Is at or above the 90th percentile for low-income	- Disadvantaged by a housing burden
Workforce Development Burden	- At or above the 90th percentile for linguistic isolation OR low median income OR poverty OR unemployment	- More than 10% of the people ages 25 years or older whose high school education is less than a high school diploma	- Disadvantaged by a workforce development burden

The two most common indicators cited as part of the housing burden for San Diego LIDACs are the cost of housing and the lack of green space. The cost of housing is particularly challenging in the region, with San Diego ranking as one of the most expensive areas to live in the nation in 2023.[16] In many parts of the region, such as southwest San Diego near the Barrio Logan neighborhood, for example, historic underinvestment is another significant issue contributing to the housing burden. CEJST evaluates historic underinvestment through an analysis of the discriminatory redlining maps used starting in the 1930s to cut off low-income and minority communities from lending and investment opportunities. The legacy of these policies continues to negatively affect San Diego area LIDACs today.

[16] https://www.kpbs.org/news/local/2023/10/26/national-report-says-san-diego-is-the-most-expensive-city-in-the-u-s

Indicators used to estimate workforce development burden include linguistic isolation, unemployment, low median income, and poverty. In many census tracts identified as having a workforce development burden, more than one of these indicators are present. For example, a tract might have linguistic isolation, low median income, and low rates of high school education. Given the San Diego region's proximity to the U.S./Mexico border, the percentage of the population that speaks another language is higher than the U.S. average. SANDAG's Language Assistance Plan published in 2022 identifies Spanish, Tagalog, Vietnamese, Chinese (Mandarin and Cantonese), and Arabic as the five most common languages spoken in the region after English. Nearly 400,000 individuals in the San Diego region have Limited English Proficiency,[17] adding to the workforce development burden in the form of linguistic isolation.

While housing and workforce development were the two most frequent categories of burden found across LIDACs in the San Diego region, these communities are commonly overburdened in more than one CEJST category, such as transportation, water and wastewater, legacy pollution, health, climate change, or energy. For example, many census tracts are in close proximity to hazardous waste facilities or have a higher number of leaking storage tanks than other communities, meaning that they are burdened by legacy pollution in addition to other burdens. Understanding the different types and layers of burdens is key to addressing climate risks facing communities across the San Diego region.

The climate risks, impacts, and vulnerabilities vary considerably across LIDACs in the San Diego region. For example, the climate change burden in many southern and eastern county census tracts is driven by higher wildfire risk, while in coastal areas to the west, coastal erosion is the major driver. For other communities across the region, climate change burdens are instead associated with higher flood risk or anticipated increased building loss. Many communities along the coastline are overburdened in the water/wastewater category, caused by wastewater discharge. For instance, residents on both sides of the U.S./Mexico international border, in the Cities of Imperial Beach and Tijuana, are exposed to severe pollution from raw sewage runoff and failing wastewater infrastructure. Recent storms, such as the historic rainfall in January 2024 mentioned earlier in this section, which are expected to increase in intensity and frequency due to climate change exacerbate these existing public health and environmental challenges.[18] Another burden on census tracts near the U.S./Mexico international border is in the transportation category, given the passenger vehicle and truck traffic congestion at the border. Similarly, communities near the Port of San Diego experience high traffic volume associated with medium- and heavy-duty freight operations, also resulting in a transportation burden.

LIDACs have diverse histories, geographies, assets, and socioeconomic characteristics that influence their ability to cope with the disproportionate impacts of the climate burdens they face. Continuing to engage with and value the knowledge of these communities will be essential to ensuring that GHG reduction measures are implemented in a manner that is responsive to the diverse contexts of LIDACs in the region.

[17] https://www.sandag.org/LAP
[18] https://www.theguardian.com/environment/2024/feb/15/us-mexico-california-tijuana-river-illness-public-health

Engagement with Low-Income and Disadvantaged Communities

As mentioned in the Approach to Developing the PCAP section of the Introduction, community and stakeholder engagement was critical in the development of the PCAP. One strategy used to reach LIDACs in the region was to solicit feedback on the PCAP content and process from CBO representatives of these communities through SANDAG's Social Equity Working Group and CBO Outreach Team meetings. Additionally, SANDAG invited numerous CBOs and other local nonprofits to both Climate Table workshops, where they voiced community priorities for GHG reduction measures and suggested relevant projects. SANDAG will build on this momentum when developing the CCAP to continue building relationships and gathering key input from LIDACs.

For more information regarding engagement with communities, see the section "Approach to Developing the Priority Climate Action Plan" above.

Benefits to Low-Income and Disadvantaged Communities from Priority Climate Action Plan Measures

The measures in this PCAP are directly informed by community and stakeholder priorities and aim to improve public health and reduce air pollution through GHG emission reductions. Additionally, based on the PCAP measure categories of transportation, building energy use, clean energy, and water, some of the wider potential co-benefits to LIDACs from the PCAP measures include energy cost savings, economic development, job creation (see Workforce Planning Analysis below), and community capacity building.

Specific benefits to LIDACs associated with each PCAP measure are listed in the section titled "Greenhouse Gas Reduction Measures" above.

Review of Authority to Implement

The "Greenhouse Gas Reduction Measure Details" section above reflects the subset of measures prioritized by stakeholders in the region that either SANDAG or partner agencies have the capacity and authority to implement before 2030. Please refer to the section titled "Greenhouse Gas Reduction Measure Details" above for the review of the authority to implement each GHG reduction measure.

Workforce Planning Analysis

Many of the measures outlined in this PCAP will result in new projects and programs for the region and will impact the workforce needs and opportunities. As the region takes action to meet ambitious GHG reduction goals, workforce training will be needed for emerging skills and occupations. To analyze the workforce development activities needed to implement the priority measures included in this PCAP, SANDAG leveraged a workforce development study called *Putting San Diego County on the High Road: Climate Workforce Recommendations for 2030 and 2050*,[19] developed by the County of San Diego to support the San Diego RDF. It includes three of the four sectors covered in this PCAP (transportation, building energy use,

[19] https://www.sandiegocounty.gov/content/dam/sdc/lueg/regional-decarb-frameworkfiles/Putting%20San%20Diego%20County%20on%20the%20High%20Road_June%202022.pdf

and clean energy), which are described below.

Transportation:

- The current workforce related directly to transportation including vehicle mechanics, gas station operators, and freight movers would need re-training but are not expected to experience net loss through 2030.
- The electrification of transportation will require a shift towards more specifically certified electricians which will entail further training.
- VMT reduction through increased public transportation and new infill development will require ensuring continue high quality labor standards through 2050.

Buildings and Energy:

- There will be a need for training that helps prepare contractors and technicians for the installation and maintenance of electric appliances and equipment including heat pumps.
- For hard-to-electrify industrial sectors, there's a need to enhance workforce readiness to expand the use of renewable gas and hydrogen.
- Training will be needed for solar installation, geothermal heat pumps, hydrogen energy solutions, and other clean energy technologies.

Water, the fourth and final sector covered in this PCAP is not specifically addressed by the County of San Diego's workforce development study, however SANDAG will conduct a full workforce planning analysis as part of the upcoming Comprehensive Climate Action Plan. The County of San Diego's workforce development study also analyzed opportunities for the creation of new high-quality jobs resulting from decarbonization measures across the multiple sectors including transportation, buildings, and energy as well as lands (which is not included in this PCAP). The study found the San Diego region could generate an average of 27,000 green jobs per year through 2030 considering all decarbonization sectors covered in the RDF.[20]

[20] https://www.sandiegocounty.gov/content/dam/sdc/lueg/regional-decarb-frameworkfiles/Putting%20San%20Diego%20County%20on%20the%20High%20Road_June%202022.pdf

Next Steps

The PCAP identifies near-term regional priorities for reducing GHG emissions and it is the first of the three deliverables that SANDAG is required to submit to EPA as part of the CPRG planning grant. Following submission of the PCAP, SANDAG will coordinate with partner agencies to prepare a regional application for the competitive implementation grants made available through the EPA's CPRG program to fund measures identified in PCAPs. To determine which measures included in the PCAP will be included in the regional grant proposal and put the San Diego region in the best position to be selected for implementation grant funding, the project team will weigh multiple factors that are part of the EPA evaluation process. These include cumulative GHG reductions, cost-effectiveness, benefits to LIDACs, potential for transformative impact, and whether other funding sources are available to implement measures.

The near-term vision for the San Diego region described in this PCAP can be used by local governments, regional agencies, Tribal Nations, community-based organizations, and other stakeholders to support effective regional collaboration to combat climate change and reduce air pollutants. The PCAP can also serve as supporting documentation for regional stakeholders to pursue additional funding opportunities outside of EPA CPRG.

Following completion of the PCAP and regional grant proposal, SANDAG will begin development of the CCAP, the second deliverable of the EPA CPRG planning grant. The CCAP will be a holistic plan to reduce GHG emissions in the region between now and 2050, and it will support the San Diego region in meeting the State's ambitious goals of net zero emissions by 2045. It will address elements not found in the PCAP such as GHG emissions projections and reduction targets and will include a more comprehensive benefits and workforce planning analysis. As part of the CCAP development, SANDAG will also update the regional GHG inventory. Building on community and stakeholder engagement conducted for this PCAP, the CCAP will include additional outreach and engagement efforts, including future Climate Table workshops and CBO engagement activities. SANDAG anticipates completing the CCAP by Summer 2025 and plans to incorporate it into the 2025 Regional Plan.

Finally, SANDAG will prepare a Status Report as the third and final deliverable of the EPA CRPG planning grant by mid-2027. It will include updates on the implementation status of the quantified GHG reduction measures included in the PCAP and CCAP, as well as any relevant updates to GHG analyses or projections. Additionally, the Status Report will discuss the next steps and future budgeting or staffing needs necessary to implement the CCAP.

Appendices