

ALAMO AREA PRIORITY CLIMATE ACTION PLAN



Alamo Area

PRIORITY CLIMATE ACTION PLAN

Acknowledgements

City of San Antonio Office of Sustainability

- Julia Murphy, Deputy Chief Sustainability Officer
- Douglas Melnick, Chief Sustainability Officer
- Patricia McWilliams, Senior Regional Climate Plan Coordinator
- Andra Nava-Garcia, Special Projects Manager, Energy
- Leslie Antunez, Senior Municipal Climate Manager
- Alejandra Longoria, Municipal Climate Manager

Alamo Area Council of Governments

- Lyle Hufstetler, Natural Resources Project Administrator

ICLEI USA

- Matthew Katz, Senior Program Officer, and Technical Team



This project has been funded wholly or in part by the United States Environmental Protection Agency (EPA) under assistance agreement 02F39101 to San Antonio-New Braunfels MSA, referred to in this document as the Alamo Area. The Alamo Area region's Priority Climate Action Plan was developed primarily by the City of San Antonio Office of Sustainability and the Alamo Area Council of Governments Natural Resources Division with technical assistance from ICLEI USA. The plan builds on existing local climate and air pollution initiatives, community priorities, and local considerations and conditions.

The contents of this document do not necessarily reflect the views and policies of the EPA, nor does the EPA endorse trade names or recommend the use of commercial products mentioned in this document.



February 16, 2024

US Environmental Protection Agency, Region 6
Air and Radiation Division Air Grants Section (6ARP-G)
1201 Elm Street, Suite 500
Dallas, Texas 75270-2102

We are pleased to submit our Alamo Area San Antonio-New Braunfels MSA Priority Climate Action Plan to fulfill initial requirements of the US EPA's Climate Pollution Reduction Grant. Building on regional efforts around improving air quality, prioritizing climate action, and reducing harmful emissions, we are excited to continue our pathway towards better quality-of-life and community resilience in the face of present and future challenges.

Our region is one of the fastest growing in the entire country, and though our economy is strong, we have an opportunity to shape our growth while leveraging innovation and technology and workforce development while at the same time protecting natural resources like land and water that are precious in our part of Texas. By educating and empowering our region to think clean and green, we will make significant strides in reaching our goal of carbon neutrality.

The opportunities made available through the Bipartisan Infrastructure Law and Inflation Reduction Act are unprecedented. We have the team and partnerships in place to make the most of federal funds by enhancing local efforts and scaling them up. Thank you for the opportunity to participate.

Sincerely,

Mayor Ron Nirenberg
City of San Antonio

Clifford Herberg, J.D.
AACOG Executive Director

Definitions and Acronyms

AACOG: Alamo Area Council of Governments

CAAP: SA Climate Ready, the City of San Antonio's Climate Action and Adaptation Plan

CEJEST: Climate and Economic Justice Screening Tool

COSA: City of San Antonio

CPRG: Climate Pollution Reduction Grant

Comprehensive Climate Action Plan (CCAP): a narrative report that provides an overview of significant GHG sources/sinks and sectors, establishes near-term and long-term GHG emission reduction goals, and provides strategies and identifies measures that address the highest priority sectors.

DEIA: Diversity, Equity, Inclusion and Accessibility

EJ Screen: Environmental Justice Screening Tool

EPA: United States Environmental Protection Agency

Greenhouse Gas (GHG) Inventory: a list of emission sources and sinks and the associated emissions quantified using standard methods, generally from the following sectors: industry, electricity generation/use, transportation, commercial and residential buildings, agriculture, natural and working lands, and waste and materials management.

IRA: Inflation Reduction Act

Low Income / Disadvantaged Communities (LIDACs): communities with residents that have low incomes, limited access to resources, and disproportionate exposure to environmental or climate burdens.

MSA: metropolitan statistical areas as defined by the U.S. Census 2020 MSA population.

Priority Climate Action Plan (PCAP): a narrative report that includes a focused list of near-term, high-priority, and implementation-ready measures to reduce GHG pollution and an analysis of GHG emissions reductions.

RTW: San Antonio Ready to Work education and job placement program

SECO: Texas State Energy Conservation Office

VMT: Vehicle Miles Traveled

Table of Contents

1.0 THE CLIMATE POLLUTION REDUCTION GRANT

- 1.1 Climate Pollution Reduction Grant Overview
- 1.2 Priority Climate Action Plan (PCAP)
- 1.3 Developing the Alamo Area PCAP

2.0 ALAMO AREA GEOGRAPHIC CONTEXT

3.0 REGIONAL CLIMATE AND AIR QUALITY INITIATIVES

- 3.1 SA Climate Ready, a Local Model for Regional Climate Planning
- 3.2 Local GHG Inventory and Air Pollution Monitoring
- 3.3 Climate Action Implementation Highlights
- 3.4 Sector Action Planning
- 3.5 Community Engagement and a Commitment to Climate Equity

4.0 PRIORITY CLIMATE ACTION PLAN ELEMENTS

- 4.1 Greenhouse Gas Inventory
 - 4.1.1 GHGI Scope
 - 4.1.2 Methodology & Data Overview
 - 4.1.3 GHG emission results
- 4.2 GHG Emissions Projections
- 4.3 Emissions Reduction and Energy Efficiency Goals
- 4.4 Priority GHG Reduction Measures
 - 4.4.1 GHG Reductions Overview
 - 4.4.2 GHG Reductions Results
- 4.5 Low Income Disadvantaged Communities Benefits Analysis
 - 4.5.1 Existing Climate Risks, Impacts, and Vulnerabilities among LIDACs
 - 4.5.2 Potential Benefits of Priority GHG Emission Reduction Measures to LIDACs
 - 4.5.3 How LIDAC Engagement Informs Alamo Area Priorities
- 4.6 Review of Authority to Implement
- 4.7 Leveraging Funding Opportunities
- 4.8 Workforce Partnerships

5.0 NEXT STEPS

Appendix A: Potential Reduction Measures for Consideration During CCAP Development

Appendix B: PCAP Community Engagement Summary

Appendix C: Alamo Area Identified LIDACs and Environmental Justice Burden Categories

Appendix D: DRAFT Alamo Area Implementation Project Concept

SECTION 1.0

**The Climate Pollution
Reduction Grant**

1.0 The Climate Pollution Reduction Grant

1.1 CLIMATE POLLUTION REDUCTION GRANT OVERVIEW

As part of the Inflation Reduction Act, the Climate Pollution Reduction Grant (CPRG) is providing significant financial resources to state, territory, local, and tribal governments to develop ambitious climate action and air pollution reduction plans and to implement measures from those plans. Administered by the United States Environmental Protection Agency (EPA), the CPRG is a two-phase program – with \$250 million in non-competitive planning grants, followed by \$4.6 billion of competitive implementation grants. Entities must have completed and submitted a Priority Climate Action Plan to be eligible for implementation grants.

The EPA has outlined three overarching goals of the program:

- Reduce harmful climate pollution while supporting the creation of jobs and lower costs for people
- Advance environmental justice and empower community-driven solutions in overburdened neighborhoods; and
- A focus on cleaning up air pollution, a public health threat.

On April 27, 2023, the City of San Antonio (COSA) submitted a Notice of Intent to Participate with letters of support from the Alamo Area Council of Governments (AACOG), CPS Energy, Alamo Area Metropolitan Planning Organization (AAMPO), San Antonio Water System (SAWS), San Antonio River Authority (SARA), and VIA Metropolitan Transit. In April of 2023, the AACOG Board of Directors approved acceptance of subaward funding, if awarded, to carry out these duties.

The full application package was submitted on May 25, 2023. On August 31, 2023, the City of San Antonio Office of Sustainability was awarded a grant in the amount of \$1 million to collaborate with AACOG in leading the development of this regional Priority Climate Action Plan (PCAP), followed by a more in-depth and multi-year development of a Comprehensive Climate Action Plan (CCAP). As mentioned above, this plan is the first major deliverable of participation in the Climate Pollution Reduction Act.

1.2 PRIORITY CLIMATE ACTION PLAN (PCAP)

Building on previous climate and environmental plans, and with community input, the City of San Antonio Office of Sustainability and AACOG developed this Priority Climate Action Plan (PCAP) and will continue to work together to deliver the Comprehensive Climate Action Plan (CCAP) for the AACOG service area, which includes Atascosa, Bandera, Bexar, Comal, Frio, Gillespie, Guadalupe, Karnes, Kendall, Kerr, McMullen, Medina, and Wilson counties.

The Alamo Area PCAP includes the regional Greenhouse Gas inventory, prioritized and quantified emissions reduction strategies for the AACOG service area, a low-income and disadvantaged communities' benefits analysis, a public engagement plan, and a Quality Assurance Project Plan (QAPP). The intent is to identify emissions reduction strategies that will have the greatest positive impact on the region and its residents while leveraging local resources and aligning with future implementation dollars. The strategies modeled in the Alamo Area PCAP focus primarily in



the Building Energy and Transportation sectors, not only because those sectors are the largest emissions contributors to the regional inventory, but also because they are consistent with strategies prioritized by the community in San Antonio's climate action and adaptation plan, SA Climate Ready.

PRIORITY CLIMATE ACTION PLAN ELEMENTS



1.3 DEVELOPING THE ALAMO AREA PCAP

The City of San Antonio (COSA), led by the Office of Sustainability, is collaborating with and supporting AACOG to develop the Priority Climate Action Plan (PCAP) and Comprehensive Climate Action Plan (CCAP) for the AACOG service area. Development of the PCAP and CCAP will accomplish three inter-related goals: 1. Broaden the geographical scope of climate planning and complete a regional GHG inventory for the AACOG service area; and 2. Develop and prioritize GHG reduction strategies that can be implemented on a regional scale; and 3. Update the City of San Antonio Climate Action & Adaptation Plan and determine new science-based reduction targets, reprioritize mitigation strategies, and develop a new implementation plan with a focus on priority strategies and funding opportunities.

SECTION 2.0

**Alamo Area
Geographic Context**

2.0 Alamo Area Geographic Context

San Antonio-New Braunfels Metropolitan Statistical Area

Per the United States Census Bureau, Metropolitan Statistical Areas, or MSAs, are “geographic entities used by Federal statistical agencies in collecting, tabulating, and publishing Federal statistics.” San Antonio serves as the seat of Bexar County and is the center of the San Antonio–New Braunfels MSA. Commonly called Greater San Antonio, the metropolitan area had a population of 2,558,143 based on the 2020 U.S. census estimates, making it the 24th-largest metropolitan area in the United States and third largest in Texas.

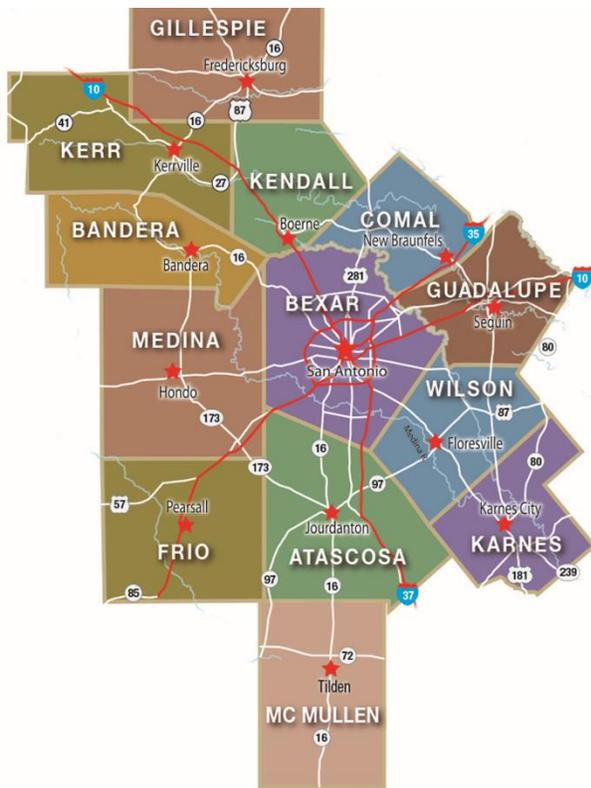
Alamo Area Council of Governments

The Alamo Area Council of Governments (AACOG) was established in 1967 as a political subdivision of the State of Texas, under Chapter 391 of the Local Government Code. AACOG is a voluntary association of local governments and organizations that serves its members through planning, information, and coordinated activities. AACOG is the air quality planning organization for State Planning Region 18, supporting Atascosa, Bandera, Bexar, Comal, Frio, Gillespie, Guadalupe, Karnes, Kendall, Kerr, Medina, McMullen, and Wilson counties. The AACOG Board of Directors is the governing body for the agency. AACOG will coordinate the Climate Pollution Reduction Grant (CPRG) planning grant for suburban and rural areas as a subrecipient. AACOG’s involvement will address areas within the MSA outside the City of San Antonio, and will include the neighboring counties of Frio, Gillespie, Karnes, Kerr, and McMullen, which together comprise the AACOG service area.

AACOG serves over 2.6 million residents across 13 counties in a fast-growing, emerging megaregion stretching from San Antonio to Austin. The AACOG region grew faster than the State of Texas between 2010 and 2020, with Comal, Kendall, and Guadalupe Counties growing the fastest, respectively. Mirroring state and national trends, the rural AACOG counties are growing the slowest or declining in population.

COUNTY	2020 CENSUS POPULATION	2010 CENSUS POPULATION	POPULATION GROWTH (2010-2020)
Atascosa	48,981	44,911	9.1%
Bandera	20,851	20,485	1.8%
Bexar	2,009,324	1,714,773	17.2%
Comal	161,501	108,472	48.9%
Frio	18,385	17,217	6.8%
Gillespie	26,725	24,837	7.6%
Guadalupe	172,706	131,533	31.3%
Karnes	14,710	14,824	-0.8%

COUNTY	2020 CENSUS POPULATION	2010 CENSUS POPULATION	POPULATION GROWTH (2010-2020)
Kendall	44,279	33,410	32.5%
Kerr	52,598	49,625	6.0%
McMullen	600	707	-15.1%
Medina	50,748	46,006	10.3%
Wilson	49,753	42,918	15.9%
Total AACOG Region	2,671,161	2,249,718	18.7%
State of Texas	29,145,505	25,145,561	15.9%



Within the Alamo Area, there are 482 census tracts, of which 177 have at least one burden category in the 90th percentile or above. (See Appendix C.) The AACOG Natural Resources department exists to bring together stakeholders from all interests - government, industry, business, and residents - to better understand air pollutants and encourage regional collaboration in support of air quality improvement. As the most populous county in the region, Bexar County is currently the only county within the AACOG service area that is in moderate nonattainment of the National Ambient Air Quality Standard (NAAQS) for ground level ozone.

The Alamo Area Council of Governments service territory comprises 13 counties in Central and South Texas.

City of San Antonio

San Antonio is a vibrant city with a thriving economy, deep cultural heritage, and communities that are compassionate, inclusive, and proudly diverse. It is the largest city in the MSA, the seventh largest city in the United States and one of the strongest fiscally managed cities in the country, nurturing entrepreneurship, encouraging investment and funding infrastructure. COSA fosters partnership and growth opportunities in aerospace, bioscience, cybersecurity, green technologies, healthcare, and information technology. San Antonio's famed Riverwalk and Alamo are the top tourist attractions in Texas, and its historic missions are a designated World Heritage Site – the first and only in Texas. Proudly called Military City, USA®, San Antonio is home to one of the largest populations of active-duty military and veterans, as well as mission-critical commands, including military medicine, cybersecurity, pilot training and basic training. However, for San Antonio, where temperatures are expected to increase by 6°F to 10°F by the end of the century, this poses a risk to residents and infrastructure.

Through collaboration with diverse stakeholders, COSA's Office of Sustainability developed and implements San Antonio's Climate Action and Adaptation Plan. Staff work both within the municipal organization and the community-at-large to deliver innovative programs focusing on energy efficiency, community, municipal, and corporate sustainability, and sustainable transportation. In 2024, COSA hired its first Chief Resilience Officer.

SECTION 3.0

**Regional Climate and
Air Quality Initiatives**

3.0 Regional Climate and Air Quality Initiatives

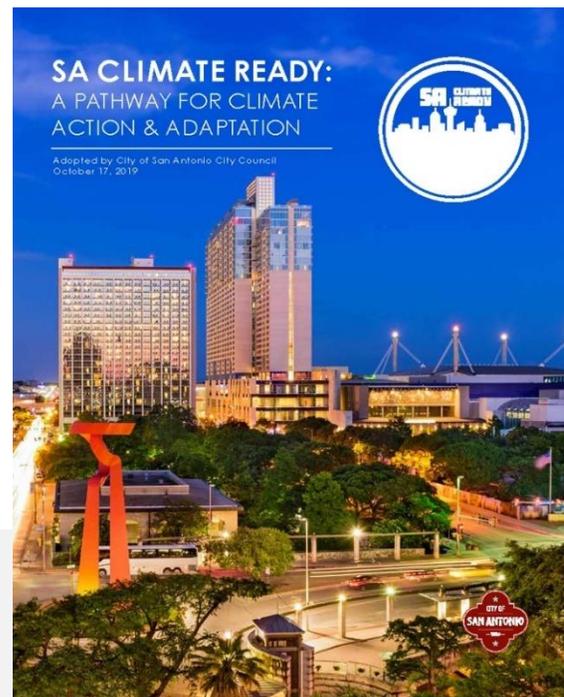
3.1 SA CLIMATE READY, A LOCAL MODEL FOR REGIONAL CLIMATE PLANNING

SA Climate Ready was adopted by the San Antonio City Council on October 19, 2019. ¹ The Climate Action and Adaptation Plan (CAAP) commits the community to achieving carbon neutrality by 2050. The plan includes 28 community mitigation, 13 municipal, and 45 adaptation strategies. Mitigation strategies are grouped into five prioritized goals: increasing carbon-free energy; reducing building energy consumption; reducing transportation energy consumption; advancing the circular economy; promoting biodiversity and healthy ecosystems; and educating and empowering the community.

Regionally, these climate priorities have emerged across all stakeholder groups:

- Energy security and utility preparedness for climate impacts
- Risk assessment of critical Infrastructure
- Extreme heat risks and impacts, especially for vulnerable populations
- Providing transportation choices and protecting transit riders
- Local food and water security

San Antonio's first Climate Action and Adaptation Plan, SA Climate Ready, was adopted by City Council on October 19, 2019.



¹ Publications (sanantonio.gov)

In addition, the SA Climate Ready Plan acknowledges that climate action is not the sole responsibility of the City of San Antonio, but is an effort that requires collaboration amongst regional entities, and in fact, identifies the following strategy:

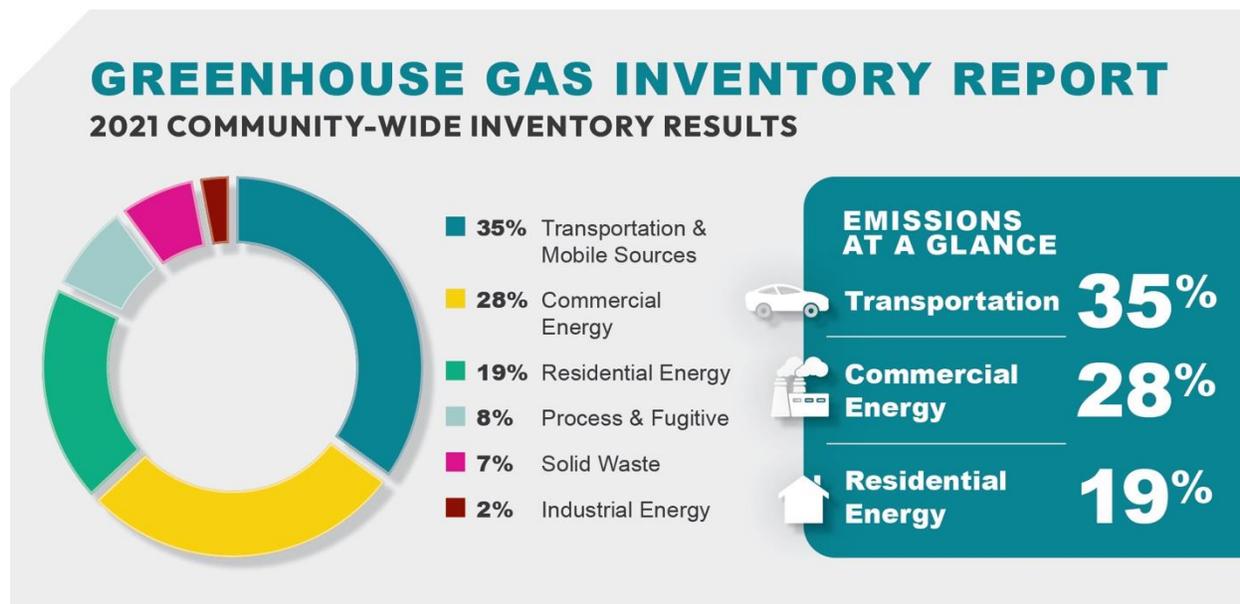
Mitigation Strategy #27: DEVELOP AND IMPLEMENT A FRAMEWORK FOR REGIONAL COLLABORATION

Work with Bexar County, suburban cities, and regional partner organizations to expand CAAP efforts through a Regional Climate Council.

This EPA-funded CPRG Initiative signifies a major step forward in implementing the SA Climate Ready Plan and provides the needed resources to jump start regional climate planning in the San Antonio MSA.

3.2 LOCAL GHG INVENTORY AND AIR POLLUTION MONITORING

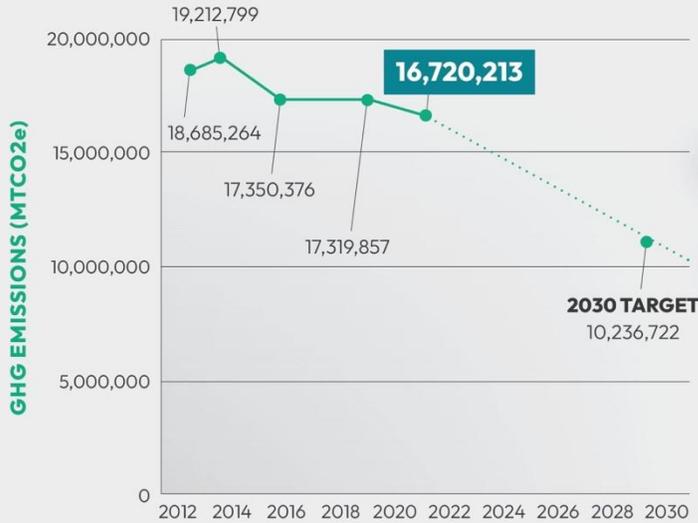
The City of San Antonio conducts a Greenhouse Gas Inventory (GHGI) every two years to measure emissions reduction progress against goals in the Climate Action and Adaptation Plan. The most recent community and municipal GHGI was completed by COSA using 2021 data.² These inventories will be updated using 2023 data.



² Publications (sanantonio.gov)

CHANGE IN EMISSIONS SINCE 2013

SAN ANTONIO COMMUNITY GHG EMISSIONS TRENDS (MTCO₂e)



KEY SECTOR TRENDS



Transportation

5.78%
DECREASE



Commercial Energy

6.66%
INCREASE



Residential Energy

6.45%
INCREASE

EMISSIONS TRENDS

13%

Total community emissions have **decreased by 13%** from a high in 2014.

3.46%

Total community emissions have **decreased by 3.46%** between 2019 and 2021.

San Antonio conducts a community and municipal GHG Inventory every two years as mandated in the CAAP, and the above is from the 2021 GHG Inventory Report.

The top three sectors contributing to the San Antonio area GHG Inventory are transportation at 35%, commercial energy at 28%, and residential energy at 19%. From a high in 2014, total community emissions have decreased by 13%, and between 2019 and 2021 emissions decreased 3.46%. The transportation sector saw a decrease of 5.78%, while commercial and residential energy saw increases of 6.45% and 6.66% respectively.

AACOG Air Quality Initiatives

As the regional air quality planning authority, AACOG engages in technical and outreach activities in support of air pollution reduction. AACOG works with regional stakeholders, including local governments, trade organizations, community groups, industries, and residents, to encourage collaboration on initiatives that promote clean air.

Technical activities include air quality monitoring and analysis, emission inventories, control strategy development, and photochemical modeling. AACOG has been monitoring ozone in the region since 2002, owning and operating seven air quality monitoring sites across three counties that measure ozone and ozone precursors nitrogen oxides

(NO_x) and volatile organic compounds (VOC). In the next two years, AACOG will begin monitoring fine particulate matter to prepare for potential nonattainment designations in two years. Prior and ongoing expertise in emission inventory development will facilitate data collection for the GHGI in the CCAP. AACOG is unique among councils of governments in having in-house photochemical modeling expertise. Future modeling projects could utilize GHG reduction data to predict future ozone levels as a result of strategy implementation.

The Alamo Area Clean Cities Coalition, administered by AACOG and funded by the U.S. Department of Energy, works with vehicle fleets, fuel providers, community leaders, and other stakeholders to reduce regional petroleum-based fuel usage and greenhouse gas emissions from the transportation sector. Currently, AACOG is about to undertake a regional community engagement initiative to support two hydrogen fuel corridors across Interstate 10 and the Texas Triangle.

To promote energy efficiency, management, and resiliency for the public sector, AACOG is partnering with the State Energy Conservation Office (SECO) to provide resources to assist in the implementation of energy efficiency and energy management programs. These resources include training events, workshops, and one-on-one assistance with other energy-related issues. AACOG has committed to its own energy efficiency by using SECO's revolving loan program to fund energy-saving measures for its facilities.

AACOG administers a regional Property Assessed Clean Energy (PACE) Program for nine municipalities and three counties across the AACOG service area. These local governments have adopted a mechanism that allows them to use property assessment liens to provide low-cost and long-term financing for commercial property owners to invest in clean energy and water-saving measures for their facilities. As part of its outreach programs, AACOG promotes PACE to its member governments who have not adopted it in their jurisdictions, as well as property owners in PACE-enabled areas to increase awareness of the program.

3.3 CLIMATE ACTION IMPLEMENTATION HIGHLIGHTS

 <p>ENERGY SECTOR</p>	<ul style="list-style-type: none"> ▪ CPS Energy commits to remove coal from their energy mix by 2028
 <p>BUILT ENVIRONMENT</p>	<ul style="list-style-type: none"> ▪ COSA 2022-2027 Municipal Bond Project Sustainability Checklist ▪ Property Assessed Clean Energy (PACE) finance tool available in nine cities and three counties ▪ EV & Solar Ready building code for residential construction ▪ COSA Cool Pavement Pilot Project and Urban Heat Island Mitigation Program ▪ COSA Municipal Solar Project (in progress)
 <p>TRANSPORTATION</p>	<ul style="list-style-type: none"> ▪ COSA Public and accessible Level 2 EV charging stations on City property ▪ VIA Metropolitan Transit Advance Rapid Transit Program ▪ COSA Equity-Based Sidewalk Program ▪ San Antonio Independent School District (SAISD) Electric School Bus Program



- COSA Sustainable Fleet Acquisition and Management Policy
- COSA Facility Energy Policy
- COSA Deconstruction & Circular Economy Program



- COSA Community-Based Organization Capacity Grant Program
- COSA *Who Cares?* Climate Education and Empowerment Campaign
- COSA Electric Vehicle San Antonio (EVSA), Outreach Program
- COSA Municipal Employee Climate Training Program
- COSA Mayor's Youth Engagement Council for Climate Initiatives



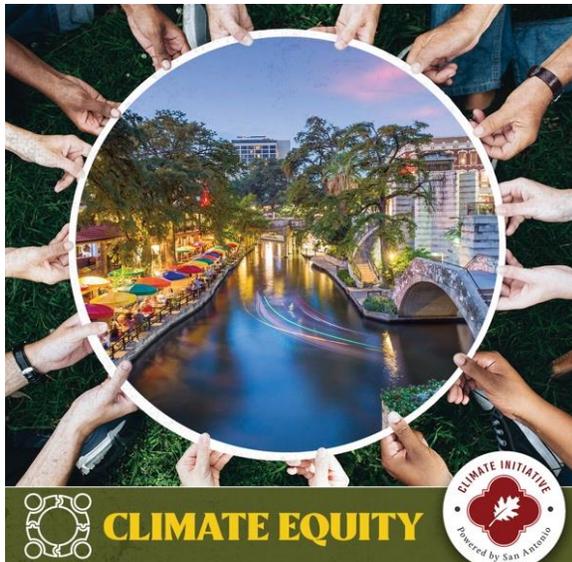
3.4 SECTOR ACTION PLANNING

These completed and in-progress climate-related plans and resources were also considered for this regional planning initiative:

RESOURCE	DESCRIPTION	LEAD
CPS Energy Sustainable Tomorrow Energy Plan (STEP)	Programs and rebates to help residential and business customers save energy and money while reducing energy demand	CPS Energy
San Antonio Water System 2019 Five Year Water Conservation Plan	Water use patterns, conservation targets and strategies associated with water conservation in San Antonio	San Antonio Water System
COSA Ozone Attainment Masterplan	Air quality and NAAQS attainment control strategies	San Antonio Metropolitan Health District
San Antonio River Authority Green Infrastructure	Low impact development in the San Antonio River watershed, including Bexar, Wilson, and Karnes Counties	San Antonio River Authority
COSA Heat Emergency Response Plan	Response and resources for extreme heat events	San Antonio Metropolitan Health District
COSA Health Equity Food Insecurity Workgroup	Community stakeholders organized around local food security	San Antonio Metropolitan Health District
Workforce Solutions Alamo (WSA) Local Plan 2021-2024	Workforce development services for the Alamo Area	WSA Board of Directors

RESOURCE	DESCRIPTION	LEAD
COSA Equity Atlas and Matrix	Demographics, disparities, and infrastructure distribution through the lenses of race and income	City of San Antonio Office of Diversity, Equity, Inclusion & Accessibility
Alamo Area Metropolitan Planning Organization (AAMPO) Resiliency Study	Assessing concerns and risks for the region's roadway system	Alamo Area Metropolitan Planning Organization
VIA Metropolitan Transit Keep SA Moving	A collection of projects designed to improve mobility for transit riders	VIA Metropolitan Transit
COSA Strategic Housing Implementation Plan	2022-2031 Housing Plan for the City of San Antonio and Bexar County	City of San Antonio Neighborhood Housing and Development Services
COSA 2022 San Antonio Bike Network Plan	Bicycle infrastructure and improvements plan for the San Antonio area	City of San Antonio Transportation Department
Complete Streets Policy Update, Transit Oriented Development Task Force	Transportation initiatives to reduce VMT and enhance user experience on area roadways	City of San Antonio Transportation Department
COSA 88th State Legislative Program 2023	Policy priorities and anticipated legislative opportunities	City of San Antonio Government Affairs Department
COSA Urban Heat Island Mitigation Delivery Team	Strategies and research to advance mitigation of urban heat effects	City of San Antonio Municipal Staff
COSA Community Resilience Network	Stakeholders convening around community needs and priorities	City of San Antonio Office of Sustainability
Reconnecting Communities with Neighborhoods Planning Grant	Connecting Hemisfair Park with LIDAC neighborhoods on San Antonio's east side.	Hemisfair Conservancy

3.5 COMMUNITY ENGAGEMENT AND A COMMITMENT TO CLIMATE EQUITY



SA Climate Ready was developed with robust community engagement, and climate equity is woven into the plan. A specialized climate equity working group was recruited to represent diverse voices and met monthly for almost 2 years to define climate equity. After the plan was passed, an official Climate Equity Advisory Committee was created to provide feedback, prioritize climate strategies and review projects before implementation. The plan is also governed by a Technical and Community Advisory Committee.

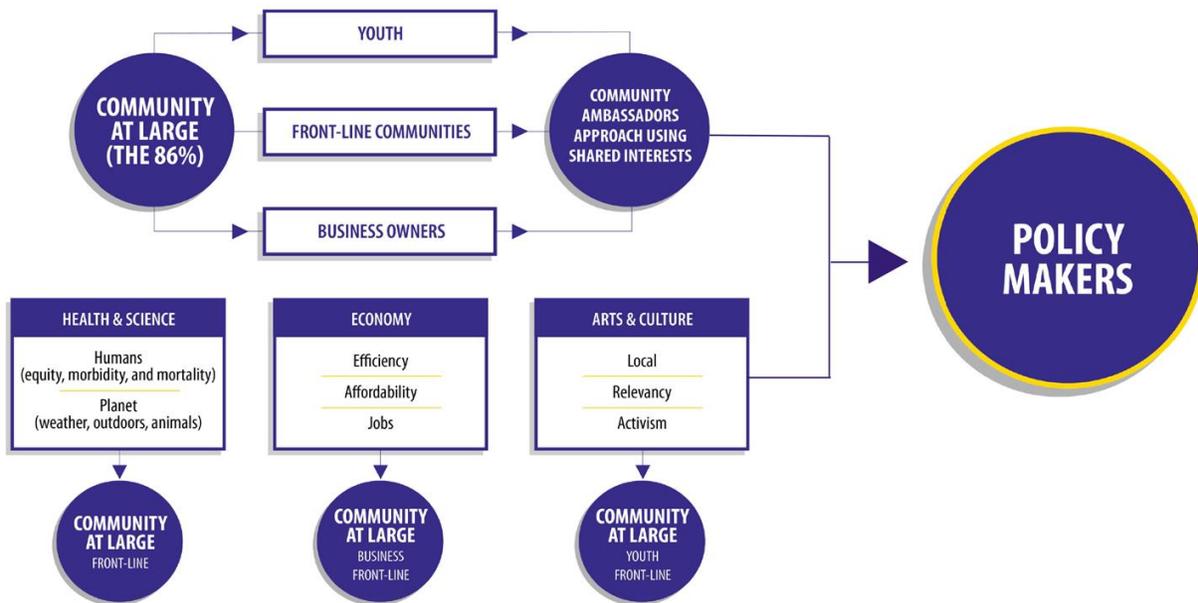
Implementation strategies within the CAAP are evaluated for access and accessibility, affordability, cultural preservation, health, and safety and security.

During the development of the Alamo Area Comprehensive Climate Action Plan (CCAP), AACOG and the City of San Antonio will use SA Climate Ready's approach to equity and engagement as a model.

“While it is important to acknowledge and address burdens faced by marginalized communities, it is also important to recognize that there is much to be learned from them, as they embody many qualities that personify what a sustainable and climate ready community is.”

- SA CLIMATE READY PLAN

Research has shown us that youth, frontline communities, and the business community share climate implications, with Health & Science, the Economy, and Arts & Culture emerging as recurring themes. This has laid the framework for our community engagement plan. Our comprehensive community outreach initiative is based on research and feedback from a broad and deep swath of community stakeholders about needs and opportunities to directly reach our frontline communities working through trusted networks. Therefore, we seek ongoing public input from community stakeholders including the public-at-large, grassroots organizations representing frontline communities, the business community, and area youth attained – these are what we call the “change-makers.”





The City of San Antonio partners with community-based organizations to foster a two-way dialogue around local climate priorities.

To ensure deep and wide engagement around local climate policy priorities, the Office of Sustainability engages with and offers capacity-building grants to community-based organizations to bolster communications with under-represented residents. Organizations are chosen for their unique networks and their dedication to furthering education and empowerment around climate action, environmental justice, and community resilience.

The groups utilize climate outreach materials that have been translated into various languages, with a focus on cultural diversity and universal accessibility. Collectively, the groups reached thousands of San Antonians through social media, events, focus groups, and public service activities. AACOG and COSA will utilize similar approaches to ensure that under-represented communities are included in the development of the CCAP.

The groups utilize climate outreach materials that have



Outreach is prioritized through trusted community organizations who help engage residents in their languages around the universal role of climate action.

A Special Emphasis on Youth Engagement

The award-winning Mayor’s Youth Engagement Council for Climate Initiatives (MYECCI) was established on the heels of the passage of SA Climate Ready to empower San Antonio’s young leaders with the resources to become effective advocates in their community. There is a strong focus on engaging youth of color and students that have been historically underrepresented in the environmental movement. Led by the COSA Office of Sustainability, this program is an essential part of a multi-pronged climate education platform and will be leveraged, along with other youth outlets, during the development of the CCAP.

“Empowering our youth is one of the most important steps we can take to address the climate crisis. Harnessing the creativity, brain power and energy of students who live in our community means that they can help craft solutions for their future in San Antonio.”

- MAYOR RON NIRENBERG

The MYECCI provides a platform for youth to actively engage in the civic process and invest in the future of their city. The MYECCI has cross-collaboration with two other adult advisory committees tasked with helping to prioritize implementation of the CAAP. The Climate Equity Advisory Committee and the Community and Technical Advisory Committee benefit from the voices of the youth council, perhaps the most important stakeholder in climate action and adaptation initiatives.

Student recruitment is intentional to ensure deep representation from racially diverse and low-income neighborhoods. Area youth, represent each City Council district and diverse public, private, charter and home schools. A true public-private partnership, a local educational non-profit organization operates the program with assistance from city government staffers. Select students are then offered the opportunity to complete internships in the Office of Sustainability, Office of Historic Preservation, World Heritage Office, and partner organizations.

To understand how local actions influence the greatest global challenge of our lifetimes, students are researching internationally recognized sustainability goals and best practices and analyzing how they relate to issues in their communities and schools. At the end of the academic year, students showcase prioritized climate action policy in the areas of housing and transportation; biodiversity; infrastructure and energy; and community health and food security. The youth are encouraged to make connections with local policymakers around environmental justice, poverty, historical redlining, and gentrification, and how education, especially for women, can begin to help mitigate historic injustices while representing their communities.



San Antonio fosters youth engagement in the climate conversation through a variety of programs such as the Mayor's Youth Engagement Council for Climate Initiatives.

The air quality outreach and education programs at AACOG educate residents about air pollution and encourage regional stakeholder collaboration to implement air quality improvement measures. These measures address a wide range of topics, including alternative fuels and vehicles, energy efficiency, ride sharing, incentives, climate resiliency, and Ozone Action Day Alerts.

The services that AACOG offers extend beyond its air quality program and touch many vulnerable populations. It houses the Area Agencies on Aging, which provides services for older residents, including congregate meals, home-delivered meals, benefits counseling, care coordination, legal assistance, nutrition and counseling and training, caregiver support, and transportation services. Its Intellectual and Developmental Disabilities Services improves the quality of life of people with a variety of disabilities and ensures that they can actively participate as valued members of our community. AACOG offers home weatherization assistance and home retrofits for low-income households and veterans. Each of the groups these programs serve are disproportionately impacted by GHG pollution and the effects of climate change. Through its Public Safety program, AACOG hosts a Regional Emergency Preparedness Advisory Committee that offers resiliency resources and expertise. AACOG hosts public roadshows in the 12 counties surrounding Bexar County to showcase these services to residents and community leaders and would be a natural conduit for CCAP outreach and engagement.

Building upon these programs, stakeholder and community engagement has been core to the process of developing the PCAP and will continue with the development of the CCAP. COSA and AACOG are leveraging their deep, local community connections and varied programs to identify those leaders and engage underserved communities, such as elderly, disabled, low income, indigenous, immigrant, and linguistically isolated people.

SECTION 4.0

**Priority Climate
Action Plan Elements**

4.0 Priority Climate Action Plan Elements

4.1 GREENHOUSE GAS (GHG) INVENTORY

4.1.1 GHG Inventory Scope

As detailed earlier, this PCAP and Greenhouse Gas Inventory (GHGI) covers the San Antonio-New Braunfels, TX MSA and other adjacent counties that comprise the AACOG service area. The following counties are represented: Atascosa, Bandera, Bexar, Comal, Frio, Gillespie, Guadalupe, Karnes, Kendall, Kerr, McMullen, Medina, and Wilson. The estimated 2020 Census population of the AACOG service area was 2,671,161.

The base year for the PCAP and GHGI is 2021. This year was chosen because of federal, state, and local data availability. This year also is representative of general emissions patterns and corresponds to San Antonio's most recently updated GHGI, which facilitates local to regional benchmarking, GHG reduction strategy planning, and more.

This inventory represents emission estimates for primary GHGs (i.e., CO₂, CH₄, N₂O, HFCs, PFCs, SF₆, and NF₃)³ for the San Antonio-New Braunfels, TX Metro Area and other adjacent counties.

CO₂	Carbon dioxide	HFC	Hydrofluorocarbons	NF₃	Nitrogen trifluoride
CH₄	Methane	PFC	Perfluorinated compounds		
N₂O	Nitrous oxide	SF₆	Sulfur hexafluoride		

This Inventory is based on version 1.2 of the U.S. Community Protocol for Accounting and Reporting GHG Emissions⁴ and additional activities/sources are considered in accordance with the Global Protocol for Community-Scale GHG Emissions Inventories. The scope covers sources and activities since they are the two central categorizations⁵ of emissions.

4.1.2 Methodology & Data Overview

GHG emissions are quantified in two ways:

1. Measurement-based methodologies refer to the direct measurement of GHG emissions (from a monitoring system) emitted from a flue of a power plant, wastewater treatment plant, landfill, or industrial facility.

³ GHGs aside from CO₂, CH₄, N₂O are estimated from Industrial Processes and entered as CO₂ equivalent (CO₂e)

⁴ ICLEI. 2019. US Community Protocol for Accounting and Reporting Greenhouse Gas Emissions. Retrieved from <http://www.icleiusa.org/tools/ghg-protocol/community-protocol>

⁵ 1) GHG emissions that are produced by "sources" located within the community boundary, and 2) GHG emissions produced as a consequence of community "activities."

2. Calculation-based methodologies calculate emissions using activity data and emission factors. To calculate emissions accordingly, the basic equation below is used: Activity Data x Emission Factor = Emissions

Most emissions sources in this inventory are quantified using calculation-based methodologies. Activity data refer to the relevant measurement of energy use or other GHG-generating processes such as fuel consumption by fuel type, metered annual electricity consumption, and annual vehicle miles traveled.

Known emission factors are used to convert energy usage or other activity data into associated quantities of emissions. Emissions factors are usually expressed in terms of emissions per unit of activity data (e.g., MT CO₂/kWh of electricity). For this inventory, calculations were made using ICLEI's ClearPath Climate Planner tool⁶.

The following tables provide an overview of data sources, methodologies, and data gaps/assumptions:

TRANSPORTATION & MOBILE SOURCES			
ACTIVITY/SOURCE	DATA SOURCE	METHODOLOGY	DATA GAPS/ASSUMPTIONS
On-Road	Google Environmental Insights Explorer	Extracted GPC compliant Boundary, Inbound, and Outbound county VMT and applied national average MPG and vehicle/fuel types.	<p>Since Google EIE does not provide data for jurisdictions under 25,000 in population, VMT for counties without data was estimated using region-wide VMT per capita multiplied by county populations.</p> <p>Since local VMT data was not available, national defaults were used. Therefore, VMT data was only separated into Gasoline and Diesel.</p>
On-Road Transit	National Transit Database Fuel and Energy Report	Extracted region-specific data from the NTD's Fuel and Energy Report	n/a
Rail	EPA's 2020 National Emissions Inventory	Extracted county data by GHG type, estimated MMBtu using MT CO ₂ /MMBTU emissions factor	Because NEI does not provide activity data, we estimated MMBtu using the MT CO ₂ /MMBTU emissions factor
Aviation	Not included in PCAP		
Waterborne	EPA's 2020 National Emissions Inventory	Extracted county data by GHG type, estimated MMBtu using MT CO ₂ /MMBTU emissions factor	Because NEI does not provide activity data, we estimated MMBtu using the MT CO ₂ /MMBTU emissions factor
Off-Road/Mobile	EPA's 2020 National Emissions Inventory	Extracted county data by GHG type, estimated MMBtu using MT CO ₂ /MMBTU emissions factor	Because NEI does not provide activity data, we estimated MMBtu using the MT CO ₂ /MMBTU emissions factor
Emissions Factors	EIA's Annual Energy Review, Bureau of Transportation Statistics Average Fuel Efficiencies, and EPA's Emission Factors for Greenhouse Gas Inventories	n/a	n/a

⁶ <https://icleiusa.org/clearpath/>

GRID ELECTRICITY

ACTIVITY/SOURCE	DATA SOURCE	METHODOLOGY	DATA GAPS/ASSUMPTIONS
Residential Electricity	Energy Information Administration State Energy Summaries	Extracted state electricity consumption data and downscaled using a ratio of county households out of state households	Since utility data was unavailable, this alternative was considered most applicable. This approach assumes every house uses grid electricity.
Commercial Electricity	Energy Information Administration State Energy Summaries	Extracted state electricity consumption data and downscaled using a ratio based on NREL's SLOPE county energy usage data out of state energy usage data.	Since utility and state commercial square footage data was unavailable, this alternative was considered most applicable.
Industrial Electricity	Energy Information Administration State Energy Summaries	Extracted state electricity consumption data and downscaled using a ratio based on NREL's SLOPE county energy usage data out of state energy usage data.	Since utility and state industrial square footage data was unavailable, this alternative was considered most applicable.
Electricity Generation	EPA FLIGHT	Extracted site-specific data per county and directly entered raw metric tons (per GHG)	This data is recorded but emissions are not considered in the GHGI total because the majority of electricity generation emissions are assumed to be captured in the residential, commercial, and industrial electricity emissions.
Emissions factors	EPA's eGRID2021	n/a	n/a

SOLID WASTE

ACTIVITY/SOURCE	DATA SOURCE	METHODOLOGY	DATA GAPS/ASSUMPTIONS
Waste Generation	Texas Commission on Environmental Quality's (TCEQ) Municipal Solid Waste in Texas: A Year in Review, 2021 Data Summary and Analysis	Extracted tons landfilled	Assumed Typical LFG collection for all landfills due to landfill-specific data not available. Assumed that all waste received per landfill is generated by the county the landfill is located in. Mesquite Creek Landfill is on the board of two counties. Waste received was allocated to each county using population ratios.
Closed Landfills	FLIGHT data	n/a	Closed landfills are information only, Total emissions do not account for closed landfills. Since these landfills are closed, the waste was not generated during the inventory year.
Emissions factors	EPA's Documentation for Greenhouse Gas Emission and Energy Factors Used in the Waste Reduction Model (WARM)	n/a	n/a

SOLID WASTE

ACTIVITY/SOURCE	DATA SOURCE	METHODOLOGY	DATA GAPS/ASSUMPTIONS
Waste Characterization	Texas Commission on Environmental Quality's (TCEQ) Study on the Economic Impacts of Recycling, Final Report 2017	n/a	<p>Assumed statewide waste characterization represent each landfills waste composition.</p> <p>Because the waste composition categories differed from ClearPath categories, the following assumptions occurred: Newspaper and Office paper each represent 1/2 of "Mixed (other recyclable)," Magazines/Third Class Mail represents "Other (non recyclable) (treated)," Food scraps represents "Food and Beverage Materials & "other organics," Grass, Leaves, and Branches each represent 1/3 of "Yard trimmings, Brush, and Green Waste," and Dimensional Lumber represents "clean/unpainted C&D wood."</p>

OTHER SOURCES

ACTIVITY/SOURCE	DATA SOURCE	METHODOLOGY	DATA GAPS/ASSUMPTIONS
Residential Stationary Fuel	Energy Information Administration State Energy Summaries	Extracted state stationary fuel consumption data and downscaled using a ratio of county households out of state households	Since utility data was unavailable, this alternative was considered most applicable.
Commercial Stationary Fuel	Energy Information Administration State Energy Summaries	Extracted state stationary fuel consumption data and downscaled using a ratio based on NREL's SLOPE county energy usage data out of state energy usage data	Since utility and state commercial square footage data was unavailable, this alternative was considered most applicable.
Industrial Stationary Fuel	EPA FLIGHT	Extracted site-specific data per county and directly entered raw metric tons (per GHG)	Assumed the majority of industrial stationary fuel consumption is captured in EPA FLIGHT.
Fugitive emissions from natural gas distribution	Energy Information Administration State Energy Summaries & FLIGHT	Enter natural gas consumption (MMBtu) per county	Used defaults from ClearPath Fugitive Emissions from Natural Gas Distribution Calculator.
Fugitive emissions from oil and natural gas systems	EPA FLIGHT	Extracted site-specific data per county and directly entered raw metric tons (per GHG)	Assumed any emissions from natural gas distribution is captured in "Fugitive emissions from natural gas distribution"
Industrial Process & Product use	EPA FLIGHT	Extracted site-specific data per county and directly entered raw metric tons (per GHG)	GHGs including refrigerants and others are captured internally and entered as CO2 equivalent (CO2e)
Water Treatment Energy	n/a	n/a	Assumed to be captured in the commercial and/or industrial electricity and stationary fuel consumption estimates.

OTHER SOURCES

ACTIVITY/SOURCE	DATA SOURCE	METHODOLOGY	DATA GAPS/ASSUMPTIONS
Wastewater Treatment Energy	n/a	n/a	Assumed to be captured in the commercial and/or industrial electricity and stationary fuel consumption estimates.
Wastewater Treatment	US Census Bureau	Used ClearPath's population-based calculations	Due to the unavailability of site-specific wastewater treatment operations data, we assumed each site operates under the same conditions as City of San Antonio's 2021 wastewater treatment operations: no Nitrification/Denitrification, an Industrial Commercial Discharge Multiplier of 1.25, WW generated and treated in boundary, systems are predominantly Aerobic, Effluent discharge goes into stream/river
Agriculture: Livestock and Crops	U.S. Department of Agriculture's (USDA) 2017 Census of Agriculture, County Data	Extracted livestock headcounts and crop counts and utilized the EPA's State Inventory Tool, Agriculture Module to estimate emissions	Due to the differing categorizations of the EPA's SIT Agriculture Modules and the USDA's 2017 Census of Agriculture county data, the following categories were grouped together/assumptions were made: Milks Cows = Dairy Cows, Cows and heifers that calved = Feedlot Heifers, Cattle/calves = Calves, Beef cows = Beef Cows, Other cattle = Heifer Stockers, Hogs are all assigned to the "Market 120-179 lbs" category, Layers = Layers, Pullets for laying flock replacement = Pullets/Chickens, Broilers and other meat-type chickens = Broilers, all sheep = Sheep on Feed
Forestry and Land Use	Land Emissions And Removals Navigator (LEARN) Tool	Extracted county-level emissions and removals for forests, changes in forestry, urban trees, etc.	This data is recorded but emissions are not considered in the GHGI total per ICLEI's US Community Protocol (emissions and removals from forestry and land use should not count towards gross emissions) Used Austin, TX as the "representative urban area" for emissions factors
Stationary Fuel Emissions Factors	EPA's GHG Emission Factors Hub	n/a	n/a
Fugitive emissions from natural gas distribution	Environmental Defense Fund's (EDF) User Guide for Natural Gas Leakage Rate Modeling Tool.	n/a	n/a
Wastewater Treatment Emissions Factors	IPCC Methods for Greenhouse Gas Inventories	n/a	n/a
Agriculture Emissions factors	EPA's State Inventory Tool Agriculture Module	n/a	n/a
Forestry and Land Use	U.S. Forest Service's Forest Inventory and Analysis (FIA) database	n/a	n/a

4.1.3 GHG EMISSIONS RESULTS

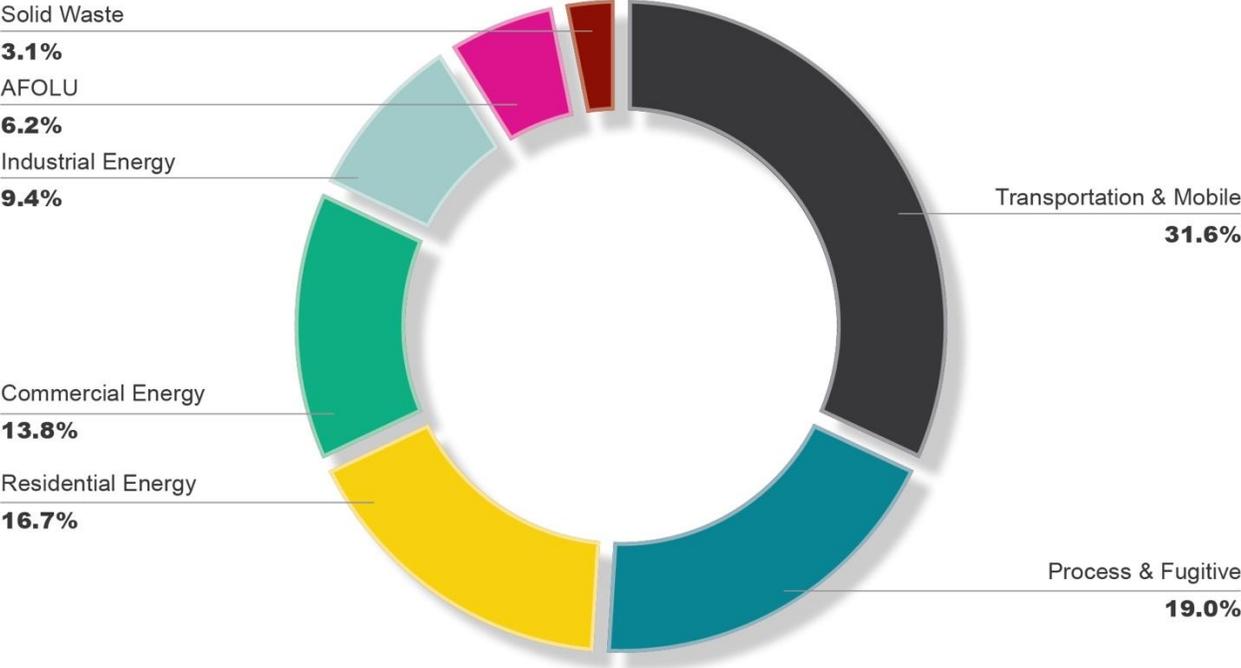
SECTOR/ ACTIVITY	FUEL OR SOURCE	2021 USAGE/ ACTIVITY	UNITS	2021 EMISSIONS (MT CO2E)
Residential Energy	Electricity	14,210,729,461	kWh	5,267,918
	Wood	214,581	MMBtu	2,090
	Propane	1,182,498	MMBtu	73,385
	Natural Gas	19,781,634	MMBtu	1,052,053
	Residential Energy Total			
Commercial Energy	Electricity	11,790,756,431	kWh	4,370,834
	Distillate Fuel Oil No. 2	1,180,140	MMBtu	87,866
	Propane	1,566,097	MMBtu	97,190
	Natural Gas	13,753,452	MMBtu	731,454
	Other Commercial Fuels	-	MMBtu	288
Commercial Energy Total				5,287,632
Industrial Energy	Electricity	7,112,011,529	kWh	2,636,423
	Natural Gas	13,433,717	MMBtu	718,403
	Gasoline	266	MMBtu	19
	Distillate Fuel Oil No. 2	504	Gallons	5
	Other Industrial Fuels	70	MMBtu	264,940
Industrial Energy Total				3,619,790
On Road Transportation	Gasoline	18,775,888,610	Vehicle Miles Traveled (VMT)	7,571,585
	Diesel	2,243,202,239	Vehicle Miles Traveled (VMT)	3,230,890
On Road Transit Transportation	Gasoline	108,260	MMBTU	7,653
	Diesel	101,923	MMBTU	7,537
	LPG	50,026	MMBTU	3,152
	CNG	655,228	MMBTU	36,532
Rail Transportation	Diesel	1,640,932	MMBTU	122,256
Waterborne	Gasoline	106,959	MMBTU	7,707

SECTOR/ ACTIVITY	FUEL OR SOURCE	2021 USAGE/ ACTIVITY	UNITS	2021 EMISSIONS (MT CO2E)
Transportation	Diesel	22,110	MMBTU	1,636
Off Road Transportation & Mobile Sources	Gasoline	4,575,767	MMBTU	328,293
	Diesel	9,562,732	MMBTU	707,665
	CNG	127,632	MMBTU	7,981
	LPG	1,037,241	MMBTU	63,878
	Transportation & Mobile Sources Total			
Solid Waste	Waste Generation	2,938,224	Tons	1,203,866
	Solid Waste Total			1,203,866
Water and Wastewater	Wastewater Treatment	-	-	60,152
	Water and Wastewater Total			60,152
Process & Fugitive Emissions	Fugitive Emissions from Natural Gas Distribution	50,531,017	MMBTU	93,302
	Fugitive Emissions from Oil and Gas Production and Processing	-	-	2,865,392
	Industrial Process & Product Use	-	-	4,340,070
Process & Fugitive Emissions Total				7,298,764
Agriculture, Forestry, and other Land Uses (AFOLU)	Livestock	-	-	1,356,669
	Crops	-	-	1,018,317
	Land/Forestry	-	-	-1,991,462
AFOLU Total (does not include Land/Forestry)				2,374,986
Total 2021 Regional Emissions				38,337,401



SECTOR	METRIC TONS CO2E
Transportation & Mobile Sources	12,096,765
Process & Fugitive Emissions	7,298,770
Residential Energy	6,395,446
Commercial Energy	5,287,632
Industrial Energy	3,619,788
AFOLU	2,374,984
Solid Waste	1,203,866
Water & Wastewater	60,149

METRIC TONS CO2e BY SECTOR



4.2 GHG EMISSIONS PROJECTIONS

4.2.1 GHG Emissions Projections Overview

As stated previously, the Alamo Area Priority Climate Action Plan uses a Business-as-Usual projection from 2021 (base year) to 2030 and 2050. This projection was carried out for every activity/source based on various activity growth rates and carbon intensity growth rates.

This Business-as-Usual projection includes the National Renewable Energy Laboratory's (NREL) Mid Case Scenario⁷, which estimates an 87.33% reduction in Texas electricity grid emissions intensity from 2024-2050. This is an average annual change of 3.36%.

These growth rates are listed below:

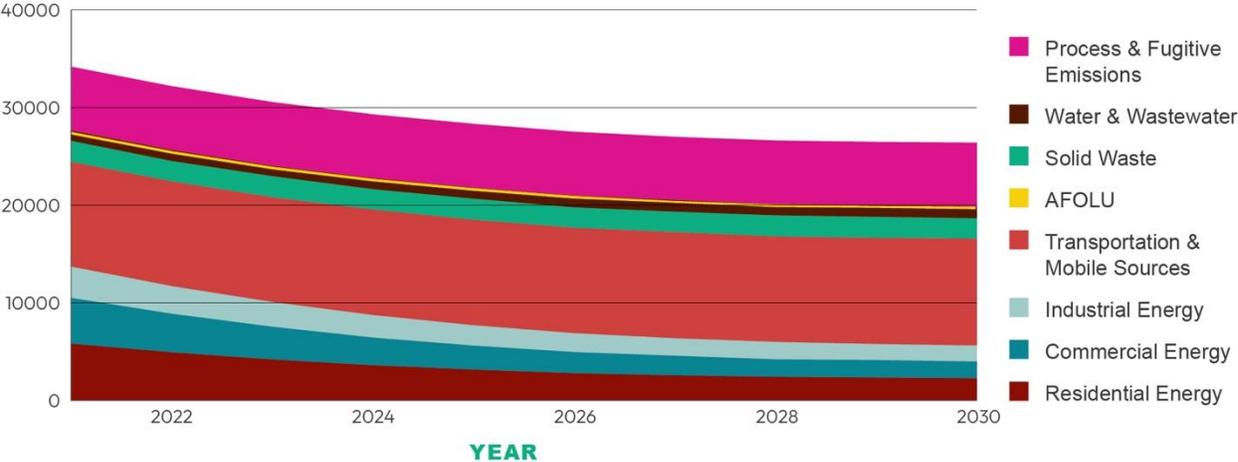
PROJECTION GROWTH RATES				
ACTIVITY/SOURCE	TYPE	DATA SOURCE	METHODOLOGY	DATA GAPS/ASSUMPTIONS
Texas State Grid Projections to 2050	Electricity Carbon Intensity Rate	2021 baseline data from eGRID2021 and projection data from National Renewable Energy Laboratory's (NREL) Cambium Scenario Viewer	n/a	n/a
Population Growth	Growth Rate (for various activities)	Texas Water Development Board	n/a	n/a
Commercial Sq Ft Projections	Growth Rate (for commercial activities)	Greater:SATX	Combined each county's total office & Retail Sq Ft to represent the region's commercial Sq Ft, then projected from 2029-2050	Data was unavailable for some counties. We used the combined county totals. Sq Ft projections went to 2028, so we used a Log-linear model to project growth from 2029 to 2050
Industrial Sq Ft Projections	Growth Rate (for industrial activities)	Greater:SATX	Combined each county's total Industrial Sq Ft to represent the region's Industrial Sq Ft, then projected from 2029-2050	Data was unavailable for some counties. We used the combined county totals. Sq Ft projections went to 2028, so we used a Log-linear model to project growth from 2029 to 2050

⁷ [NREL Mid Case](#)

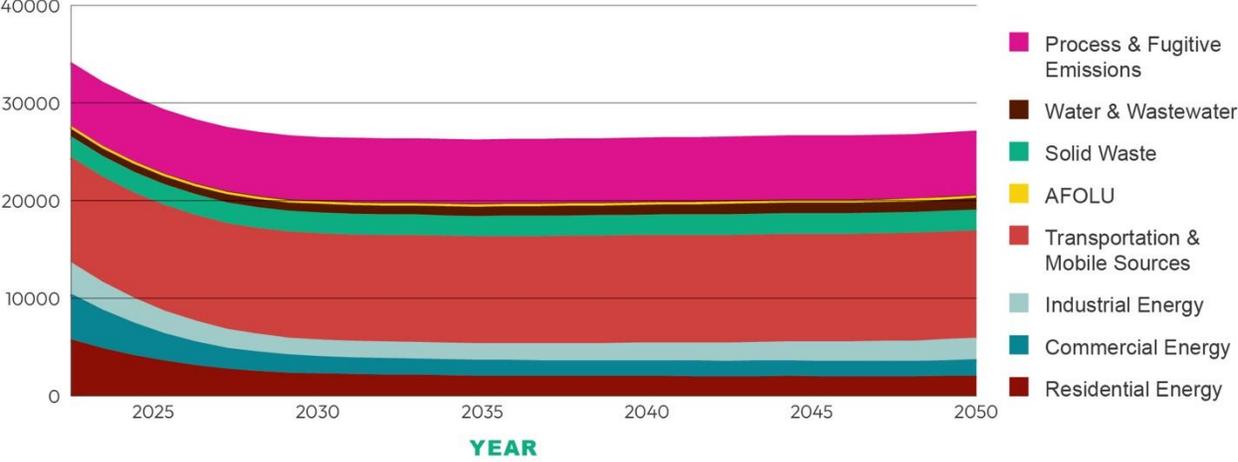
PROJECTION GROWTH RATES				
ACTIVITY/SOURCE	TYPE	DATA SOURCE	METHODOLOGY	DATA GAPS/ASSUMPTIONS
CAFE Standards Default On Road Carbon Intensity Factors	On Road (passenger/light duty) Carbon Intensity Rate	Center for Climate and Energy Solutions (C2ES)	Miles per Gallon fleet averages were converted to Gallons per Mile. Values were then utilized to calculate a Compound Annual Growth Rate from 2010 to 2040. Values were carried forward to 2050.	Although CAFE standards apply to medium/heavy-duty trucks, the provided Carbon Intensity Factors are based on passenger cars and light- duty trucks because limited analysis of the fleetwide impact have been performed. The test procedure for CAFE standards is different than that used for MPG of vehicles in actual driving conditions.

4.2.2 GHG Emissions Projections Results

GHG PROJECTIONS 2021-2030 METRIC TONS CO₂e



GHG PROJECTIONS 2021-2050 METRIC TONS CO₂e



4.3 EMISSIONS REDUCTION AND ENERGY EFFICIENCY GOALS

Texas is the fastest growing state in the nation. San Antonians alone use 23 million megawatt hours (MWh) of electricity in a single year. Meanwhile, extreme weather is becoming more severe and frequent, impacting the energy grid when it's both excessively hot or cold. SA Climate Ready, Climate Action and Adaptation Plan commits the City of San Antonio to reaching carbon neutrality by 2050. The 100% net reduction in GHG emissions by 2050 is a goal that aligns with the Paris Climate Agreement.

For the region, the GHG emissions reduction target is 58.4% by 2030. As Texas continues to grow, AACOG recognizes that implementing energy efficiency and resiliency practices within its 13 counties will be of the utmost importance to securing a sustainable future.

CPS Energy is the San Antonio region's municipally owned utility. Through a variety of energy efficiency and conservation programs that are subsidized by ratepayers, the utility offers incentives for customers to save both energy and money while reducing overall energy demand and carbon emissions. According to CPS Energy, their Sustainable Tomorrow Energy Plan's goals are 410 MW of demand reduction, 1% energy savings per year, 16,000 weatherized homes, and 1.85 million tons of avoided carbon by 2027.⁸ In January 2023, the CPS Energy Board of Trustees approved the current generation plan that includes additional wind, solar, and battery energy storage to support this target.



PARTNER HIGHLIGHT:

CPS Energy's Commitment to Conservation and Energy Efficiency

In 2009, the Save for Tomorrow Energy Plan (STEP) was established to empower customers to manage their energy through energy efficiency, weatherization, demand response and the adoption of both rooftop and community solar with a goal of saving 771 Megawatts ("MW"). This goal was achieved early and under budget in 2019 with 845 MW in energy savings.

In 2021, the Sustainable Tomorrow Energy Plan (STEP), was approved, providing \$350 million to support energy efficiency and conservation initiatives for the San Antonio community. The program goals of this 5-year plan include 410 megawatts (MW) of demand reduction, 1% energy savings per year, 16,000 weatherized homes and 1.85 million tons of avoided carbon. This plan includes weatherization in single homes for the most vulnerable customers along with multifamily units; community and other solar offerings for more low-to-moderate income customers; energy storage, electric vehicle (EV) charging; educational curriculum to promote behavioral change towards energy conservation; demand response in the form of enabled technology like smart thermostats both in homes and businesses; and, support for the commercial sector to become more efficient through traditional energy efficiency rebates and new programs.⁹

⁸ [STEP Rebates & Ways to Save \(cpsenergy.com\)](https://www.cpsenergy.com/step-rebates-ways-to-save)

⁹ <https://newsroom.cpsenergy.com/san-antonio-city-council-approves-new-energy-efficiency-conservation-program/>



PARTNER HIGHLIGHT:

Enhancing Water Resources and Community Resiliency

Water quality and quantity continues to be a top priority for regional residents, and risks as a result of drought or grid disruption are only increasing. San Antonio Water System (SAWS) has long prioritized conservation as a water supply. Population growth projections are a cornerstone of water planning. SAWS revisits population forecasts at least once every five years. The 2017 forecasts project that the SAWS customer base is expected to increase from the current estimate of 1.8 million to 3.3 million people.

According to SAWS 2019 Five Year Water Conservation Plan, future water savings will come from customized programs and outreach, and the water utility has these goals: 1. Two-thirds of households have used at least one conservation program, but this will increase; 2. Newcomers to San Antonio will be introduced to our water conservation culture early; 3. SAWS will use more analytics to assess needs and offer water-saving solutions before people ask; 4. Designing programs for low-income customers will remain a priority.¹⁰

SAWS operates the H2Oaks Center, located in far south Bexar County at the site formerly known as SAWS Twin Oaks Aquifer Storage and Recovery. The location is now home to three water supplies, all operated from the H2Oaks control room: desalinated water, aquifer storage and recovery, and local Carrizo Aquifer.

4.4 PRIORITY GHG REDUCTION MEASURES

4.4.1 GHG Reductions Overview

The Alamo Area PCAP applies regional, priority GHG reduction strategies to the regional Business-as-Usual projection. These strategies were prioritized based on various criteria including general data availability, largest emitting activities/sources, significant impacts, implementation readiness, impacts on LIDACs, as well as other factors. For a detailed description of more specific implementation strategies, please review Appendix A.

For the PCAP, modeling was conducted for the following priority high-level strategies:

- 10% Reduction of Gasoline VMT by 2050
- Gasoline to EV Conversions
- Diesel to EV Conversions
- Residential Solar Installation
- Commercial (non-residential) Solar Installation
- Residential Electricity & Natural Gas Efficiency Upgrades
- Residential Building Electrification
- Commercial Electricity & Natural Gas Efficiency Upgrades
- Commercial Building Electrification

¹⁰ <https://sawstg.saws.org/conservation/conservation-conservation-plan/>

GHG REDUCTION STRATEGIES

ACTIVITY/SOURCE	DATA USED	DATA GAPS/ASSUMPTIONS	DATA SOURCE
10% Gasoline VMT Reduction	10% Gasoline VMT Reduction by 2050	General benchmark	n/a
EV Adoption - Gasoline	95.63% of Gasoline VMT will switch to EVs by 2050	Follows National LDV Average	DOE Alternative Fuels Data Center, Statista, Rocky Mountain Institute (RMI)
EV Adoption - Diesel	99.63% of Diesel VMT will switch to EVs by 2050	Follows National HDV Average	DOE Alternative Fuels Data Center, Statista, Rocky Mountain Institute (RMI)
Residential Solar	-1,298.31 kWh/kW- Generation Potential -446,745.14 kW installed capacity/year	-Solar data-based Satellite imagery, 3D modeling, and shade calculations from Google. Baseline years for this data vary by county. -Because Google estimates total rooftop solar capacity without consideration of technical/financial constraints, we assume 15% of estimated capacity is achievable by 2030, and another 50% is achievable by 2050 -Because google outputs rooftop solar potential by roof orientation, we assume all directional orientations are residential	Google Project Sunroof/EIE
Commercial Solar	-1298.31 kWh/kW- Generation Potential -218,933.51kW installed capacity/year	-Solar data-based Satellite imagery, 3D modeling, and shade calculations from Google. Baseline years for this data vary by county. -Because Google estimates total rooftop solar capacity without consideration of technical/financial constraints, we assume 15% of estimated capacity is achievable by 2030, and another 50% is achievable by 2050 -Because google outputs rooftop solar potential by roof orientation, we assume all flat roof orientations are non-residential	Google Project Sunroof/EIE
Residential Efficiency (Electricity/Natural Gas)	-3.85% of existing housing units receiving efficiency retrofit per year -20% Savings from efficiency retrofit of existing buildings -25% Energy savings in new buildings	-Default value of existing housing units receiving efficiency retrofit per year was 5%, 5% of building stock per year: Typical heating/cooling equipment life is around 15-20 years, and 20 years translates to 1/20, or 5%, each year. It can make sense to do an efficiency upgrade at the same time as equipment replacement - the efficiency may allow for a smaller, less expensive AC unit or furnace. -ACEE reported 10% typical energy savings for a 'light' retrofit and 29% for a 'medium' retrofit - so 20% falls in the middle between those. -Default Energy savings in new buildings was 37%, 37% improvement for new buildings comes from comparing estimated EUI (energy use intensity) for 2018 commercial model energy code with average EUI of existing commercial buildings from 2012 commercial buildings energy consumption survey.	Pacific Northwest National Laboratory (PNNL), U.S. Energy Information Administration

GHG REDUCTION STRATEGIES			
ACTIVITY/SOURCE	DATA USED	DATA GAPS/ASSUMPTIONS	DATA SOURCE
Residential Building Electrification	<ul style="list-style-type: none"> -3.85% of existing housing units with natural gas electrified per year -85% (to 2030) and 100% (to 2050) of new construction electrified -3.58 Heat Pump Coefficient of Performance (COP) -80% Furnace Efficiency 	<ul style="list-style-type: none"> -Default value of existing housing units with natural gas electrified per year is 5%, 5% of building stock per year: Typical heating/cooling equipment life is around 15-20 years, and 20 years translates to 1/20, or 5%, each year. 	EnergyStar, Schroders (Peiser, R., & Wiegelmann, T. "Real Estate and Sustainability: The Moral Imperative." Property Chronicle.)
Commercial Efficiency (Electricity/Natural Gas)	<ul style="list-style-type: none"> -3.85% of existing commercial building units receiving efficiency retrofit per year -20% Savings from efficiency retrofit of existing buildings -25% Energy savings in new buildings 	<ul style="list-style-type: none"> -Default value of existing housing units receiving efficiency retrofit per year was 5%, 5% of building stock per year: Typical heating/cooling equipment life is around 15-20 years, and 20 years translates to 1/20, or 5%, each year. It can make sense to do an efficiency upgrade at the same time as equipment replacement - the efficiency may allow for a smaller, less expensive AC unit or furnace. -ACEE reported 10% typical energy savings for a 'light' retrofit and 29% for a 'medium' retrofit - so 20% falls in the middle between those. -Default Energy savings in new buildings was 37%, 37% improvement for new buildings comes from comparing estimated EUI (energy use intensity) for 2018 commercial model energy code with average EUI of existing commercial buildings from 2012 commercial buildings energy consumption survey. 	Pacific Northwest National Laboratory (PNNL), U.S. Energy Information Administration
Commercial Building Electrification	<ul style="list-style-type: none"> -3.85% of existing commercial units with natural gas electrified per year -85% (to 2030) and 100% (to 2050) of new construction electrified -3.58 Heat Pump Coefficient of Performance (COP) -80% Furnace Efficiency 	<ul style="list-style-type: none"> -Default value of existing commercial units with natural gas electrified per year is 5%, 5% of building stock per year: Typical heating/cooling equipment life is around 15-20 years, and 20 years translates to 1/20, or 5%, each year. 	EnergyStar, Schroders (Peiser, R., & Wiegelmann, T. "Real Estate and Sustainability: The Moral Imperative." Property Chronicle.)

The above reduction strategies are an initial list of potential actions that will be further refined as part of the development of the Comprehensive Climate Action Plan (CCAP) In addition, though the above strategies were modeled for the purpose of the PCAP, the region is committed to the following priority greenhouse gas reduction measures that will be further evaluated as part of the final CCAP.

Grid Decarbonization

As 39% of regional greenhouse gas emissions are associated with commercial, residential, and industrial energy consumption, it is essential that grid supplied energy is decarbonized. This is also significant as



31.6% of regional emissions come from transportation and mobile sources, and to ensure that as these sectors electrify, they are using clean grid-supplied energy. Targeted strategies include the **expansion of utility scale and community solar programs**, projects that focus on the **energy and water nexus** and result in the **decarbonization of water treatment and distribution systems**, and projects that incorporate **battery storage systems (BSS)**. While this strategy was not quantified for overall GHG reduction impact, a potential CPRG Implementation Grant Community Solar Project (Appendix D) will have a 2047 net GHG reduction impact between 846,320 and 1,322,376 MTCO₂e.

Industrial Sector Decarbonization

While only 9.4% of regional greenhouse emissions are for direct energy use, and an additional 19% of emissions are from industrial process and fugitive emissions and these GHG emissions are produced from a wide variety of non-energy related industrial activities. Potential strategies include **industrial building efficiency and electrification**, **industrial sector fleet electrification**, utilization of **clean energy technologies**, and projects and programs aimed at **reducing industrial process and fugitive emissions**.

Nature-Based Solutions

Nature-based solutions are actions to protect, sustainably manage, or restore natural ecosystems that address societal challenges such as climate change, human health, food and water security, and disaster risk reduction while providing human well-being and biodiversity benefits. In addition, these activities can serve as greenhouse gas reduction strategies through the process of natural carbon capture and storage. Potential strategies include **tree planting programs**, **urban agriculture projects**, **green roofs and walls**, the installation of **green infrastructure**, and **low-impact development** projects.

Advancing the Circular Economy

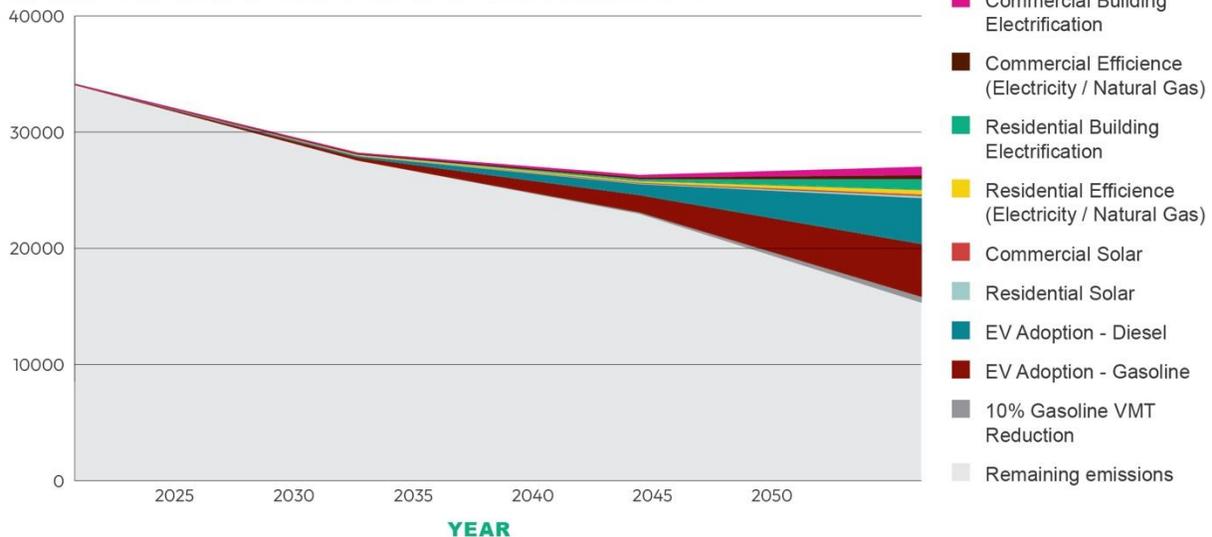
In a circular economy, things are made and consumed in a way that minimizes our use of the world's resources, cuts waste and reduces carbon emissions. Products are reused and recycled and kept in use for as long as possible, through repairing, recycling and redesign. Potential strategies include **recycling and organics diversion** programs, **building deconstruction** programs, **food diversion** programs, and **upcycling** programs.

4.4.2 GHG Reductions Results

	NET GHG REDUCTION (MT CO ₂ E)		
	2025	2030	2050
10% Gasoline VMT Reduction	37,476	205,337	618,755
EV Adoption - Gasoline	279,916	1,647,914	5,084,787
EV Adoption - Diesel	136,639	930,827	4,258,593
Residential Solar	86,086	241,029	485,994
Commercial Solar	42,187	118,120	238,167
Residential Efficiency (Electricity/Natural Gas)	34,785	134,433	431,967
Residential Building Electrification	33,959	228,064	1,068,676

Commercial Efficiency (Electricity/Natural Gas)	28,645	107,216	333,540
Commercial Building Electrification	24,462	164,280	772,542

GHG REDUCTIONS BY STRATEGY (MT CO₂e)



4.5 LOW INCOME DISADVANTAGED COMMUNITIES BENEFITS ANALYSIS

4.5.1 Existing Climate Risks, Impacts, and Vulnerabilities among LIDACs¹¹

- Drought:** All counties within the Alamo Area MSA are “highly likely” to experience drought according to the State of Texas’s Hazard Mitigation Action Plan. All counties within the MSA have also been identified to have exceptional drought risk which has historically resulted in widespread crop/pasture losses; exceptional fire risk; water shortages in water reservoirs, streams, and water wells, creating water emergencies.
- Extreme Heat:** Texas’s Hazard Mitigation Action Plan identifies Bexar County to be “highly likely” and Guadalupe County to be “likely” to experience extreme heat events. While other counties in the MSA aren’t likely to experience extreme heat events, trends predict an increase (+600.5% change in historic extreme heat events from 2017-2021) in the number of extreme heat events and will likely affect the other counties in the future. Heat threatens public health directly, specifically children, elderly, those with preexisting health conditions, and those without access to cooling. These events also add immense burden to the electrical grid, further removing access to cooling. Additionally, low income communities without adequate home insulation or less efficient cooling systems are more vulnerable to increased costs to offset extreme high temperatures.

¹¹ [AACOG CEJST Data \(LIDAC Analysis\)](#)

- **Hailstorm:** All counties within the Alamo Area MSA are “highly likely” to experience hailstorm events according to the State of Texas’s Hazard Mitigation Action Plan. The severity of these events vary across the counties in regards to damage. More severe events result in greater injuries, deaths, crop damage, and property damage. LIDACs among these counties disproportionately encounter greater barriers to recovery from these events.
- **Flood:** All counties within the Alamo Area MSA are “highly likely” to experience flooding events according to the State of Texas’s Hazard Mitigation Action Plan. The MSA falls within the State’s identified “Flash Flood Alley,” where flooding regularly occurs due to hurricanes, tropical disturbances, depressions, and storms. Impacts from flooding events disproportionately affect LIDACs in the region.
- **Tornado:** Most counties within the Alamo Area MSA are “likely” or “highly likely” to experience tornadoes according to the State of Texas’s Hazard Mitigation Action Plan. Tornado events commonly occur in the months of April to June and are disruptive, resulting in extreme damages, injuries, and death.
- **Severe Winter Weather:** All counties within the Alamo Area MSA are “likely” or “highly likely” to experience severe winter weather events according to the State of Texas’s Hazard Mitigation Action Plan. Severe winter weather events including snow, blizzards, ice storms, sleet, extreme cold temperatures, freezing rain, or a mix can be disruptive and take a toll on livestock and people without adequate shelter and preparedness. LIDACs often lack preparedness and are more likely to experience negative impacts from these events such as increased energy burden and property damage.
- **Wildfire:** Of the counties within the Alamo Area MSA, Atascosa County is the only county “likely” to experience wildfire events.

FACT

San Antonio's median energy burden is 4.5%. 27,000 households struggle with severe energy burden (over 10%). Residents in the highest quintile have an average energy burden of 8% while residents in the lowest quintile have an average energy burden of 2.6%.¹²

FACT

Climate projections completed by the City of San Antonio in 2019 estimated that San Antonio would experience 61 days over 100 degrees by 2041. However, San Antonio experienced 75 days over 100 degrees in 2023, faster than projected. This impacts people who work and play outside, as well as pedestrians and transit riders. In addition to that, households that cannot afford the energy costs and will be exposed to the extreme heat for longer periods of time with limited options to keep cool during the day.

A Risk and Vulnerability Assessment conducted during the SA Climate Ready planning process revealed that risks in our region are:

- Injury to vulnerable groups from heat and extreme weather
- Increased impacts from high ozone concentrations
- Increased need for waste and debris management
- Reduction in local food security and production

¹² <https://www.equitymap.org/san-antonio-energy-burden-impacts>

- Increased infrastructure damage from wildfires and flooding
- Increased injury and mortality at low water crossings from flooding
- Increase in vector-borne diseases from heat, drought, and storms
- Reduction in the abundance and health of native species and ecosystems
- Increased mobility disruption
- Increased need for emergency management resources

4.5.2 Potential Benefits of GHG Emission Reduction Measures to LIDACs

 <p>RESIDENTIAL EFFICIENCY</p>	<ol style="list-style-type: none"> 1. Cost reductions - Decreased energy costs from energy efficiency improvements. 2. Public health - Increased housing quality and comfort from reduced costs to increased efficiencies 3. Increases in Resilience- Incorporation and/or upgrading to more efficient heating, ventilation, air conditioning systems (HVAC), and building envelope upgrades (insulation) will improve the building’s capabilities to withstand temperature extremes and weather events.
 <p>RESIDENTIAL ELECTRIFICATION</p>	<ol style="list-style-type: none"> 1. Public health - Increased housing quality, comfort, and safety from reduced costs, increased efficiencies, and improved indoor air quality. 2. Increased local energy resiliency - Decentralized energy supply from renewable energy sources increases the ability to adapt to grid disruptions. 3. Cost reductions - Decreased energy costs from energy efficiency improvements. Electricity costs are more stable than fluctuating fossil fuel prices. 4. Reduced risk to climate hazards - Emissions reductions ultimately slows climate change, therefore reducing the risk to climate hazard events induced by climate change.
 <p>COMMERCIAL EFFICIENCY</p>	<ol style="list-style-type: none"> 1. Local economic improvements - Lowering operational costs for businesses could allow them to direct more funding into their workforce, leading to more employment opportunities. 2. Reduced risk to climate hazards - Commercial and industrial reductions typically are at a larger scale than residential. Emissions reductions due to more efficient utilities ultimately slows climate change, therefore reducing the risk to climate hazard events induced by climate change.



COMMERCIAL ELECTRIFICATION

1. Public health - Decreased health risks from reduction of fossil fuel combustion and improved air quality.
2. Local economic improvements - Deployment of electrification could translate into local job creation targeting low-income and unemployed people and communities.
3. Reduced risk to climate hazards - Commercial and industrial reductions typically are at a larger scale than residential. Emissions reductions due to more efficient utilities ultimately slows climate change, therefore reducing the risk to climate hazard events induced by climate change.



RESIDENTIAL SOLAR

1. Public health - Increased housing quality, comfort, and safety from reduced costs, increased efficiencies, and improved indoor air quality.
2. Increased local energy resiliency - Decentralized energy supply from renewable energy sources coupled with battery storage systems (BSS) increases the ability to adapt to grid disruptions.
3. Cost reductions - Decreased energy costs from energy efficiency improvements. Electricity costs are more stable than fluctuating fossil fuel prices.



COMMERCIAL SOLAR

1. Local economic improvements - Deployment of renewable energy could translate into local job creation.
2. Local economic improvements - Decreased reliance on price volatile energy sources and supply disruptions. (insulation) will improve the building's capabilities to withstand temperature extremes and weather events.



VEHICLE MILES TRAVELED (VMT) REDUCTION (GAS ONLY)

1. Public health - Reduced vehicle miles traveled results in local reduced exposure to particulate emissions, ozone, and noise.



1. Public health- Reduced exposure to particulate emissions, ozone, and noise leads to a decrease in health risks.
2. Local economic improvements - Increased community capacity building and job creation due to additional training and infrastructure for electric vehicles.
3. Equity - Expansion of charging stations and public financial support lowers barriers and improves access to EV ownership.

The following documentation specifies which census tracts are most impacted by the aforementioned strategies:

- [AACOG CEJST Data \(LIDAC Analysis\) - Identification Methodology Affected Census Tracts.pdf](#)
- [AACOG CEJST Data \(LIDAC Analysis\)](#)

4.5.3 How LIDAC Engagement Informs Alamo Area Priorities

As described earlier, a fundamental strategy in San Antonio’s Climate Action and Adaptation Plan is educating and empowering the entire community to tackle the greatest challenge of our time. Yet we have already learned that traditional engagement techniques fail the inclusivity test in a city that leads the nation in income inequality and where 42% speak a language other than English at home. We have developed community-based communication channels that prioritize inclusivity, with the governmental entities operating in “listening mode.” These strategies are organic and will continue to be designed to “meet people where they are.”

COSA and AACOG are using Justice40 benefit categories developed by the U.S. Department of Energy to evaluate GHG reduction measures for inclusion in the PCAP. Justice40 aims to deliver 40% of benefits of federal investments to disadvantaged communities. Additionally, the EPA’s EJSCREEN tool is being used to identify census tracts within communities that may be considered underserved or overburdened.

ALAMO AREA COMMUNITY BENEFITS

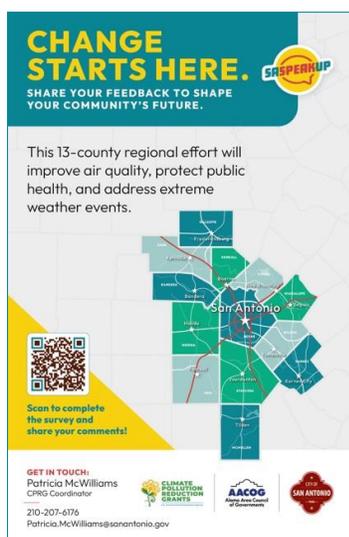
	Improved air quality		Utility bill savings and energy choices		New jobs and workforce training
	Heat Relief		Transportation Choices		Investments in Livable Communities
	Neighborhood Resiliency				

Initial stakeholder engagement to seek community input around prioritized PCAP strategies consisted of bulk electronic communication of two surveys: one for residents and the other for public, institutional, and public sector organizations.

Specific outreach was focused on:

- Low income and disadvantaged communities
- Community organizations, especially those who serve disadvantaged or constituencies who have been harder to reach through traditional channels
- Regional public governmental bodies
- Institutions and private businesses
- CPS Energy, San Antonio Water System, and other regional utility and water providers
- Trade associations

The surveys have been hosted on the City’s survey platform, SASpeakUp, and have been distributed via organizational and elected leader newsletters, linked on various websites, at in-person events and during presentations. Paper copies were made available at public libraries, City Council district field offices, and community centers.



CPRG community engagement materials in English and Spanish

MUNICIPAL PARTNER HIGHLIGHT:



DIVERSITY, EQUITY, INCLUSION & ACCESSIBILITY

The Office of Diversity, Equity, Inclusion and Accessibility is a citywide office focused on advancing social justice and equity within the City of San Antonio. The Office seeks to reduce and ultimately eliminate disparities experienced by our most marginalized residents so that all people can thrive and prosper.



Frequent stakeholder engagement is ongoing and will continue through the life of the CPRG in order to garner more widespread input and a thorough understanding of the needs of the 13-county region. Future engagement includes, but is not limited to, social media posts, tabling at area events, presentations at government meetings, additional email distribution, and targeted stakeholder discussions. This will ensure transparent and open communication that will minimize potential disbenefits to LIDACs.

COSA and AACOG will build on existing connections with community-based organizations who work with underserved groups across the AACOG region while leveraging resources, such as the City of San Antonio’s Office of Diversity, Equity, Inclusion, and Accessibility.

Furthermore, COSA and AACOG are collaborating to create an advisory board to engage with LIDACs and the extended community in the region, forming a concerted effort to involve various stakeholders for input and collaboration in the decision-making process and community initiatives.

4.6 REVIEW OF AUTHORITY TO IMPLEMENT

As home rule cities, many cities in the region (almost every city with a population over 5,000), may establish any law or ordinance it wants to unless it is expressly forbidden by state or federal law. This includes the ability to pass ordinances, resolutions, and regulations regarding transportation, land use, and environmental sustainability. Cities have the authority to allocate municipal funds, apply for state and federal grants, and offer incentives to support climate action initiatives.

COSA will work with its CAAP Advisory Committees, Executive Leadership Team and City Council. The City of San Antonio has a council-manager form of government. Residents elect council members and the Mayor. Those elected officials hire a city manager and establish policies related to municipal operations and city code. Oversight of climate-related issues is split up between City Council and San Antonio residents. The City Council’s Community Health & Equity Committee oversees sustainability-related issues and programs. The Climate Action & Adaptation Plan (CAAP) Advisory Committee establishes climate priorities and reviews climate-related programs and initiatives. On

June 22, 2023, the San Antonio City Council authorized the acceptance of funds for a US Environmental Protection Agency Climate Pollution Reduction Grant in the amount of \$1 Million dollars.

Under the Texas Regional Planning Act (Chapter 391 of the Texas Local Government Code), AACOG has the authority to conduct regional planning, coordinate with local governments, and implement programs that address regional issues, including transportation and air quality. AACOG is governed by a Board of Directors, consisting of each county judge, select mayors or other municipally elected officials, and representatives from special districts within the service area. AACOG will coordinate with its board members, as well as leaders from other local governments, large businesses or industries, and community-based organizations. None of the priority measures included in this plan are prohibited by state or federal law.

4.7 LEVERAGING FUNDING OPPORTUNITIES

The project team will provide regular updates to governing bodies to ensure awareness around alignment with funding opportunities that may include general obligation funds, special funds such as the Resilience Energy Efficiency and Sustainability (REES) Fund, bond programs (including the next City of San Antonio 2027-2032 Bond Program), and grants. This will include an ongoing analysis of staff requirements to ensure successful implementation.

The REES fund was established as part of San Antonio's Fiscal Year 2023 Budget to be a dedicated financial resource for sustainability and climate initiatives. Approximately \$7 million to \$9 million will be invested annually over the next five years, and the money can be utilized to leverage federal funding opportunities.

Additionally, the development of the CCAP will include an evaluation of State and Federal funding opportunities that municipalities may pursue, as well as an implementation plan directly linked to specific funding opportunities and programs.

4.8 WORKFORCE PARTNERSHIPS

The City of San Antonio and AACOG plan to align RTW and other regional programs with workforce recommendations during the CCAP process and will leverage programs and partnerships already in place in the Alamo Area.

San Antonio Ready to Work

San Antonio Ready to Work (RTW) is San Antonio's unprecedented education and job placement program. In 2020, San Antonio voters overwhelmingly approved the \$200 million program, which is funded by a 1/8-cent sales tax. Local employers have pledged support for the program and provide guidance relating to in-demand, well-paid occupations, and relevant training.

RTW supports training for specific occupations that are well paid and in high demand in the following industries:

- Construction/Trades/Utilities
- Education
- Finance/Insurance
- Healthcare
- Information Technology/Cybersecurity
- Manufacturing/Aerospace
- Professional Services
- Transportation/Warehousing

Workforce Solutions Alamo

Workforce Solutions Alamo (WSA) serves as the governing board for the regional workforce system, a network of service providers and contractors that brings people and jobs together. They represent the taxpayers of the 13-county Alamo region that includes Atascosa, Bandera, Bexar, Comal, Frio, Gillespie, Guadalupe, Karnes, Kendall, Kerr, McMullen, Medina and Wilson counties. Our key executives, staff and board members reflect the diverse constituencies of the regional community: business, economic development, education, labor, community organizations, and government.

SECTION 5.0

Next Steps

5.0 Next Steps

Building on the PCAP, work on the CCAP is commencing and will continue through 2025. That effort will address all major sources and sinks of GHGs and establish both near- and long-term GHG emission reduction goals, strategies, and measures. Included in the CCAP will be a catalog of prioritized emission reduction strategies by county for local decision-makers to utilize for community engagement, policy, and funding considerations.

Criteria for GHG reduction measure selection will also include assessing whether the project takes place in, or directly benefits, an underserved census tract or section of the county, as determined by the EPA's CJEST or EJ Screen analysis tools.

The Alamo Area San Antonio-New Braunfels MSA will also complete a Workforce Analysis, Review of Authority to Implement, and Benefits Analysis per EPA requirements.

The project delivery team will continue to review and incorporate existing regional plans with climate mitigation implications. The end goal is a science-based implementation plan that aligns with local, state and federal funding opportunities and priorities.

Above all, the region is committed to upholding the CPRG goals of meaningful engagement that include:

- Fostering a spirit of mutual trust and collaboration
- Ensuring accurate and transparent information sharing
- Creating processes for feedback and early risk mitigation
- Anticipating conflict and engaging in early conflict resolution
- Identifying the existing needs and desired outcomes of LIDACs

APPENDIX A

Potential Reduction Measures for Consideration During CCAP Development

Buildings	Community	Residential Retrofit Incentives and Programs	Residential Weatherization
Buildings	Community	One-Stop-Shop for Households and Contractors	Residential Retrofit Support
Buildings	Community	Workforce and Contractor Training and Engagement	
Transportation	Community	Active Transportation Infrastructure	Bicycling Facilities
Transportation	Community	Transportation Mode Shifting Incentives and Programs	Bike Sharing
Transportation	Community	Transportation Mode Shifting Incentives and Programs	Car Sharing
Transportation	Community	Transportation Mode Shifting Incentives and Programs	E-Bike Incentives and Programs
Transportation	Community	Transportation Mode Shifting Incentives and Programs	Free or Subsidized Transit
Transportation	Community	Transportation Mode Shifting Incentives and Programs	Ridesharing
Transportation	Community	Transportation Mode Shifting Incentives and Programs	Vanpool Programs
Electricity	Community	Commercial New Construction or Retrofit Incentives and Programs	Commercial Solar PV
Electricity	Education	K-12 Schools or Government Facilities Retrofit Incentives and Programs	Commercial Solar PV
Electricity	Community	100% Renewable Electricity Communities	Local/Grid RE
Transportation	Community	Transit Infrastructure	Bus Rapid Transit Lanes
Transportation	Government	Government Fleet Electrification	Government Heavy Duty Fleet Vehicles and Charging

Transportation	Government	Government Fleet Electrification	Government Light Duty Fleet Vehicles and Charging
Buildings	Community	Residential New Construction or Retrofit Incentives and Programs	Residential All-Electric
Buildings	Community	Residential New Construction or Retrofit Incentives and Programs	Residential HVAC Heat Pumps
Buildings	Community	Residential New Construction or Retrofit Incentives and Programs	Residential Water Heating Heat Pumps
Buildings	Community	Commercial Retrofit Incentives and Programs	Commercial HVAC Heat Pumps
Buildings	Community	Commercial Retrofit Incentives and Programs	Commercial Water Heating Heat Pumps
Buildings	Education/ government	K-12 Schools or Government Facilities Retrofit Incentives and Programs	Commercial HVAC Heat Pumps
Buildings	Education/ government	K-12 Schools or Government Facilities Retrofit Incentives and Programs	Commercial Water Heating Heat Pumps
Buildings	Community	Commercial Retrofit Incentives and Programs	Building Performance Standards
Buildings	Community	Commercial Retrofit Incentives and Programs	Commercial Simple Efficiency Measures Package
Buildings	Community	Commercial Retrofit Incentives and Programs	Commercial Weatherization
Buildings	Community, Education, Government	Commercial Retrofit Incentives and Programs	Large Commercial and Industrial Buildings and Facility Assessments (Benchmarking)
Buildings	Education/ government	K-12 Schools or Government Facilities Retrofit Incentives and Programs	Commercial LED Lighting
Buildings	Education/ government	K-12 Schools or Government Facilities Retrofit Incentives and Programs	Commercial Recommissioning



Buildings	Education/ government	K-12 Schools or Government Facilities Retrofit Incentives and Programs	Commercial Weatherization
Buildings	Government	Government Facility Retrofit Incentives and Programs	LED Street Lighting
Buildings	Community	Commercial New Construction Incentives and Programs	Voluntary Stretch Code and Incentives
Buildings	Community	Residential New Construction Incentives and Program	Voluntary Stretch Code and Incentives
Buildings	Community	Tariffed On-Bill Financing	Residential Energy Efficiency and Electrification Retrofits
Electricity	Community	Residential New Construction or Retrofit Incentives and Programs	Residential Solar PV
Transportation	Community	Commercial Fleet Electrification	Private Heavy Fleet Charging Stations
Transportation	Community	Commercial Fleet Electrification	Private Heavy Fleet Purchase Incentives
Transportation	Community	Transportation Electrification	Public EV Charging Stations
Transportation	Community	Transportation Electrification	Public EV Purchase Incentives Programs
Transportation	Education/ government	K-12 Schools or Government Fleets	Electric Bus Fleet



APPENDIX B

PCAP Engagement

Community Engagement is ongoing. The information below represents a sampling of the digital media, events, and presentations that have been made in the Alamo Area region.

DATE	TABLING EVENT	NUMBER ENGAGED
1/25/2024	DreamWeek Resilience	65
1/27/2024	Council District 3 Sustainability Symposium	87
2/6/2024	Veganuary Potluck	10
2/15/2024	"Thirst for Power" video showing	600
2/22/2024	Green Horizon Symposium	65
2/22/2024	Veganuary Market Box Distribution	25
SURVEY DISTRIBUTION		
2/1/2024	Posted to City of San Antonio (COSA) website	10,000
2/2/2024	Emailed to Alamo Area Council of Governments (AACOG) Judges/Mayors	60
2/2/2024	Emailed to AACOG City Managers/Administrators	41
2/2/2024	Emailed to AACOG City Secretaries	54
2/2/2024	Emailed to AACOG Public Works Administrators	52
2/2/2024	Flier delivered to COSA Council District Field Offices	1,000
2/4/2024	Emailed to COSA Office of Sustainability newsletter subscribers	2,600
2/5/2024	Flier delivered to COSA Libraries	2,600
2/5/2024	Flier delivered to COSA Community Centers	1,100
2/6/2024	Emailed to Alexander Briseno Leadership Development Cohort 2023	85
2/12/2024	Emailed to COSA partners (SAWS, CPS, San Antonio River Authority, AAMPO)	10
2/13/2024	Emailed to San Antonio Bicycle Network Working Group	65
2/13/2024	Emailed to San Antonio Food Security Working Group	45
2/13/2024	Emailed to SA Climate Ready Community-Based Organization Partners	13
2/13/2024	Emailed to San Antonio Resilience Network	102
PRESENTATION		
2/8/2024	City of Hondo Economic Development Board Training	10
12/4/2023	COSA Department Head Meeting	50

1/17/2024	Greater Bexar County Council of Cities	15
1/24/2024	COSA City Council Community Health Committee	35
SOCIAL MEDIA		
2/13/2024	Facebook	4300
2/13/2024	Instagram	2728
2/13/2024	X (formerly Twitter)	1625
2/13/2024	LinkedIn	1520



APPENDIX C

Alamo Area Climate and Economic Justice Screening Tool (CEJEST) Summary

The following table lists all the census tracts within the AACOG service area that rank in the 90th percentile nationally in at least one environmental justice burden category, as defined by the CEJST tool.

48019000200	48029120502	48029171917
48029130600	48029140900	48029181711
48029170401	48029161200	48029121702
48019000400	48029190901	48029150300
48029110500	48029181819	48029131503
48029170800	48029141200	48029131504
48029110600	48029152201	48029150100
48029160501	48029181823	48029131507
48029130300	48029150600	48029192100
48029130402	48029160701	48029120100
48029171000	48029150502	48029110100
48029170300	48029151400	48029120501
48029130500	48029150700	48029131505
48029171100	48029160200	48029121403
48029171200	48029190604	48029121402
48029170402	48029171301	48029110900
48029131100	48029161303	48029190501
48029130800	48029150900	48029140800
48029181303	48029180300	48029151500
48029121404	48029160902	48029121206
48029121205	48029130200	48029192200
48029141101	48029180504	48163950300
48029181820	48029141102	48029131700
48029171602	48029161501	48029171700
48029130900	48029111000	48013960201
48029181402	48029161304	48029150800
48029170101	48029131402	48029980100
48029180702	48029131506	48013960500
48029180202	48029152000	48013960600
48029131000	48029160901	48029161801

48029141000	48029121802	48013960401
48029191004	48029151100	48029180602
48029191304	48029150501	48265960301
48029160100	48029181506	48187210400
48029110800	48029181704	48265960200
48029130700	48029980002	48265960100
48029140300	48029181505	48029191102
48029170200	48029172003	48325000200
48029160300	48029160400	48265960302
48029171502	48029172002	48029131300
48029170102	48029181817	48265960800
48029170900	48029172007	48029110700
48029180800	48029121606	48029181005
48029161000	48029121803	48029180901
48029171302	48029121804	48029181001
48029160702	48029121909	48029190504
48029180501	48029181601	48029120701
48029130401	48029181822	48029190601
48029140200	48029181713	48029191101
48029171802	48029181504	48029150400
48029160502	48029181503	48029140100
48029191900	48029121605	48029120902
48029110300	48029151301	48029180604
48029170500	48029121812	48029181100
48029160600	48029181725	48029121203
48029181003	48029121809	48029190100
48029171601	48029180603	48029121204
48029121508	48029181727	48029190200
48187210300	48029171916	48029180701



The following environmental justice burden categories and their justifications used to define LIDAC census tracts are listed below:

GHG Measure	LIDAC Criteria	Justification
Residential Electrification	Energy Burden	Electrification of homes decrease/eliminate reliance on volatile prices associated with natural gas and therefore easing energy burden
Residential Electrification	Housing burden (percent) (percentile)	Electrification of homes decrease/eliminate reliance on volatile prices associated with natural gas and therefore increasing budgeting abilities to addressing housing related costs
Residential Electrification	Low median household income as a percent of area median income (percentile)	Electrification of homes decrease/eliminate reliance on volatile prices associated with natural gas, therefore easing budgeting pressures associated with low-income
Residential Electrification	Percent of individuals < 100% Federal Poverty Line (percentile)	Electrification of homes decrease/eliminate reliance on volatile prices associated with natural gas, therefore easing budgeting pressures associated with poverty
Residential Electrification	Percent of individuals below 200% Federal Poverty Line, imputed and adjusted (percentile)	Electrification of homes decrease/eliminate reliance on volatile prices associated with natural gas, therefore easing budgeting pressures associated with poverty
Residential Electrification	Low life expectancy (percentile)	Electrification upgrades improve indoor air quality due to the removal of indoor combustion of natural gas, therefore removing health impacts associated with exposure to CO ₂ , CH ₄ , and N ₂ O.
Residential Electrification	Proximity to Superfund sites (percentile)	Electrification upgrades improve indoor air quality due to the removal of indoor combustion of natural gas, therefore removing health impacts associated with exposure to CO ₂ , CH ₄ , and N ₂ O. Decreases the quantity of exposures to pollutants present in and around residential dwellings, which are already higher due to proximity to Superfund sites
Residential Electrification	Proximity to Risk Management Plan (RMP) facilities (percentile)	Electrification upgrades improve indoor air quality due to the removal of indoor combustion of natural gas, therefore removing health impacts associated with exposure to CO ₂ , CH ₄ , and N ₂ O. Decreases the quantity of exposures to pollutants present in and around residential dwellings, which are already higher due to proximity to RPM facilities
Commercial Efficiency	Unemployment (percent) (percentile)	Efficiency upgrades will lower operational costs for businesses and could allow them to direct more funding into their workforce, leading to more employment opportunities. Additionally, as efficiency upgrades become more common, workforce development will increase and ease unemployment rates
Commercial Efficiency	Low median household income as a percent of area median income (percentile)	Efficiency upgrades will lower operational costs for businesses and could allow them to direct more funding into their workforce, leading to more employment opportunities. Additionally, as efficiency upgrades become more common, workforce development will increase.
Commercial Efficiency	Percent of individuals < 100% Federal Poverty Line (percentile)	Efficiency upgrades will lower operational costs for businesses and could allow them to direct more funding into their workforce, leading to more employment opportunities. Additionally, as efficiency upgrades become more common, workforce development will increase.
Commercial Efficiency	Percent of individuals below 200% Federal Poverty Line, imputed and adjusted (percentile)	Efficiency upgrades will lower operational costs for businesses and could allow them to direct more funding into their workforce, leading to more employment opportunities. Additionally, as efficiency upgrades become more common, workforce development will increase.
Commercial Electrification	Unemployment (percent) (percentile)	Electrification will lower operational costs due to decreased/elimination of reliance on volatile processes associated with natural gas. This could allow for businesses to direct more funding into their workforce, leading to more employment opportunities. Additionally, as efficiency upgrades become more common, workforce development will increase and ease unemployment rates

GHG Measure	LIDAC Criteria	Justification
Commercial Electrification	Low median household income as a percent of area median income (percentile)	Electrification will lower operational costs due to decreased/elimination of reliance on volatile processes associated with natural gas. This could allow for businesses to direct more funding into their workforce, leading to more employment opportunities. Additionally, as efficiency upgrades become more common, workforce development will increase.
Commercial Electrification	Percent of individuals < 100% Federal Poverty Line (percentile)	Electrification will lower operational costs due to decreased/elimination of reliance on volatile processes associated with natural gas. This could allow for businesses to direct more funding into their workforce, leading to more employment opportunities. Additionally, as efficiency upgrades become more common, workforce development will increase.
Commercial Electrification	Percent of individuals below 200% Federal Poverty Line, imputed and adjusted (percentile)	Electrification will lower operational costs due to decreased/elimination of reliance on volatile processes associated with natural gas. This could allow for businesses to direct more funding into their workforce, leading to more employment opportunities. Additionally, as efficiency upgrades become more common, workforce development will increase.
Residential Solar	Energy Burden (Percentile)	Decreased energy costs due to reliance on decentralized energy source, easing energy burden
Residential Solar	Housing burden (percent) (percentile)	Solar installation decreases/eliminates reliance on volatile prices associated with natural gas and therefore increasing budgeting abilities to addressing housing related costs
Residential Solar	Low median household income as a percent of area median income (percentile)	Solar installation decreases/eliminates reliance on energy companies, decreasing energy costs therefore easing budgeting pressures associated with low-income
Residential Solar	Percent of individuals < 100% Federal Poverty Line (percentile)	Solar installation decreases/eliminates reliance on energy companies, decreasing energy costs therefore easing budgeting pressures associated with low-income
Residential Solar	Percent of individuals below 200% Federal Poverty Line, imputed and adjusted (percentile)	Solar installation decreases/eliminates reliance on energy companies, decreasing energy costs therefore easing budgeting pressures associated with poverty
Commercial Solar	Unemployment (percent) (percentile)	Solar installation will lower operational costs due to decreased/elimination on purchased energy from energy companies. This could allow for businesses to direct more funding into their workforce, leading to more employment opportunities. Additionally, as efficiency upgrades become more common, workforce development will increase and ease unemployment rates
Commercial Solar	Low median household income as a percent of area median income (percentile)	Electrification will lower operational costs due to decreased/elimination of reliance on volatile processes associated with natural gas. This could allow for businesses to direct more funding into their workforce, leading to more employment opportunities. Additionally, as efficiency upgrades become more common, workforce development will increase.
Commercial Solar	Percent of individuals < 100% Federal Poverty Line (percentile)	Solar installation will lower operational costs due to decreased/elimination on purchased energy from energy companies. This could allow for businesses to direct more funding into their workforce, leading to more employment opportunities. Additionally, as efficiency upgrades become more common, workforce development will increase.
Commercial Solar	Percent of individuals below 200% Federal Poverty Line, imputed and adjusted (percentile)	Solar installation will lower operational costs due to decreased/elimination on purchased energy from energy companies. This could allow for businesses to direct more funding into their workforce, leading to more employment opportunities. Additionally, as efficiency upgrades become more common, workforce development will increase.
VMT Reduction (gas only)	Coronary heart disease among adults aged greater than or equal to 18 years (percentile)	Studies show that particulate pollutants such as those released from internal combustion engines can exacerbate existing cardiovascular diseases. Reducing VMT will reduce the amount of particle particulates in the air

GHG Measure	LIDAC Criteria	Justification
VMT Reduction (gas only)	Low life expectancy (percentile)	Reduction of pollution in the air from VMT reduction, can improve health and quality of life, improving life expectancy
VMT Reduction (gas only)	Traffic proximity and volume (percentile)	Reduced VMT will reduce traffic volumes, thus those in close proximity to traffic will see a decrease in car-related emissions
EV Adoption	Coronary heart disease among adults aged greater than or equal to 18 years (percentile)	Studies show that particulate pollutants such as those released from internal combustion engines can exacerbate existing cardiovascular diseases. Reducing VMT will reduce the amount of particle particulates in the air
EV Adoption	Low life expectancy (percentile)	Reduction of pollution in the air from VMT reduction, can improve health and quality of life, improving life expectancy
EV Adoption	Traffic proximity and volume (percentile)	Reduced VMT will reduce traffic volumes, thus those in close proximity to traffic will see a decrease in car-related emissions
EV Adoption	Unemployment (percent) (percentile)	Increased community capacity building and job creation due to additional training and infrastructure for electric vehicles. Therefore, improving unemployment rates



APPENDIX D

DRAFT ALAMO AREA CPRG IMPLEMENTATION PROJECT CONCEPT

Preparing Alamo Area Water & Energy Systems for an Equitable & Sustainable Future

US EPA Funding Proposal to Deploy Clean Energy, Enhance Regional Water and Energy Resilience, Provide LIDAC Benefit, and Create Innovative Education and Job Opportunities

The City of San Antonio (COSA), CPS Energy, and the San Antonio Water System (SAWS) seek to collaborate to deploy at least 80 MW of solar with battery storage to enhance local energy and water resilience for the community, offer affordable clean energy options to residents, and create opportunities for innovative educational and workforce training partnerships.

Sustainable and resilient water management is critical to quality of life, health, safety, and economic opportunity for over 2 million people in and around San Antonio. For years, SAWS has managed the region's water needs, with its state-of-the-art H2Oaks facility supporting water treatment, desalination, and aquifer storage and recovery. COSA and SAWS now aim to leverage up to 900 acres for aquifer management surrounding SAWS' H2Oaks facility to co-locate clean, resilient energy.

Addressing Critical System Resilience Gaps for the San Antonio Region

This site and proposal could be a key part of the innovative, flexible energy strategy that SAWS, CPS and the San Antonio community need to advance local resilience and cost-effectively scale clean energy to recover from Winter Storm Uri. In fact, San Antonio's Community Emergency Preparedness Committee Report (2021) highlighted the need for this type of collaborative project: "...there may be opportunities for SAWS and CPS Energy to partner... [to build] out distributed energy in San Antonio and [help] with demand management periods in the summer as well. A distributed energy strategy would obviate the need for generators to sit idle for extremely long periods of time. SAWS and CPS Energy could consider this as a cost sharing opportunity, to include the use and benefit of the generators. This concept must be explored further."^[1] This investment would help diversify energy resilience strategies in San Antonio beyond SAWS' planned investment in backup natural gas generators.

This project is of regional impact as the resilience, clean energy, and LIDAC benefits would span both the CPS Energy and SAWS service areas. CPS Energy's service area includes Bexar County and portions of its 7 surrounding counties and the SAWS service area for water supply includes most of Bexar County, several suburban municipalities, and adjacent parts of the county.

Flexible, Renewable Energy Opportunities

The partnership aims to first prioritize local distributed solutions that deploy clean, resilient solutions with community-facing benefits:

- **Community Solar for Low-Income San Antonio Residents:** Leverage this local site, or other CPS-owned properties, and build on CPS Energy's plans to expand community solar which can help expand access to

clean, affordable electricity for low-income residents regardless of whether they own, rent, or have a viable rooftop for solar. Preliminary estimates suggest that at least 80-125 MW of solar may be possible across up to 900 acres of SAWS land. As helpful, COSA would also aim to serve as an anchor offtaker (up to 54 MW) to reduce risk of undersubscription and further offset COSA’s municipal electricity needs. This may require grid upgrades to support additional capacity beyond the solar directly connected to SAWS’ facilities.

- **On-Site Solar to Reduce Electricity Needs for H2Oaks:** Deploy “behind-the-meter” on-site solar to support SAWS’ H2Oaks facility. This would be similar in approach to the recently approved on-site solar contract CoSA just signed for 42+ municipal facilities to reduce energy needs from the grid and hedge against rising electricity and fuel costs. SAWS estimates H2Oaks’ peak electricity demand approaches 10 MW for its combined aquifer storage recovery and desalination operations. Estimated annual H2Oaks electricity bills now average nearly \$4 million each year, approximately 1/10th of SAWS’ total electricity costs.
- **Energy Storage to Enhance Resilience for H2Oaks and CPS:** Supplementing and supporting the on-site and community solar, CoSA, SAWS, and CPS can deploy short-duration (typically up to 4 hours) battery storage. Appropriately designed solar and battery systems can serve multiple purposes and can recharge during the day without fuel costs. This would buffer against temporary outages, help manage peak electricity stresses on the grid during hot summer days and reduce SAWS’ energy costs throughout the year.
- **Workforce Development:** Given the single site and size of the site, COSA and SAWS would aim to pair this project with a solar job training program, similar to how Houston is expanding STEM and solar jobs with this landfill solar project. A project of this scale at H2Oaks could lend itself to 1,000+ temporary skilled construction jobs and serve as a model for regional workforce training and education in energy and water innovation.

Projected Net GHG Reduction (MT Co2e)

YEAR	2025	2030	2047
80 MW	73,089	331,838	846,320
125 MW	114,202	518,497	1.322.386



[1] Excerpt from [Community Emergency Preparedness Committee Report, page 24, 2021](#). Note that SAWS estimates that a generator (or system of generators) for one pump station would cost approximately \$10 million, not including fuel storage and additional electrical upgrades... SAWS has indicated that this type of generator (or system of generators) would have potentially been used only one other time in the past 30 years.