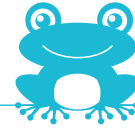


GONZALES

CLIMATE ACTION & RESILIENCE PLAN



ACKNOWLEDGEMENTS



CITY OF GONZALES

Mayor Barney Arceneaux

Jackie Baumann

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Prepared for the City of Gonzales by



CENTER *for* PLANNING EXCELLENCE





City of Gonzales

120 SOUTH IRMA BOULEVARD • GONZALES, LOUISIANA 70737 • PHONE (225) 647-2841 • FAX (225) 647-9557

BARNEY D. ARCENEUX
MAYOR/ADMINISTRATOR

To my fellow residents,

TIMOTHY R. RILEY-Division A
COUNCILMAN
DRAINAGE
MAYOR'S YOUTH COUNCIL

The City of Gonzales is a dynamic city that handles challenges with a collaborative and equitable approach. The goal of this plan is to maintain our quality of life and continue to thrive economically as we support the state's effort* to reduce carbon emissions. To do so, we must be prepared for a different future.

KIRK J. BOUDREAUX-Division B
COUNCILMAN
MAYOR PRO-TEMPORE
TREASURER/FINANCE
STREETS
AEDC LIAISON

We are already experiencing more intense rain events, stronger hurricanes, and hotter summers. This year we have experienced large swings in energy prices, both at the fuel pump and on utility bills. I recognize that Gonzales is too small to affect the drivers of these physical and financial threats; however, we are not helpless to take action to reduce our exposure to them. This plan provides a path to do that by mitigating and adapting to threats to ourselves, our infrastructure, and our financial security.

HAROLD L. STEWART-Division C
COUNCILMAN
SANITATION
TOURISM

Guided by our values of resilience and preparedness, the Climate Action & Resilience Plan provides a vision and a path forward for the City of Gonzales to be a leader in the state in the effort to reduce our carbon footprint. The plan details strategies to reduce community and government greenhouse gas emissions by increasing efficiency and reducing waste. Importantly, the plan also includes strategies to help the city continue to make smart investments as we work to adapt to and be prepared for the numerous impacts of climate change and more frequent extreme weather events.

TYLER J. TURNER-Division D
COUNCILMAN
ASSISTANT TREASURER
UTILITIES
ORDINANCE

JOHN A. BERTHELOT-Division E
COUNCILMAN
RECREATION
ENGINEERING
PUBLIC SAFETY

SHERMAN D. JACKSON
CHIEF OF POLICE

TRACEY N. NORMAND
FIRE CHIEF

SCOT BYRD
CITY CLERK / CAO

MATTHEW I. PERCY
CITY ATTORNEY

The Climate Action & Resilience Plan sets the goal of reducing net greenhouse gas emissions 30-40% from 2005 levels by 2030 and reducing greenhouse gas emissions to net zero by 2050. These are lofty but achievable goals and rest assured we are not at the starting line on this effort. Many of our recent activities and investments contribute to our climate goals. For example, updates to our ordinances enabled investments in mixed-use development, making our community more walkable which helps reduce vehicle miles traveled (and traffic!). We invested in a rail station on the Baton Rouge - New Orleans line which will soon provide alternative transportation options to and from large job centers. And we are at work bringing electric vehicle chargers to the city as EVs become more widespread in their use.

Perhaps the most important aspect of the Climate Action & Resilience Plan is that it provides a climate change lens for decision making. Through well informed decisions, we can tackle our climate challenges one project at a time and one policy at a time, as we work to ensure future generations of Gonzales residents live in a place they love as much as we do.

Sincerely,

Barney D. Arceneaux
Mayor

* Governor John Bel Edwards issued Executive Order JBE 2020- 18, committing the state of Louisiana to reduce greenhouse gas emissions to limit the impacts of climate change that harm the state's natural and cultural heritage while positioning Louisiana as a world leader in energy, industry, agriculture, and transportation.

Jambalaya Capital of the World
We've Got it All!!

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EXECUTIVE SUMMARY



The City of Gonzales is taking action to be a leader in reducing the community's carbon footprint and contribute to the global effort of curbing carbon emissions to avoid the worst impacts of climate change. High temperatures and risks to residents from hurricanes and flooding have increased in the City of Gonzales in the last five years. According to the Intergovernmental Panel on Climate Change, climate related risks to health, livelihoods, food security, water supply, human security, and economic growth are projected to increase as the climate continues to change.

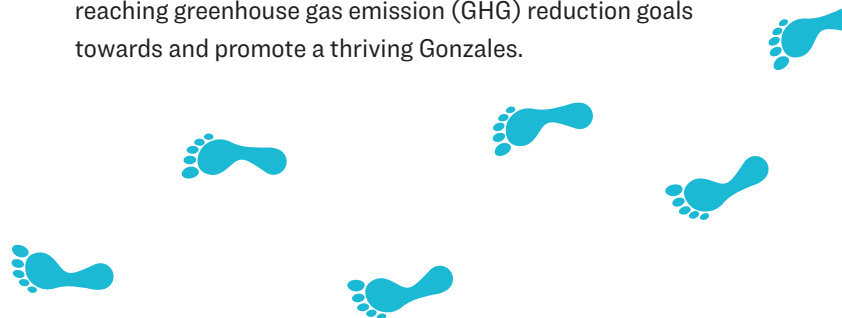
To do its part to avoid the worst impacts of climate change and prepare for the unavoidable impacts of it, the City is proactively addressing its greenhouse gas emissions and identifying adaptation measures. These efforts are also aligned with the recommendations from the [State of Louisiana Climate Action Plan](#) and global goals of the [Paris Agreement](#). The City of Gonzales has set a goal of reducing 40-50% of 2005 greenhouse gas emission levels by 2030 and have net zero greenhouse gas emissions by 2050.

This plan has a strategic focus on the community and residents of Gonzales to better the overall health, safety, and longevity of the city and those that call it home. Gonzales' Climate Action and Resilience Plan will play a critical role as an important tool that can be used to inform decision making and make the city more competitive in its pursuit of grant money. The Infrastructure and Investment Act and the Inflation Reduction Act have unprecedented funding available to implement this Climate Action and Resilience Plan.

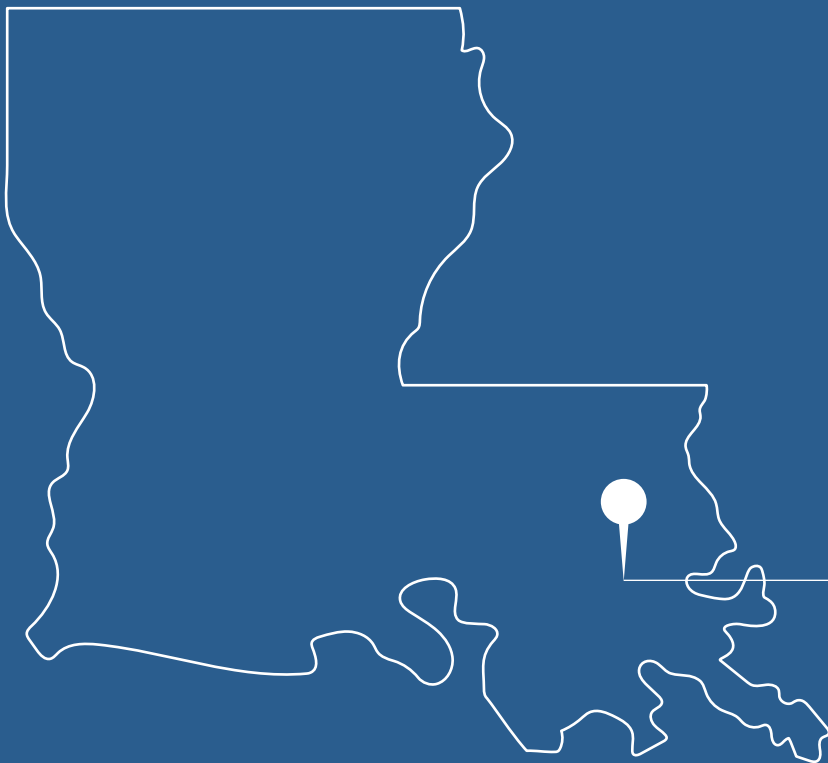
The Gonzales Climate Action and Resilience Plan begins by identifying the top climate hazards to the community. It continues with a description of how this plan was created including the importance of incorporating community health, equity issues, and differences in climate vulnerability across the city and its people. The plan then identifies Gonzales' carbon footprint and its major sources of greenhouse gas emissions to establish a quantifiable benchmark from which success can be measured.

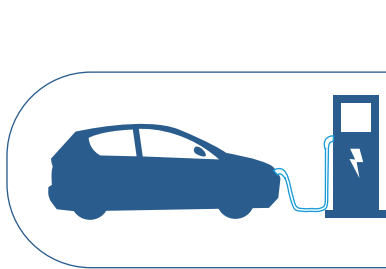
The Plan then provides a timeline of activities undertaken to date to improve the city's efficiency and resilience - activities that provide the foundation for many of the strategies in this plan. It then continues with a description of overarching carbon emission reduction strategies and identifies five areas the City of Gonzales should focus on to reduce greenhouse gas emissions and adapt to a changing climate: Reduce Vehicle Miles Traveled (VMT) per Capita, Use Renewable Energy, Increase Energy Efficiency, Reduce Waste, and Increase Green Spaces.

The Take Action Chapter contains action items and specific steps Gonzales can take to implement the strategies. Some actions should be led by the city, some by the private and business community, and some at the household level. As Gonzales continues to make progress on reducing its carbon footprint, collaboration and coordination with Ascension Parish entities, business and industry, regulators, and residents will ensure success of reaching greenhouse gas emission (GHG) reduction goals towards and promote a thriving Gonzales.



INTRODUCTION





With its Climate Change 2021 report, the Intergovernmental Panel on Climate Change revealed what Gonzales is already experiencing firsthand: human-caused greenhouse gas emissions are rapidly altering the climate, putting human lives and our world's systems—natural, social, and built environment—at risk.

According to the Fourth National Climate Assessment, the primary climate-related hazards for the Southeast region of the United States are increasing temperatures, drought, extreme heat, sea-level rise, heavy precipitation, flooding and changing seasonal patterns. Extreme heat, intense storms, storm surge, extreme rainfall, flooding, seasonal shift, drought, sea level rise, and subsidence were identified as climate hazards of concern for Gonzales. Best available resources and local climate data were reviewed and prioritized by the Climate Action Committee. Ultimately the committee members decided that extreme heat events, intense storms and hurricanes, and extreme rainfall are the most relevant to Gonzales.

At the city level, Gonzales has been experiencing high temperatures for longer periods of time, increased intensity and frequency of hurricanes, and heavy precipitation in short periods of time, that have and will continue to affect residents and businesses.



A Climate Action and Resilience Plan makes Gonzales more competitive for grant money. Just like communities compete for businesses and people by dedicating resources to public services, the maintenance of infrastructure, and overall quality of place and life, communities also compete for funding from federal programs and philanthropic organizations. For example, the consideration of climate change is required for anyone applying for the billions of dollars available in the competitive funding programs in the **Infrastructure Investment and Jobs Act of 2021**. The more recent Inflation Reduction Act has programs designed to support many of the strategies included in this plan such as low-emission technologies like heat-pumps, community solar, and electric vehicle (EV) charging networks. By being one of the first cities in Louisiana to have a Climate Action and Resilience Plan, it not only makes Gonzales a leader amongst its peers, but also positions Gonzales to better invest in itself and its people over the long term.

GONZALES' CLIMATE HAZARDS



● Extreme heat events

Extreme heat events refers to weather that is much hotter than normal. An extreme heat event occurs when the daily maximum temperature is hotter than 99% of historically recorded temperatures in a particular location. Climate models show that by 2050, Gonzales may experience almost three times as many extreme heat events annually compared to 2020. By 2100, there may be eight times as many. Both the frequency and duration of heat waves in Gonzales are anticipated to increase significantly over time. Warm nights (low temperature of 75°F or above), which are particularly dangerous to human health, are also on the rise. Extreme heat events along with high humidity produce conditions that affect the human body's ability to cool itself down effectively through sweat and evaporation. This heat stress can be dangerous, especially for people with cardiovascular issues.¹

By 2050, Gonzales may experience more than twice as many warm nights as it did in 2020, and there may be four times as many by 2100. Besides increasing energy bills and putting strain on the power grid, higher temperatures pose risks to: unhoused populations and people experiencing homelessness; low-income people who struggle to afford high energy bills; outdoor workers; and those who have nowhere to go to cool off.

● Intense storms and hurricanes

Intense storms and hurricanes are already increasing. Wind and waves associated with increasingly intense tropical storms and hurricanes cause storm surge and coastal flooding. On average, the Louisiana coast is struck by a hurricane once every three years; however, there were six hurricanes between 2005 and 2009, the most recorded in any five-year period, and four since 2020. As the climate warms, high-intensity hurricanes are predicted to occur with greater frequency.² Gonzales' location and topography put it at risk from these events. Over the next century, the impacts of sea level rise, land loss, and subsidence are predicted to increase risk to tropical storms even in areas that are farther from the coast, like Gonzales.



Home in Gonzales, LA during the 2016 flood.

¹ Fourth National Climate Assessment, Southeast Chapter

² Fourth National Climate Assessment, Southeast Chapter

● Extreme rainfall

Extreme rainfall is defined as a rain that is much heavier than normal. An extreme rainfall event occurs when more rain falls in a single day (total daily rainfall) than has fallen on 99% of days in the historic record for a particular location. Historical data on the impacts of storms in Ascension Parish and Gonzales indicate that the City already faces high storm and flood risk. As the climate changes, Gonzales is expected to experience increased flash floods. Climate models show that the number of extreme precipitation events, an indicator of future flooding, increases under climate change conditions. While Gonzales already experiences a number of extreme precipitation events per year, the chances of experiencing eight or more extreme precipitation events per year increase after 2050. Climate models indicate that high precipitation days (in which two or more inches of rain falls in a single day) are already within the range of possible conditions for 6-12 days a year in Gonzales.³ Louisiana's relative flat topography and interconnected system of waterways mean that the impact of rainfall events can extend significantly past the area receiving rain. Extreme rainfall in other locations should therefore also be assumed to have possible impacts on Gonzales.

Discussion with the Climate Action Committee (CAC), resident engagement, and desktop research led to the identification of specific groups of people and community assets in Gonzales that are particularly vulnerable to climate change. Examples of identified people and assets include school buildings, public safety employees, road networks, and power reliability.



Home in Gonzales, LA during the 2016 flood.

³ [Fourth National Climate Assessment, Southeast Chapter](#)



Incorporating Health

In addition to impacting our assets and environment, there is an increasing body of evidence demonstrating the negative impacts of climate change on physical and mental health as well as the inequitable impacts across the spectrum of our population. Higher temperatures can worsen air quality and increase the risk of heat-related illness; more frequent and severe storms can lead to power losses, contamination of water systems, interruptions in access to care and services, and the displacement of people; and changes in weather patterns help spread vector-borne diseases – all of which could have negative impacts on physical and mental health. Older adults, those with chronic illnesses or disabilities, young children, and those experiencing poverty or homelessness are generally at greater risk of health issues related to the direct and indirect impacts of climate change, including power outages, and poor air and water quality because they are less mobile and have fewer resources to draw upon during times of disruption or disaster.

Addressing Equity

Climate change does not impact everyone equally – some communities and populations bear a greater burden of negative impacts than others. People who are experiencing poverty, discrimination, housing or food insecurity, or live with abuse, chronic illness, or disability often have less capacity to protect themselves or recover from the risks and disruptions associated with climate change. Furthermore, low-income and minority households are more likely to be subject to exposure to poor air and water quality and housing that is not well-equipped for extreme temperatures or protected from flooding. When considering strategies for reducing emissions and addressing climate change impacts, it is essential to consider what groups and areas have been bearing the greatest burden from climate change impacts and how mitigation strategies and projects may affect them.



● Climate Vulnerability

Climate change vulnerability is defined as the propensity or predispositions to be adversely impacted by climate change.⁴ To help understand climate vulnerability, it may be useful to consider some concrete examples for both people and assets. For example, low-income community members may be more vulnerable to extreme heat due to the high energy costs associated with running air conditioning. You can also approach vulnerability in terms of community assets. For example, a school in a flood zone is likely more vulnerable to flooding than a nearby school that is not in a flood zone.

Understanding climate vulnerability is important because it can point to places and groups in your community that have greater need for support or adaptive measures, which can promote equitable prioritization of capacity and resources. Vulnerable groups of people include those with low income, communities of color, immigrant groups, Indigenous peoples, children and pregnant women, older adults, vulnerable occupational groups, persons with disabilities, and persons with preexisting or chronic medical conditions.

VULNERABILITY

The propensity or predisposition to be adversely affected by hazards. Vulnerability encompasses exposure, sensitivity, and adaptive capacity.

EXPOSURE

The presence of people, assets, and ecosystems in places where they could be adversely affected by hazards.

SENSITIVITY

The degree to which people, systems, or community assets are or might be affected by hazards.



ADAPTIVE CAPACITY

The ability of people, systems, or community assets to adjust to a hazard, take advantage of new opportunities, or cope with change.



4 IPCC, 2022: Summary for Policymakers [H.-O., D.C. Roberts, E.S. Poloczanska, K. Mintenbeck, M. Tignor, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem (eds.)]. In: Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 3–33, doi:10.1017/9781009325844.001.



PLAN CREATION





Throughout 2022, the City of Gonzales worked with the Climate Action Committee, conducted stakeholder focus groups, and solicited public input on emission reduction strategies through a survey and by participating in the Gonzales Centennial Celebration.

Climate Action Committee

In November 2021, the Gonzales' City Council passed a resolution to develop a Climate Action Committee consisting of city staff, leadership, and community representatives. This committee convened regularly to advise the development of the plan and provide direction on outreach, suggest focus group members, and public engagement events.

Focus Groups

Three focus groups were established to address specific sectors within Gonzales. The three focus groups were:

- *Government Operations* consisted of members that worked with the city or closely with the city to give insight on how the city functions and how the city handles climate hazards.
- *Energy and Buildings* consisted of members that worked in building maintenance and building construction.
- *Transportation and Mobility* consisted of members that work in the transportation industry and those that deal with transportation on a daily basis.

Each Focus Group met three times during the development of the Climate Action and Resilience Plan. During the first meeting, focus group members identified existing community assets and challenges and began generating ideas for addressing them. The second meeting focused on developing implementation strategies to reduce Gonzales' carbon footprint. At this meeting, members also prioritized those strategies based on what the city can do with and on its own property, if the strategy requires policy changes, and whether the city should work with partners to implement the strategies. At the third meeting, focus groups provided feedback on the draft Climate Action and Resilience Plan.

Analysis of focus group discussions and community input led to the identification of two factors that support Gonzales' adaptive capacity:

- 1** The city's experience with disaster response and recovery, and
- 2** Existing improvements to infrastructure conditions and regular maintenance.



- **Board 1: Introduction to Gonzales Climate Action and Resilience Plan**
- **Board 2: Did You Know...** - Objective: Inform residents about Gonzales' emissions profile, climate hazards, and the positive impacts of taking action.
- **Board 3 and Map: Tell Us About Your Gonzales** - Objective: Identify assets in Gonzales.
- **Board 4: What Would You Like in Your Gonzales?** - Objective: Collect information about what residents want to see or change.



Did You Know...?

- ...vehicle emissions are the largest emitter of carbon dioxide (CO₂) in Gonzales.
- ...walkability is positively associated with social connectedness, sense of community, and quality of life.
- ...communities with sidewalks and bike and pedestrian trails are more likely to have lower rates of obesity.
- ...Gonzales' nights are going to stay warmer in the future and the frequency and duration of heat waves will significantly increase.
- ...trees and wetlands are the most efficient carbon sequestration technologies for combating CO₂ emissions and help prevent flooding.
- ...greenspace has a positive association with mental and physical health and well-being and a negative association with high blood pressure.
- ...forest owners can list carbon sequestration as an official activity and benefit from revenue streams.¹
- ...climate change is expected to disrupt agricultural productivity and affect crop yields and quality.
- ...storms are becoming more frequent and severe bringing increased flood risk and more potential disruptions to the power grid.
- ...floodwater can move pollutants from the land into nearby water bodies, negatively impacting water quality.

Tell Us About Your Gonzales

Grab some sticky notes and place them here or on the map to show us:

Assets

What are the things that Gonzales does well or that you enjoy about living or working here?

Some examples of assets are:

- Parks
- Natural areas
- Libraries
- Walking paths

Use green sticky notes to mark assets here and on the map.

Challenges

What are the risks, vulnerabilities, or challenges that come with living in Gonzales?

Challenges could be:

- Ability to get around
- Cost of living
- Access to healthy food
- Access to recreation

Use red sticky notes to mark challenges here and on the map.

Ideas

What types of things would you love to see in the future? Do you have any ideas for future assets?

Ideas for the future can be anything!

- Activities & events
- Jobs
- Education
- Infrastructure

Use orange sticky notes to mark ideas here and on the map.

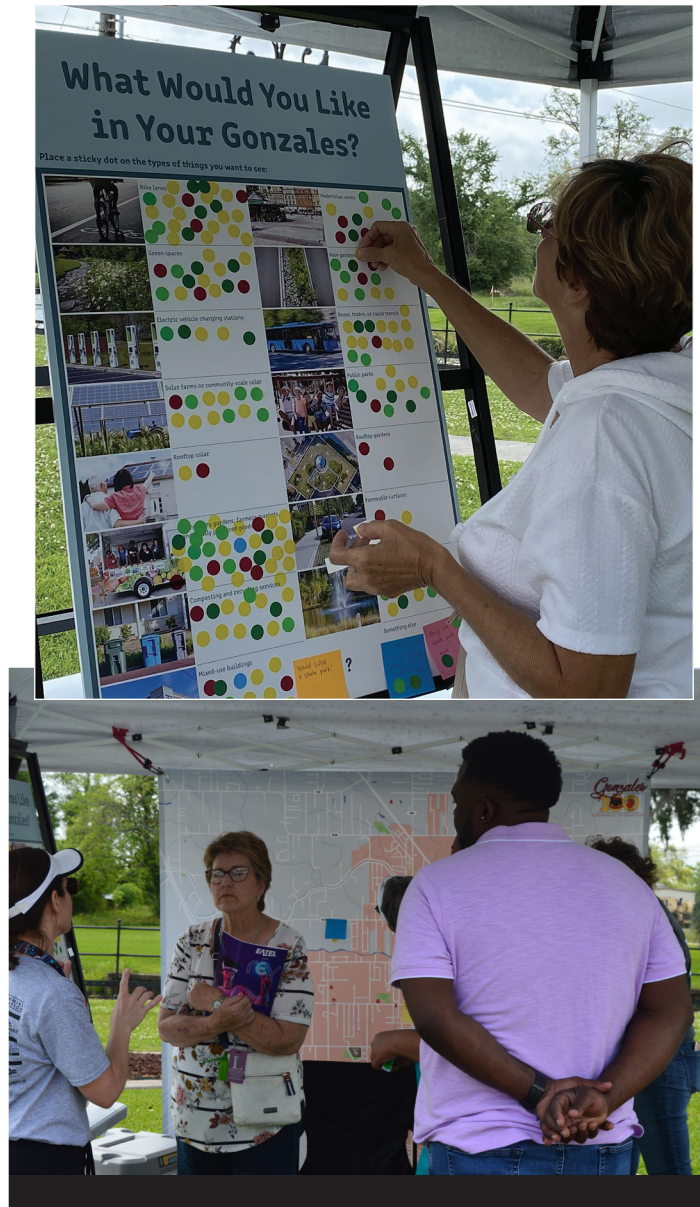
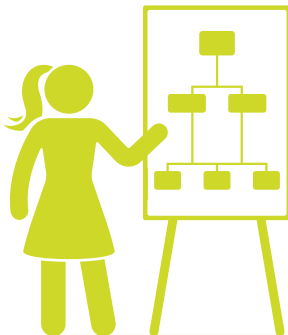
What Would You Like in Your Gonzales?

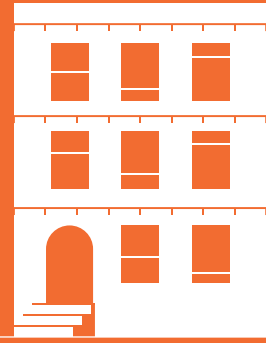
Place a sticky dot on the types of things you want to see:

Bike lanes	Pedestrian zones
Green spaces	Rain gardens
Electric vehicle charging stations	Buses, trains, or rapid transit
Solar farms or community-scale solar	Public parks
Rooftop solar	Rooftop gardens
Community gardens, farmers markets, and locally produced goods	Permeable surfaces
Composting and recycling services	Conservation areas
Mixed-use buildings	?

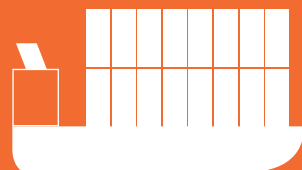
The foundation of any successful plan is meaningful public engagement that is best achieved by meeting residents where they are. Engagement with the public included a survey and community outreach at the 2022 Centennial Celebration.

To conduct community outreach and collect input on preferences for greenhouse gas reduction strategies, a booth was set up at the City's 100 year anniversary celebration event on April 22-24, 2022. Four boards and a map were erected in a 10x10 foot tent space to engage with the community on the Climate Action and Resilience Plan process. The first two boards provided an overview of the plan and why it is important. The other two boards were used for a preference survey and to identify assets, challenges, and ideas. The map of Gonzales was used for residents to use as a geo-reference as they provided location-specific input.





GONZALES' CARBON FOOTPRINT



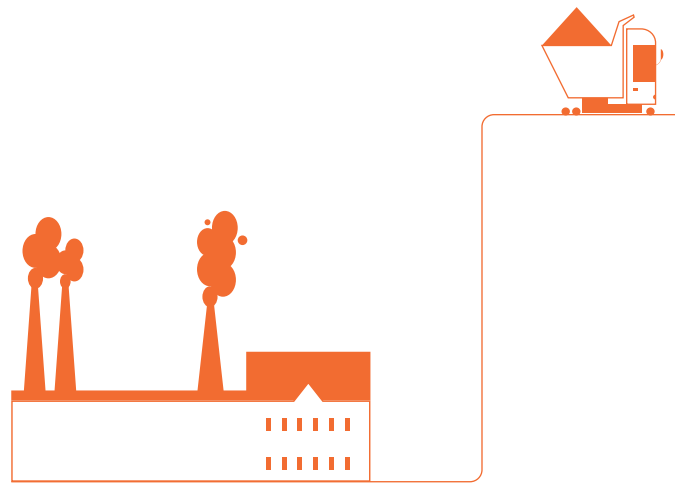
What is a Carbon Footprint?

A Carbon Footprint is the amount of carbon dioxide (CO₂) and other human-caused greenhouse gas (GHG) emissions produced by a community or organization's activities. GHGs in the atmosphere act like the glass of a greenhouse, trapping heat close to the surface of the Earth and causing warmer land and oceans, which in turn cause a variety of climate changes. While a certain amount of GHGs exist naturally in the atmosphere, human activities, mostly the burning of fossil fuels, have greatly increased the concentration of these gases.

What is Gonzales' Carbon Footprint?

Gonzales' 2019 emissions were estimated at 101,692 Metric Tons Carbon Dioxide Equivalent (MT CO_{2e}). Based on growth rates and emissions intensity factors, 2030 emissions are projected to be 127,543 MT CO_{2e} unless measures to reduce emissions are taken.

There are two sectors that are responsible for nearly 85% of Gonzales' carbon footprint: transportation and electricity use. The largest emitters are gasoline and diesel vehicles, contributing to 56% of Gonzales' GHG emissions. Residential and commercial electricity is the second largest emitter of GHG in Gonzales, contributing 28.4% of GHG emissions. To help decrease emissions from these sources, the city and residents should consider strategies that result in less driving required for day to day tasks, less energy consumption (increased efficiency), and the availability of cleaner energies.

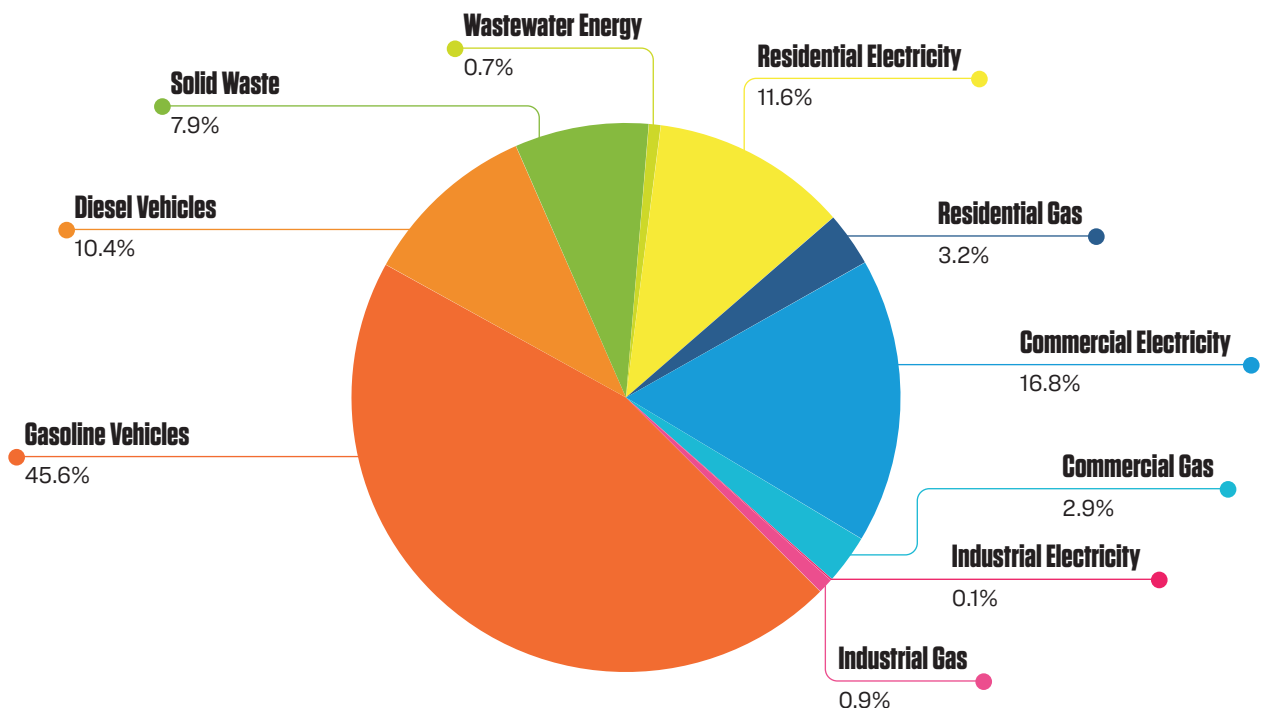


By the numbers

To reduce Gonzales' Carbon Footprint by 50% by 2030, **emission reductions must occur in the transportation and energy use sectors.** This can be accomplished by:

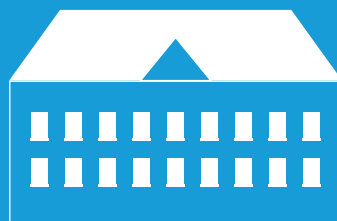
- Reducing the number of vehicle miles traveled by 15% per capita
- Electrifying 50% of on-road gasoline vehicles and 15% of on-road diesel
- Draw 80% of Gonzales' electricity use in residential, institutional, and commercial buildings from carbon-free and renewable sources.

2019 Greenhouse Gas Inventory





CARBON EMISSION REDUCTION STRATEGIES



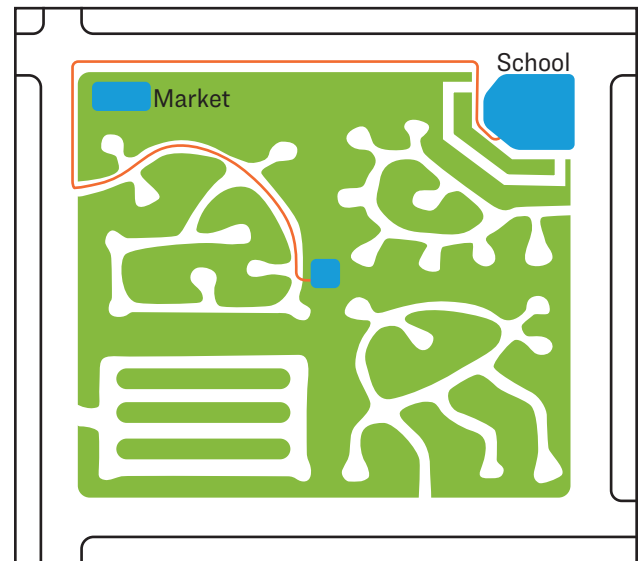
REDUCE VEHICLE MILES TRAVELED PER CAPITA



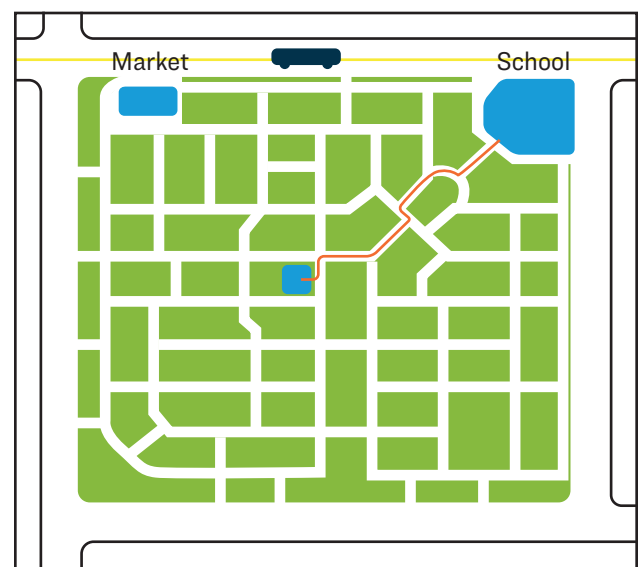
For the City of Gonzales to reach net-zero emissions by 2050 and reduce 40-50% of community wide greenhouse gas emissions by the year 2030, the following strategies have been identified.

In Gonzales, the largest source of GHG emissions is the transportation sector, making it a key sector to target. Reducing overall vehicle miles traveled (VMT) per capita is an important strategy for combating climate change. There are two primary ways to reduce VMTs: provide transportation alternatives and reduce the number of vehicle trips necessary.

- *Transportation options* such as public transit and making improvements to bicycle and pedestrian infrastructure helps reduce the number of vehicle miles traveled. Public transit is more efficient than private passenger vehicles because it has the potential to move a greater number of people.
- *Reducing the number of vehicle trips necessary* can be achieved by promoting and incentivizing smart growth principles such as transit oriented development. Transit-oriented development creates compact, mixed-use communities near transit where people enjoy easier access to jobs and services resulting in a reduced need to drive for day-to-day needs.



Driving-only transportation pattern



Walkable connected transportation network

ADDITIONAL BENEFITS OF REDUCING VMTs

In addition to reducing GHG emissions, reducing VMTs can lead to a number of other community benefits:

- Fewer VMTs and fewer vehicles on the road helps reduce traffic congestion and can help improve local and regional air quality.⁵
- Providing other transportation options can promote physical activity and spur economic development. A study evaluating the job creation impacts of the American Reinvestment and Recovery Act (ARRA) in 2009 found that public-transportation investments generate 31% more jobs per dollar than construction of new roads and bridges.⁶
- Implementing transit oriented development is the most efficient way to reduce VMTs while simultaneously adding exponential growth benefits to residents and the economy. Market surveys and research have consistently shown that at least one-third of homebuyers prefer homes in smart growth neighborhoods, and this share is growing.⁷
- Reducing VMTs can also create safer streets. Street design determines whether an area will be perceived as safe and inviting for pedestrians, bicyclists, and transit users, which affects the viability of these modes of transit. This, in turn, affects the viability of certain types of retail, influences land values and tax receipts, and shapes overall economic strength and resilience.
- Reducing VMTs can create new opportunities for land use in the future. For example, as modes of transportation evolve within a city, communities can often reclaim streets and parking lots for additional green space and more pedestrian-friendly and economically-vibrant corridors.
- Finally, improving access to jobs and services for residents without a personal vehicle can help bolster local economic development efforts.

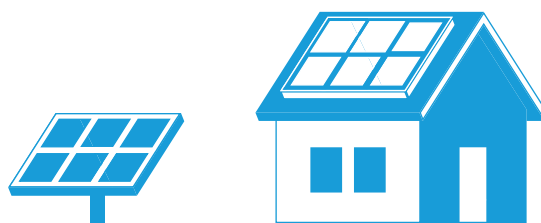


⁵ Shapiro RJ, Hassett KA, Arnold FS. Conserving energy and preserving the environment: the role of public transportation. American Public Transportation Association; 2002.

⁶ Arthur C Nelson et al., The Best Stimulus For the Money: Briefing Papers on the Economics of Transportation Spending, University of Utah's Metropolitan Research Center and Smart Growth America, April 2009.

⁷ US Census Bureau and HUD (2009), American Housing Survey for the United States: 2007, Table 2-8. Neighborhood-Occupied Units compared to Table 1-1, including interpolation

USE RENEWABLE ENERGY



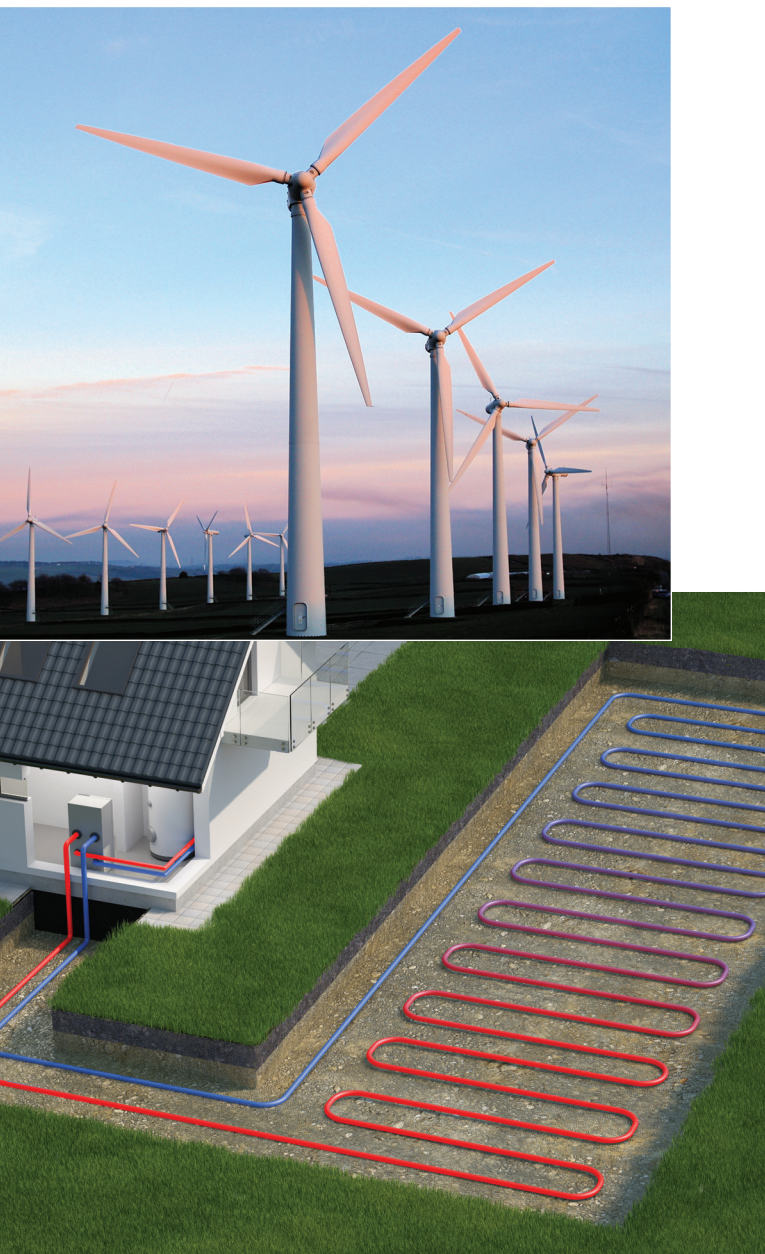
Unlike fossil fuels like coal and natural gas which are non-renewable and take millions of years to form, renewable energy is derived from sources that are not depleted when they are used such as wind and solar. Most importantly, when we burn fossil fuels to produce energy, they release GHGs to the atmosphere; whereas many renewable energy sources do not. Switching to renewable energy sources is significant in reducing GHG emissions and can also provide an economic boost. Solar panels need humans to install them; wind farms need technicians for maintenance. Local governments also benefit from clean energy, most often in the form of property and income taxes and other payments from renewable energy project owners. Renewable energy includes solar, wind, and geothermal energy.

Solar Energy

Of all energy resources, solar energy is the most abundant and, contrary to common belief, does work in cloudy weather. The cost of manufacturing solar panels has decreased significantly in the last decade⁸, making them not only affordable but often the cheapest form of electricity. Solar energy can be generated by solar farms and sold to municipalities; it can also be generated on rooftops of buildings and other suitable structures. There are a myriad of tax credits available to further incentivize investments in solar energy and large scale solar siting is a viable land use option for existing brownfield sites.



⁸ Feldman, David, Vignesh Ramasamy, Ran Fu, Ashwin Ramdas, Jal Desai, and Robert Margolis. 2021. U.S. Solar Photovoltaic System Cost Benchmark: Q1 2020. Golden, CO: National Renewable Energy Laboratory. NREL/TP-6A20-77324.



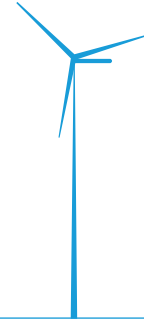
Wind Energy

Onshore and offshore wind energy technologies have evolved over the last few years to maximize the electricity produced - with taller turbines and larger rotor diameters. Offshore wind power in particular has significant potential in Louisiana. Wind power stations can generate energy for municipalities and energy can also be sold to generate income. Wind power entities can take advantage of wind energy tax credits which include Production Tax Credits (provides a tax credit of 1¢–2¢ per kilowatt-hour for the first ten years of electricity generation) and Investment Tax Credits (provides a credit for 12%–30% of investment costs at the start of the project). Homeowners can take advantage of renewable energy tax credits which help offset installation costs.

Geothermal Energy

Geothermal energy is energy extracted from the Earth's interior via geothermal heat pumps. Geothermal pumps are commonly used for heating and cooling needs and, if equipped, supply hot water. Relative to air-source heat pumps, they are quieter, last longer, need little maintenance, and do not depend on the temperature of the outside air. The installation price of a geothermal system can be several times that of an air-source system of the same heating and cooling capacity; however, the additional costs may be returned in energy savings in five to ten years, depending on available incentives.

INCREASE ENERGY EFFICIENCY



Increasing energy efficiency simply means less energy is required to perform the same task, whether that task is building a new school or bringing light to an office space. Improving efficiency is a pillar of climate change mitigation and in many ways, is the most straightforward strategy. Many gains can be made simply by switching out old appliances and fixtures with more efficient ones (i.e., switching to LED lights), or programming existing systems to operate in a more efficient manner (i.e., programmable thermostats). Often the largest efficiency gains can be achieved by making homes and buildings more energy efficient through insulation and other retrofits. Energy efficient homes and buildings use less energy to run appliances, to heat and cool themselves, and to perform various other day-to-day operations. Existing buildings can be retrofitted with energy efficient appliances and systems that once installed, immediately reduce energy use. Incorporating energy efficiency protocols into new and retrofit building projects is another cost effective way to reduce energy use and energy costs.

While the operational efficiency of a building is important (heating and cooling, lighting, etc.), it is also important to address embodied carbon in materials and methods used for new construction or other development projects. Embodied carbon is the CO₂ emissions associated with the materials or construction processes throughout the lifecycle of a building or infrastructure project. This includes the CO₂ emissions from the manufacturing and transportation of building materials to a site, the maintenance of a building throughout its lifespan, and the demolition and recycling of the building. Embodied carbon is expected to account for nearly 50% of the overall carbon footprint of new construction between now and 2050⁹; so the materials, design, and methods used for constructing a building or infrastructure are just as important as its operational efficiency.



9 UN Environmental Global Status Report, 2017; EIA International Energy Outlook, 2017.

REDUCE WASTE



Making new products takes energy and resources. Reducing waste by avoiding single use products or reusing products is one of the most effective ways to reduce energy expenditures and save natural resources. Donating appliances, clothes, or other products to local churches, community centers, thrift stores, or nonprofit organizations not only reduces waste but also helps others.

Recycling is another option for reducing waste but comes with its own energy costs and associated emissions. Recycling materials such as cardboard and aluminum are excellent strategies; however, most plastics cannot be recycled. Most importantly, plastics are made from fossil fuels so dumping, incinerating, recycling and composting (for certain plastics) all release CO₂. For the few plastics that can be recycled, the process emits toxic fumes and the recyclable plastics are often shipped to far away recycling facilities which produces additional transportation emissions. The biggest challenge with plastics is that they are so abundant and ubiquitous - especially single use plastics - that finding alternatives is often not practicable. In short, avoiding plastic should be the goal and when that is not possible the goal should be long-lived, reusable plastic. Only when no other practicable options exist, should single use plastics be used.

Reducing waste is not only about physical objects, it also goes hand-in-hand with improving efficiency. Heating, cooling, and lighting buildings when they are not in use is a form of waste. Unnecessary idling by vehicles is a form of waste. Rethinking how systems operate is another important step for reducing waste and GHG emissions. In many cases this is also an off-the-shelf solution such as motion detector lights and programmable thermostats.

INCREASE GREEN SPACES



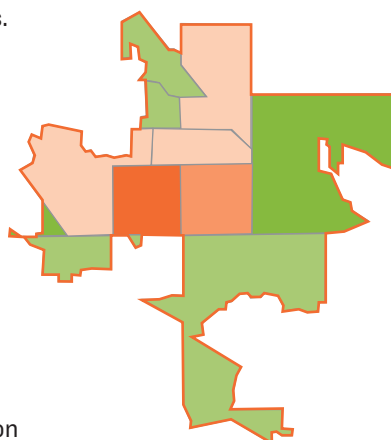
Green spaces are areas covered with vegetation and include parks, community gardens, green infrastructure and other built spaces with vegetative cover. Increasing Green infrastructure and tree canopy cover are great strategies for Gonzales to reduce GHGs. Green Infrastructure such as bioswales has recognized benefits around stormwater management, flooding reduction, and water quality improvements. Green infrastructure achieves these benefits by functioning to absorb, retain, filter, and slow the flow of water. Depending on an installation's feature and size, green infrastructure also has the potential to have multiple co-benefits. These include air quality improvement, aesthetic enhancement, urban cooling, energy savings, habitat provision, and others. Green infrastructure project implementation timelines are highly variable, often within the span of 1-2 years, and depend primarily on funding and the nature of the project. Note that green infrastructure projects have been associated with draw-backs, most notably their connection with displacement, increased property values, and green gentrification.

Trees sequester CO₂ and are important for combatting the impacts of climate change in a variety of ways. Trees can improve environmental quality by absorbing

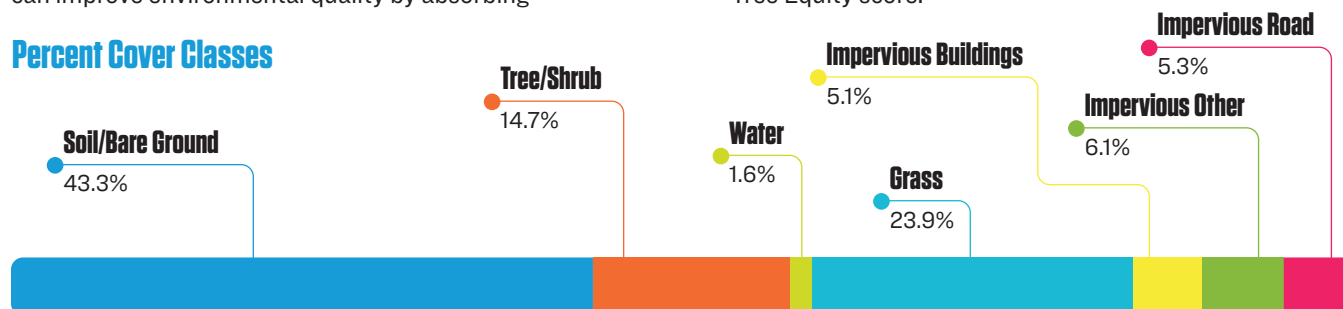
pollutants from the air and water; reducing urban heat island effects by providing shade and through evapotranspiration; lowering building energy use by keeping buildings warmer and cooler when strategically placed; controlling and guiding wind speed and guide the flow of air; acting as a noise buffer; intercepting solar radiation from the sun; aiding in stormwater management; absorbing, transforming, and transferring contaminants in the soil. On a smaller scale, shrubs and other vegetation provide many of these same benefits.

A [Tree Equity Score](#) is a metric that assists cities in assessing how well they are delivering equitable tree canopy cover to all residents, especially those in urban neighborhoods. The score is a combination of tree canopy cover, climate, demographic and socioeconomic data.

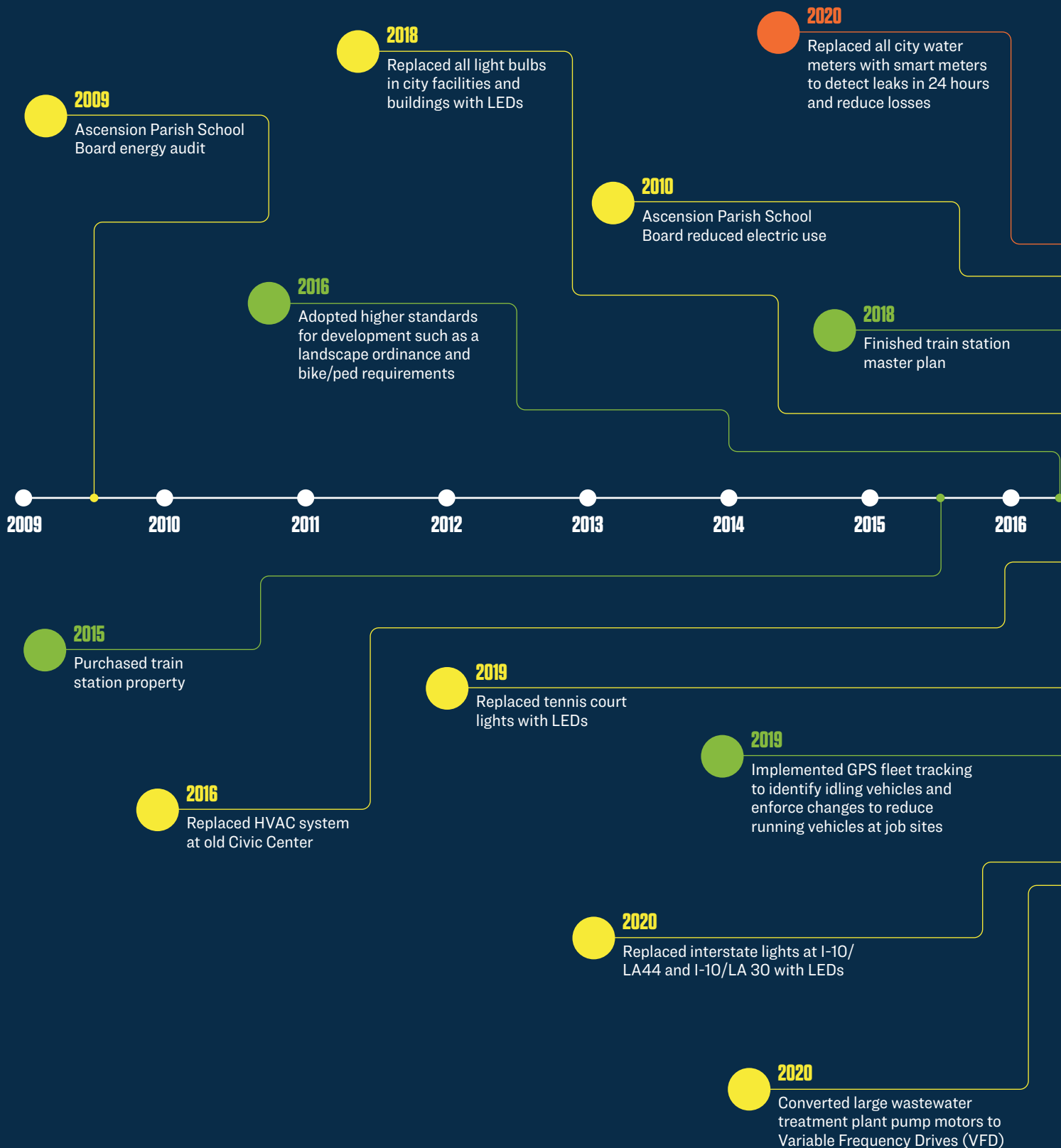
Gonzales has an overall Tree Equity Score of 67, with five of the ten block groups in the city having a score lower than 67. The ideal score for Gonzales is 75. In order for the city to achieve this goal they will need to plant approximately 32,000 trees to get all block groups to a score of 75. Looking at the chart below, Gonzales has 43.3% of soil-bare ground. There is ample space available in the City to expand tree coverage to increase the overall Tree Equity score.



Percent Cover Classes



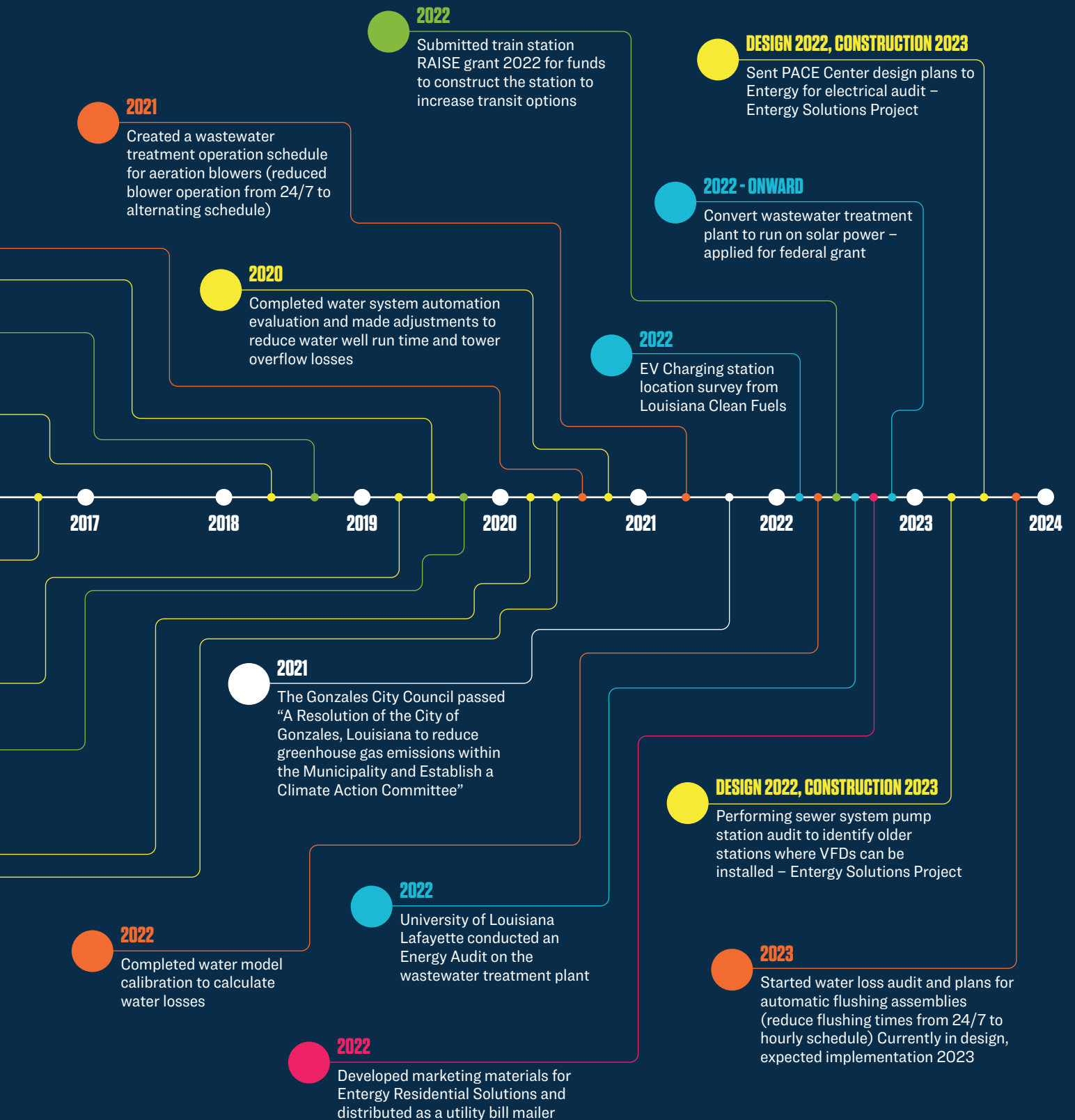
Gonzales has already taken many steps that this plan builds upon.



INCREASE ENERGY EFFICIENCY



REDUCE VEHICLE MILES TRAVELED PER CAPITA



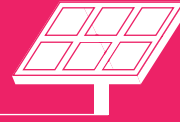
USE RENEWABLE ENERGY



REDUCE WASTE



TALK ABOUT IT ALL



TAKING ACTION

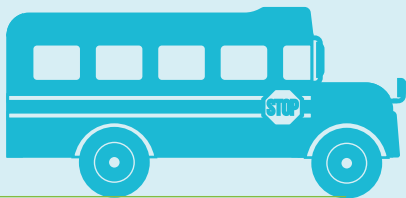


GOAL 1: USE RENEWABLE ENERGY SOURCES

STRATEGY:

Expand the availability of electric vehicle(EV) charging stations

- ☐ **ACTION:** Coordinate with Louisiana Clean Fuels on funding opportunities and guidance
- ☐ **ACTION:** Develop and implement policies to expand EV infrastructure
 - Step 1. Review comprehensive plan, zoning, and land use code to eliminate unintended barriers
 - Step 2. Develop and implement policies to help facilitate expansion of charging stations
 - Step 3. Adopt EV ready/EV capable building codes to facilitate EV charging
 - Step 4. Consider expedited and streamlined permitting policies for EV chargers
 - Step 5. Review parking, signing, and technical requirements to encourage and facilitate EV charging stations.



STRATEGY:

Use alternative energy for city-owned buildings

- ☐ **ACTION:** Energy audit provided by the University of Louisiana at Lafayette(ULL) for all city-owned buildings
- ☐ **ACTION:** Implement recommendations from wastewater treatment plant energy audit
- ☐ **ACTION:** Consider transitioning emergency response generators to solar or another alternative energy source

STRATEGY:

Shift public fleets to zero-emission vehicle

- ☐ **ACTION:** Slowly transition fleet using Enterprise' car service
- ☐ **ACTION:** Bus electrification
- ☐ **ACTION:** Shift city equipment (lawnmowers, blowers, etc.)

STRATEGY:

Expand energy options

- ☐ **ACTION:** Identify opportunities to remove potential barriers to and promote residential and commercial renewable energy
- ☐ **ACTION:** Program that supports residential, commercial, and community-based renewable energy installation and storage
- ☐ **ACTION:** Sol Smart certification designation



GOAL 2: REDUCE VEHICLE MILES TRAVELED PER CAPITA

STRATEGY:

Increase mobility options

- ☐ **ACTION:** Encourage carpooling
- ☐ **ACTION:** Increase transit options
- ☐ **ACTION:** Facilitate bike share options
- ☐ **ACTION:** Increase bike/ped infrastructure

STRATEGY:

Create walkable communities

- ☐ **ACTION:** Plan for “last mile” for public transit
 - Step 1. Analyze first and last mile needs. Think about how residents will get from rail to home or work. Plan for a variety of travel modes (Bikes, bus, shuttle, micro-transit)
 - Step 2. Determine connectivity needs for the last-mile. Rail to key destinations
 - Step 3. Anticipate community engagement with ridership study or survey
- ☐ **ACTION:** Plan for transit oriented development (TOD) around rail
 - Step 1. Canvas area around the rail station looking for properties that can be redeveloped
 - Step 2. Look for properties city can purchase and hold for future development
 - Step 3. Consider market analysis with future use in mind
 - Step 4. Consider overlay such as Tax Increment Financing (TIF) or Economic Development Districts (EDDs)
 - Step 5. Identify key partners
 - Step 6. Develop request for proposals (RFPs) to seek developers that would bring tenants with them (developers to build and lease)

STRATEGY:

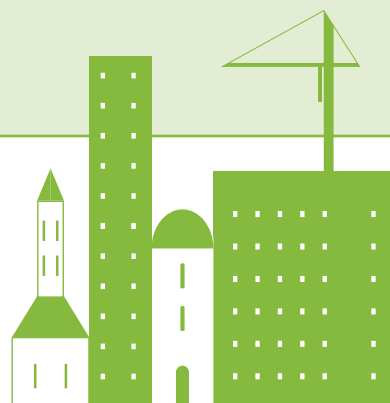
Buy local

- ☐ **ACTION:** Establish a farmer's market
 - Step 1. Research different types of markets. City, Non-profit, private sector, BREDA
 - Step 2. Determine how the market will be constituted
 - Step 3. Determine a site
 - Step 4. Funding opportunities
 - Step 5. Determine how the market will be staffed
 - Step 6. Advertise for vendors, farmers/partnerships
 - Step 7. Align market to occur near transit station
 - Step 8. Research buyers group for fresh produce. Target seniors, use churches and other organizations

STRATEGY:

Increase Broadband access

- ☐ **ACTION:** Allow for hybrid work opportunities
 - Step 1. Decide hybrid workplace model
 - Step 2. Create hybrid workplace policy and procedures (amount of office/remote work days)
 - Step 3. Update contracts/employee handbooks that state hybrid work options.
 - Step 4. Accommodations for remote work (ensure each employee has stable Internet connections, proper equipment to work from home)
 - Step 5. Connect with Commuter Krewe through Capital Region Planning Commission (CRPC)





GOAL 3: INCREASE ENERGY EFFICIENCY

STRATEGY: Site improvements

- ☐ **ACTION:** Plant shade trees, shade structures or other improvements around city buildings.
- ☐ **ACTION:** Refer to recommendations made from ULL energy audit

STRATEGY: Building improvements

- ☐ **ACTION:** Retrofit existing buildings for improved efficiency. Examples below
 - Step 1. Motion sensor for lights
 - Step 2. Increase/reduce room temperature
 - Step 3. Glazing windows to reduce heat access

STRATEGY: Upgrade appliances

- ☐ **ACTION:** Upgrade appliances and equipment to energy star appliances

STRATEGY: Gray water recycling (sinks and laboratories) for irrigation

GOAL 4: REDUCE WASTE IN THE CITY

STRATEGY: Reduce compostable waste

- ☐ **ACTION:** City to restructure how disposal is assessed to reduce waste and promote composting in Gonzales
- ☐ **ACTION:** Establish city owned composting facility
- ☐ **ACTION:** Encourage composting in schools
- ☐ **ACTION:** City to remove yard waste

STRATEGY: Eliminate the availability of plastic bottles, Styrofoam, and other single-used waste in city-owned buildings

- ☐ **ACTION:** Install water bottle filling stations in all city-owned buildings

STRATEGY: City to practice how to Refuse, Reduce, Reuse, and Recycle

- ☐ **ACTION:** Provide education on ways to recycle
- ☐ **ACTION:** Educate Home Owners Associations on policies that reduce waste
- ☐ **ACTION:** Incentivize people that reduce yard waste
- ☐ **ACTION:** Establish a recycling program



GOAL 5: INCREASE GREEN SPACES

STRATEGY: Plant more vegetation

- ☐ **ACTION:** Plant more trees around city-owned buildings

Step 1. Prioritize buildings (based on energy bills and existing vegetations; prioritize buildings with no vegetation on the south & west side)

Step 2. Line-item in grounds and maintenance budget for procurement, planting, and maintenance (i.e. Irrigation)

Step 3. Partner with Southern University, Baton Rouge Green, Master Gardeners, for identifying appropriate species and develop a plan for each building;

Step 4. Consider augmenting staff to include a urban forester;

Step 5. Require new city buildings need to be sited, built, and landscaped appropriately to maximize energy efficiency

Step 6. Louisiana Community Forest to provide technical or community assistance

- ☐ **ACTION:** Expand urban tree canopy cover and green spaces in Gonzales

Step 1. **Get recognized by Tree City USA - Abita Springs, Brusly, Gretna, Kenner, Mandeville, Slidell, Alexandria, Covington, Hammond, Lafayette, New Orleans**



Step 2. Create a greening program

STRATEGY: Preserve and create open space

- ☐ **ACTION:** Conduct an open space inventory

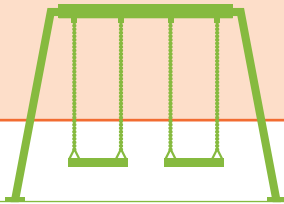
- ☐ **ACTION:** Evaluate open space preservation areas that provide multiple community benefits. Example: stormwater retention and parks and recreation

- ☐ **ACTION:** Transition pavement to greenspace

Step 1. Identify locations for long-term green and open spaces (parking lots, brownfields, industrial or commercial facilities)

Step 2. Determine whether they are candidates for restoration, conservation, recreation, agriculture, or a combination thereof.

STRATEGY: Support backyard, rooftop, and community gardening





GOAL 6: ADDRESS EQUITY AND HEALTH

STRATEGY:
Adopt Complete Streets Ordinance

STRATEGY:
Hazard early warning system and evacuation plans

STRATEGY:
Decrease impervious surfaces

- ☐ **ACTION:** Expand urban tree canopy and green spaces in Gonzales
- ☐ **ACTION:** Elevate Homes

STRATEGY:
Green infrastructure

- ☐ **ACTION:** Green streets program
- ☐ **ACTION:** Incorporate vegetation and design systems that can alleviate stormwater runoff that will reduce the amount of flooding in Gonzales
- ☐ **ACTION:** Partner with Water Wise Gulf South to work with and train for green infrastructure development, especially in low-income communities

STRATEGY:
Multi-benefit development to provide recreational opportunities and water management services

GOAL 7: TALK ABOUT IT ALL

STRATEGY:
Increase climate knowledge

- ☐ **ACTION:** Host topical workshops and trainings
- ☐ **ACTION:** Develop a Climate Ambassadors Program
- ☐ **ACTION:** Conduct an industry roundtable

STRATEGY:
Develop a communication strategy (social media, etc)

- ☐ **ACTION:** Create a webpage tracking progress on CAP
- ☐ **ACTION:** Highlight property owners utilizing solar/green infrastructure/other interventions

STRATEGY:
EV education

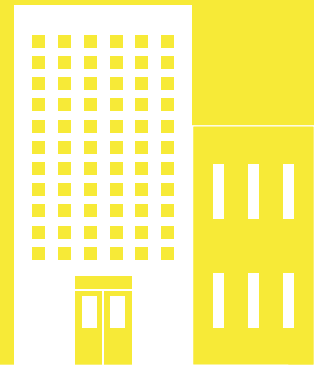
- ☐ **ACTION:** Host events with local dealerships and other potential partners where residents can test-drive EVs
- ☐ **ACTION:** Provide information about tax credit incentives

STRATEGY:
Stakeholder outreach

- ☐ **ACTION:** Identify the correct audience



APPENDIX





This Climate Action and Resilience Plan builds on the City of Gonzales 2019 Inventory of Greenhouse Gas Emissions. Throughout the development of this Gonzales Action Plan, in-depth research, assessments, and analyses were developed to inform the Greenhouse Gas reduction strategies and goals for Gonzales. A survey and public meeting were used to solicit input and feedback from residents of Gonzales. To identify what environmental risks Gonzales is facing now and in the future, a Climate Vulnerability Assessment was done and shared with the Climate Action Committee.

Simultaneously, a Wedge Analysis analyzed and quantified the impact reduction strategies could have on reaching the emission reduction goal over time. This research has informed Gonzales' climate action strategies and actions, which can be found in detail Online via the links to the left.

We also included a Climate Action Cheat Sheet for those who are further interested in learning about what individuals can do to reduce their carbon footprint. We hope it will be help you contribute to our collective effort of reducing Gonzales' Carbon Footprint.

- [**City of Gonzales 2019 Inventory of Greenhouse Gas Emissions**](#)
- [**Survey Results**](#)
- [**Public Meeting Results**](#)
- [**Climate Vulnerability Assessment**](#)
- [**Wedge Analysis**](#)
- [**Climate Action Cheat Sheet**](#)

To access a digital version of the Climate Action and Resilience Plan and its supporting documents, scan the QR code below.





2022