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Executive Summary

The City of Mesa (City) created a Climate Action Plan (Plan) as our commitment to proactively and responsibly protect and conserve Mesa's environment and natural resources. The Plan will lower our climate impact, serve as guidance for sustainable growth and build resiliency by reducing carbon pollution in City operations. Through this Plan, we will further study mitigation and adaption strategies, implement intentional policy direction, and support the advancement of innovative technologies.

The City recognizes the significance of climate change. Human activities have increased greenhouse gas (GHG) concentrations in the atmosphere, disrupting the Earth's natural systems and weather patterns. Climate change means unpredictable precipitation patterns, hotter summer temperatures,



increased risk of wildfires, and Arizona's worst drought in over a century.

The Plan begins by measuring our impact. The City's GHG emissions are estimated through a GHG inventory, which documents all sources of emissions throughout the organization at a point in time. This inventory helps to set the baseline of known gases in order to develop strategies that reduce emissions and to track progress of those efforts.

The Plan has listed four 'Aspirational Goals' that will be used as a guide for our vision for the future:

ASPIRATIONAL GOAL #1: Carbon Neutrality

- Achieve carbon neutrality by 2050 by reducing greenhouse gas emissions and enhancing carbon sinks
- Strive to reduce the carbon footprint of City Operations by 50% by 2030

ASPIRATIONAL GOAL #2: Renewable Energy

• Prioritize the use of renewable, resilient energy to achieve 100% renewable energy by 2050

ASPIRATIONAL GOAL #3: Materials Management

 Manage material responsibly and divert 90% waste from the landfill by 2050

ASPIRATIONAL GOAL #4: Community Action

• Develop community-based action items to be incorporated into the Plan

We will be leading by example. We have identified how the City will create solutions with short-term and long-term benefits. Individual City departments will continue to be the owners of the projects and programs that will achieve progress toward these goals based on measurable targets and strategies.

Reduction targets are incorporated into six 'Focus Areas':

O FOCUS AREAS











The Plan will be a living document that will evolve over time as new strategies, resources, technologies, and collaborations come to light. The next version of the Plan will include cross-sector collaboration between subject-matter experts, local businesses, community stakeholders, and residents alike to help put Mesa on the path to carbon neutrality. We will look to the community to develop a pathway of equitable and inclusive initiatives based on data, best practices, and local expertise for proposed community-based actions that will reduce GHG emissions each year.

We know what we need to do. The Plan provides a pathway to accelerate our historical success so that we can more greatly contribute to the global climate action impacts. We want Mesa to continue to be a vibrant, prosperous, and thriving city for generations to come.

CITY OF MESA CLIMATE ACTION PLAN: FOR A SUSTAINABLE COMMUNITY

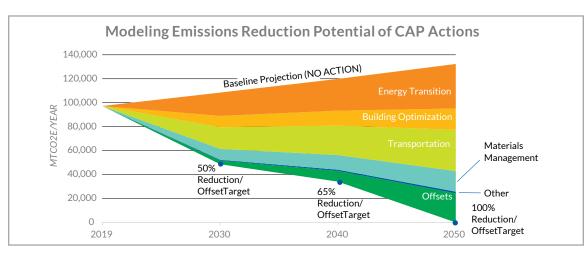
Ch 1. Looking to the Future: Aspirational Goals

The Plan has listed four 'Aspirational Goals' that will be used as a guide for our future vision. To achieve these Aspirational Goals, we have identified efforts and initiatives needed to champion these impactful goals that support the Earth, our Mesa community and future prosperity.

ASPIRATIONAL GOAL: Carbon Neutrality

Achieve carbon neutrality by 2050 by reducing greenhouse gas emissions and enhancing carbon sinks

Strive to reduce the carbon footprint of City Operations by 50% by 2030



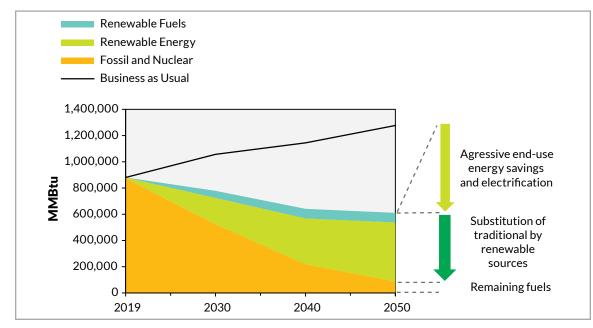
The following efforts will help the City achieve this goal:

- 1. Build smart, energy efficient buildings and include efficient equipment.
- 2. Transition to clean energy, such as hydro, biogas and solar.
- 3. Reduce vehicle miles travelled and increase driving efficiency.
- 4. Acquire vehicles powered by clean energy, such as electricity and renewable natural gas (RNG).
- 5. Replace streetlights and sports field lights with LED fixtures.
- 6. Convert to smart water, electric and gas meters Full conversion from manual meter reading to automated metering infrastructure (within next six years).
- 7. Adopt a sustainable materials management policy (waste reduction).
- 8. Invest in carbon sinks, such as trees and vegetation.

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ASPIRATIONAL GOAL: Renewable Energy

Prioritize the use of renewable, resilient energy to achieve 100% renewable energy by 2050



The following efforts will help the City achieve this goal:

- 1. Continue finding energy efficiency retrofit projects.
- 2. Build smart, high performance buildings and use energy efficient equipment.
- 3. Seek out wholesale and retail renewable energy purchases.
- 4. Increase renewable energy and distributed energy infrastructure.
- 5. Support electrification of light duty vehicles.
- 6. Enhance renewable natural gas infrastructure for heavy duty fleet vehicles.





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ASPIRATIONAL GOAL: Materials Management

Manage material responsibly and divert 90% waste from the landfill by 2050

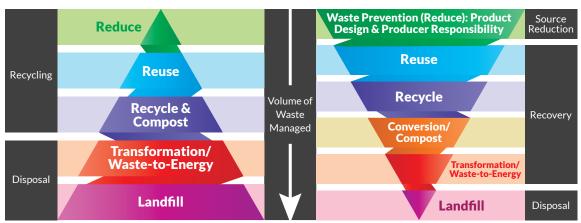


Figure 1: Traditional Waste Hierarchy

Figure 2: New Waste Management Paradigm

Change the Paradigm!

The following efforts will help the City achieve this goal:

- 1. Focus on waste reduction.
- 2. Actively seek reuse of items within the City prior to disposal.
- 3. Capture and condition biogas for reuse.
- 4. Reuse and recycle material.
- 5. Advance the 'Food Waste to Energy' and 'Waste to Energy' programs.

ASPIRATIONAL GOAL: Community Action

Develop community-based action items to be incorporated into the Plan.

It is important to understand that climate change is a global challenge that the City cannot tackle alone. To achieve these Aspirational Goals, additional collaboration from a variety of stakeholders will be necessary to accelerate emission reductions from sectors where the City has limited control. The City will lead by example but to make a difference, we will also need community action.

Future versions of the Plan must include cross-sector collaboration between subject-matter experts, local businesses, community stakeholders, and residents alike to help put Mesa on the path to carbon neutrality. We will look to the community to develop a pathway of equitable and inclusive initiatives based on data, best practices, and local expertise for proposed communitybased actions that will reduce GHG emissions each year.

The following efforts will help the City achieve this goal:

- 1. Develop community engagement strategies for residents, businesses, nonprofits, organizations, and other stakeholders.
- 2. Host public input sessions.
- 3. Evaluate equity of the Plan.
- 4. Continue public education on sustainability and City programs that support sustainability.
- 5. Contribute to regional efforts and represent the public voice on collaboration.



Doing Our Part

CITY OF MESA CLIMATE ACTION PLAN: FOR A SUSTAINABLE COMMUNITY

OUR CLIMATE IS CHANGING faster than at any point in history

Ch 2. Sustainability & Climate Action Plan for Mesa

Our climate is changing faster than at any point in history, primarily due to generations of growth and human impact on the earth. Climate change has the ability to jeopardize everything we value: the resilience of our natural resources, our physical infrastructure, our financial security, economic competitiveness, and most importantly our health and well-being. Our collective global responsibility is to mitigate, prepare and adapt for a future that is projected to have hotter temperatures, harmful air pollution, longer droughts, more significant natural disasters, and more intense rain events.

The City is in a unique position to be on the front lines of direct impact and to provide leadership to local efforts that will contribute towards meaningful and sustainable action. It is our role to set the framework for citywide measures and advance these goals across programmatic and departmental lines. The City has created the Plan as our commitment to proactively and responsibly protect and conserve Mesa's environment and natural resources. With the Plan, we will lower our climate impact by reducing carbon pollution and building resiliency in City operations, through the further study of mitigation and adaption strategies, with intentional policy direction and by supporting the advancement of innovative technologies.

Our Climate Vision

The City is committed to fostering solutions with long-term community benefits, building resilience in City operations, and maximizing climate action for a healthy community with sustainable growth. We want Mesa to continue to be a vibrant, prosperous, and thriving city for generations to come. The City has been making investments that support a more sustainable Mesa with clean air, clean water, and reduced emissions for many decades. These investments protect the resiliency of our natural resources, physical infrastructure, financial security, and economic competitiveness. The Plan will guide collaborative decision-making, future investments and daily operations that promote a shared vision for a greener, innovative, resilient, and competitive community.

Many cities, including the City of Mesa, have embraced sustainability as a philosophy to enhance the viability of their organization and community. The benefits from this include increased efficiencies, reduced operating costs, enhanced social services, preservation of valuable environmental resources, and motivating innovation. Our actions will be targeted towards local impact, improving our quality of life, and ensuring ensuring greater stability to climate

impacts for generations to come. But climate change is a global challenge that does not account for local or national borders. Emissions anywhere affect people everywhere. We are proud to be joining a movement of global influencers coming together to combat and adapt to climate change.

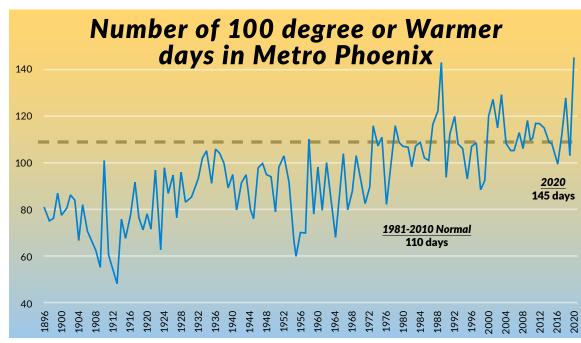
While the first draft of the Plan is primarily intended to lay out specific actions for our City operations, it also provides context to the community of our current conditions. Future updates to the Plan will support a greater vision that includes collaborations and engagement with the public, businesses, nonprofits, stakeholder groups, and subject matter experts from academia, industry, and interdepartmental staff representatives. We will all need to work together, community and City alike, to build a sustainable future.

What is Climate Change?

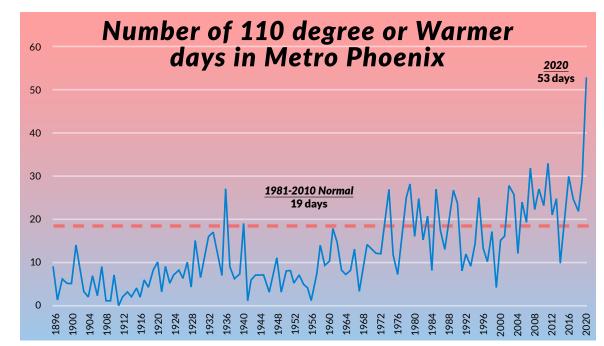
Climate Change is the variation in average weather patterns and conditions spanning over years and decades. It encompasses the steady rise in temperatures, shifts in rainfall, elevated severity of weather events, and other fluctuations of the climate system driven in large part by human activity.

Statewide & Regional Climate Change

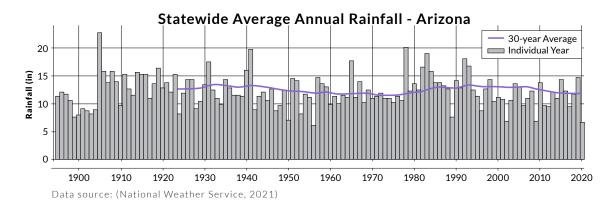
Data collected by the National Weather Service, National Oceanic and Atmospheric Administration, shows that year 2020 ended up being the 2nd warmest year recorded in the history of Metro Phoenix and the 2nd driest.



Data source: (National Weather Service, 2021)



Data source: (National Weather Service, 2021)







CITY OF MESA CLIMATE ACTION PLAN: FOR A SUSTAINABLE COMMUNITY

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There is a link between climate and carbon emissions that drive some of the effects we see above. To better understand the facets of climate change, the following elements have been identified:

CARBON FOOTPRINT: The total amount of carbon dioxide and other carbon compounds, specifically greenhouse gases (GHG), emitted into the environment by direct actions. City operations depend on fossil fuel-based energy for activities, such as traveling, heating, and cooling buildings, pumping water and processing waste.

CARBON NEUTRALITY: Carbon neutrality means having a balance between the emission of carbon dioxide, and other GHGs, with removal or mitigation measures intended to achieve net-zero carbon. For the City, this means reducing carbon emissions from buildings, transportation, waste, and our energy supply as much as possible, and supporting activities that remove carbon from the atmosphere (carbon offsets) to compensate for any remaining emissions.

SUSTAINABILITY: Sustainability means meeting the needs of today without compromising the ability to meet the needs of tomorrow for future generations (Sustainability, 2021). To support our natural environment, this means we must cultivate conditions where humans and nature can flourish together. The City embraces the three common pillars of sustainably: planet, people, and prosperity, to guide and frame decisions with environmental impacts.

CO-BENEFITS: The ability to have positive impacts in multiple areas at once. Many of the actions in the Plan have numerous co-benefits in addition to reducing emissions. For example, actions that reduce vehicle miles traveled (VMT) may also result in cost-savings by lowering transportation expenses and improving environmental quality by decreasing vehicle emissions. Consideration of these added benefits is an opportunity to prioritize actions that also positively impact other needs.

Health Impacts and Equitable Solutions

Mesa is a vibrant and diverse community. We must proactively address and provide solutions for climate impacts and social vulnerability to remain resilient and ensure future equitability. National studies (Prevention, 2021) have found that climate change constitutes a threat to public health and welfare through direct and indirect effects on communities. More extreme weather events, heat waves, the spread of infectious diseases, and detrimental impacts on air and water quality can all negatively impact quality of life.

There are two main ways climate change directly affects health:

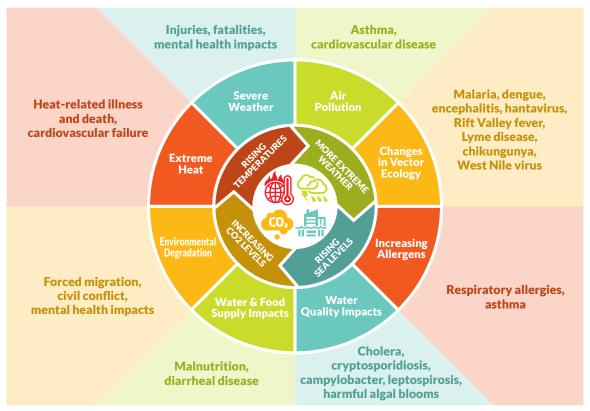
- 1. Changing the severity or frequency of health problems directly caused by climate or weather factors.
- 2. Creating unprecedented or unanticipated health problems or threats in places where they have not previously occurred.

Additionally, some segments of the community can have greater vulnerability to health risks depending on varying factors such as language, economic, cultural, or geographic barriers. They may be disproportionately disadvantaged with limited resources and/or access to healthcare services. For example, a family with limited income living in a deteriorating home is more likely to experience disproportionate impacts and will be less likely to recover following extreme weather events, therefore increasing their vulnerability to climate-related health effects. Such a family will face tough decisions about how to spend limited funds: food, medical care, or repair/replace an aging air conditioning unit. Recognizing and identifying these health and equitable climate change impacts will lead toward interventions or actions that will reduce or prevent exposures to those at risk. (Program, 2021)

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Below is a chart provided by the Centers for Disease Control and Prevention depicting climate effects on health (Prevention, 2021):

Impact of Climate Change on Human Health



The City is committed to incorporating equitable solutions throughout the Plan that meet community needs and do not place additional burdens on vulnerable populations.

How the Plan will be Used

The Plan will be a guiding document to support the direction of Mesa's City Council and City departments with shared sustainability and climate action vision and goals. Under their 'Healthy Environment' strategic initiative, the City Council stated that they want to proactively and responsibly protect and conserve Mesa's environment and natural resources to mitigate climate change by reducing carbon pollution/emissions.

The Plan will be a living document used as a short-term and long-term planning tool to guide a strategic framework for these shared outcomes. Individual City departments will continue to be the owners of the projects and programs that will achieve progress toward these goals, but priority will be placed on actions that could be implemented quickly and achieve long-lasting positive impacts. While there has been measurable progress on the City's sustainable practices, the Plan will accelerate progress in a more coordinated manner and help achieve even more significant outcomes.

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Ch 3. Measuring City's Impact: Understanding Mesa's Carbon Footprint

Gases that trap heat in the atmosphere are often called greenhouse gases (GHG). Some GHGs such as carbon dioxide occur naturally and are emitted into the atmosphere through natural processes and human activities. Other GHGs are created and emitted solely through human activities (Agency, 2021).

The principal GHGs that enter the atmosphere because of human activities are:

- **CARBON DIOXIDE (CO2):** Carbon dioxide enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees, and wood products, and also as a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.
- METHANE (CH4): Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.
- **NITROUS OXIDE (N2O):** Nitrous oxide is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste. N2O is commonly found in vehicle tailpipe emissions.
- **FLUORINATED GASES:** Hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride are synthetic, powerful GHGs that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances (i.e., CFCs, HCFCs, and halons). These gases are typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes referred to as High Global Warming Potential gases ("High GWP gases").

The effect of each gas on climate change depends on three main factors:

- How much is in the atmosphere? Concentration, or abundance, is the amount of a particular gas in the air. Larger emissions of GHGs lead to higher concentrations in the atmosphere. GHG concentrations are measured in parts per million, parts per billion, and even parts per trillion. One part per million is equivalent to one drop of water diluted into about 13 gallons of liquid (roughly the fuel tank of a compact car).
- How long do they remain in the atmosphere? Each of these gases can remain in the atmosphere for different amounts of time, ranging from a few years to thousands of years. All of these gases remain in the atmosphere long enough to become well mixed, meaning that the amount that is measured in the atmosphere is roughly the same all over the world, regardless of the original emission source.
- How strongly do they impact the atmosphere? For each GHG, a Global Warming Potential (GWP) has been calculated to reflect how long it remains in the atmosphere, on average, and how strongly it absorbs energy. Gases with a higher GWP absorb more energy, per pound, than gases with a lower GWP, and thus contribute more to warming Earth. (Agency, 2021)

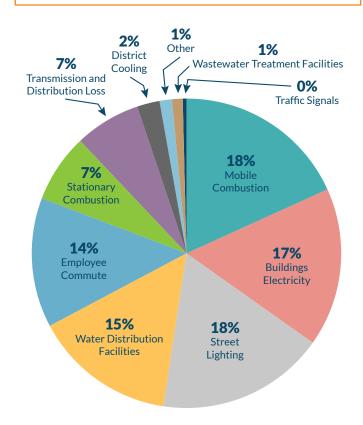
What is a GHG Inventory?

The United States Environmental Protection Agency (US EPA) defines a GHG inventory as a list of emission sources and the associated emissions quantified using standardized methods. The Local Governments for Sustainability (ICLEI) GHG Protocol (USA, 2021) is a standardized method designed to quantify GHG inventories for municipal operations. The ICLEI protocol states that local governments should assess emissions of all six internationally recognized GHGs regulated under the Kyoto Protocol: carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF6). Emissions are summarized in the GHG inventory as metric tons of carbon dioxide equivalent (MTCO2e). This inventory helps to set the baseline of known gases in order to develop strategies and policies for emissions reductions and to track progress of those efforts.

Here is the City's GHG inventory and what it tells us:

The City inventoried GHG emissions to identify sectors with the highest overall GHG impacts. In City operations, emissions are relatively equal among five sectors - City Fleet (mobile combustion), Buildings Electricity Use, Street Lighting, Water Distribution Facilities, and Employee Commute - which provides the City with many reduction opportunities.

CITY OPERATIONS CARBON FOOTPRINT in 2019 = 97,243 MTC02e GHG



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Ch 4. Leading by Example: Closer Look at Focus Areas for City Operations

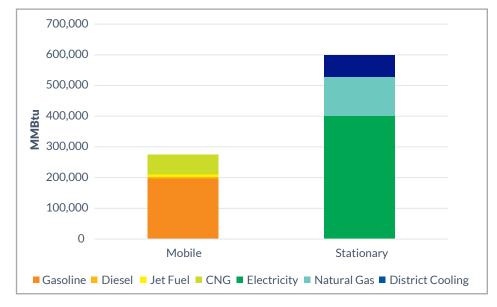
Based on the City's GHG inventory, the Plan is organized into six 'Focus Areas.' These Focus Areas provide a framework for further areas of study in current City operations that will evolve with innovation and new approaches over time. In many cases, the Focus Areas are interrelated and provide co-benefits to the identified targets.

O FOCUS AREA 1: Energy

Climate change means higher temperatures and higher demand for energy. City operations activities, such as traveling (during the workday, as well as employees commute to and from work), heating and cooling buildings, pumping water and processing waste, are energy intensive and currently depend heavily on fossil fuel-based energy. Fossil fuels release GHGs. These GHG emissions raise global temperatures by trapping infrared radiation (heat) in the atmosphere, which in turn may alter historic weather patterns, precipitation, and temperatures.



What kind of energy do we use in City operations today?



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The most important step we can take to reduce the carbon footprint of City operations is to minimize energy use. The next step is to fulfill remaining energy needs with reliable, renewable, carbon-free, clean energy. To account for and offset emissions from existing fossil-fuel power generation, the City must continue to invest in new, cost-effective emission reduction strategies. Carbon sequestration, carbon capture, utilization and storage and other negative emission strategies are key to reaching carbon neutrality.



TARGET 1.1: Reduce energy demand in buildings, facilities, and waste treatment

FOR FURTHER STUDY:

- a. Improve efficiency in existing operations, buildings, and facilities.
- b. Incorporate high-performance energy efficient strategies in construction and processes.
- c. Reduce waste and improve employee energy conservation practices.

TARGET 1.2: Reduce energy demand in City fleet vehicles

FOR FURTHER STUDY:

- a. Reduce vehicle miles travelled through innovation, transit, and active transportation.
- b. Replace fossil-based fuel vehicles with electric, hybrid and alternate low-emission fuel vehicles.

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TARGETS 1.3: Increase the use of clean, renewable energy for City operations

FOR FURTHER STUDY:

- a. Expand renewable energy generation capacity.
- b. Subscribe to utility scale renewable energy projects that provide energy for City facilities.
- c. Shift the City's fleet to electric, alternate low-emission, and renewable natural gas vehicles.
- d. Focus on resilient energy sources and strategies such as microgrids, distributed energy, and alternate fuels.

TARGET 1.4: Maintain a resilient energy supply for City operations

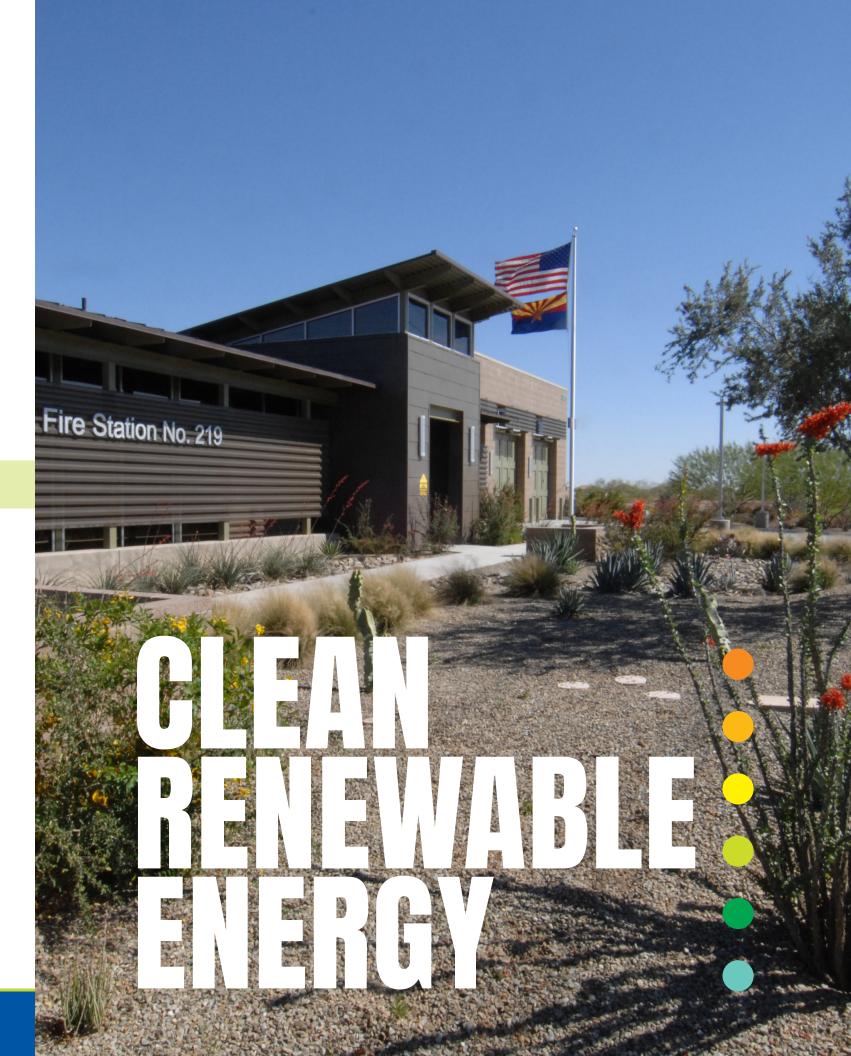
FOR FURTHER STUDY:

a. Invest in resilient energy sources and infrastructure.

Co-Benefits: Air Quality, Heat Mitigation







for Generations to Come

"We have a responsibility to future generations to pass along a community that is healthy at every level."

- Mayor John Giles

FOCUS AREA 2: Air Quality

Air quality is adversely affected by ozone, dust, and smoke.

Ozone at ground level is a harmful air pollutant. Ozone is not emitted directly into the air but is created by chemical reactions between oxides of nitrogen (NOx), a principle GHG, and volatile organic compounds (VOC). This happens when pollutants emitted by cars, power plants, industrial boilers, refineries, chemical plants, and other sources react chemically in the presence of sunlight.



Two additional air pollutants of concern are dust and smoke. City staff work with contractors, businesses, and residents to implement strategies that control dust generation. The City also partners with Maricopa County Air Quality Department on regional programs designed to reduce smoke generating activities, like wood burning, which can create poor air quality when the air is stagnant.

Below are strategies that reduce GHG emissions, improve air quality and reduce carbon emissions that trigger climate change. The goal is to achieve a level of air quality that is healthy for humans and the environment.

TARGET 2.1: Reduce GHGs and ozone

FOR FURTHER STUDY:

- a. Transition City fleet to no and/or low-emission vehicles.
- b. Convert gasoline and diesel-powered powered equipment used by staff or City contractors, such as landscaping and construction equipment, to electric or low-emission fuels.
- c. Reduce employees' vehicle miles traveled during the workday through innovation.
- d. Reduce employees' commute to the workplace on High Pollution Advisory Days.
- e. Implement programs that support employees that use alternative modes of transportation to reduce single occupancy employee commutes to and from the workplace.
- f. Reduce vehicle miles traveled in single occupancy vehicles by expanding transit alternatives, like light rail, buses, paratransit, etc. Include an evaluation and implementation of alternatives that connect transit riders - doorstep to destination.
- g. Promote walkable connections to public facilities, parks, and neighborhood-level services.

TARGET 2.2: Reduce dust

FOR FURTHER STUDY:

- a. Implement strategies that reduce dust, such as landscape maintenance practices and regular street sweeping of City-owned parking lots and structures.
- TARGET 2.3: Reduce smoke

FOR FURTHER STUDY:

- a. Enhance local compliance with smoke emission requirements on "noburn" days through outreach and incentives.
- TARGET 2.4: Increase community commitment to air quality recommendations

FOR FURTHER STUDY:

a. Educate the community, including residents, businesses, and organizations, about Maricopa County's Clean Air Make More program and other incentives through City outreach and engagement.

Co-Benefits: Energy, Heat Mitigation





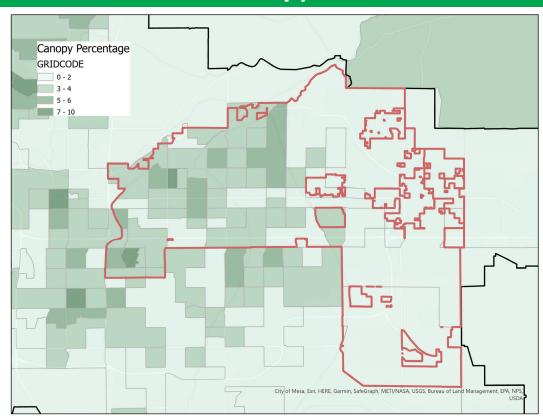


Urban development has raised daily high temperatures and overnight lows considerably. Well-considered urban design, landscape, building materials and cooling strategies can improve the quality of life during Mesa's extreme heat events.

Climate change threatens the livability and iconic landscapes of our region. The City is heavily committed to managing the urban built environment, open spaces, travel corridors, and urban landscapes to promote and protect equity, thermal comfort, and ecosystem health. Purposeful shade and landscape installations can prevent erosion, support air and water quality, and provide natural cooling.



Tree Canopy Cover



Nature-Based Heat Mitigation Strategies:

- Increase tree and shade canopy cover to ensure all neighborhoods have green, cool spaces
- Create networks of walkable cool corridors within and between neighborhoods
- Move, use, and manage rainwater wisely for trees and vegetation

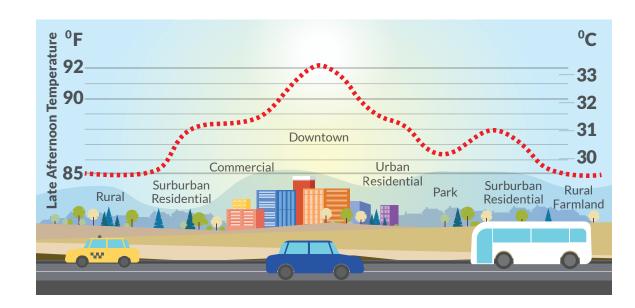
Data Source: (Arizona, 2021)

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Unequivocally, healthy landscapes mitigate climate change and reduce the urban heat island effect. Plants and, by association, their vibrant microbial soil capture and store carbon dioxide. Considering the large-scale impacts of urban heat and developing strategies to mitigate those effects will provide a path to maintaining the livability of the community.

URBAN HEAT ISLAND - Structures such as buildings, roads, and other infrastructure absorb and re-emit the sun's heat more than natural landscapes such as desert and open space. Urban areas, where these structures are highly concentrated and greenery is limited, become "islands" of higher temperatures relative to outlying areas. These pockets of heat are referred to as "heat islands."



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TARGET 3.1: Mitigate heat island effects in urban areas

FOR FURTHER STUDY:

- a. Coordinate with ASU, Arizona Department of Health Services, NOAA and similar organizations on the collection and distribution of heat and weather data for the community.
- b. Tree and Shade Plan(s) for City rights-of-way and City property.
- c. Programming with City's Community Engagement Division and local nonprofits to communicate with neighborhoods about heat concerns and
- d. Reduce the use of materials that hold heat and replace with cooler footprint materials.
- e. Reduce the number of unsheltered transit stops and unshaded sidewalks.
- f. Establish corridors with trees and shade to encourage active transportation and use of transit.
- g. Install multi-purpose, shared use solar canopy parking structures in City parking lots.

TARGET 3.2: Support resilient ecosystems and Mesa's natural ability to capture and store carbon

FOR FURTHER STUDY:

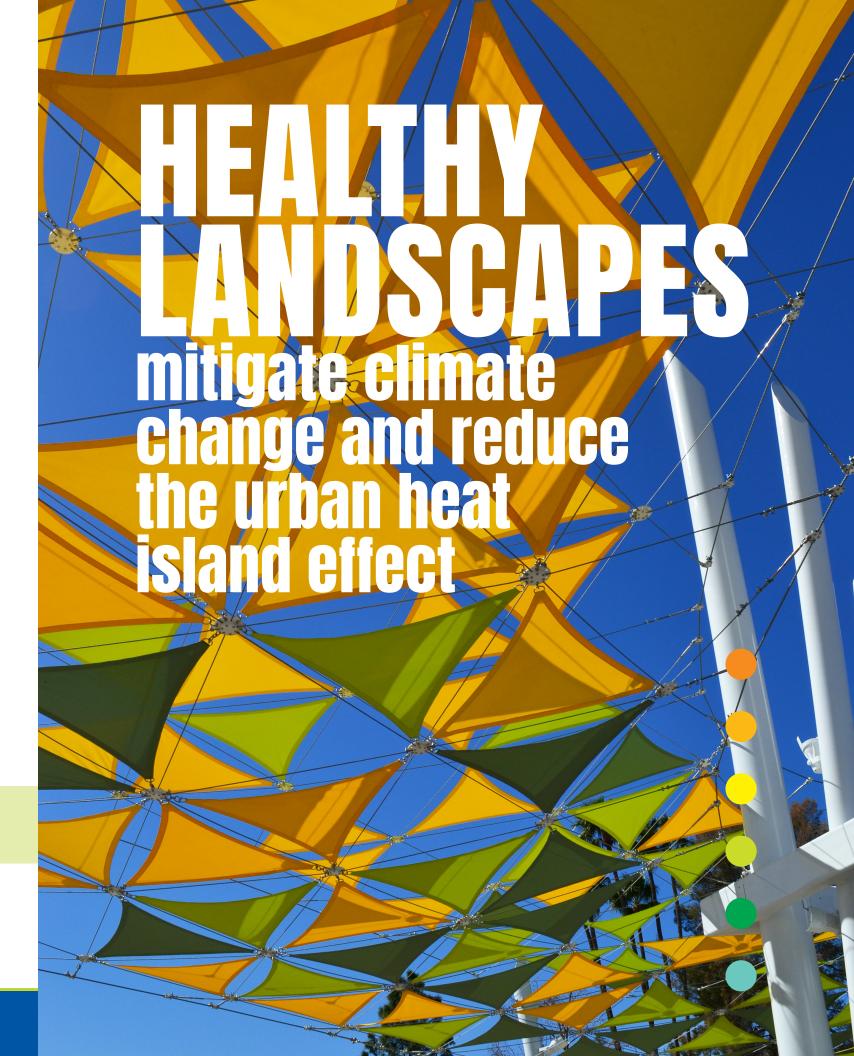
- a. Protect natural open space and conserve native wildlife, plants, and natural areas.
- b. Plant trees and vegetation.
- c. Manage areas to support resilient ecosystems and biodiversity.

TARGET 3.3: Prepare Workforce

FOR FURTHER STUDY:

- a. Foster a safe work environment by preparing City employees for climate change risks they may encounter at their work sites.
- b. Provide resources necessary to adequately prepare City employees for climate change risks that may affect their home environment.

Co-Benefits: Energy, Air Quality, Water **Stewardship**



FOCUS AREA 4: Water Stewardship

Water is one of our most vital resources. It is essential to nearly every facet of life, from food cultivation to the generation of electricity. Yet, in the Sonoran Desert, it is also one of our most limited assets. The City and community at-large have made great strides in reducing the use of potable water. However, continuing drought, changing precipitation patterns, reduced snowpack and higher temperatures mean additional strategies will be needed.



TARGET 4.1: Reduce the intensity of potable water use in City operations

FOR FURTHER STUDY:

- a. Install efficient fixtures and equipment.
- b. Use smart technology to monitor and adjust water use at all City facilities.
- c. Optimize water use in City operations, especially for areas like landscaping and cooling towers, respond quickly to alerts, and identify opportunities for improvement.
- d. Support the use of desert-adapted landscaping and encourage that turf is limited to areas that have recreational value.
- e. Reduce waste and improve employee water conservation practices through education and outreach.

TARGETS 4.2: Protect surface water resources

FOR FURTHER STUDY:

- a. Implement measures that harvest rainwater (low impact development) for beneficial use on City owned property, such as parks, facilities, and along public streets.
- b. Protect natural resources and conserve natural areas.

TARGET 4.3: Maintain a resilient water supply for City operations

FOR FURTHER STUDY:

a. Invest in resilient water infrastructure to optimize reuse opportunities.

Co-Benefits: Energy, Air Quality, Heat Mitigation

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Promote conservation programs







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Government purchases and the management of this material can have a carbon footprint many times that of energy used by government facilities and vehicles. Procurement of sustainably produced and locally manufactured materials can increase energy, water and waste efficiency of the organization and significantly reduce the carbon footprint of City operations. Encouraging more diverse, resilient, and secure supply chains will rebuild domestic manufacturing capacity, support local businesses, promote prosperity, and mitigate climate change.



TARGET 5.1: Eliminate GHG emissions and volatile organic compounds (VOCs) from City operations to the greatest extent possible

FOR FURTHER STUDY:

- a. Replace chemicals identified as GHG emitters with non-GHG emitting chemicals in City operations.
- b. Specify alternatives to GHGs emitting materials used in City construction and maintenance.
- c. Explore alternative materials and methods.
- d. Replace volatile organic compounds (VOCs) containing materials used in City operations with alternative materials.

TARGET 5.2: Reduce waste

FOR FURTHER STUDY:

- a. Implement mindful purchasing for capital projects, maintenance projects and standard operations. Develop initiatives that include a circular economy framework and support for a local, equitable economy.
- b. Reduce waste and improve employee purchasing practices through education and outreach.
- c. Transition to safer, non-hazardous materials in City operations.
- d. Reuse materials whenever possible or look into alternative markets for reuse.
- e. Develop program(s) that increase recycling.
- f. Dispose of material when it exceeds its useful life and divert material from the landfill.
- g. Strategically set up waste stream systems that beneficially uses waste that is not reusable or recyclable to create power from waste.

TARGET 5.3: Increase commitment to local businesses and nonprofits

FOR FURTHER STUDY:

- a. Work with local organizations to support local businesses that have similar goals.
- b. Expand education and outreach for sustainable purchasing guidelines.









Co-Benefits: Air Quality, Heat Mitigation, Water Stewardship

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FOCUS AREA 6: Local, Sustainable Food

Systems

Local, sustainable food systems ensure that food is fresh, nutritious, and grown without harm to producers, our community members, or our environment. Food grown and produced locally reduces the environmental impacts of transportation, refrigeration, and preservation. Of great significance is that local food systems increase equitable access to affordable, healthy food, and reduce food waste.





TARGET 6.1: Cultivate natural systems

FOR FURTHER STUDY:

- a. Support low-carbon food production, distribution, and ecosystems. In addition to mitigating climate impacts, this strategy will support biodiversity.
- b. Support sustainable urban growth that includes equitable access to local food systems.
- c. Support a strong community network of successful and culturally diverse businesses that produce, process, cook, transport, and sell foods with the goal of preventing food loss and waste.
- d. Optimize waste operations that create energy or compost from waste.
- e. Incorporate sustainable growth, agriculture, food processing and distribution into existing and future economic development initiatives.

Co-Benefits: Energy, Air Quality, Urban Heat Mitigation, Water Stewardship, **Materials Management**







Ch. 5 Where We Go from Here: Plan Implementation

Mesa's Climate Action Plan will be a dynamic document that is intended to be updated and evolve over time as new resources, technologies, and collaborations come to light. It is anticipated that there will be periodic updates when significant changes have been accomplished or identified to ensure that the intended vision is continuously reflected over the next several decades, or until the Aspirational Goals are achieved.

We set forth an ambitious, community-focused engagement goal that will contribute to the overall climate impact for Mesa. It is already anticipated that the Plan will be updated when those efforts are completed to reflect a document that sets a community vision to enhance quality of life, embrace smart City innovation, and improve social equity for a vibrant healthy future for Mesa.

Monitoring Reports and Updates

The City will maintain updated reporting to easily track and monitor impacts to GHGs and other climate action progress. City staff will provide regular progress updates to the City Council and conduct future GHG inventories to evaluate the Plan's effectiveness. Public information, including metrics and reporting data, related to City operations and other known variables will be made available on the Open Data Portal listed under 'Healthy Environment'.

Finance

Current City operations that include sustainable initiatives are fully funded under an existing, adopted budget. Each year the City Council reviews and approves budgets with proposed new projects and full financial impact analysis. Although the actions outlined in the Plan are designed to demonstrate a pathway to achieve carbon neutrality by 2050, there is much uncertainty in predicting future technologies, costs, and regulations. Therefore, the City will continue to use its annual budget process as a mechanism to evaluate programs, projects, and services with the environmental lens, and adjust associated costs accordingly as new technologies emerge and mature.

Council Tool

To support City Council with making fiscal and programming decisions, a tool will be developed which will demonstrate the environmental and community impacts. The creation of this tool will rely on Council direction and other decision-making factors. Once these have been determined, this information will be updated and incorporated in a future update of this Plan.

Ch. 6 Climate Care for All

Climate change is an unavoidable and unprecedented global issue that has great potential to cause disruption to our way of life if mitigative actions are not taken. Recent climate disasters have given us a preview of what may become the 'new abnormal.' However, this gives us a great reason to come together and collectively envision what we hope for Mesa's future.

We know what we need to do. We have identified solutions to reduce emissions, increase efficiency, promote economic vitality, and improve our quality of life. The Plan provides a pathway to accelerate our historic success so that we can more greatly contribute to the global climate action impacts. It is also a call to action for residents, community institutions, nonprofits, and businesses to also take an active part. In the next phase of the Plan, we will develop additional mitigation measures to assist in our transition to a low carbon future and clean economy. In this collective process, we will foster equity within our health and economy, increase our resiliency, and set up Mesa as a vibrant and sustainable community for generations to come.

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This Plan was created with consideration of other community plans for best practices and discussion on regional efforts including: City of Phoenix, City of Tempe, Pima County, City of Houston, City of Santa Monica, and City of Cleveland.

This Plan also relies on research and data from the following agencies: Maricopa Association of Governments, Maricopa County Air Quality Department, Arizona State University, and National Oceanic and Atmospheric Administration among others.



