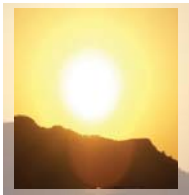


EMPOWERMENT

Stewardship *community*

PROSPERITY

Framework for Advancing **Sustainability**



LEADERSHIP

As a Sustainability Leader, the City commits to...

Take responsibility for its impacts by consciously engaging in actions and choices that are more environmentally friendly and socially conscious.

Set a "green standard" for the community in resource efficiency, environmental protection, social accountability, and fiscal responsibility.

Make sustainability relevant to all staff and empower them to take an active role in reducing the impacts of day-to-day



SUPPORT

As a Sustainability Leader, the City commits to...

Understand and tackle the complex local and global issues that impact the lives of people today and in the future.

Make policy decisions that nurture and sustain the economic, environmental and social well being of the community.

Use legislative authorities to support and encourage growth of the community in a more sustainable direction.



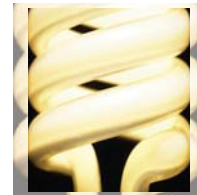
COLLABORATION

As a Sustainability Leader, the City commits to...

Convene authentic conversations with others to generate a broader understanding of the issues facing our community.

Work side-by-side with others to create and enact reasonable solutions to ensure a more sustainable future.

Nurture leadership potential and encourage a community of responsible, active individuals and organizations willing to develop a shared view of the future they want and a viable pathway to get there.



SUSTAINABILITY

Sustainability, it is about a new way of thinking!

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Introduction

The City of Tucson, in its roles as a civic institution, corporate entity, and service provider, has a fundamental responsibility for initiating and following through on actions necessary to ensure the environmental, social, and economic health – the sustainability – of the community. The concept of sustainability has emerged in recent years as an overarching and integrating principle that has been endorsed by the Tucson Mayor and Council to help guide the City's actions. The most often-quoted definition of sustainable development is development that "meets the needs of the present generation without compromising the ability of future generations to meet their own needs." In its endorsement of sustainable development the Mayor and Council have provided a leadership statement about Tucson as a caring, livable, and resilient community. The City must now embrace a framework to carry ideas and vision forward into action. What follows below is a draft framework for developing a sustainability program for the City of Tucson.

The draft Framework identifies the vision and guidance from which it derives, the three major focus areas it creates (along with goals, targets and indicators for each), and a five element Work Plan to guide near-term activities of the City. The Framework also proposes the establishment of a new community advisory committee – the Climate Change Committee – to help the City achieve its challenging and wide-ranging responsibilities in the area of climate change. In the pages that follow, each of these constituent elements of the Framework is described in more detail.

The City has several opportunities within its legislative and fiscal capacity to contribute to the achievement of community sustainability. Decisions regarding internal practices directly affect the sustainability of City operations. Similarly, decisions about funding, services, policies and regulations affect the practices and form of the community at large.

Sustainability is not solely the domain of City government. The City cannot do it all, and cannot achieve sustainability alone. Inherent in this Framework is also the notion that all sectors of society have a contribution to make to the achievement of a sustainable city. Individuals, groups, voluntary organizations, businesses, and other governments all have a stake in a sustainable future for Tucson.

The purpose of this Framework is to provide a structure to how City departments will identify priorities and key actions to take over the next few years to integrate sustainability into the City's operations and administrative culture. The intent is to also create a decision-making framework that explicitly considers sustainability and facilitates sustainable development within the community. Further, this Framework promotes a collaborative effort between the City and other entities to address regional issues related to sustainability and, more specifically, climate change. Over the longer-term, the goal is to create a strategic sustainability plan for Tucson that can be used to guide, measure and report on actions taken in support of a healthy environment, a strong economy, and a vibrant community. Implementation of this Framework signals that the City takes to take its sustainability commitments seriously.

The creation of the Office of Conservation and Sustainable Development (OCSD) in June 2006 was a strong statement of the City's commitment to pursuing sustainability. OCSD was only the fifth dedicated sustainability office in the United States. The office provides a valuable mechanism for coordinating the efforts of City Departments and for organizing communications between the City and the community regarding sustainability.

An important component of the Framework is the creation of a Climate Change Committee (Appendix A). This committee will serve several functions. First, it will bring with it broad, high-level skill sets, expertise and vision necessary to address the multiple dimensions of the climate change issue in a strategic manner on behalf of the City. The committee will also represent key stakeholder groups that will contribute to the broad climate change and sustainability work that needs to be undertaken over the long-term. The committee can also help the City set priorities for meeting its climate change mitigation and adaptation goals going forward.

The time for action is now. Reactive or crisis responses to such great challenges as climate change are always more costly and leave fewer options than when changing circumstances are both anticipated early then acted upon. This Framework provides a mechanism for setting priorities for City efforts, focusing City resources, and determining the most appropriate and effective actions needed to achieve a sustainable future.

Vision

The City of Tucson is committed to sustainability – to finding ways to transition from the economic, environmental, and social stress of a fossil fuel-dependent society to a more stable, secure, and healthy community where we celebrate and live more in balance with our desert environment. The City is committed to improving the health of the environment and community in a time of uncertainty and challenge brought about by global climate change.

The guiding vision for this Framework is that

- the City leads by example through its own sustainable practices,
- the City implements policies, regulations, incentives, and investments that encourage sustainable economic growth and development within the community, and
- the City engages in partnerships to promote sustainable living throughout the Tucson region.

Guidance

Guidance for this Framework comes from policy direction provided by the Mayor and Council. This policy direction has three components:

1. The City's General Plan, ratified by voters in 2001;
2. Various land-use and conservation-oriented ordinances; and
3. Adopted resolutions relating to specific aspects of sustainability.

The City's General Plan addresses many elements of sustainability including Land Use, Transportation, Open Space, the Environment, Water Resources, and Energy. Other elements of sustainable development are addressed through specific regulations such as the City's Land Use Code, Drought Response and Preparedness Ordinance, Planned Community Development (PCD) District, Neighborhood Preservation zone, Native Plant Preservation Ordinance, Environmental Resource Zone (ERZ), and Hillside Development Zone (HDZ). Other ordinances are under development including requirements pertaining to water harvesting in new commercial development and solar and gray water stub-outs in new residential development.

Among the resolutions adopted by the Mayor and Council (Resolution 20443) is one endorsing the Mayors' Climate Protection Agreement (MCPA). The primary focus of the MCPA is to encourage cities to reduce the cumulative greenhouse gas emissions from their jurisdictions. Reducing these emissions requires changes in land use and transportation systems, energy and water efficiency, use of alternative fuels and renewable energy, and waste reduction and recycling.

Other relevant resolutions include:

- Resolution 20322: Approval of an updated sustainable energy standard for City building construction projects (LEED Silver standard)
- Resolution 20101: Houghton Area Master Plan (HAMP)
- Resolution 20505: Interim Watercourse Preservation Policy

Focus Areas

The City has a number of roles in promoting community sustainability and should work to strengthen its actions with respect to each of these roles. This Framework for the City's efforts therefore focuses on three key areas:

1. Practices – improving internal operations of the City to achieve a sustainable organization and model sustainable practices,
2. Policies - incorporating sustainability principles and goals into plans, regulations, funding decisions, and policies that impact the broader community, and
3. Partnerships – working with other entities and the community at large to address those issues that require community-wide action, such as the response to climate change.

For each of these focus areas, the Framework details:

- Broad **goals** concerning the values the City wishes to promote,
- Specific policy **guidance** from Mayor and Council,
- **Targets** indicating desired long-term performance within the focus area,
- **Initiatives** to address each element of Mayor and Council policy guidance, and
- Potential quantitative success **indicators** for each initiative.

Goals provide an overarching context for what the City wishes to accomplish through development and implementation of a sustainability program. Policy guidance from Mayor and Council relevant to each of the three specific focus areas is described, with reference to specific resolution numbers, ordinances, or General Plan policies. These two elements set the direction for all actions to be considered as part of the City's sustainability program.

Much of the previous policy direction has been broad, but where specific performance targets have been identified, these are also discussed. These targets established a desired outcome for the implementation of a policy, such as the MCPA target of reducing greenhouse gas emissions to 7 percent below 1990 levels by 2012. Where specific performance targets have not been identified, recommendations can be made in the future using input from the proposed Climate Change Committee, City staff, and/or the general public.

A range of initiatives is proposed to address each element of policy direction from Mayor and Council. By clearly identifying initiatives, this Framework ensures that all aspects of the adopted sustainability vision are being explicitly addressed. Within each initiative, potential success indicators are suggested. These provide a basis for quantifying and communicating progress to Mayor and Council and the community. Some of these indicators were developed as part of the Livable Tucson Vision program in the mid-1990s. Others were proposed by City staff based on review of indicators utilized by other cities.

Following the discussion of the three focus areas (below) is a Work Plan section that details the interim actions required to implement this Framework.

1. Practices

This section of the Framework is intended to establish a “culture of sustainability” within the City government that influences daily actions and decisions. The long-term goal is to align the business practices of all departments with the City’s sustainability vision. The City is dedicated to adapting its business practices to minimize consumption of materials, fossil fuel and water; limit the impact of City projects on the natural environment; and create healthy working environments. These are important from both the perspectives of environmental stewardship and good government, particularly in a time of declining resources and increasing community needs.

As they begin to mainstream sustainability, departments will be asked to gather baseline information on their current practices, establish short and long-range goals, and track performance toward these goals. These steps will encourage accountability, improve interdepartmental collaboration, allow for better communication of the City’s sustainability efforts to the public, and promote the City’s role as a national leader and model for other communities. Some important activities within this focus area will be the sustainable procurement of supplies, products, vehicles, and other equipment; reducing consumption and waste while increasing reuse and recycling; conserving limited natural resources; minimizing the use of potentially toxic substances as a matter of public and employee safety and environmental health; and promoting and facilitating the education of employees about sustainability practices. The General Plan, the Land Use Code, and other City ordinances are important tools through which the City can facilitate sustainable development in Tucson. As the City acts in support of the policies in the voter-ratified General Plan, it will meet its responsibility to facilitate the creation of a more sustainable and livable community.

Goals

Specific goals under this focus area are to:

- Reduce environmental impacts of City operations,
- Improve economic efficiency of City operations through reduced resource use,
- Pursue the objectives outlined in the MCPA, and
- Demonstrate environmental leadership.

Guidance

The General Plan provides broad support for making City operations more sustainable. Specific policy guidance includes:

- General Plan Policy 14-38 *“Continue efforts to reduce energy consumption and improve sustainability of government facilities and operations.”*
- General Plan Policy 14-10 *“Continue to coordinate with City Departments that use or generate hazardous materials to institute pollution prevention practices.”*
- General Plan Policy 3-6 *“Protect the natural and built environments from adverse impacts resulting from provision of transportation facilities and services.”*
- General Plan Policy 8-13 *“Continue to pursue appropriate land uses for City-owned retired farmland in the Avra Valley.”*

More specific guidance is found within the MCPA, specifically:

- Measure 1: *Inventory global warming emissions in City operations, set reduction targets and create an action plan.*
- Measure 4: *Increase the use of clean, alternative energy by, for example, investing in “green tags”; advocating for the development of renewable energy resources, recovering landfill methane for energy production, and supporting the use of waste to energy technology;*
- Measure 5: *Make energy efficiency a priority through building code improvements, retrofitting city facilities with energy efficient lighting and urging employees to conserve energy and save money;*
- Measure 6: *Purchase only Energy Star equipment and appliances for City use;*
- Measure 7: *Practice and promote sustainable building practices using the U.S. Green Building Council’s LEED program or a similar system;*
- Measure 8: *Increase the average fuel efficiency of municipal fleet vehicles; reduce the number of vehicles; launch an employee education program including anti-idling messages; convert diesel vehicles to bio-diesel;*
- Measure 9: *Evaluate opportunities to increase pump efficiency in water and wastewater systems; recover wastewater treatment methane for energy production;*
- Measure 10: *Increase recycling rates in City operations and in the community;*
- Measure 11: *Maintain healthy urban forests; promote tree planting to increase shading and to absorb CO₂; and*
- Measure 12: *Help educate the public, schools, other jurisdictions, professional associations, business and industry about reducing global warming pollution.*

Additional policy direction in the area of water conservation comes from the Drought Response and Preparedness Plan Ordinance. Resolution 20322 (Adopting LEED standards) also requires that new or expanded City facilities are constructed to green standards.

Targets

The overall target for the MCPA is to reduce greenhouse gas emissions from City operations, and within the broader community, to 7 percent below 1990 levels by 2012.

The overall purpose of the Drought Response and Preparedness Ordinance is to reduce water demand during a drought situation. Although quantitative targets do not exist, the objectives outlined in the Drought Response and Preparedness Plan include (1) emphasizing the need for visible leadership from City-maintained facilities; (2) reducing or restricting highly visible, non-essential uses of water; (3) avoiding or minimizing economic impacts to the community except under extreme conditions; and (4) ensuring that any water restrictions do not impact community health and safety.

Initiatives and Indicators

Under *Practices*, twelve initiatives are proposed in order to meet the policy direction provided by Mayor and Council. Success measures for each initiative are also proposed.

Initiatives and Indicators

Initiatives	Guidance	Success Indicators
Greenhouse gas emission tracking for City operations	Resolution 20443, Measure C.1	<ul style="list-style-type: none"> • Estimated greenhouse gas emissions from City operations in 1990 and 2005 • Projected greenhouse gas emissions from City operations for 2012 and 2040
Increase use of renewable energy	Resolution 20443, Measure C.4	<ul style="list-style-type: none"> • Total renewable energy generated by City facilities per year • Percent City energy usage from renewable sources • Reduction in greenhouse gas emissions from City operations from 1990 to present attributed to use of renewable energy sources
Increase energy efficiency of existing facilities	Resolution 20443, Measures C.5, C.9	<ul style="list-style-type: none"> • Change in energy use for facilities receiving energy efficiency retrofits • Change in total energy use for City operations • Reduction in greenhouse gas emissions from City operations from 1990 to present attributed to energy efficiency improvements
Green building standards for new construction	Resolution 20322 Resolution 20443, Measure C.7	<ul style="list-style-type: none"> • Number of green buildings constructed by the City by LEED category and SES • Square footage of green buildings by LEED category and SES • Percent (square footage) of City buildings built to green standards
Increase use of alternative fuel vehicles	Resolution 20443, Measure C.8	<ul style="list-style-type: none"> • Total number of alternative fuel vehicles by fuel type • Alternative fuel as % of total vehicle fuel use • Percent of fleet that are alternative fuel vehicles • Average fuel efficiency of fleet vehicles by class • Total petroleum used per year to fuel fleet • Total petroleum displaced by use of alternative fuels
Decrease miles driven City employees	Resolution 20443, Measure C.3	<ul style="list-style-type: none"> • Percent of City employees responding to annual travel survey • Percent of City employees reporting in annual travel survey that they carpool, bike, walk, or take the bus to work or work a modified work-week • Number of City employees utilizing the City bike-share program

Initiatives and Indicators

Initiatives	Guidance	Success Indicators
Increase number of trees on City property and rights-of-way	Resolution 20443, Measure C.10	<ul style="list-style-type: none"> • Number of new trees planted each year • Survival rate of new trees planted on an annual basis
Reduce waste and improve reuse and recycling	Resolution 20443, Measure C.10	<ul style="list-style-type: none"> • Number of City facilities with accessible recycling containers • Annual volumes recycled and percent increase in annual volumes recycled • Number of City employees who recycle
Pollution prevention	General Plan policy 14-10	<ul style="list-style-type: none"> • Number of projects employing pollution prevention measures (operation design changes, materials substitution, etc.)
Increase water conservation	Ordinance 10380	<ul style="list-style-type: none"> • Number of City facilities having received a water audit • Number of City facilities retrofitted to reduce water usage • Percent reduction in water usage at retrofitted City facilities
Design City constructed facilities and infrastructure to minimize impacts on native plants, wildlife, habitat, and movement corridors	Resolution 20322 General Plan policy 3-6, 8-13	<ul style="list-style-type: none"> • Identification of recommended design principles to minimize construction impacts on native plants, wildlife, habitat and movement corridors • Identification of recommended environmentally sensitive design principles amenable to City road projects • Number of projects incorporating environmentally sensitive design principles
Engage employees in making City operations more sustainable	Resolution 20443, Measures C.6, C.12	<ul style="list-style-type: none"> • Number of sustainability-related trainings offered to City employees • Number of City employees participating in trainings or workshops related to sustainability

2. Policies

In order to fully support sustainable development, the General Plan should be structured in such a way that clearly acknowledges and incorporates the land use goals of the MCPA, the State's Smart Growth principles and scorecard, as well as other local sustainability values. The City has an opportunity to create a General Plan structure that makes sustainability an overarching consideration and highlights the interconnections and interdependencies of the various elements. A major component of the City's efforts to develop policies that support community sustainability will be the revision of the General Plan, which will occur over the next couple of years.

Likewise, a Land Use Code that emphasizes sustainability is one where protection of essential ecosystem elements and services, mitigation of natural or environmental threats to human health, and efficient use of resources including money, land, water, fossil fuels, and building/infrastructure materials are of primary importance. Other City regulations and policies can address aspects of sustainable development such as protecting critical wildlife habitats and maintaining a balance between protecting characteristics of existing neighborhoods while encouraging appropriate mixed-use infill. City fiscal commitments to services (e.g. City recycling program) and capital projects (e.g. City parks) also relate to the potential for a sustainable future. The potential of these and other mechanisms, such as rezoning conditions and development standards, to facilitate sustainable development in Tucson needs to be fully explored.

Goals

Specific goals under this focus area are to:

- Make sustainability an explicit consideration in City decision-making, beginning with the General Plan.
- Provide a policy and regulatory framework that supports sustainable development.
- Invest City resources in projects that promote sustainable development.
- Implement policies in the General Plan and revise the General Plan as needed to reflect current understanding and needs regarding sustainability.
- Ensure the Land Use Code and other City ordinances and standards support development that is sustainable.
- Pursue the objectives outlined in the MCPA.

Guidance

The MCPA provides broad guidance for sustainable land-use policies. Measure C.2 of the MCPA states *"Adopt and enforce land-use policies that reduce sprawl, preserve open space, and create compact, walkable urban communities."* Measure C.3 encourages cities to *"Promote transportation options such as bicycle trails, commute trip reduction programs, incentives for carpooling, and public transit."*

More specific guidance regarding sustainable land use is found within the City's General Plan, including:

- General Plan Policy 2-9 *"Promote regional land use planning and coordination within metropolitan Tucson to provide more livable communities and more compact and integrated land use patterns."*
- General Plan Policy 2-10 *"Continue to identify and protect environmentally sensitive natural areas and encourage the preservation of vegetation and wildlife within those areas."*
- General Plan Policy 14-5 *"Promote the long-term management and maintenance of Tucson's urban vegetation to maximize environmental and other benefits to the community."*
- General Plan Policy 10-8 *"Establish an accessible open space system that connects open space in the urbanized area to the surrounding public natural areas."*
- General Plan Policy 8-14 *"Pursue water plans and policies that protect and benefit natural ecological systems."*
- General Plan Policy 3-3 *"Provide for a safe, efficient, and accessible public transportation system that is in harmony with area-wide environmental objectives while making the most effective and prudent use of public funds to operate the system."*
- General Plan Policy 3-4 *"Plan for bicycle facilities throughout the region that provide for safe and efficient means of transportation and recreation throughout the greater Tucson metropolitan area."*
- General Plan Policy 3-5 *"Plan and encourage the use of pedestrian facilities as a critical element of a safe and livable community to meet the transportation and recreational needs of the community."*
- General Plan Policy 14-22 *"Implement transportation system modifications that facilitate improved traffic flow throughout the region for vehicles and alternative modes of transportation."*

This guidance is further supported by adopted ordinances and resolutions such as:

- Ordinance 10503: Planned Community Development (PCD) District
- Ordinance 10548: Neighborhood Preservation Zone (NPZ)
- Resolution 20101: Houghton Area Master Plan (HAMP)
- Resolution 20505: Interim Watercourse Preservation Policy

Targets

The purpose of the General Plan is to address growth and growth-related pressures by identifying growth areas, establishing policies and strategies for new growth to pay its fair share of the new public facilities required to serve it, identifying open space needs and regionally planning for interconnected open space, and analyzing the environmental impacts of the development anticipated by the General Plan.

The policies within the General Plan establish a basic direction and approach to guide the future growth and development of Tucson. As currently written, however, the General Plan does not provide quantitative objectives or indicators relating to sustainability. The upcoming revision of the General Plan is an opportunity to identify sustainability targets for Tucson with greater specificity.

Initiatives and Indicators

Until such time as the General Plan is revised to incorporate sustainability more explicitly, the initiatives in this section are based upon the MCPA. Success measures for each initiative are also proposed. Some of these indicators were developed through the City’s Livable Tucson Vision program and are noted with an asterisk*.

Initiatives	Guidance	Success Indicators
<p>Adopt and enforce land-use policies that reduce sprawl, preserve open space, and create compact, walkable urban communities.</p>	<p>Resolution 20443, Measure C.2 General Plan policies 2-9, 2-10, 8-14, 14-5</p>	<ul style="list-style-type: none"> · Ratio of City building permits to total regional building permits* · Dollars invested in restoring and renovating inner-city buildings* · Ratio of urban space to developed land* · Percentage of residences within half mile of designated open space* · Ratio of protected natural desert to total developed land* · Area of preserved or restored urban washes and wildlife corridors* · Population and diversity of key native wildlife species* · Number of pedestrians in neighborhoods* · Number of gathering places and people using them* · Percentage of residences located within half mile of a market*
<p>Promote transportation options such as bicycle trails, commute trip reduction programs, incentives for carpooling, and public transit</p>	<p>Resolution 20443, Measure C.3 General Plan policies 3-3, 3-4, 3-5, 14-22</p>	<ul style="list-style-type: none"> · Use of alternative means of travel* · Ratio of miles of quality pedestrian and bike paths and bus routes to total lane miles of roads*

3. Partnerships

Long-term sustainability for our community can only be created through collaborative action between the City, businesses, voluntary organizations, other agencies, and the community as a whole. Community-wide commitments are required to achieve the more efficient use of our limited natural resources, reduce consumption and waste and increase reuse and recycling, avoid activities that pollute our environment, restore areas already damaged, and preserve the health and well-being of our ecosystem and all individuals.

Increasingly, there is almost universal agreement in both the science and projected impacts of climate change. Climate change – driven in large part by greenhouse gas emissions – presents such a threat to the future of our community that, left un-addressed, it will undermine our efforts to preserve and improve the community's environmental quality, economic stability, social equity, and individual well-being.

Reducing community-wide greenhouse gas (GHG) emissions is of primary importance in creating a more sustainable city and it is linked to a wide range of topics including green building, smart growth, managing water availability and conservation, reducing the urban heat island effect, improving transportation options, reducing waste, improving air quality, and protecting biodiversity. The scientific community is in near-unanimous agreement that projected climate change impacts resulting from past GHG emissions will have serious consequences for a wide range of community issues such as food security, cost of living, social equity, and long-term economic and social stability. The development of a city-wide Climate Change Mitigation and Adaptation Plan is crucial in establishing short and long-range goals related to reduced GHG emissions, tracking performance toward reaching these goals, promoting individual accountability, and improving collaboration among all partners.

There are four essential elements of building and implementing a Climate Change Mitigation and Adaptation Plan (Climate Change MAP):

1. Completion of a greenhouse gas inventory for the City for the baseline years of 1990 and 2005, as well as for the most recent year that data is available (2007);
2. Development and implementation of mitigation strategies to reduce GHG emissions to meet adopted goals. The MCPA and State of Arizona GHG reduction goals differ, so an element of this portion of the Plan will be to determine an appropriate goal for the Tucson community;
3. Development and implementation of strategies to enable the community to adapt to unavoidable climate change. The adaptation component will require an examination of the anticipated consequences of climate change; and
4. Outreach and education to the community to ensure that residents are informed about climate change drivers, expected impacts, community consequences, and options for mitigating or adapting to this change.

Not all strategies for reducing GHG emissions are equally effective. Adequate evaluation of alternative strategies requires that the community fully understand how all aspects of resource use contribute to the problem. Once baseline information has been compiled, the community can identify strategies to reduce GHG emissions and begin to adapt to the challenges of a hotter, drier future characterized by increasingly limited water supplies and rising fuel costs.

Goals

Specific goals under this focus area are to:

- Promote collaborative, community-wide action regarding climate change.
- Build meaningful public-private partnerships to address climate change.
- Encourage public and private action in support of resilient social and economic systems that can withstand the stress induced by anticipated climate change impacts within our region.
- Provide outreach and education to the community to enable individuals and groups to take action to improve the sustainability of Tucson.
- Pursue the objectives outlined in the MCPA.

Guidance

The MCPA provides broad guidance for action regarding climate change. Measure C.1 of the MCPA states: *“Inventory global warming emissions in City operations and in the community, set reduction targets and create an action plan.”* Measure C.12 of the MCPA asks that cities *“Help educate the public, schools, other jurisdictions, professional associations, business and industry about reducing global warming pollution.”*

Additional guidance regarding aspects of climate change mitigation, adaptation, and outreach is found within the City’s General Plan, including:

- General Plan Policy 14-39 *“Continue to support programs that reduce energy consumption and improve sustainability in housing.”*
- General Plan Policy 14-40 *“Continue to support partnerships with public and private agencies to increase energy efficiency and sustainability in nonresidential uses.”*
- General Plan Policy 8-4 *“Continue to develop and implement programs for the reuse of water.”*
- General Plan Policy 8-4 *“Continue to promote water conservation.”*
- General Plan Policy 14-20 *“Protect and improve air quality by reducing sources of air pollution.”*

Policy direction in the area of water conservation outreach and education comes from the Drought Response and Preparedness Plan Ordinance.

Targets

The overall target for the MCPA is to reduce greenhouse gas emissions within the community to 7 percent below 1990 levels by 2012.

The overall purpose of the Drought Response and Preparedness Ordinance is to reduce water demand during a drought situation. Although quantitative targets do not exist, the objectives outlined in the Drought Response and Preparedness Plan are to (1) work with large commercial water users to determine their own operational strategies for reducing water use well in advance of implementing advanced drought response stages and (2) continue to proactively educate all customers on the importance of using water efficiently regardless of climatic conditions.

Initiatives and Indicators

Under *Partnerships*, three initiatives are proposed in order to meet the policy direction provided by Mayor and Council. Success measures for each initiative are also proposed. Some of these indicators were developed through the City’s Livable Tucson Vision program and are noted with an asterisk.

Initiatives and Indicators

Initiatives	Guidance	Success Indicators
Develop a Climate Change Mitigation and Adaptation Plan	Resolution 20443, Measure C.1	<ul style="list-style-type: none"> • Renewable energy as a percentage of total energy use in the region* • Recycling as a percentage of total waste* • Per capita water consumption* • Use of alternative means of travel* • Ratio of miles of quality pedestrian and bike paths and bus routes to total lane miles of roads* • Number of pedestrians in neighborhoods*
Identify and build collaborative partnerships and offer incentives to encourage individual action to address climate change.	General Plan policies 14-39, 14-40	<ul style="list-style-type: none"> • Number of partnerships between and among various community sectors • Number of incentives offered by City to community groups wishing to address climate change (guest speakers, event sponsorship, educational programs, and public-private investment opportunities)
Provide outreach and education to the community to encourage individual action to address climate change.	General Plan policies 8-3, 8-7,	<ul style="list-style-type: none"> • Number of people provided with City-prepared and community-specific climate change outreach material • Number of brochures distributed with climate change mitigation steps, adaptation strategies, or general climate science information • Number of school classroom presentations and children reached with climate change information • Number of events attended by City staff where staff make presentation on the City's climate change programs

Work Plan

A successful sustainability program for the City needs an overarching Framework that will guide an effective implementation strategy including the selection of appropriate action steps and measures of progress. Ultimately, this Framework is about establishing a process and mechanism for setting priorities to guide choices about what to pursue as a City government. By setting priorities, we provide a basis for future decisions regarding programs, services, and resource allocations that most effectively further community sustainability goals.

The implementation strategy consists of five elements: infrastructure, investigation, implementation of projects, improvements in the vision and strategic direction (including evaluation of success), and information exchange (reporting). Each element is discussed in more detail below.

Infrastructure

The first step in developing a sustainability program is to ensure that there are mechanisms in place under all three focus areas for adequate communication and collaboration among Departments, and between the City and stakeholders and the broader community. A technique successfully used in other cities with strong sustainability programs, and proposed in this Framework, is the creation of an internal team – a “Green Team” – to identify and carry out activities that fall under the responsibility of City operations (Practices). A second mechanism needed is one to ensure that the General Plan update process incorporates and reflects sustainability principles at every juncture (Policies). Finally, a third mechanism necessary under the Framework is a community advisory committee to support the City’s climate action agenda and collaboration with the larger community (Partnerships).

The Office of Conservation and Sustainable Development (OCSD) will convene an internal “Green Team” consisting of representatives from all affected Departments. This team will be responsible for developing baseline data such as current City energy and water use and recycling efforts, identifying projects currently underway within the City to improve the sustainability of internal operations, refining the objectives and indicators needed to measure and communicate success, and recommending additional steps and programs needed to fulfill the policy direction provided by Mayor and Council. Ultimately, this information will be aggregated into a strategic “Green Plan” for the City’s internal practices which the Mayor and Council can use to evaluate further direction or investment regarding the greening of City operations.

Urban Planning and Design (UPD) is in the process of developing a scope of work for the revision of the City’s General Plan. UPD and OCSD staff have formed an internal planning team to determine how best to incorporate sustainability as an overarching framework into a revised General Plan. The process proposed by UPD for revising the General Plan, including getting input from City Departments and feedback from the community, will be utilized for the Policies section of this Framework. OCSD will continue to support UPD’s endeavors in this matter.

The concept for a community advisory committee (Appendix A) was created in response to direction from Mayor and Council on January 8, 2008. This committee, referred to as the Climate Change Committee, will serve several functions. First, it will bring with it broad, high-level skill sets, expertise and vision necessary to address the multiple dimensions of the climate change issue in a strategic manner on behalf of the City. The committee will also represent key stakeholder groups that will contribute to the broad climate change and sustainability work that needs to be undertaken over the long-term. The committee can also help the City set priorities for meeting its climate change mitigation and adaptation goals going forward. OCSD will provide staff support to the Committee as it carries out its responsibilities.

Investigation

The goals and objectives listed in the Framework are based on previous direction from Mayor and Council. Some of the objectives are qualitative and subject to interpretation. The indicators are intended to be a starting point for measuring progress and represent some but not all of the ways of evaluating sustainability. In all three elements, efforts must begin with the development of baseline data. To evaluate strategies and understand how much progress we have made, we must assess where we are now in terms of energy, fuel, and water use; greenhouse gas emissions; and other quantitative measures of sustainability. The Investigation element thus has four main objectives:

- Develop baseline data, such as City energy, fuel, and water use; recycling and pollution prevention efforts; and compliance with environmental regulations in construction projects.
- Inventory all of the current projects that various Departments are implementing that support existing policy direction identified in this Framework.
- Utilize input from City staff and the Climate Change Committee to refine objectives and success indicators.
- Identify other mechanisms by which the City can facilitate sustainable development, such as through the Land Use Code, rezoning conditions, and building code requirements.

OCSO will oversee the completion of the greenhouse gas emissions inventory and will work with the City Departments, through the internal "Green Team," to gather the information listed above.

Implementation

The true success of the City's sustainability initiative will be measured in the accomplishment of actions proposed in three specific planning documents appropriate to each of the three focus areas: Practices, Policies, and Partnerships. These documents constitute the actual work products intended to implement the sustainability vision described in this Framework. These are:

- A City strategic "Green Plan" to address the sustainability of internal operations,
- An updated General Plan with an explicit sustainability framework, and
- A Climate Change Mitigation and Adaptation Plan developed with the Climate Change Committee.

Improvement/Evaluation

This Framework and the resulting Plans will need to be updated periodically to reflect current thinking and best practices. Goals and objectives will be supplemented in the future by additional policy direction from the Mayor and Council, and based on the revision of the City General Plan in 2010. Indicators and actions will also be refined using input from the Climate Change Committee that is outlined in Appendix A. Updates to these Plans require a thorough evaluation of the successes of previous years, as well as an assessment of weaknesses and gaps. Improvement steps will consist of the following:

- An annual update of the Framework to reflect additional adopted policy guidance from Mayor and Council;
- An annual update of the City's internal Green Plan with an emphasis on connecting strategic sustainability initiatives with the annual budget cycle; and
- A multi-year review of the Climate Change Mitigation and Action Plan by the Climate Change Committee to evaluate the success of implementation and recommend changes in strategies necessary to allow Tucson to reach its greenhouse gas emission reduction goals.

Information

Though they are crucial to the well being of the community, sustainability and climate change concepts are not widely understood. Before these concepts can take root and help inform and then drive public policy, the community must have access to timely, accurate, and understandable information so that it can participate in an effective way as sustainability issues get framed for decision. This information exchange is also necessary to highlight the successes of the City's overall sustainability program as implemented through this Framework.

OCSO has an important role in providing comprehensive sustainability information to the community and will do so through two mechanisms: the Annual Sustainability Report and a comprehensive sustainability website. The Annual Sustainability Report will provide a clear and quantitative assessment of how well the City is progressing on reaching its sustainability goals. The website will be a broad and more dynamic platform for drawing attention to the wide range of issues and opportunities facing our community as we strive to become more sustainable.

Other types of support that OCSO can offer include the development of a "brand" that other Departments can use to indicate that their programs and activities directly support the vision and direction identified in this Framework and the coordination of Department involvement in public sustainability-related events.

Timeline

The following tables describe some of the major tasks needed to implement this Framework and provide an estimated timeframe for their completion.

Conclusion

The Mayor and Council have identified the City's major sustainability goals through their formal commitment to the General Plan policies, the MCPA, and other local initiatives. Additional local sustainability goals and objectives can be identified by the Mayor and Council, and the Framework and its constituent plans and initiatives should evolve over time.

This Framework will also provide the mechanism for coordinating the efforts of the various departments. This collaborative approach allows for a comprehensive sustainability commitment to be presented to the community and provides a platform for continued cooperation within City government.

The proposed Climate Change Committee can help frame goals relative to the City's broader sustainability vision, evaluate them for consistency with existing commitments and staff work plans, and recommend approaches for addressing new goals in light of competing staff workloads.

Ultimately this Framework and its subsequent plans signal the City's intention to take its sustainability and climate change commitments seriously and represents a priority-setting guide for taking strategic action across government operations and the community as a whole.

Appendix A: **CLIMATE CHANGE COMMITTEE CONCEPT**

Climate Change and how we respond to it will be the most significant determinant of a successful community sustainability endeavor. If we do not get climate change addressed properly, other sustainability initiatives will have little chance of success. While climate change knowledge and expertise will be crucial to the proposed Committee, other broad sustainability expertise will also be needed.

The Climate Change Committee should have a membership that represents the major thematic concepts of sustainability – environmental, economic, and social. These include representation from professional, community, and business sectors capable of providing expertise and guidance in areas ranging from renewable energy to green building, from climate change to sustainable land use and transportation, from food security to education and workforce development.

The Climate Change Committee will have as resources the existing Mayor and Council-adopted Advisory Committees, many of which have strong expertise in topics that relate to sustainability. It is therefore more important for members of the Climate Change Committee to have a broad understanding of the many issues related to climate change mitigation and adaptation and other aspects of sustainability, rather than a narrow or focused expertise in one area. The Committee will focus on issues and recommendations to improve the sustainability of the City of Tucson. Yet, since climate change and other sustainability issues are regional in both cause and impact, Committee members must have an ability to consider the City's roles and responses within this larger context.

Since sustainability is ultimately concerned with the interconnection among environmental, economic, and social issues, it is preferable for members to have general experience in a range of issues rather than only expertise in one topic. Committee members should possess leadership skills or qualities and be committed to addressing the overall condition of the community. Committee members should exhibit a willingness to strive for common understanding and consensus, rather than be driven by a narrow agenda. These characteristics of membership will create a committee able to develop comprehensive and balanced goals and strategies for improving the sustainability of Tucson.

A 13-member committee is being proposed. This number will allow for a sufficiently broad range of expertise among the members while not creating a committee that is unwieldy in size. The following discussion outlines the areas of expertise that will be most valuable for a committee intended to address climate change mitigation and adaptation.

It is essential that one member of the committee is knowledgeable in the causes, projected impacts, and potential consequences of climate change for the southwestern United States and Arizona in particular. Another three (3) members will be selected for their knowledge of how greenhouse gas emissions – the driver for climate change – can be mitigated by land use patterns, by building design and materials, and by the choices made by all individuals in the community. These elements represent three of the principle areas of focus and opportunity to reduce greenhouse gas emissions.

In addition, because of the potential for climate change-induced increases in local temperature to be exacerbated by urban heat island effect, it is important to have a member who can speak to the mitigation of this effect. Protection or creation of green spaces – whether natural areas, parks, ballfields, gardens, or landscaping – is one strategy for mitigating the rise in local temperatures. Greenspace can also serve in certain circumstances as a sink for carbon emitted to the atmosphere. Carbon sequestration by plants is increasingly being discussed as a viable element of a carbon mitigation strategy, thus Committee expertise in this area is essential.

Appendix A: (con't)

Climate change mitigation – the process of identifying and reducing sources of greenhouse gas emissions within the community – is a relatively straightforward process. Understanding and determining how to adapt as a community to the anticipated changes in regional climate is a much more complicated endeavor. The likely consequences of climate change pose a serious threat to the social equity and economic viability of our community. The remaining eight (8) members would bring to the committee expertise in a range of social and economic issues related to climate change adaptation.

Four (4) members will represent various aspects of our local economy. One member will represent low-income populations, which are most susceptible to the converging influences of rising energy and fuel costs, more extreme local temperatures, and increasing water supply costs and uncertainty. Another member should be able to address the consequences of climate change and potential climate change mitigation strategies on the local economy overall. This member will be most valuable if they have expertise related to projected trends in various economic sectors, how these sectors will likely be impacted by changes such as in energy, fuel, and water costs, and what options may be available to bolster the overall strength, diversity, and vitality of our local economy.

The third economic-oriented member should represent the small, local businesses that are the lifeblood of the Tucson economy. Small businesses not only comprise more than 90 percent of the business in Tucson, but supporting local business is an effective means to keep the wealth of the community circulating within the region rather than being exported to other areas. The final member in this area should be focused on the local workforce. Anticipating and adapting to climate change-induced impacts requires that we also focus on the needs of current and future workers.

The final four (4) members will provide the social expertise to support the climate change adaptation discussion. These members should represent the neighborhoods, as well as individuals. One member would be knowledgeable regarding resources available to city neighborhoods and a second member would bring expertise in the area of social services, especially for at-risk or vulnerable populations. Finally, there would be two members to represent the issues of human health and food security. These issues are of particular concern. The combined effect of global warming and an increasing urban heat island effect will present an increasing threat to the health of Tucson residents. Heat-related illness and death, childhood asthma, and other respiratory illness are all made worse under conditions of a warming climate. Loss of agricultural productivity is widely understood to be one of the earliest impacts of climate change as growing seasons, rainfall patterns, rising irrigation and fuel costs, and movement of crop-damaging insects all threaten our nation's food supply. Food security considerations are thus critical to our local climate change planning efforts as food, together with water, represent the most basic needs that individuals cannot do without. Food security and the protection of human health must always be forefront of our planning efforts in response to climate change.

In summary, the 13-member Climate Change Committee should have members representing each the following areas:

- Climate change
- Sustainable land use, transportation
- Architecture, sustainable design
- Community, grassroots climate change efforts
- Urban green space, urban heat island mitigation
- Low-income representation
- Local economy
- Small and/or local business
- Workforce advocacy/training
- Neighborhood advocacy/support
- Social services
- Human health
- Food security

Appendix A: (con't)

In order to plan quickly and effectively, and also to facilitate broader stakeholder involvement, an alternate member will be assigned for each seat on the committee. Alternates will preferably come from the same or similar organization as the primary member but, at a minimum, will represent the same area of expertise.

The committee will also be empowered and expected to create subcommittees that bring in additional expertise from outside of the committee. Subcommittees will have at least three (3) members and no more than seven (7), and must have at least one member that is also appointed to the Climate Change Committee. No more than three (3) subcommittees can be active at any one point in time. This structure will allow for broader inclusion of technical experts and impacted constituencies in the decision-making process.

The proposed functions of the Climate Change Committee are as follows:

- (1) Develop a Climate Change Mitigation and Adaptation Plan including recommendations to achieve the City's greenhouse gas reduction commitments along with strategies and steps needed to prepare for the direct and indirect affects of climate change on the City's infrastructure and operations, as well as its ecological, economic, and social capital.
- (2) Identify and prioritize concerns and issues relating to long-term environmental, social, and economic sustainability of the Tucson community.
- (3) Annually review the City's Sustainability Strategic Plan, provide a written report on the status of implementation of the Plan, and recommend revisions to the Mayor and Council that reflect new information or priorities for pursuing a more sustainable community.
- (4) Review and report to the Mayor and Council on progress toward achieving adopted sustainability goals and objectives, including those identified in the Mayors' Climate Protection Agreement, utilizing staff of the City Manager's Office of Conservation and Sustainable Development and other sources for the information necessary for such review.
- (5) Frame priorities for sustainability that balance environmental protection, judicious use of resources, economic vitality, healthy communities, and social equity and that are appropriate to the specific challenges and constraints of the Sonoran Desert, and develop and propose a comprehensive set of sustainability principles to inform City policies, including the General Plan.
- (6) Establish methods and indicators to measure success in meeting established sustainability goals.
- (7) Solicit and review recommendations from other City advisory committees regarding indicators, implementation, and/or other aspects of the City's Sustainability Strategic Plan.
- (8) Support and sponsor community programs and projects to provide information and education to the community on ways to improve individual, business, or organizational sustainability.
- (9) Develop and encourage community efforts and resources for community action on sustainability.
- (10) Cooperate with all government agencies, citizens, community groups, academic institutions, and other entities on matters relating to sustainability.
- (11) Consult with the Mayor and Council as requested relative to specific sustainability issues and needs that may arise.

Mayor & Council

CITY VISION INCLUDES:
 General Plan,
 Growing Smarter,
 Mayors' Climate Agreement

Staff	 <p>Advisory Committee</p>	Community Other Advisory Committees
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Synthesize Community Values

INTERNAL OPERATIONS	DECISION-MAKING	COMMUNITY
Assist interdept team develop indicators, goals, priorities for internal operations	Recommend to M&C means to incorporate City sustainability vision into General Plan and Land Use Code	Develop a Climate Change Mitigation and Adaptation Plan (Climate Change MAP)

PRODUCTS:
 City Strategic "Green Plan", Revised General Plan, Climate Change MAP, Annual Report Card



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