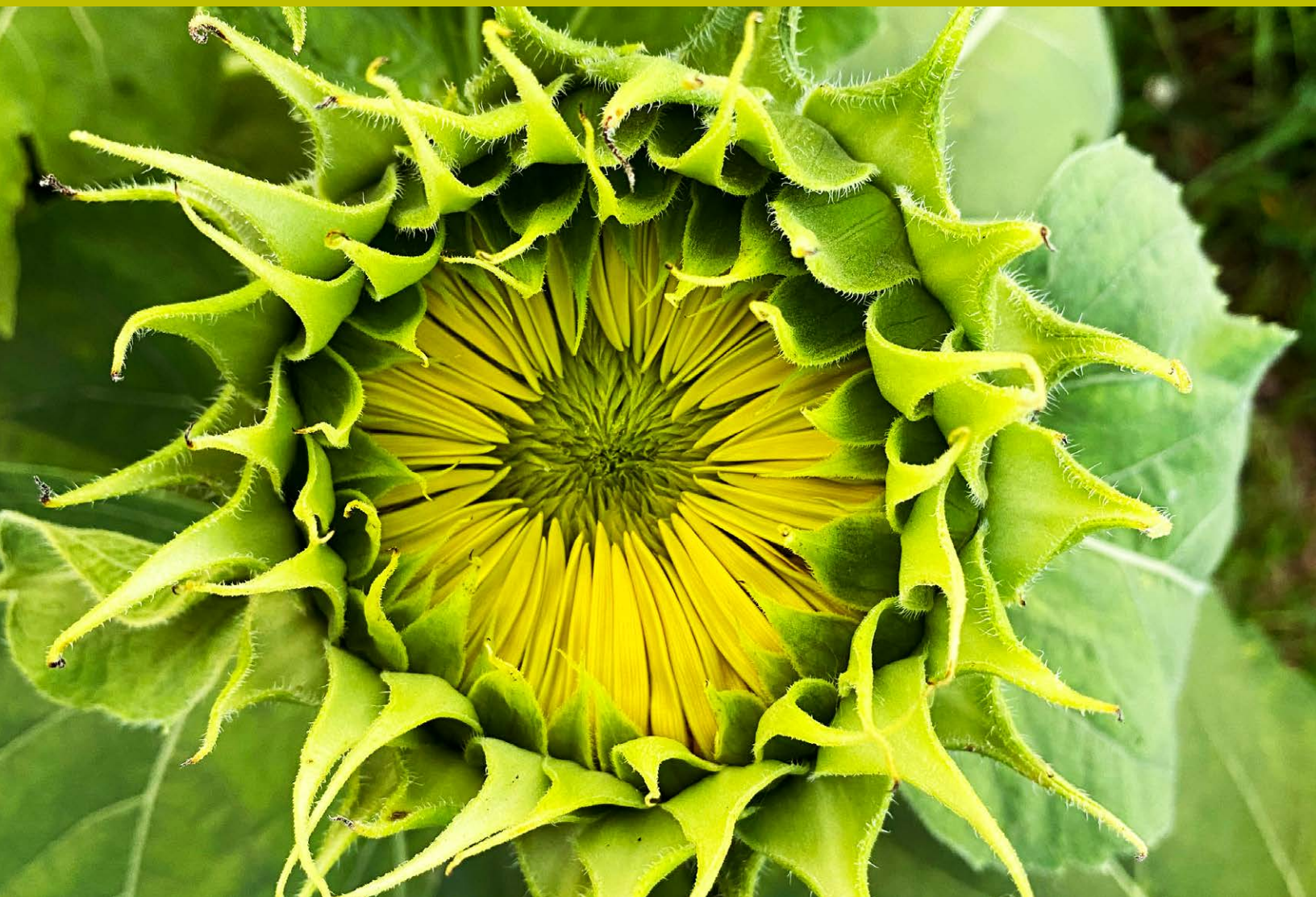
ADAPT DOUGLAS COUNTY

A CLIMATE ACTION AND ADAPTATION PLAN



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Unanimously adopted by Douglas County, May 22, 2024
Resolution No. 24-13

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LEADERSHIP STATEMENT

Following extensive planning and public engagement, we are pleased to introduce Douglas County's first climate action and adaptation plan, Adapt Douglas County. This Plan makes recommendations for policy and program development that both reduce our contribution to climate change and help our community adapt in ways that build collective resilience.

There is scientific consensus that human-induced climate change is occurring, and climate change correlates with compounding stressors that can and are impacting our community. Last year temperatures worldwide were approximately 1.5 degrees Celsius higher than they were in the second half of the 19th century, making it the warmest year on record by a wide margin. An intensifying climate comes at a significant environmental, human, and financial cost, but also comes with opportunities to learn, adapt, and improve. Adapt Douglas County brings focus to these changing realities and emerging opportunities.

This Plan starts us on the path toward a goal of carbon neutrality by 2050 through countywide actions that will inform multiple government functions and elevate our communities' unique strengths. Residents across Douglas County deserve the same opportunities to thrive, as such this Plan strives to be inclusive of all residents in its recommendations. During the development phase, extensive efforts were made to seek and learn from diverse voices. These voices can be found reflected throughout the Plan.

On behalf of the Board of County Commissioners, we look forward to working alongside champions across the state, the region, and the county to help achieve the goals of Adapt Douglas County and build on the existing momentum and leadership in our community. We welcome all of Douglas County's cities to use this Plan and its tools as a framework for their unique climate responses.

Karen Willey
Chair, Douglas County Commission

INTRODUCTION

Adapt Douglas County: A Climate Action and Adaptation Plan is a cross-organizational, countywide effort, involving input and participation from across Baldwin City, City of Lawrence, Eudora, Lecompton, and the unincorporated areas of Douglas County. Set in motion before the COVID-19 pandemic, and publicly launched in 2021, the planning process was initially spearheaded by a formerly joint Lawrence-Douglas County Sustainability Office in response to Action Item 6.1 of Plan 2040,[1] to adopt a climate change adaptation and mitigation plan. In 2022, the project was reorganized under a newly structured Douglas County Sustainability Office, while remaining in partnership with Lawrence leaders. At this time, the planning scope was widened to the entirety of the county, seeking strength in aligned priorities and resources among our five local governments.

Why *Adapt* Douglas County?

The worst impacts of climate change cannot be minimized without reducing emissions, and with hazards of climate change already set in motion, adapting is no longer optional.

Proactively facing the climate crisis will require reevaluating and adjusting how we meet our needs as a community. Making the necessary and urgent adjustments to mitigate greenhouse gases that are causing the climate to change, is *the greatest adaptation strategy*.

Adaptation strategies are essential for the long-term protection and well-being of our community. While the vast energy systems we rely on are regulated at the state and federal levels, the experience of, and strategies for, living through climate change occur locally. Therefore, our local governments are well-positioned to prepare our communities to thrive amid climate challenges, take local action toward energy conservation and emissions reduction, and advocate for change at state and regional levels.

While our communities possess unique assets and will have different starting places and focus areas for implementation, cross-county collaboration in *Adapt Douglas County* allows us to move in a stronger direction of climate action and resilience, together.

Mitigation: Measures to reduce the amount and rate of future climate change by reducing emissions of heat-trapping gases or removing greenhouse gases from the atmosphere.

Adaptation: The process of adjusting to an actual or expected environmental change and its effects in a way that seeks to moderate harm or build on beneficial opportunities.[2]

[1] *Plan 2040: A Comprehensive Plan for Unincorporated Douglas County and the City of Lawrence.* Amended, October 2023. lawrenceks.org/pds/comp-plan/

[2] *Fifth National Climate Assessment*. Crimmins, A.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, B.C. Stewart. and T.K. Maycock, Eds. U.S. Global Change Research Program, Washington, DC, USA. 2023. doi.org/10.7930/NCA5.2023

Courtesy of Jay Antle

A CHANGING CLIMATE

Greenhouse gases (GHGs) collect in the atmosphere and trap heat from the sun, in the same way that glass panes trap the sun's heat in a greenhouse. This process is called the greenhouse effect, and it is essential to sustaining all life on our planet. During the day, sunlight shines through the Earth's atmosphere and warms the surface. At night, the surface cools and releases heat back into the air. Some of that heat is held by GHGs in the atmosphere, making it possible for Earth's species to evolve and thrive in a hospitable climate.

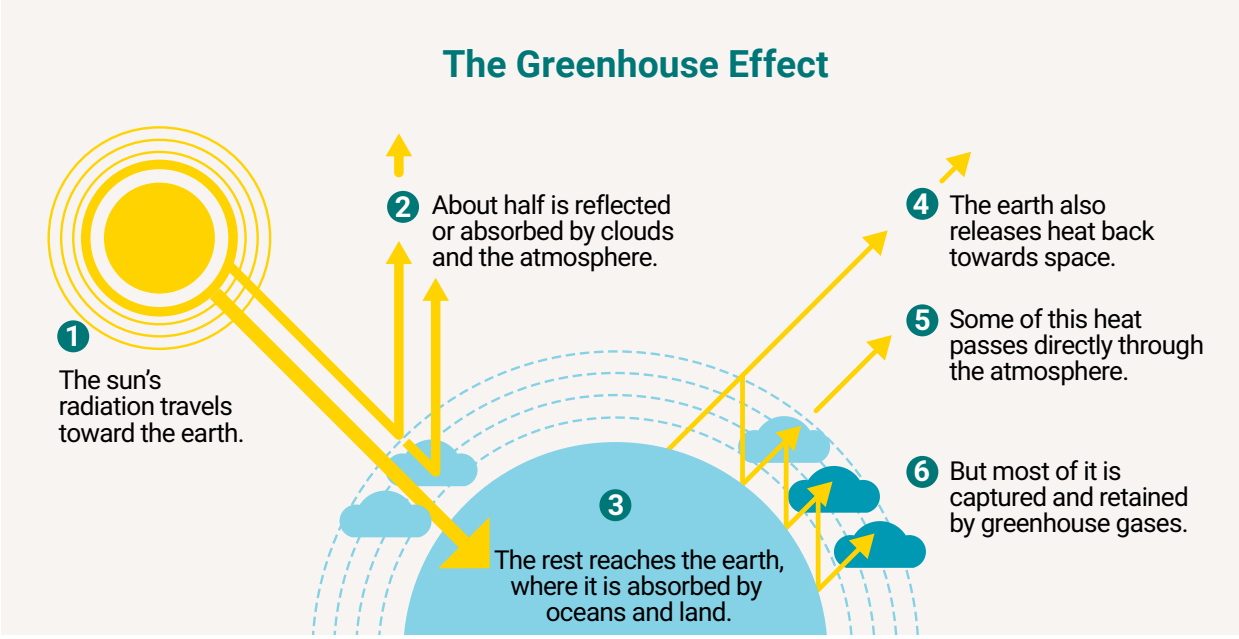


Figure #1. The Greenhouse Effect[3]

The greenhouse gases that contribute most to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). While they occur naturally, most of their emissions come from human-related activities. Activities that lead to increased GHGs primarily involve the production and combustion of fossil fuels, such as those that create electricity and heat, and make transportation and large-scale agriculture possible.

[3]"The Greenhouse Effect," derived from Council on Foreign Relations, July 25, 2023. education.cfr.org/learn/reading/greenhouse-effect

Since the dawn of the Industrial Revolution in the mid-18th century, humanity's ability to access and consume fossil fuels like coal and oil have led to exponential increases in the rate and amount of greenhouse gas emissions entering the atmosphere. With emissions intensely exceeding the rate of natural occurrence for more than a century, the amount of GHGs present in the atmosphere has increased by almost half, and with this comes the increased capacity to trap heat in the Earth's atmosphere.

Figure #2 shows the relationship between carbon dioxide and average global temperature change since the late 1800s. As carbon dioxide accumulates in the atmosphere, average global temperatures have increased. Climate scientists use this data to create models that project global temperature changes and potential future climate impacts.

Courtesy of Jay Antle

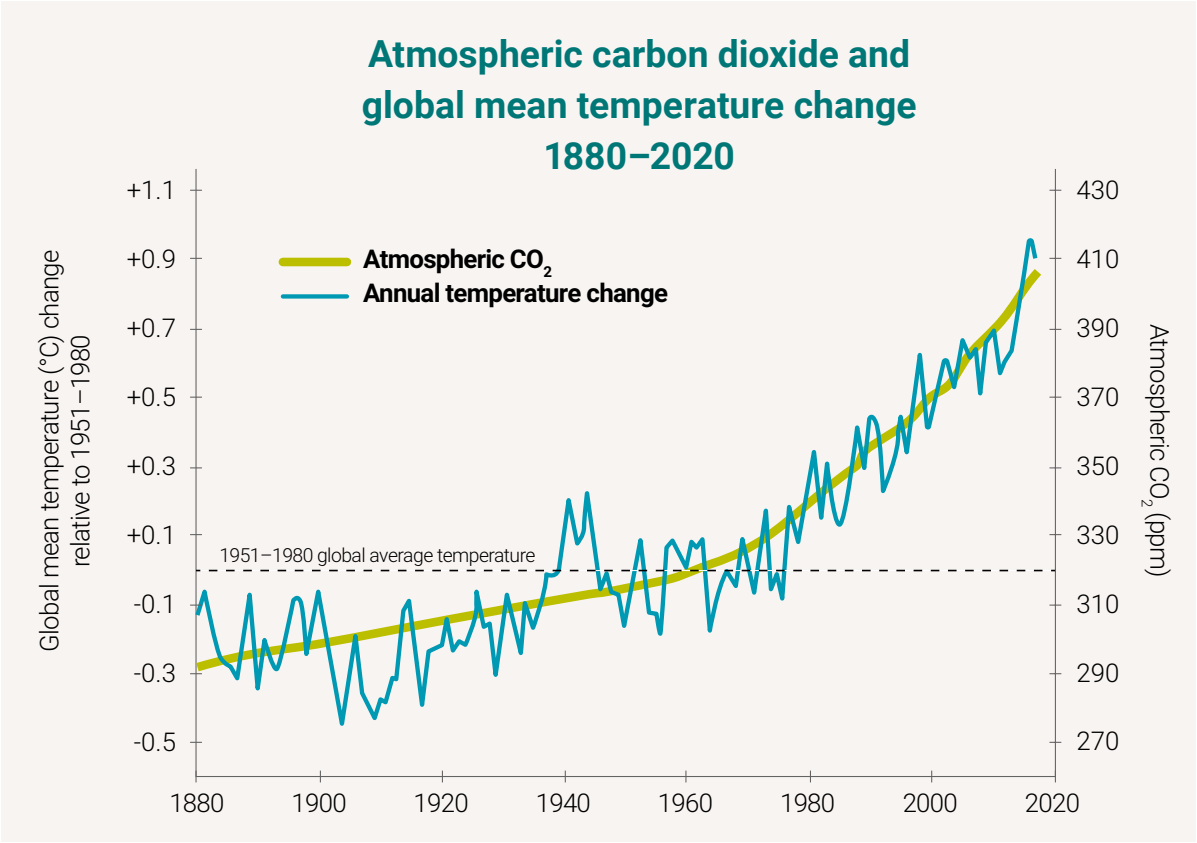


Figure #2. Atmospheric carbon dioxide and global mean temperature change 1880-2020.[4] Atmospheric CO_2 is measured in parts per million.[5]

Scientific observation and modeling provide important data about the impact of even a small but consistent rise in global temperatures. Current scientific research indicates that with every increment of global temperature warming, the potential risks, impacts, and projected losses from climate change increase as well. Through the strategies recommended in this Plan, Douglas County aims to prepare our community to avoid and withstand these challenges.

The Intergovernmental Panel on Climate Change (IPCC) is the leading organization on the science of climate change. The IPCC's Sixth Assessment Report (AR6)[6] projects that continuing current emissions rates could lead to future temperature increases upwards of 5°C relative to pre-industrial levels. Meanwhile, models estimate that the greenhouse gases already trapped in our atmosphere will continue a warming trend resulting in an expected increase of 1.5°C in the near term. In order to maintain this lower threshold, we must begin to urgently and rapidly reduce emissions.

[4]*No Time to Waste. The Intergovernmental Panel on Climate Change's Special Report on Global Warming of 1.5°C and Implications for Washington State*. Snover, A.K., C.L. Raymond, H.A. Roop, H. Morgan, 2019. Briefing paper prepared by the Climate Impacts Group, University of Washington, Seattle. Updated February 2019. cig.uw.edu/projects/no-time-to-waste/

[5]Parts per million (ppm) indicates the concentration of greenhouse gases in the atmosphere using the ratio of one molecule of a given greenhouse gas to one million molecules of air.

[6]IPCC, 2023: *Climate Change 2023: Synthesis Report*. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 35-115. www.ipcc.ch/report/ar6/syr/

LOCAL CLIMATE RISKS AND VULNERABILITY

A climate risk and vulnerability assessment identifies a community's potential to be impacted by, and capacity to respond to, the current and future risks associated with climate change. *Adapt Douglas County* looks to Kansas City's 10-county regional Climate Risk & Vulnerability Assessment (CRVA)[7] and the Kansas Homeland Security Region K Hazard Mitigation Plan,[8] among other national sources, to identify our regional climate risks.

These assessments warn that we can expect to endure the following:

- Shifting temperatures and seasons that bring **longer, hotter heat waves**, extreme temperature swings, and warmer winters
- Erratic precipitation, including **intense rainfall, flooding, and drought**
- Increased **severity and frequency of natural hazards**, such as tornadoes, winter storms, high-speed winds, and wildfires

The CRVA contains a matrix that summarizes the risk level for climate hazards facing our region now and in the future, based on their probability and consequences. Flooding is identified as the region's highest risk, followed by heat and drought. Severe thunderstorms, tornadoes, and winter weather have moderate risk levels.

Resilience: The ability to prepare for threats and hazards, adapt to changing conditions, and withstand and recover rapidly from adverse conditions and disruptions.[2]

[7]*Climate Risk & Vulnerability Assessment*. Mid-America Regional Council. May 2022. www.marc.org/sites/default/files/2022-05/Climate-Risk-and-Vulnerability-Assessment.pdf

[8]*Kansas Homeland Security Region K Hazard Mitigation Plan 2019*. Blue Umbrella Solutions, LLC. July 2019. www.dgcoks.gov/emergency-management/mitigation-plan

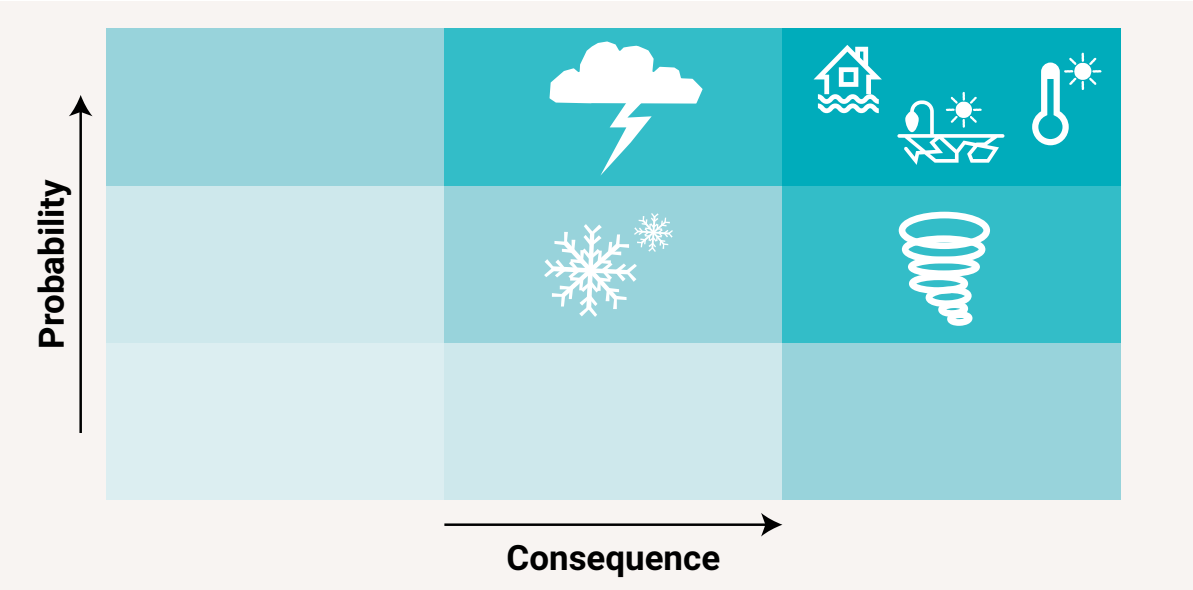


Figure #3. Risk matrix summarizing each hazard facing our region and how they compare to one another.[7]

Impacts stemming from climate change amount to more than natural disasters. Stressors will be experienced through extended periods and become more of a normal condition in our community.

Examples of these impacts could include:

- Declining biodiversity
- Increasing demand for heating and cooling
- Exacerbated physical and mental health challenges
- Inundation of stormwater infrastructure
- Uncomfortable and dangerous conditions when accessing daily needs

Equity in Climate Resilience

The impacts of climate change do not affect all systems and people in the same way and to the same extent. Disproportionate vulnerability and exposure for individuals and communities are based on intersecting factors including wealth, education, race and ethnicity, religion, gender, age, class, ability, and health status, among others.

Too often, communities of color and low-income populations are more vulnerable to the impacts of climate change due to policies rooted in racism that influenced socioeconomic development patterns and historical linkages to wealth and property ownership. These societal and structural inequities, exacerbated by systemic oppression, contribute to the unequal burden of pollution, risk of environmental disaster, and dangerous flooding that are faced by historically marginalized communities.[9]

[9]*Equity in Climate Planning*. ICLEI-Local Governments for Sustainability USA. December 2023. icleiusa.org/wp-content/uploads/2024/01/Equity-in-Climate-Planning_-Trends-and-Best-Practices-for-U.S.-Local-Governments.pdf

"At some point in our lives, each of us will have a mobility challenge, such as pregnancy, an injury, or age-related. Accessibility is not just about getting in the door; it includes the placement of everyday needs."

—Human services focus group participant

The 2022 CRVA included a regional socioeconomic vulnerability index relying on five indicators: non-white population, population below 200% of poverty, population under age 5, population over age 65, and renter-occupied housing. As Douglas County moves into implementation of this Plan, we should prioritize strategies by identifying and applying the most locally relevant vulnerability indicators for our community.

Equity in climate resilience means that one's race, class, ability, or other characteristics are not a determinant of how well one is equipped to deal with climate change.[10] From the start, in order to increase equity in climate resilience and uplift members of our community who are more vulnerable to climate change, the planning team has sought to learn from the experiences of community members who face historic and current inequities or have limited resources to adapt to the effects of climate change (see Developing this Plan). In addition, the planning team developed guiding questions to apply to the strategies of this Plan, keeping the intentional inquiry into equity considerations at the forefront of developing next steps.

Equity Framework

As Douglas County approaches Plan implementation, whether that takes the form of a policy change, a public program, or infrastructure design, we will aspire to build into our process the time to explore the following:

1. Identify the vulnerable communities that the policy, program, or action step will affect.
2. How will these communities be impacted by or benefit from the policy, program, or action step?
3. What unintended consequences may result for vulnerable populations?
4. How will any inequitable consequences from the policy, program, or action step be addressed?

With intentional investigation and greater awareness of the equity implications of climate actions, we aim to avoid exacerbating inequities through their implementation.

We also aim to apply these universal and inclusive recommendations where impactful and feasible:

1. Prioritize marginalized identities for access to programs and services.
2. Consider access for all physical abilities in development and design.
3. Provide inclusive communications about programs and services.

Further equity recommendations are offered throughout the sections that follow. These are provided to inspire further exploration and are not intended to be exhaustive of the equity reflections and enhancements possible through this Plan.

[10]*Centering Equity in Climate Resilience Planning and Action: A Practitioner's Guide*. Fang, Clara, Jessica Hench, Christa Daniels, and Abigail Abrash Walton. Climate-Smart Communities Series, Vol. Antioch University New England 2022. library.oarcloud.noaa.gov/noaa_documents.lib/OAR/CPO/Climate_Smart_Communities/Vol_03_CSC_CenteringEquity.pdf

GREENHOUSE GAS INVENTORY AND TARGETS

In 2022, Douglas County sought the expertise of ICLEI-Local Governments for Sustainability USA (ICLEI), to develop an inventory of greenhouse gas emissions (GHGs). The inventory provides a baseline of Douglas County's community-wide emissions for the year 2021 by source, sector, and activity, and allows us to model the projected emissions reduction from potential climate action activities.

SECTOR	2021 Emissions (Mt CO_2e)	SECTOR
Residential Energy	392,907	28%
Transportation and Mobile Source	371,917	27%
Commercial Energy	357,568	26%
Industrial Energy	132,046	9%
Agriculture	73,6133	5%
Solid Waste	49,617	3%
Process and Fugitive	19,776	1%
Water and Wastewater	2,430	1%
Total Gross Emissions		**1,399,873**
Forest and Trees	-151,262	
Total Emissions with Sequestration		**1,248,611**

Figure #4. Details of Douglas County's emissions broken down by sector.[11] Emissions are measured in metric tons of $C0_2e$ (Mt $C0_2e$).[12]

[11] *Douglas County, Kansas: 2021 Inventory of Community-Wide Greenhouse Gas Emissions*. ICLEI-Local Governments for Sustainability USA. October 2, 2023. www.dgcoks.gov/sites/default/files/2024-01/douglas_county_ks_community-wide_greenhouse_gas_emissions.pdf

[12] Metric tons of carbon dioxide equivalent or $MTCO_2e$ is a unit of measurement for greenhouse gases based on their global warming potential. The global warming potential or GWP is the amount of heat the gas traps in the atmosphere compared to carbon dioxide (CO_2).

The three primary sources of GHGs for Douglas County are Residential Energy (28%), Transportation and Mobile Sources (27%), and Commercial Energy (26%).

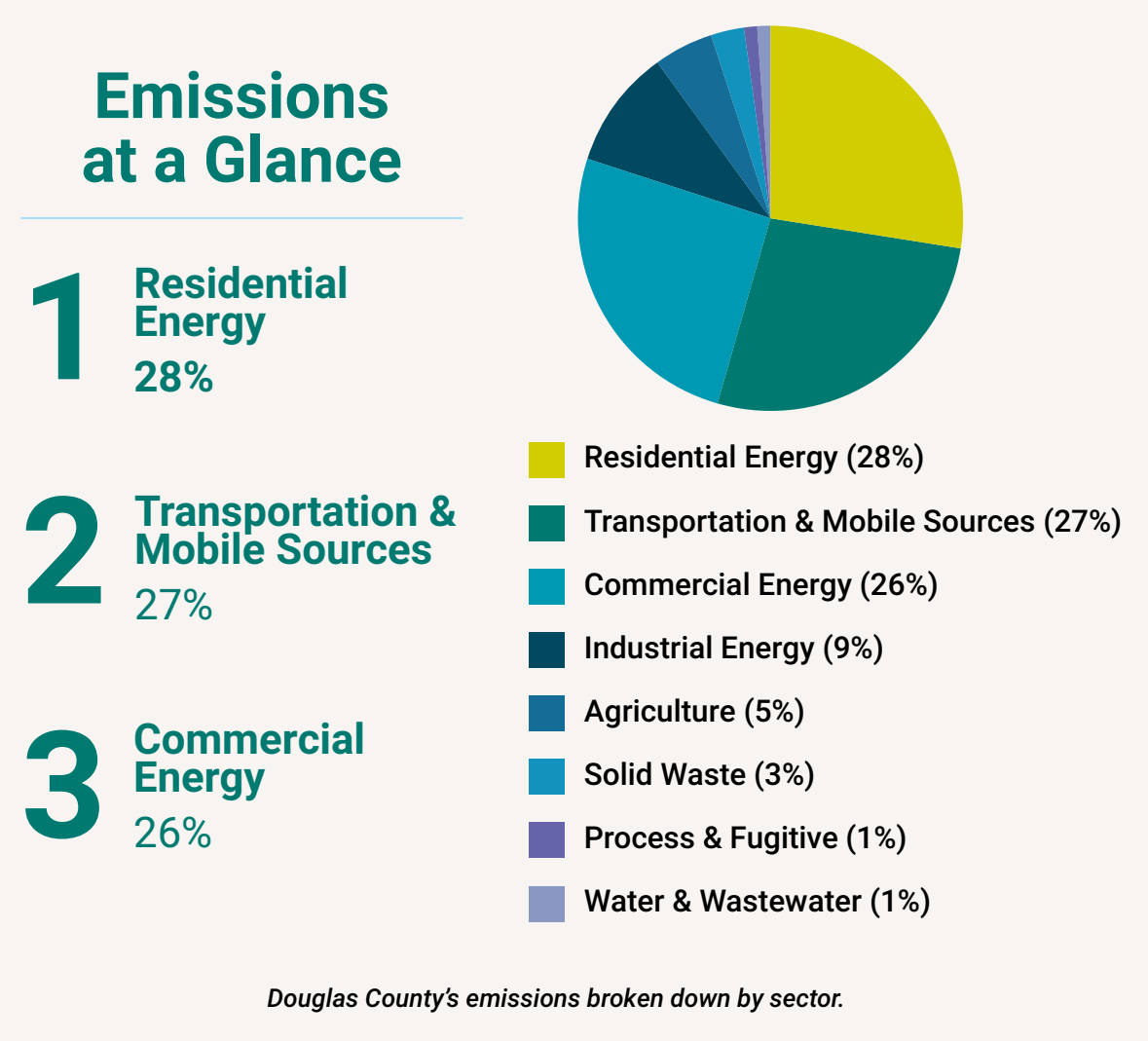


Figure #5. Douglas County's emissions broken down by sector.[11]

An Emissions Reduction Scenario

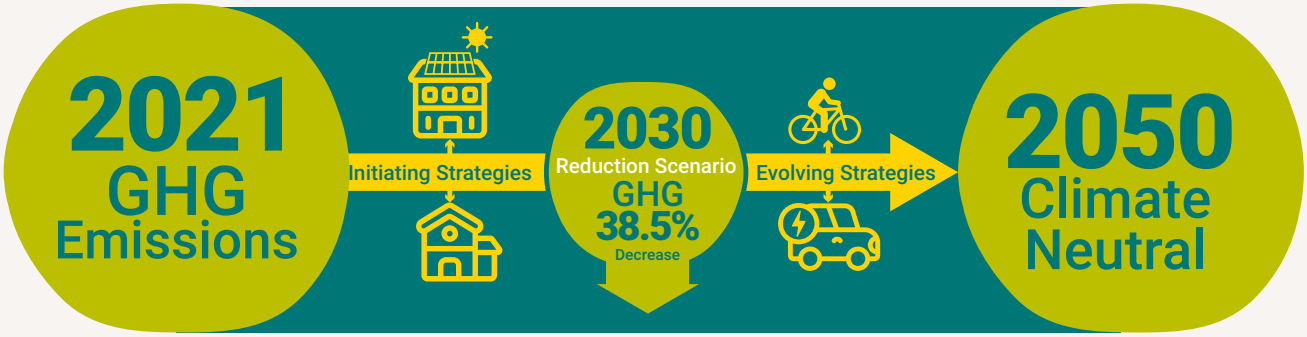
Using its leading emissions management software, ClearPath, ICLEI forecasted an emissions reduction scenario for Douglas County, which considers projected population growth and forecasted advancements in automotive fuel efficiency standards, and assumes maintenance of carbon-sequestering tree coverage. It also calculates planned reductions to the carbon intensity of the electric grid—including the decarbonization plans of Evergy[13] and other local electric utility companies.[14] ClearPath allows ICLEI to extrapolate all of these factors with the amplified emission reduction benefits of key mitigating activities found in this Plan.

ICLEI advised us on incremental estimates for each of these activities—such as reducing vehicle miles, increasing energy efficiency, installing rooftop solar, and electric vehicle adoption—based on its leading work in the field of modeling community GHGs.

If these activities were implemented at these rates beginning in 2024, a 38.5% decrease in countywide emissions from 2021 levels could be achieved by 2030.

- 5% of existing housing units and commercial buildings retrofitted to be 20% more efficient per year
- 100% of new construction built to the latest energy building codes (estimating a 37% efficiency improvement)
- 20% of countywide potential for rooftop solar achieved
- 10% reduction in Vehicle Miles Traveled (VMT)
- 16% increase in electric vehicle adoption

Douglas County Greenhouse Gas Reductions



[13]"Sustainability," Evergy, 2024. www.evergy.com/smart-energy/environmental-impact-link/sustainability-hub

[14]ICLEI calculated a weighted average change with/for other utilities, resulting in an expected 35% reduction in electric emissions intensity (CO_2e/kWh) in 2030 compared to 2021.

The Significance of 2030 and Beyond

The Intergovernmental Panel on Climate Change (IPCC) urges that to meet the goals of the Paris Agreement[15] to keep warming below 1.5°C, the entire globe should strive to reduce emissions by 50% by 2030 and ultimately reach climate neutrality by 2050. However, not all communities emit the same ratio of greenhouse gases. Communities willing to contribute can use science-based targets—reduction calculations informed by the latest climate science and geared toward meeting milestones set by the IPCC—to discover their total emissions responsibility toward this global goal.

Douglas County's fair share: Using our 2021 GHG inventory, ICLEI calculated that a science-based target of reducing our countywide emissions 60.4% by 2030 would put our community on track toward the IPCC short-term recommendation (*see* Appendix A). Understanding the expanse between our current emission rates and our reduction responsibility positions Douglas County to act with intention toward realistic and achievable progress by 2030, and to strive for climate neutrality by 2050. With fast-approaching and bold targets, every effort at local emissions reduction matters.

This first iteration of *Adapt Douglas County* is intended to ignite action that will lead us toward this global goal in the coming decades. We will revisit our goals and strategies at regular intervals in order to learn from challenges, celebrate successes, and account for new opportunities and technology on the path to 2050 (see Implementing Adapt Douglas County).

The Paris Agreement is a legally binding international treaty, adopted by 196 entities at the United Nations Climate Change Conference (COP21) in Paris, France in 2015. It aims to limit global average temperature increase to 1.5°C above pre-industrial levels.

ICLEI defines **climate neutrality** as the targeted reduction of greenhouse gas (GHG) emissions and GHG avoidance in government operations and across the community in all sectors to an absolute net-zero emission level at the latest by 2050.[16]

Decarbonization of our electricity grid alone would significantly reduce overall emissions—a 72% reduction in its carbon intensity would result in a 36% reduction from our baseline emissions.[11] Proactive policy and collaborative planning will be needed to move toward decarbonization of our regional electricity supply (see strategy G2-S2).

[15]The Paris Agreement. United Nations Framework Convention on Climate Change. December 2015. unfccc.int/process-and-meetings/the-paris-agreement

[16]*The ICLEI Climate Neutrality Framework*. ICLEI-Local Governments for Sustainability. October 5, 2020. iclei.org/climate_neutrality

DEVELOPING THIS PLAN

Douglas County's approach to climate action and adaptation prioritizes the community knowledge and lived experiences of our residents, accounts for local conditions, and draws from existing local planning efforts, with the goal of creating a countywide community-led climate vision.

Plan 2040,[1] our community comprehensive plan, officially charged staff to develop a climate change mitigation and adaptation plan, specifying that it reduces not only greenhouse gases but also risk and exposure to hazards. Prior to declaring this county-level need, the City of Lawrence led our community in climate priorities, having adopted its own initial Climate Protection Plan in 2008, and passing Ordinance 9744 in 2020 setting renewable energy goals for the city.

Throughout the development process, the planning team worked with government colleagues across the county to identify existing initiatives and priorities that this Plan could support, seeking to integrate climate-related work across departments, promote organizational commitment and collaborative relationships, and foster new opportunities for efficiency and innovation as we learn from each other. Research for this Plan also sought alignment with numerous existing community plans and public priorities. See Plan Alignment for a full list of connected community visioning and strategic plans.

From the outset, the planning team sought to learn about diverse community values and goals across the county, recognizing that communities within Douglas County have unique experiences, needs, priorities, and assets. The experiences shared through community listening directly informed the goals and strategies in this Plan. We aspire to learn from each other and collaborate as a community as we approach implementing climate solutions together.

INFORMING THIS PLAN

115 interviews collected by 10 Community Coordinators

554 initial survey responses

Peer community climate plans studied

30 existing community plans consulted

Collaboration with staff advisors from 5 governments

Guidance from a community steering committee

1st countywide GHG inventory conducted

11 vocational and community focus groups

300+ unique draft comments

5 open houses held across the county

"Historically in an event or catastrophe, what happens with the community, how do they rebuild together? … Community is one of the main factors in how we come together and rebuild. "

—BIPOC perspectives focus group participant

Committee Guidance

Two key committees offered direction and advice through Plan development:

- Staff Advisors representing multiple departments and leadership across five local governments dedicated their expertise, represented their community's priorities and aligning commitments, and helped to guide the creation of a Plan that is relevant and actionable.
- Steering Committee members representing several community advisory boards, nonprofits, and agencies contributed their time to share the perspective and expertise of their organization or field in regard to climate priorities, while elevating the experiences of those they serve.

Community Engagement

The planning team approached the community engagement process with these guiding values:

- Authenticity and Transparency: Listening to understand, sharing what we gather, and checking to make sure we get it right
- Equity: Centering those who are most impacted by the burdens of climate change
- Collaboration: Incorporating the input, lived experience, and expertise of community members and staff
- Relevancy: Connecting climate to people's everyday lives

Below is a summary of the significant components of our engagement process.

Community Narratives

In 2021, the planning team partnered with Climate + Energy Project and Sunrise Project to employ and guide 10 Community Coordinators in recording the diverse climate change-related experiences of individuals throughout Douglas County. Following the guiding values for community engagement, this effort prioritized the voices of community members who have faced historic and current inequities, have limited resources to adapt to the effects of climate change, or both. The identities prioritized in this process included Black, Indigenous, and People of Color (BIPOC), Spanish speakers, LGBTQIA2S+, elders, youth, low-income residents, people living with a disability, those experiencing houselessness, community members in addiction recovery or the foster care system, as well as intersections of these identities. The result was 115 unique stories from life in Douglas County. For more information on the process and stories collected, please see Appendix B.

Community-Wide Survey

In fall 2021, Douglas County residents completed a survey to share their top concerns regarding climate stresses, including how those stresses related to their transportation methods, their comfort options in the winter and summer, and the health of their family and friends. Learning from the perspective of daily experience provided insight in our effort to identify the most effective, accessible strategies for improving quality of life in a changing climate. For more information on the survey responses, see Appendix C.

Focus Groups

During the final stage of community listening, the planning team hosted a series of focus groups to target key gaps and learning opportunities. These included gathering particular vocational groups whose professions are challenged by climate change and convening community groups to represent more geographic areas and diverse demographics of the county.

A total of 11 focus groups were held, each having a similar format aimed at learning how the attendees experience climate change, including their priorities, practices, and barriers, and how they envision the future of Douglas County as the climate crisis continues. Local facilitators who share the vocation or identity of an invited group were enlisted to help lead a number of these gatherings, in order to guide relatable and relevant discussion. A summary of our process and the input we received can be found in Appendix D.

"I want to make sure the community I live in and the people that are to come, whether it is people wanting to move here, or simply next generations experience the same beautiful community that I get to experience."

—Survey participant

PRIORITY VOCATIONAL GROUPS

Outdoor workers exposed to extreme heat and cold temperatures throughout the year

Frontline first responders assisting residents during/after extreme weather events

Human services workers providing services to individuals coping with issues exacerbated by extreme weather, including housing and health conditions

Agricultural producers impacted by sudden and seasonal weather changes that affect crop productivity and their livelihood

PRIORITY COMMUNITY GROUPS

Black, Indigenous, and People of Color (BIPOC) community members sharing perspectives on the climate impacts they uniquely experience
(An additional Indigenous perspectives focus group was also held per recommendations from the Community Narratives.)

Youth voices at the Boys & Girls Club representing the future generation of Douglas County

Unincorporated areas and municipalities of Eudora, Baldwin City, and Lecompton offering rural and countywide perspectives

Community Emergency Response Training (CERT) participants, volunteers who are trained to watch and prepare for hazards affecting their neighborhoods

Public Draft

During November and December 2023, the planning team launched a six-week public comment period on the draft of *Adapt Douglas County*. Community members were invited to submit feedback through an online feedback form or by attending one of five open houses hosted throughout the county. In addition, public presentations were given to advisory boards and elected officials across the community. Input received during the public comment period informed Plan revisions, provided informative reflections, and offered considerations for partnerships and implementation.

HOW TO READ THIS PLAN

The goals and strategies for this Plan are organized into four sections, each representing an essential and complex system we all participate in. They include the following:

Co-benefits and Equity Recommendations

Many strategies provide benefits beyond reducing greenhouse gas emissions and preparing for risks. They may ripple out to improve community health, air and water quality, and economic opportunity. By highlighting co-benefits within this Plan, we hope to discover intersections for new partnerships and innovative programming. The example equity recommendations found in each section provide added considerations and context to help prevent further exacerbating inequities.

Popular Topics

Climate impacts are complex, reaching across many aspects of our daily lives. Likewise, the systems which present important climate action and adaptation opportunities, cut across the sections of this Plan. Find these popular topics woven into one or more of the four Plan sections:

TOPIC	SECTIONS IN THE PLAN
Agriculture and Food	**Living Systems** **Thriving Community**
Biodiversity	**Mobility** **Living Systems**
Local Economy and Jobs	**Energy** **Thriving Community**
Land Use and Green Infrastructure	**Thriving Community** **Mobility** **Living Systems**
Renewable Energy	**Energy** **Living Systems**

ENERGY

POWERING WHERE WE LIVE, WORK, AND PLAY

WHAT WE HEARD

- increasing utility costs
- lack of energy efficiency
- desired access to renewable energy
- potential impacts of utility-scale energy

In Douglas County, residential and commercial energy needs are the first and third highest greenhouse-gas contributing sectors, respectively, and together they make up more than half of our total emissions inventory. Our community relies on a number of utility providers, including Evergy, Baldwin City, and FreeState Electric Cooperative for electricity, and Black Hills, Atmos Energy, and Kansas Gas Service for natural gas. Emissions from electricity sources are double those of natural gas sources for residences, and 2.5 times greater when it comes to commercial customers. With this significant portion of our emissions contributed by the electric grid, we have a substantial opportunity at mitigation by transitioning our grid supply to renewable sources. In planning this transition, it will be crucial to consider diversity in scale and approach, and a range of factors. These should include everything from rooftop and regional generation to conservation and innovation, and from affordability and reliability to public and ecosystem health.

Utility-scale wind and solar are leading sources for decarbonizing our electricity grid and will be part of regional efforts by utility providers to supplement and maintain a reliable, affordable, and clean energy supply. Energy flowing from utility operations, of any source, contributes to an energy mix that powers the whole county. Douglas County has active regulations which allow solar and wind projects to apply for permit. These bring into question large land uses that require critical, project-specific examination. These decisions are made at the Commission level, using these regulatory documents, through an intentional public process.

Douglas County and the City of Lawrence participate in the EPA's Green Power Partnership program.[17] As part of this program, the equivalent of a portion of their facility usage is generated through utility-scale renewable energy. Douglas County government purchases on average equal to 62% of the organization's electricity use; for City of Lawrence, their purchase amounts to 100% of their organizational use. These green power offsets are not factored into the countywide greenhouse gas inventory. While our program participation helps advance the voluntary market for green power, that power supplies the regional grid—building a cleaner grid for all—and not Douglas County as a direct consumer. Therefore, our inventory accounts for actual energy usage and associated emissions.

[17] "Green Power Partnership," United States Environmental Protection Agency. www.epa.gov/greenpower/meet-our-partners

Reducing energy consumption overall not only serves to keep emissions in check as our community grows, it also decreases demand for resources. As technology and policy encourage a transition of our energy systems to diverse and renewable sources, we also reduce the known externalities that accompany burning fossil fuels, such as air and water pollution, and health repercussions. However, we must remain aware that even renewable energy necessitates resource use, such as those associated with manufacturing and land use. Reducing overall consumption and managing demand can help our community more efficiently meet our energy needs while balancing other values and natural resources.

Between increasing weather hazards and elevated daily usage during extreme temperatures, we can anticipate stress on the reliability and supply of our energy. The impacts of power outages can range from inconvenient to life-threatening, especially for members of our community experiencing a range of vulnerabilities. But building resilience into our energy systems is more than preparing for disaster; it will require collaborative work with state and regional entities to advance our infrastructure for the demand of a growing community and a diversifying energy supply.

CO-BENEFITS

- Reduced cost burden from utility bills through more efficient homes and buildings
- Improved outdoor air quality resulting in reduced respiratory and other health issues
- Healthier, comfortable homes through weatherization improvements
- A diversified and reliable electric grid
- Job opportunities resulting from demand for clean energy technology and energy efficiency

EQUITY RECOMMENDATIONS

- Consider the barrier of upfront costs for residential solar installations and energy efficiency upgrades.
- Address indoor air quality as part of weatherization program assistance, ensuring that efficiency upgrades improve well-being rather than exacerbate issues.

An Emissions Reduction Scenario

If these building energy-related activities were implemented at these rates beginning in 2024, a 17% decrease in countywide emissions from 2021 levels could be achieved by 2030.

- 5% of existing housing units and commercial buildings retrofitted to be 20% more efficient per year
- 100% of new construction built to the latest energy building codes (estimating a 37% efficiency improvement)
- 20% of countywide potential for rooftop solar achieved

GOAL 1

Reduce energy consumption while increasing access to renewable sources

G1-S1

Develop and promote programs that prioritize energy conservation and cost savings.

1. Establish a community energy hub that includes tools and resources for reducing energy use and understanding energy options.
2. Implement a local residential energy efficiency program that makes homes comfortable and safe, and bills more affordable.
3. Co-create energy programming with existing housing and utility affordability programs to further benefit those they serve.

G1-S2

Prioritize and incentivize accessible renewable energy generation and energy efficiency for residential, commercial, and industrial buildings.

1. Implement incentives for solar installation to power commercial and industrial operations, including new development, utilizing paved or building surfaces where feasible and effective.
2. Develop and adopt a community-relevant solar-ready ordinance for new construction.
3. Establish an effective and feasible cycle for adopting the most advanced building energy codes.

G1-S3

Increase renewable energy and energy efficiency in local government and institutional facilities.

1. Prioritize energy conservation measures when budgeting and forecasting Capital Improvement Plans or similar policies.
2. Conduct renewable energy analysis for local government infrastructure, identifying potential emissions-reduction impact and funding needs for facility installation.
3. Identify and plan for ongoing energy efficiency improvements in local government facilities.
4. Adopt policy that establishes community-relevant criteria for sustainable building design, including consideration of renewable energy and efficiency technologies, for new buildings and renovations.
5. Foster relationships with local institutions to align and support emissions reduction and other resilience goals.

"Electricity is expensive in a drafty rental."

—BIPOC perspectives focus group participant

Community Spotlight

Renewable energy generation like the 1.21-megawatt solar field in Baldwin City helps reduce fossil fuel energy use by providing 4% of the community's electricity needs!

Strengthens resilience
The solar field features more than 3,500 panels on five acres, with native and sustainable landscape design providing habitat for pollinators and biodiversity.

The power of partnership
Baldwin City worked with Evergy on the design and installation, and the solar field is now maintained by local city staff.

A living laboratory
Baker University business students have had opportunities to learn about project management, renewable energy, and business planning, while biology students have assessed the property for impact on wildlife.

GOAL 2

Build resilience in our energy systems through innovative infrastructure and collaborative policy

G2-S1

Advance infrastructure to ensure energy reliability.

1. Work with utilities to inform planning of necessary infrastructure upgrades and enhancements to avoid power outages and support increasing demand on building and transportation electrification.
   For example: transmission capacity and energy storage.
2. Expand advanced metering and monitoring technologies to better track outages and vulnerabilities.

G2-S2

Advocate for policy that enables local efforts to decarbonize the grid, reduce energy demand, increase reliability, and keep rates affordable for all.

1. Partner with organizations that advocate at the Kansas Corporation Commission[18] for increased, equitable renewable energy options.
2. Work with regional policymakers and utilities, including engaging in Evergy's Integrated Resource Plan,[19] to rapidly advance the most reliable, affordable, and clean grid supply and storage measures for our region's resources and demand.
3. Pursue state policies for solar and wind power purchase agreements, community-owned solar, and net metering that incentivize and enable more access to renewable energy.

[18]The Utilities Division of the Kansas Corporation Commission establishes and regulates rates for public utilities, including electricity, natural gas, liquid pipelines, and telecommunications. kcc.ks.gov

[19]An Integrated Resource Plan (IRP) is a utility's assessment of their energy demand, supply, and the risks that could prevent them from meeting their customers' energy needs at reasonable costs. In 2021, Evergy released a triennial filing outlining generation sources and capacity through 2040. www.evergy.com/-/media/documents/smart-energy/irp-executive-summary.pdf

Community-owned solar is a distributed energy model that allows customers to buy or lease part of a larger, off-site solar system. It can benefit renters, participating homeowners, and businesses. Systems can be owned by utilities or third-party developers and can be located on public buildings, private land, and other suitable areas.

Commonly used for renewable energy systems, a **power purchase agreement** (PPA) is an arrangement in which a third-party developer installs, owns, and operates an energy system on a customer's property. A PPA allows the customer to supplement their electricity from the grid with no upfront cost, and typically at a rate lower than the local utility.

MOBILITY

MOVING AROUND THE COMMUNITY SAFELY AND EFFICIENTLY

WHAT WE HEARD

- stress on workers and infrastructure in extreme conditions
- access to and transport of essential goods in emergencies
- vehicle pollution impacting youth and other vulnerable populations
- unsafe travel, discomfort, delays, or obstacles in extreme weather

As the second-largest contributor of greenhouse gas emissions in Douglas County, the transportation sector offers opportunity for emissions reduction through emergent technology and community planning, while accompanying co-benefits and adaptation strategies encourage a sense of community, accessibility, well-being, and more.

Mitigating emissions from transportation is so much more than vehicle efficiency or alternative fuels. By increasing the options for multiple modes of travel–from walking and wheeling, to transit and sharing–and examining opportunities for connected design, we can reduce miles traveled by car, while also fostering neighborhoods that build community. Douglas County should also plan inclusively and equitably for electric vehicle charging access, making adopting new technologies increasingly possible for more residents.

While many of the strategies outlined below focus on moving people around the community, the movement of goods, or freight, is also a contributor to our local emissions. Implementation partnerships should include investigation of opportunities to increase efficiencies in this sector.

As we work toward creating more connected options to access our needs, many community members will still contend with extreme elements on travelways. Seeking opportunities for more adaptable design that incorporates shade and absorptive elements to protect from excessive heat, wind, and water will help reduce harmful conditions for multimodal travelers, and decrease burdens on infrastructure.

Traveling in good company: This Plan reinforces numerous community goals around safe and sustainable connectivity, among them is vision and leadership put forth in Transportation 2050 (T2050).[20] T2050 is the blueprint for a healthy, safe, and efficient transportation system serving the metropolitan region—Lawrence, Eudora, Baldwin City, Lecompton, and the unincorporated areas of Douglas County. T2050 convenes and inspires several of the climate action and adaptation opportunities we present here, and we look to this guiding chapter of Plan 2040[1] to build on momentum for emission reduction already at work in our transportation sector.

[20] *Transportation 2050: Lawrence-Douglas County Metropolitan Transportation Plan*. Amended, October 2023. lawrenceks.org/mpo/t2050/

As our community approaches decisions about urban growth, connected and safe travel infrastructure will be essential, but it comes with costs. Priority should be made for design that functions in concert with natural systems and minimizes impacts on their ecosystem services of flood control, carbon sequestration, air quality, biodiversity, and more.

CO-BENEFITS

- Healthier urban or road-side habitat through native plantings and integrated pest management
- Avoided land use through density and mixed-use design
- Flood control through use of green infrastructure
- Cleaner air due to decreased tailpipe emissions
- More opportunity for physical activity through walking and wheeling

EQUITY RECOMMENDATIONS

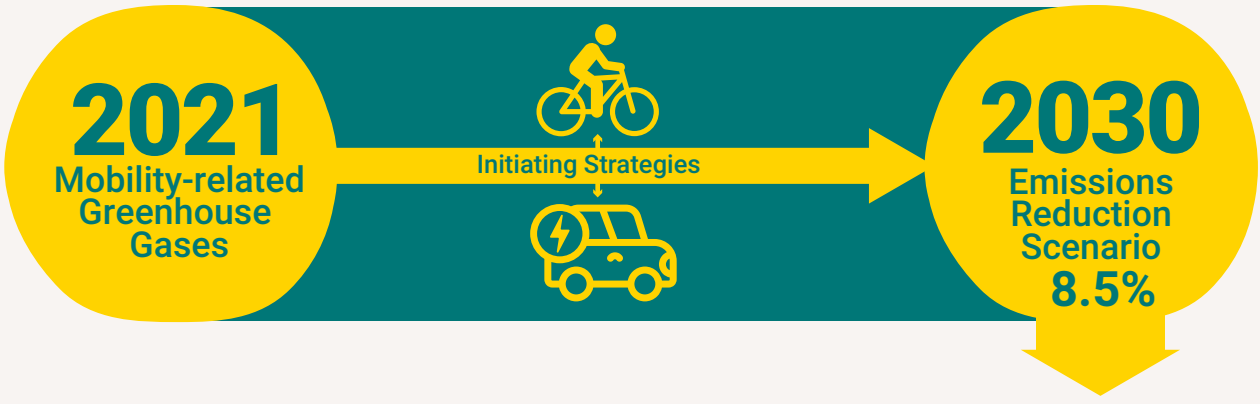
- Learn about unique cultural perspectives around various modes of transportation to inform planning and communications about mobility choices.

An Emissions Reduction Scenario

If these mobility-related activities were implemented at these rates beginning in 2024, a 38.5% decrease in countywide emissions from 2021 levels could be achieved by 2030.

- 10% reduction in Vehicle Miles Traveled (VMT)
- 16% increase in electric vehicle adoption

Mobility-related Greenhouse Gas Reductions



GOAL 3

Enable low-carbon modes of transportation while improving access to everyday needs

G3-S1

Continue investment in creating safe, comfortable, well-maintained infrastructure for people walking, wheeling, and biking.

1. When updating long-range plans, integrate components of the "15-minute neighborhood" concept, while prioritizing accessibility.
2. Implement locally relevant parking management that balances efficiency with community needs and accessibility.
   For example: eliminating parking mandates and implementing adequate bike parking in public spaces.

G3-S2

Create viable multimodal networks that serve residents and visitors across the region.

1. Incorporate alternate travelways or paths for walking and biking in the unincorporated areas.
2. Support regional transportation initiatives, such as expanding demand-based intercity and commuter transit options.

G3-S3

Enable the transition to electric vehicles (EVs) and electric bicycles (e-bikes).

1. Conduct EV readiness planning for countywide EV and e-bike charging infrastructure.
2. Develop an information hub for residential and commercial EV transition.
3. Advance the transition of local government fleets and necessary infrastructure to EV technology.
4. Promote incentives and rebates for the purchase of e-bikes

G3-S4

Maximize traveler choices using shared mobility.

1. Assess the need, feasibility, and funding mechanisms for piloting a countywide microtransit model.
2. Support community partners such as the Senior Resource Center, Independence, Inc., and other organizations that provide vanpool services to those they serve throughout the county.
3. Increase awareness about the benefits and accessibility of traveler choices and encourage participation in existing programs.
   For example: employer-hosted ridesharing, employee transit incentives, and game-day park-and-ride options.
4. Continue investment in improving the rider experience on public transit.

Community Spotlight

Lawrence Public Transit has made several improvements to encourage riding the bus as a viable option.

No cost to the rider
In 2023, Transit launched a fare-free pilot, which increased ridership. The pilot has been extended through December 31, 2024.

Quiet, electric buses
Transit began transitioning to an electric fleet in 2020 and aims to be 100% by 2035.

Responds to feedback
Based on rider feedback, an on-demand service has been implemented overnight and on Sundays.

Modern amenities
Central Station, which opened in January 2024, not only provides passenger amenities such as route transfers protected from the elements, it also enables intercity connectivity by providing space for Greyhound and K-10 Connector regional bus services.

Always improving
The bus stop improvement program is adding ADA boarding pads, shelters, benches, and bike racks every year through independent projects and along with coordinated street and sidewalk improvements.

Supports multimodal trips
Every bus is equipped with bike racks, allowing riders to seamlessly use bikes to connect to or from their destination.

On your radar
Popular navigation and transit apps provide trip planning and track real-time bus locations.

What is a 15-Minute Neighborhood? This concept aims to create communities in which people have access to the services they need within approximately 15 minutes from home.

The goal is to create more livable and sustainable communities by reducing the need for long-distance travel and the dependence on cars.

However, we all move at different speeds and with different ease through space. **Prioritizing safe and accessible infrastructure for people of all abilities is key to design and integration of these concepts.**

Parking management includes a variety of strategies that create more efficient use of existing parking capacity, improve the quality of service for visitors, and encourage other accessible modes of travel.

"Weather conditions affect all infrastructure, roads, bridges, and make things fall apart quicker."

—Outdoor workers focus group participant

GOAL 4

Build resilience in our transportation infrastructure

G4-S1

Adopt policies and design standards that encourage green infrastructure and nature-based solutions.

For example: incorporating trees and tree-lined corridors that promote shade; street grids with wind ventilation and light-colored surfaces to combat urban heat; bioswales, rain gardens, and permeable surfaces that reduce flooding.

1. Conduct an audit of heat-vulnerable neighborhoods and identify opportunities to incorporate protective shading and green infrastructure elements.
2. Establish and work toward a community-relevant goal for native, climate-adaptive tree canopy within urban areas and along multimodal travelways.
3. Seek opportunities to repurpose and restore underutilized paved surfaces to green space.
4. Select native, diverse, local genotype, non-varietal, prairie and tree species for stormwater and other public infrastructure.
5. Continue to seek advantageous locations for, and deployment of, bus stop enclosures for shade and protection.

G4-S2

Enhance resilience throughout the project planning and development process.

1. Develop asset management plans, or their equivalent, that account for increased weather-related stress on roads, bridges, shared-use paths, and sidewalks.
   For example: weather such as drought, flooding, extreme heat, and snow.
2. Prioritize sustainability measures when budgeting and forecasting Capital Improvement Plans or similar policies.
3. Incorporate nature-based solutions into public infrastructure.
4. Examine planning processes early and often for opportunities to consult with communities and stakeholders most impacted in the development of public infrastructure.
5. Inventory flood-vulnerable roadways and plan for alternative routes and communications.

G4-S3

Implement use of Intelligent Transportation Systems (ITS) technology to monitor infrastructure and improve travel times and safety.

For example: real-time travel data, notifications of weather or roadwork, and traffic signal management to reduce congestion.

LIVING SYSTEMS

BALANCING LAND USES, ECOSYSTEMS, AND NATURAL FUNCTIONS

WHAT WE HEARD

- declining biodiversity
- valuing ecosystem services
- impacts of development decisions on wetlands, agriculture, floodplains, and prairie
- seasonal changes affecting plant, wildlife, and insect populations
- water quality and access
- carbon capture and flood management from green space and wetlands
- centering Indigenous knowledge and lived experience
- improving soil health as a multi-benefit strategy

The ecosystems, land features, and waterways of Douglas County provide essential functions and resources that inherently contribute to our climate resilience. From flood absorption and carbon sequestration, to rich soil and ample fresh water, the living systems we have thrived in should be valued, and our policies should prioritize them.

Undeniably, our built environment has left a permanent mark on natural landscapes, and climate change is causing disruptions that will compound challenges both to their integrity and our dependence on them. From altered seasons and cycles, imbalanced hydrology, and declining biodiversity, the natural world will continue to experience irreversible change and loss in the face of incremental warming.

Woodlands, wetlands, prairie, and even regenerative agriculture, provide carbon sequestration as an ecosystem service. Floodplains and wetlands

Courtesy Wendy Holman, KU Field Station (3)

provide degrees of natural protection from the rain events to which we are increasingly vulnerable. However, these natural adaptations can only exist if we value, protect, and wisely steward our natural and open spaces. Pursuing strategies, partnerships, and priorities to enhance, conserve, and restore landscapes can increase our sequestration potential, enable systems to further protect our community, and allow biodiversity to thrive.

This Plan seeks to build on urban growth guidance and sensitive land protections asserted in Plan 2040,[1] and aligns with conservation criteria and tools identified in the Douglas County Open Space Plan. It also uniquely urges our community to develop and adopt methods to account for invaluable ecosystem services as we approach decision-making and community design, prioritize more nature-based solutions in our built environment's co-existence with the land, and study and seek opportunities to protect and restore ecosystem function both for its own sake and for the adaptation services provided to our community.

CO-BENEFITS

- Sustained habitat for plants and animals
- Emissions reduction through carbon-sequestering soils and landscapes
- Supporting public health through sustained access to green space
- Expanded and enhanced opportunities in the agricultural sector
- Water security and safety for all living species

EQUITY RECOMMENDATIONS

- Seek diverse knowledge and methods of understanding natural systems when approaching land use decisions and stewardship collaborations.
- Prioritize programs, services, and access for historically marginalized land stewards and aspiring farmers.

GOAL 5

Respect and protect the diverse ecology of Douglas County and its contributions to natural resilience

G5-S1

Identify and apply methodology that accounts for ecosystem services in land use and infrastructure decisions.

G5-S2

Alleviate burdens of the built environment on sensitive ecosystems and avoid interference with their natural functions.

1. Conduct noise and light pollution studies in key areas for impacts to wildlife and cultural practices, such as stargazing.
2. Apply vegetation and integrated pest management practices and policies that enable native species to thrive and responsibly deter harmful invasive encroachment.
3. Restore and sustain ecosystem services provided by wetlands.
4. Evaluate and monitor the impact of climate change on local biodiversity.

G5-S3

Activate priority projects identified in the Douglas County Open Space Plan to collaboratively conserve diverse landscapes for future human and non-human communities.

Community Spotlight

The Douglas County Open Space Plan provides guidance for proactive land conservation within the unincorporated areas of the county and will work in concert with *Adapt Douglas County* to sustain essential functions and climate resilience provided by our living systems.

Provides nuanced criteria for conservation
the plan elevates consideration of distinct land qualities for decision-making, resource allocation, and stewardship collaboration, including those that sequester carbon, protect from flooding, support biodiversity, grow food, and connect people to natural places.

Identifies priority projects
- Restoration and enhanced awareness of county public lands.
- Support for private landowners in conservation efforts that keep land open and thriving.
- Comprehensive planning, partnerships, and resources for long-term conservation of, and co-existence with, the Wakarusa River Corridor.

GOAL 6

Protect quality, capacity, and functionality of vital water resources and landscapes

G6-S1

Strengthen local participation in watershed planning and water quality protection initiatives.

1. Review development codes for opportunities to reduce the causes of erosion and runoff around waterways.
2. Select materials used for county and municipal infrastructure maintenance, such as snow melt, that have the least impact on water quality.
3. Enhance and develop water codes and programs that conserve water as a vital resource.

G6-S2

Prioritize creative long-term conservation of floodplains through policy and strategic community partnerships.

1. Update county and municipal codes to further protect floodplain both within and beyond the urban growth area.
2. Any county or municipal infrastructure necessary for urban growth or access should consider design alignment with natural systems and functions.
3. Integrate low-impact community-building assets such as accessible green space, recreation, and agriculture into floodplain conservation.

G6-S3

Support and engage in implementation of the Kansas Water Plan 2022[21] update and continue to promote proactive statewide water policy.

"People who hunt and gather are also noticing the irregularities. My family and I forage every now and again... the elderberries are showing up way later. What about when there are no pawpaws, persimmons, white-tailed deer, no turkeys?"

—Indigenous perspectives focus group participant

[21] *Kansas Water Plan*. Kansas Water Authority. August 2022. kwo.ks.gov/water-plan/water-plan

GOAL 7

Protect and build the potential of carbon-sequestering ecosystems

G7-S1

Enable innovative land uses that balance resilience, opportunity, and valued natural resources.

1. Enhance and promote resources that assist public and private landowners in making informed decisions to preserve ecological value and functional potential of the land.
2. Maintain solar and wind regulations that protect public health and safety, environmentally sensitive lands,[22] and other natural and cultural assets.
3. Support partnerships to research and pilot varied forms and scales of agrivoltaic production.
4. Promote programs and resources that encourage carbon-sequestering land management practices.

Courtesy Courtney Eddy King, Haskell Greenhouse

[22]Douglas County Code Chapter 12, Article 3, Section 14 (12-314-2) defines Environmentally Sensitive Lands and outlines procedures for their protection in the case of proposed development. www.dgcoks.gov/administration/county-code#chpt-8. *See also Definitions and Resources.*

GOAL 8

Support a thriving, sustainable agricultural sector

G8-S1

Promote climate-smart and sustainable agricultural practices, farming entrepreneurs, and agritourism businesses.

1. Build collaboration with agencies and partners addressing challenges and supporting innovations of local producers in a changing climate.
2. Enhance and expand programs, resources, and incentives that promote voluntary transition to climate-smart and regenerative agricultural practices.
3. Develop or expand training programs, apprenticeship opportunities, and innovative land access partnerships that support aspiring farmers and farm entrepreneurs.

Climate-smart agriculture refers to a variety of principles and practices that reduce emissions, increase carbon sequestration, and deliver co-benefits such as water quality, soil health, and more. Examples of practices include: conservation crop rotation, tillage management, prescribed burning, nutrient management, planting cover crops, and agroforestry.

THRIVING COMMUNITY

NURTURING HEALTH AND RESILIENCE ACROSS THE COUNTY

WHAT WE HEARD

- aggravated asthma and seasonal allergies
- rainwater overwhelming neighborhood infrastructure
- extreme heat impacting people's ability to work and play
- psychological strain of living with climate anxiety
- access to basic needs during uncomfortable and dangerous conditions
- harm for the unhoused during extreme temperatures

While reducing greenhouse gas emissions is the pivotal strategy for adapting to climate change, threats to public health and prosperity are already upon us as a result of accelerated emissions.

Douglas County can anticipate increased occurrences of heat-related illnesses; exacerbated symptoms of asthma, allergies, and chronic respiratory illnesses; hindered ability to work and play outside; and experience with loss and/or natural disaster causing increased anxiety or post-traumatic symptoms in people of all ages. Further assessment of climate health risks particular to our community can help us collaboratively strategize to adapt to these realities and improve quality of life.

Community preparedness reduces risks of unforeseen emergencies, empowers residents to participate in informed planning, and fosters community cohesion for rapid recovery. Emergency preparedness can take direct forms such as community training, resource hubs, flood protection, and more. We should also continue to elevate the value of indirect preparedness through self-sufficiency and resource sharing, which have the co-benefits of reducing production and travel of goods. Meanwhile, preventing and responsibly diverting waste in our community not only reduces emissions, it also decreases pollution and the need for virgin resources.

Supporting research and innovation, entrepreneurial opportunities, and job training, positions Douglas County to be more self-reliant in community solutions. Moreover, individuals and families that are secure in their livelihood and daily needs will be better able to shield, prepare, and respond to mounting climate pressure.

CO-BENEFITS

- Responsive community health partnerships informed by local conditions
- Sense of community built through sharing garden space, skills, and more
- A more prepared and self-empowered community that looks out for one another
- Opportunity for emissions reduction through solid waste management strategies
- Robust and diverse business community that provides goods and services closer to home

EQUITY RECOMMENDATIONS

- Consider existing health inequities and how initiatives might aim to center communities experiencing these.
- Collaborate with organizations that serve diverse populations when sharing information and resources about psychological and other health impacts of climate change.

GOAL 9

Prepare our community to address increased and compounded health risks due to a changing climate

G9-S1

Factor climate impacts on public health into community planning.

1. Conduct and maintain an Environmental Health Risk Assessment in collaboration with Lawrence-Douglas County Public Health (LDCPH), prioritizing locally relevant climate-related public health indicators.
2. Prioritize climate change as a consideration when updating the Community Health Plan.
3. Continue to support systemic change that reduces the community's need for human services.

G9-S2

Plan for increased occurrences of extreme temperatures.

1. Support sufficient summer and winter relief centers throughout Douglas County.
2. Promote training programs and resources for outdoor workers to plan for and use best practices during high-risk weather.

GOAL 10

Assess and address the psychological impacts of climate anxiety and stress on our community

G10-S1

Work with behavioral health partners to acknowledge, understand, and respond to the prevalence of psychological impacts due to climate change.

1. Promote employer resources and encourage peer support among frontline workers.
   For example: first responders, human services professionals, and healthcare workers.

GOAL 11

Increase community preparedness for climate hazards

G11-S1

Conduct a countywide climate risk and vulnerability assessment that evaluates hazards, exposure, adaptation opportunities, and susceptible and disproportionately impacted groups.

1. Integrate climate risks and vulnerabilities into emergency management planning.
   For example: creating and updating organizational Continuity of Operations Plans (COOPs).

G11-S2

Expand access to emergency preparedness education and resources.

1. Promote mini-Community Emergency Response Team (CERT) training, and pilot other formats that make components of CERT available to more people.
2. Expand efforts to provide disaster preparation materials and education through community centers, such as libraries.
3. Continue to improve emergency communication access to all residents, including those with language or technology barriers.
4. Empower communities to implement climate action and resilience programs at the neighborhood level and minimize barriers to participation.

Community Spotlight

Climate change supercharges our weather, increasing the severity and frequency of storms and flooding. The Community Emergency Response Team (CERT) is a nationwide program offered locally by Douglas County Emergency Management.[23] Participants gain knowledge on how to be prepared for hazards in our region.

Prepared and more resilient
Communities who are educated and prepared are better able to respond and recover from disasters.

Strengthens relationships
Participants learn in a team setting and gain knowledge on how to check in and help neighbors, resulting in a stronger sense of community.

Ongoing and growing
The local CERT program has been going strong since 2003. Since its inception, over 1,000 community members have completed the training, about 10% of which joined Douglas County Emergency Management's volunteer group.

[23]Douglas County Community Emergency Response Team. www.dgcoks.gov/emergency-management/community-emergency-response-team

"More cover crops help with soil health and flooding, but that means finances."

—Agricultural producers focus group participant

G11-S3

Ensure buildings are protected from increased precipitation.

1. Review and update county and municipal stormwater management guidelines to prepare for increasing frequency and intensity of precipitation.
2. Promote funding mechanisms, programs, and tools for flood protection, mold prevention, and remediation in homes.
3. Examine county and municipal building codes for opportunities to advance healthy home standards related to moisture control and mold prevention.
4. Assess the prevalence of and projections for repetitive loss properties to inform future safety measures for residents and property.

GOAL 12

Increase community resilience through skill-building, self-sufficiency, and resource sharing

G12-S1

Strengthen community food production and resource recovery opportunities.

1. Support food recovery partnerships that redirect organic resources to people and animals.
2. Sustain and enhance existing community gardening opportunities through programs such as Common Ground and Eudora Giving Garden.
3. Promote and expand educational opportunities and technical resources for residents to gain skills in food gardening, fruit production, raising animals, food preservation, and cooking.

GOAL 13

Systemically prevent, reduce, and responsibly divert solid waste

G13-S1

Comprehensively update the Douglas County Solid Waste Management Plan with attention to emissions-reducing prevention and diversion opportunities.

The plan will prioritize food waste source reduction and diversion, such as public or private composting services; innovative industrial energy recovery; accessible recycling options for residential and commercial customers; demand-appropriate, cost-effective, and environmentally sound solutions for electronics recycling, tire disposal, and refrigerant and household hazardous waste management; community education and outreach; and understanding our current waste trends through a characterization study.

GOAL 14

Foster and develop a resilient business community and equitable workforce

G14-S1

Expand existing economic development resources and efforts that help nurture, fund, and attract small businesses.

1. Encourage small business establishments in and around township centers that foster community and provide goods and services close to home.

G14-S2

Strengthen a diverse and adaptable workforce prepared to deploy community solutions.
For example: composting services, solar installation, and green infrastructure construction.

1. Develop partnerships with educational and research institutions, training centers, and other regional stakeholders to support career and workforce development.

G14-S3

Convene partners to evaluate and plan for projected local economic impacts of climate change.

Courtesy of Kenna McNally, Dole Institute of Politics

IMPLEMENTING ADAPT DOUGLAS COUNTY

Carrying out the goals of *Adapt Douglas County* will be an ongoing and evolving process, cutting across organizational boundaries. The unique communities of Douglas County may find opportunities to launch various activities that align best with their immediate priorities. Other efforts may be broad and collaborative, calling for participation across the county.

To monitor our collective impact and remain accountable to the community in progressing toward these goals, **Douglas County Sustainability commits to the following:**

- Organize and regularly convene an implementation team made up of governmental staff and community partners.
- Implement strategies as they pertain to policies and services of unincorporated Douglas County.
- Facilitate coordination of strategies when advantageous to take a countywide approach.
- Update a countywide greenhouse gas inventory every one to three years.
- Track and report on collective progress toward Plan goals, including efforts achieved by partners, at regular intervals.
- Serve as a resource for governmental staff and community organizations advancing action and adaptation strategies.
- Convene a formal Plan review at five-year intervals to stay on track for carbon neutrality in 2050.
- Monitor state and federal funding opportunities and convene partners on proposals to pursue the implementation of action and adaptation strategies in this Plan.

Working Together

Collaboration and leadership from local government and community partners across a variety of functions and focus areas will be essential to advancing the goals of this Plan and ensuring that efforts remain relevant and reflective of the needs of the community. As opportunities to advance strategies are identified, Douglas County Sustainability will work with additional experts in the field, organizations active in the focus area, and community leaders, to learn, convene, resource, and launch progress together. Likewise, we invite potential partners to reach out to us for support when their work contributes and achieves progress toward the goals of this Plan.

Douglas County Sustainability aims to serve as a resource and model for implementation by local government and community partners. Below are layered approaches to initiating implementation which the County will apply both in countywide initiatives and those specifically serving the unincorporated areas. We encourage our partners to explore these when considering what the goals of this Plan look like relative to their community.

Review Policies
Proactively review existing policies and regulations to strengthen opportunities for, or remove barriers to, climate action and adaptation goals and strategies. Examples may include policies and procedures for buildings and development. Additionally, as policies and strategic plans come up for review, consider alignment with and elevation of the goals in this Plan in those processes.

Align Priorities
There will be ways to progress climate action and adaptation in efforts the community has already identified as an opportunity or need. As community priorities emerge, consider the overlap and alignment that inherently exists with the goals of this Plan. The strategies outlined within may offer inspiration for ways to enhance an effort toward multiple community goals and co-benefits.

EXAMPLE COMMUNITY PRIORITY:

Increased and enhanced community access to green spaces

OPPORTUNITIES TO ACHIEVE CO-BENEFITS WITH THIS PLAN:

G5-S2.2: Apply vegetation practices that enable native species to thrive and deter invasive encroachment.

G6-S2.3: Integrate accessible green space, recreation into floodplain conservation.

G7-S1.4: Foster carbon-sequestering land management practices.

Apply Tools in this Plan
Having identified a prime opportunity for action or adaptation, a local government or community partner may look to the guidance provided by the Equity Framework found in *Equity in Climate Resilience* and adapt it as needed for their initiative. The *Definitions and Resources* section also offers a starting point for further investigation of tools and creative approaches.

Call on Us
Local governments and community partners who meet one or more of the following can reach out to Douglas County Sustainability to collaborate and get started.

- identified an aligning opportunity, but are not sure where to start
- have a need for outside funding for a priority action
- found a funding opportunity that would be strongest applied at the county level
- have a proposal that could benefit the whole county
- have an interest in exploring all of the above and more

Activity / Strategy	Activity / Strategy	Funding	Timeframe
Apply for regional Climate Pollution Reduction Grant (CPRG) funding / strategies of Goals 1, 2 & 7	Douglas County / All cities	EPA's Climate Pollution Reduction Grants (CPRG) program	EPA federal awards announced summer/fall 2024
Why This Action Now? EPA's CPRG program makes $4.6 billion in competitive funding available for reducing greenhouse gas emissions and other harmful air pollution. The Mid-America Regional Council (MARC) has applied to the federal call for proposals to implement priorities of the KC Regional Climate Action Plan. As a partner in this 10-county plan, Douglas County will be eligible to apply for a subgrant to extend implementation of aligning actions locally.			
Conduct a Visioning and Feasibility Study of the Wakarusa River Corridor / strategies of Goals 5 & 6	Douglas County / Multiple municipal, institutional, and organizational partners	American Rescue Plan Act (ARPA) Recovery Fund	2024-2025
Why This Action Now? Conservation planning for the Wakarusa River Corridor is identified as a priority project in the Douglas County Open Space Plan. Collaboration on further study, planning, and resource allocation for the future of this vital area will not only help prepare our community to proactively and collectively answer multiple pressures and challenges, but also align efforts with several goals of this Plan, particularly those related to protection and restoration of habitat, wetland, and floodplain.			
Conduct EV readiness planning for countywide EV charging infrastructure / G1-S3.1	Lawrence-Douglas County Metropolitan Planning Organization / Douglas County, All cities	Consolidated Planning Grant through Kansas Department of Transportation (KDOT), City of Lawrence match	2024-2025
Why This Action Now? Electric Vehicles (EVs) make up a small but growing portion of vehicles in use. A readiness plan will evaluate the need for and guide installation of public charging stations throughout the county. It will enable partners to plan for and respond to funding and infrastructure opportunities with equity and future growth in mind.			
Comprehensively update the County Solid Waste Management Plan / G13-S2	Douglas County and City of Lawrence / Multiple municipal and institutional partners, solid waste service providers	Douglas County	2024-2025
Why This Action Now? Kansas Department of Health and Environment (KDHE) requires that each county in the state adopts a plan to manage their solid waste. Since creating our last Solid Waste Management Plan in 1996, Douglas County has maintained annual reviews and five-year updates; however, we have a significant opportunity to comprehensively examine our waste reduction and diversion opportunities by conducting a new and modern management plan. Meanwhile, the City of Lawrence is embarking on its own focused waste study. The opportunity to build on their study, in addition to emphasizing emission reduction strategies in waste management from a countywide lens, make this an advantageous time to launch a modern solid waste planning process.			

Activity / Strategy	Activity / Strategy	Funding	Timeframe
Conduct a countywide climate risk and vulnerability assessment / G11-S1	Douglas County Emergency Management / Multiple municipal and institutional partners	Douglas County / pursue assessment funding opportunities	2025-2026
Why This Action Now? Initiating a countywide climate risk and vulnerability assessment will be essential to aligning our emergency management strategies with current and specific local needs. Building on the foundational insights from the 2022 10-county Climate Risk and Vulnerability Assessment, this localized study will allow us to accurately identify and address our unique community vulnerabilities and hazards, and provide precise data to tailor our response strategies and resilience planning. Moreover, syncing this initiative with the 2024 Kansas Region K Hazard Mitigation Plan update will enable us to leverage the latest regional conditions and data, enhancing the effectiveness of our planning processes. This proactive approach not only prepares us to better manage potential emergencies, but also strategically positions Douglas County to compete for state and federal funding. By demonstrating a detailed understanding of our localized risks, we improve our chances of securing grants and funding opportunities that support our community's long-term safety and sustainability.			
Conduct an Environmental Health Risk Assessment that includes climate-related public health indicators / G9-S1	Lawrence-Douglas County Public Health / Douglas County, All cities	Pursue assessment funding opportunities	2025
Why This Action Now? Increased exposure to climate impacts will affect our health outcomes.[24] The relationship between the two is complex and dependent on multiple societal and environmental factors. Partners in Lawrence-Douglas County Public Health have a vested interest in identifying our local climate-related health indicators. With this study in hand, they will be best able to connect health pathways and define determinants of vulnerability. Conducting this assessment is a next step as an equitable and adaptive community in prioritizing populations of concern.			

Taking Action

Priority and timing of actions will be driven by access to funding, capacity, and opportunities to integrate with existing commitments. While the following have been identified as short-term action items, this table does not limit or preclude the initiation of other activities as avenues for leadership, partnership, and funding emerge. These are offered as illustrations of how climate actions may rise to the top or weave into existing County functions.

Funding

Resourcing the strategies of *Adapt Douglas County* will require a multi-faceted approach. From external funding sources to embedding efforts into existing functions of the organization, funding may differ from initiative to initiative.

External Sources

In 2022, the Inflation Reduction Act (IRA)[25] was signed into law, marking one of the largest investments by Congress in the American economy, energy security, and climate response. Beyond IRA funding, multiple agencies at the state and federal level offer cyclical funding opportunities that lend to community climate solutions, offering even more channels in which to study and match priorities. Douglas County Sustainability will continue to monitor and track state and federal funding and build relationships to develop strong proposals for eligible opportunities.

[24]Understanding the Connections Between Climate Change and Human Health. www.epa.gov/climate-indicators/understanding-connections-between-climate-change-and-human-health

[25]Inflation Reduction Act. 2022. www.epa.gov/inflation-reduction-act

Internal Capacity
The annual budget process can be a helpful stage for building internal capacity to incrementally advance Plan implementation. Examples may include requesting supplemental funding for a key step in advancing a strategy, such as conducting an identified study to launch further work (See G5-S2.5: Seek research partnerships to understand the localized impact of climate change on biodiversity), or factoring in small but meaningful enhancements to a planned project, such as incorporating plantings that multiply the co-benefits of stormwater management in flood-prone areas (See G4-S1.4: Select native, diverse, local genotype species for public infrastructure). Key to these budget proposals will be connecting to the goals of this Plan while maximizing community benefits, staff time, and capital.

Embed in Process
Foundational work for this Plan can be accomplished with little to no additional cost when integrated with existing staff capacity and work planning. Proactively planning for climate risk in local government functions and services, and procedures and policies can support a holistic approach to becoming a more climate-aware organization. Internal, cross-departmental knowledge sharing and goal setting with climate priorities in mind can foster and reinforce an interdisciplinary, shared mission toward climate action and adaptation.

Reporting Action

Targets and Indicators
Several of the mitigation goals within this Plan have accompanying greenhouse gas reduction projections. Incremental progress toward these reductions will be monitored and published through an updated greenhouse gas inventory every one to three years.

Several strategies from this Plan provide opportunities to develop key indicators for monitoring not only the climate action and adaptation progress of our community but also further understanding the impacts of climate change we are experiencing. As these are identified and studied, we will share new findings with the public to collectively inform and adapt our ongoing community climate actions.

As staff and partners approach a given action area, it may be determined that preliminary studies are needed for a baseline understanding of circumstances to best address strategies and impacts.

Accountability
Douglas County Sustainability is committed to keeping the community in tune with our progress and next steps and involving their input whenever possible. Forms of community updates and engagement may include:

- Periodic public discussions and presentations
- Interactive events such as project or priority workshops
- Milestone updates in the County newsletter and other community media
- Seeking the expertise of established advisory boards and community groups
- Formation of ad hoc steering committees or working groups to guide priority efforts when needed

INDIVIDUAL ACTION

Everyone has a stake in reducing our community's carbon footprint and building collective resilience. This section serves as a starting place to connect with the goals of this Plan on an individual level. It is certainly not comprehensive of all unique opportunities for individual action, and we encourage the community to stay curious and creative in seeking climate action and adaptation strategies that work for them personally.

Energy

- Buildings are the highest contributor to our greenhouse gas emissions. Stay aware of your home's energy use and search for ways to reduce your consumption and your bill amount. Most electric and gas utility companies will allow you to subscribe to notifications about your home or building's energy usage, alerting you when it is higher than the previous week. Many of them also offer suggestions on how to reduce energy consumption. Check out your energy provider's website for what they have to offer.
- Programs that conserve energy while saving community members money on energy bills are becoming more accessible with recent changes at the federal and state level. Stay tuned for a countywide resource hub with information about programs for rooftop solar, energy efficiency, and weatherization (see strategy G1-S1.1).

Mobility

- Using non-motorized modes of transportation, such as walking and biking—including using them to get to the bus stop—can improve physical health. Using public transit reduces your personal carbon footprint. Try using a car alternative for one errand a week and build up from there.
- Carpooling can reduce your carbon footprint and build community. If you are attending an out-of-town event, try contacting the event organizers in advance about reaching other attendees to share a ride.
- There are zero tailpipe emissions from electric vehicles and e-bikes. Stay tuned for a countywide resource hub with information about electric transportation options (see strategy G1-S3.2).
- Safety concerns for cyclists and pedestrians can be scary and discouraging to those who wish to bike or walk. Even if you do not ride a bike, bicycle friendly driving awareness can help keep cyclists and motorists safe. Check out the online learning resources from the League of American Bicyclists.[26]

[26]Bicycle Friendly Driver Training. League of American Bicyclists. bikeleague.org/ridesmart/bicycle-friendly-driver-training/

Living Systems

- Conventional, manicured lawns require resources and upkeep such as water, fertilizer, and mowing. Consider planting a native garden that reduces the need for resource-intensive lawn care and instead provides a habitat for wildlife and an accessible natural space for you.
- Ecosystems, land features, and waterways provide essential resources that inherently contribute to our climate resilience. Learn about the ecology and waterways downstream of your own backyard and how you can help nurture them.

Thriving Community

- With increased precipitation, homes may be more vulnerable to water damage. During a heavy rain event, if you observe that water is not flowing away from the property, consult with a contractor to improve grading that diverts water, with care not to cause new issues for adjacent properties.
- Communities are stronger at responding to and recovering from disasters when they are knowledgeable and prepared. Learn about our local risks, how to prepare yourself and your family, and look out for your neighbors by attending a Community Emergency Response Team[23] training.
- Build and share climate and community awareness. We all have unique lived and learned skills that can aid in our community cohesion and adaptability. Neighborhood associations can be a great avenue to connect with others. Try contacting yours or form a neighborhood group. Check with your library to see if they have a reading list for climate and environment, or suggest a title to your book club.
- A representative government functions at its best with high levels of citizen engagement. There are many ways to learn about local government operations, services, and decision-making. Consider participating in a citizen learning opportunity, such as the Sheriff's Office Citizen's Academy.[27] Attend commission and council meetings where policy and land use decisions are made. Participate in community surveys, open houses, and public meetings to share your ideas and ask questions; these opportunities help inform policy decisions down the line. Visit with your elected officials to share your perspective and experience. The County's voting and elections resources[28] will list your current representatives.

Here are two titles we shared during the development of this Plan to elevate community climate awareness. Add these to your reading list!

All We Can Save: Truth, Courage, and Solutions for the Climate Crisis (Johnson and Wilkinson, 2021)

Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants (Kimmerer, 2013)

[27]Douglas County Sheriff's Office Citizen's Academy. dgso.org/index.php/dgso-citizens-academy/

[28]Douglas County Elected Officials and Reports. www.dgcoks.gov/county-clerk/voting-and-elections/elected-officials

PLAN ALIGNMENT

Many of the goals and strategies in this Plan connect to other existing community plans and public priorities, and in doing so create cohesion and momentum for climate action and adaptation progress across organizations, efforts, and resource opportunities. Alignment goes in multiple directions, both in research and creation of this Plan, and in informing other forthcoming local initiatives and extending our county goals regionally.

- Baldwin City Comprehensive Plan (2008)
- Baldwin City Master Plan (2017)
- Baldwin Safe Routes to School (2020)
- City of Lawrence Consolidated Plan (2018)
- Douglas County Community Health Plan (2019-2023) (forthcoming update, 2024)
- Douglas County Coordinated Public Transit—Human Services Transportation Plan (2016)
- Douglas County Countywide Bike Plan (2021)
- Douglas County Food System Plan (2017)
- Douglas County Health Assessment (2024)
- Douglas County Health Equity Report (2021)
- Douglas County Open Space Plan (2024)
- Plan 2040: A Comprehensive Plan for Unincorporated Douglas County & The City of Lawrence (2019)
- Transportation 2050: Lawrence-Douglas County Metropolitan Transportation Plan (2023)
- Downtown Lawrence Plan (2021)
- Eudora Comprehensive Plan (2020)
- Eudora Safe Routes to School Plan (2020)
- Lawrence Climate Protection Plan (2009)
- Lawrence-Douglas County Intelligent Transportation Systems (ITS) Plan (2021)
- Lawrence Land Development Code (forthcoming, 2024)
- Lawrence Complete Streets Policy (2018)
- Lawrence Parks and Recreation Master Plan (2017, Updated 2019)
- Lawrence Safe Routes to School Plan (2020)
- Lawrence Strategic Plan (2021)
- Kansas City Regional Climate Action Plan (2021)
- Kansas City Regional Priority Climate Action Plan (Mid-America Regional Council, 2024)
- Kansas Homeland Security Region K Hazard Mitigation Plan (2019)
- Kansas Statewide Housing Needs Assessment (2021)
- Kansas Emissions Reduction and Mitigation Plan (E-RAMP) Priority Action Plan (Kansas Department of Health and Environment, 2024)
- Regional Pedestrian Plan (forthcoming, 2024)
- 2022-2026 Capital Improvement Plan Guidelines and Procedures (2022)

DEFINITIONS AND RESOURCES

Energy

Building energy codes establish minimum energy efficiency requirements for new construction and renovations. Increased levels of insulation, high-efficiency windows, and other measures deliver energy and dollar savings year after year for the life of the building. Department of Energy Building Codes (www.energy.gov/eere/buildings/building-energy-codes-program)

Community-owned solar, also known as shared solar, is a distributed solar energy deployment model that allows customers to buy or lease part of a larger, off-site solar photovoltaic (PV) system. It can benefit renters, participating homeowners, and businesses. They can be owned by utilities or third-party developers and can be located on public buildings, private land, brownfields, and other suitable areas. The National Renewable Energy Laboratory Community Solar (www.nrel.gov/state-local-tribal/community-solar.html)

The Green Power Partnership (GPP) was established by the Environmental Protection Agency (EPA) to encourage organizations to use green power voluntarily and Douglas County has been a participant since 2019 (www.epa.gov/greenpower/meet-our-partners?partner=douglascountyks)

Integrated Resource Planning (IRP) is a utility's assessment of their energy demand, supply, and the risks that could prevent them from meeting their customers' energy needs at reasonable costs. The Kansas Corporation Commission (KCC) required an IRP in the utility merger that created Evergy in 2018, and the utility released a triennial filing in 2021. Sustainability—Evergy (www.evergy.com/smart-energy/environmental-impact-link/sustainability-hub)

The Utilities Division of the Kansas Corporation Commission establishes and regulates rates for public utilities, including electricity, natural gas, liquid pipelines, and telecommunications. Kansas Corporation Commission (kcc.ks.gov)

LEED for Cities and Communities, a certification program launched by the US Green Building Council and Bank of America, helps local leaders create and operationalize plans for natural systems, energy, water, waste, and transportation. The City of Lawrence was selected to join the 2023 cohort of LEED for Cities Local Government Leadership Program (lawrenceks.org/2023/04/13/city-of-lawrence-selected-for-leed-for-cities-local-government-leadership-program/)

A Power Purchase Agreement (PPA) is an arrangement in which a third-party developer installs, owns, and operates an energy system on a customer's property. The customer then purchases the system's electric output for a predetermined period. A PPA allows the customer to receive stable and often low-cost electricity with no upfront expense, while also enabling the owner of the system to take advantage of tax credits and receive income from the sale of electricity. Though most commonly used for renewable energy systems, PPAs can also be applied to other energy technologies such as combined heat and power (CHP). Power Purchase Agreements—DOE (betterbuildingssolutioncenter.energy.gov/financing-navigator/option/power-purchase-agreement)

SolSmart is a national program that helps cities, towns, counties, and regional organizations become solar energy leaders. A SolSmart designation provides official recognition that the local government has made a commitment to solar energy and removed obstacles to growth. For companies looking to move into the area, it's a sign that the community is "open for solar business." SolSmart (solsmart.org)

Weatherization and other energy efficiency upgrades can have negative impacts on occupant health and safety if not accompanied by appropriate indoor air quality (IAQ) protections. With an increase in weatherization and energy efficiency improvement activities, consideration should be given to include incentives for ensuring that energy upgrades are accompanied by appropriate IAQ actions. Energy, Weatherization and Indoor Air Quality | US EPA (www.epa.gov/indoor-air-quality-iaq)

Mobility

An Asset Management Program establishes effective and innovative infrastructure investment and treatment strategies for the entire asset lifecycle—or simply the right treatment at the right time for the right reason. The objective of asset management is determining the appropriate preventative maintenance, rehabilitation, reconstruction, and stop-gap measures to keep municipal assets in the desired serviceable condition utilizing the most effective resources. Read about what our neighbors in Kansas City are doing to prepare for future freeze-thaw cycles. Kansas City drivers navigate a metro full of potholes after winter weather swings tear up roads | KCUR—Kansas City news and NPR (www.kcur.org/news/2024-01-30/kansas-city-drivers-navigate-a-metro-full-of-potholes-after-winter-weather-swings-tear-up-roads)

EV readiness is a community-wide effort, requiring planning, policies, and support services to prepare for the growing number of electric vehicles and charging infrastructure. Alternative Fuels Data Center: Electric Vehicle Readiness—DOE (afdc.energy.gov/fuels/electricity-ev-readiness)

Intelligent Transportation System (ITS) technology helps monitor roadways and transportation equipment at intersections for disruptions and assists in diverting traffic to other roadways due to congestion, roadwork, weather or other special events. It helps mitigate impacts of flooding and other extreme weather on our transportation systems and reduces emissions from backed-up vehicles. US Department of Transportation Intelligent Transportation System (its.dot.gov)

Microtransit is a form of ride service in which individuals can request trips to and from locations using a smartphone app or dialing a phone number. Local examples of microtransit include Lawrence Transit's Night Line and Sunday service, and KU's SafeRide program for students.

Nature-based solutions are sustainable planning, design, environmental management and engineering practices that weave natural features or processes into the built environment to promote adaptation and resilience. These solutions use natural features and processes to combat climate change, reduce flood risk, improve water quality, protect coastal property, restore and protect wetlands, stabilize shorelines, reduce urban heat, and add recreational space. Nature-Based Solutions—FEMA, Climate Action Plan for Resilience—USDOT (www.fema.gov/emergency-managers/risk-management/climate-resilience/nature-based-solutions)

Living Systems

Agritourism is a form of commercial enterprise that links agricultural production and/or processing with tourism to attract visitors to a farm, ranch, or other agricultural business for the purposes of entertaining or educating while generating income for the farm, ranch, or business owner. AgriTourism—USDA (nal.usda.gov/human-nutrition-and-food-safety/local-foods-and-communities/agritourism)

Agrivoltaic production is the use of land for both agriculture and solar photovoltaic energy generation. This system looks at agriculture and solar energy production as compliments to the other instead of as competitors. By allowing working lands to stay working, agrivoltaic systems could help farms diversify income. Other benefits include energy resilience and a reduced carbon footprint. Agrivoltaics: Coming Soon to a Farm Near You?—USDA Climate Hubs (climatehubs.usda.gov/hubs/northeast/topic/agrivoltaics-coming-soon-farm-near-you)

Carbon sequestration occurs when green spaces absorb C02, thereby reducing overall emissions. Tools that were used in inventorying Douglas County's current tree coverage include i-Tree Tools—Calculate the benefits of trees! (itreetools.org) and LEARN—ICLEI USA (icleiusa.org/LEARN). In the future, we plan to expand sequestration calculations to include other green spaces as well.

Climate-smart agriculture consists of programs and services for farming and forestry operations that mitigate the impacts of a changing climate while building resilience within the operation. Programs include building soil health, sequestering carbon, reducing greenhouse gas emissions, and enhancing productivity and commodity marketability. NRCS Climate-Smart Mitigation Activities | Natural Resources Conservation Service (nrcs.usda.gov/conservation-basics/natural-resource-concerns/climate/climate-smart-mitigation-activities)

Douglas County Code Section 12-314-2 identifies the following as Environmentally Sensitive Lands: regulatory floodways and floodway fringe, jurisdictional wetlands, stream corridors, native and restored prairie, prime farmland, stands of mature trees, and archaeological and historic sites. See pg. 211 of the full code text for more information. (https://www.dgcoks.gov/media/8615)

Thriving Community

Climate anxiety is a normal psychological response to the climate crisis and should not be seen as a disorder. It is best responded to with community-health-level interventions that serve to build connections. For more information on the impacts of climate change on mental health, see the American Psychological Association's report on Mental Health and Our Changing Climate (Mental Health and Our Changing Climate: Impacts, Implications, and Guidance. 2017. American Psychological Association, and ecoAmerica) (www.apa.org/news/press/releases/2017/03/mental-health-climate.pdf)

The Community Emergency Response Team (CERT) program is a locally implemented initiative that trains volunteers with basic emergency preparedness and response skills. This includes light search and rescue, fire safety, medical operations, and incident command (www.dgcoks.gov/emergency-management/community-emergency-response-team)

A Continuity of Operations Plan (COOP) addresses emergencies from an all-hazards approach that enables individual departments and/or agencies to continue to perform their Essential Support Functions (ESFs) during an emergency or long-term disruption, which might last from two days to several weeks (www.dgcoks.gov/emergency-management/severe-weather-planning-businesses#coop-plan)

The National Healthy Housing Standard, developed in partnership by the National Center for Healthy Housing (NCHH) and the American Public Health Association (APHA), informs and delivers housing policy that reflects the latest understanding of the connections between housing conditions and health. (nchh.org/tools-and-data/housing-code-tools/national-healthy-housing-standard)

Universal Design is the design of buildings, products, or environments to make them accessible to people, regardless of age, disability, or other factors.

CITATIONS

The following are sources cited throughout the body of the Plan. They correspond to the footnote organization for ease in locating sources cited multiple times. Note that not all footnotes contain a citation.

1. *Plan 2040: A Comprehensive Plan for Unincorporated Douglas County and the City of Lawrence*. Amended, October 2023. lawrenceks.org/pds/comp-plan/

2. *Fifth National Climate Assessment.* Crimmins, A.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, B.C. Stewart. And T.K. Maycock, Eds. U.S. Global Change Research Program, Washington, DC, USA. 2023. doi.org/10.7930/NCA5.2023

3. "The Greenhouse Effect," derived from Council on Foreign Relations, July 25, 2023. education.cfr.org/learn/reading/greenhouse-effect

4. *No Time to Waste. The Intergovernmental Panel on Climate Change's Special Report on Global Warming of 1.5°C and Implications for Washington State.* Snover, A.K., C.L. Raymond, H.A. Roop, H. Morgan, 2019. Briefing paper prepared by the Climate Impacts Group, University of Washington, Seattle. Updated February 2019. cig.uw.edu/projects/no-time-to-waste/

5. Parts per million (ppm) indicates the concentration of greenhouse gases in the atmosphere using the ratio of one molecule of a given greenhouse gas to one million molecules of air.

6. IPCC, 2023: *Climate Change 2023: Synthesis Report.* Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 35-115. www.ipcc.ch/report/ar6/syr/

7. *Climate Risk & Vulnerability Assessment.* Mid-America Regional Council. May 2022. www.marc.org/sites/default/files/2022-05/Climate-Risk-and-Vulnerability-Assessment.pdf

8. *Kansas Homeland Security Region K Hazard Mitigation Plan 2019*. Blue Umbrella Solutions, LLC. July 2019. www.dgcoks.gov/emergency-management/mitigation-plan

9. *Equity in Climate Planning*. ICLEI-Local Governments for Sustainability USA. December 2023. icleiusa.org/wp-content/uploads/2024/01/Equity-in-Climate-Planning_-Trends-and-Best-Practices-for-U.S.-Local-Governments.pdf

10. *Centering Equity in Climate Resilience Planning and Action: A Practitioner's Guide*. Fang, Clara, Jessica Hench, Christa Daniels, and Abigail Abrash Walton. Climate-Smart Communities Series, Vol. Antioch University New England 2022. library.oarcloud.noaa.gov/noaa_documents.lib/OAR/CPO/Climate_Smart_Communities/Vol_03_CSC_CenteringEquity.pdf

11. *Douglas County, Kansas: 2021 Inventory of Community-Wide Greenhouse Gas Emissions*. ICLEI-Local Governments for Sustainability USA. October 2, 2023. www.dgcoks.gov/sites/default/files/2024-01/douglas_county_ks_community-wide_greenhouse_gas_emissions.pdf

12. Metric tons of carbon dioxide equivalent or MTCO2e is a unit of measurement for greenhouse gases based on their global warming potential. The global warming potential or GWP is the amount of heat the gas traps in the atmosphere compared to carbon dioxide (CO_2).

13. "Sustainability," Evergy, 2024. www.evergy.com/smart-energy/environmental-impact-link/sustainability-hub.

14. ICLEI calculated a weighted average change with/for other utilities, resulting in an expected 35% reduction in electric emissions intensity (CO_2e/kWh) in 2030 compared to 2021.

15. The Paris Agreement. United Nations Framework Convention on Climate Change. December 2015. unfccc.int/process-and-meetings/the-paris-agreement

16. *The ICLEI Climate Neutrality Framework*. ICLEI-Local Governments for Sustainability. October 5, 2020. iclei.org/climate_neutrality

17. "Green Power Partnership," United States Environmental Protection Agency. www.epa.gov/greenpower/meet-our-partners

18. The Utilities Division of the Kansas Corporation Commission establishes and regulates rates for public utilities, including electricity, natural gas, liquid pipelines, and telecommunications. kcc.ks.gov

19. An Integrated Resource Plan (IRP) is a utility's assessment of their energy demand, supply, and the risks that could prevent them from meeting their customers' energy needs at reasonable costs. In 2021, Evergy released a triennial filing outlining generation sources and capacity through 2040. www.evergy.com/-/media/documents/smart-energy/irp-executive-summary.pdf

20. *Transportation 2050: Lawrence-Douglas County Metropolitan Transportation Plan*. Amended, October 2023. lawrenceks.org/mpo/t2050/

21. *Kansas Water Plan*. Kansas Water Authority. August 2022. kwo.ks.gov/water-plan/water-plan

22. Section 12-314-2 Protection of Environmentally Sensitive Lands. Official County Code of Douglas County, Kansas, Chapter 12: Zoning and Land Use Regulations, pg. 211. www.dgcoks.gov/media/8615

23. Douglas County Community Emergency Response Team. www.dgcoks.gov/emergency-management/community-emergency-response-team

24. Understanding the Connections Between Climate Change and Human Health. www.epa.gov/climate-indicators/understanding-connections-between-climate-change-and-human-health

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27. Douglas County Sheriff's Office Citizen's Academy. dgso.org/index.php/dgso-citizens-academy/

28. Douglas County Elected Officials and Reports. www.dgcoks.gov/county-clerk/voting-and-elections/elected-officials

APPENDICES

Appendix A: GHG Inventory
www.dgcoks.gov/sites/default/files/2024-01/douglas_county_ks_community-wide_greenhouse_gas_emissions.pdf

Appendix B: Community Narrative Summary
www.dgcoks.gov/sites/default/files/2023-03/Community%20Narrative%20Summary%20Fall%202021.pdf

Appendix C: Community Survey Summary
www.dgcoks.gov/sites/default/files/2023-03/Community%20Survey%20Results%20Fall%202021.pdf

Appendix D: Focus Group Summary
www.dgcoks.gov/sites/default/files/2023-08/douglas-county-climate-action-adaptation-plan-report-focus-groups.pdf

Appendix E: Climate Action and Adaption Plan: Resolution No. 24-13.
www.dgcoks.gov/sites/default/files/2024-06/Res%2024-13%20Climate%20Action%20Plan%20052224.pdf

A CLIMATE ACTION AND ADAPTATION PLAN

dgcoks.gov/sustainability