

Adapt Douglas County: A Climate Action and Adaptation Plan

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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 2040², 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.¹

¹ 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. <https://doi.org/10.7930/NCA5.2023>

² Plan 2040: A Comprehensive Plan for Unincorporated Douglas County and the City of Lawrence. Amended. October 2023. <https://lawrenceks.org/pds/comp-plan/>

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.

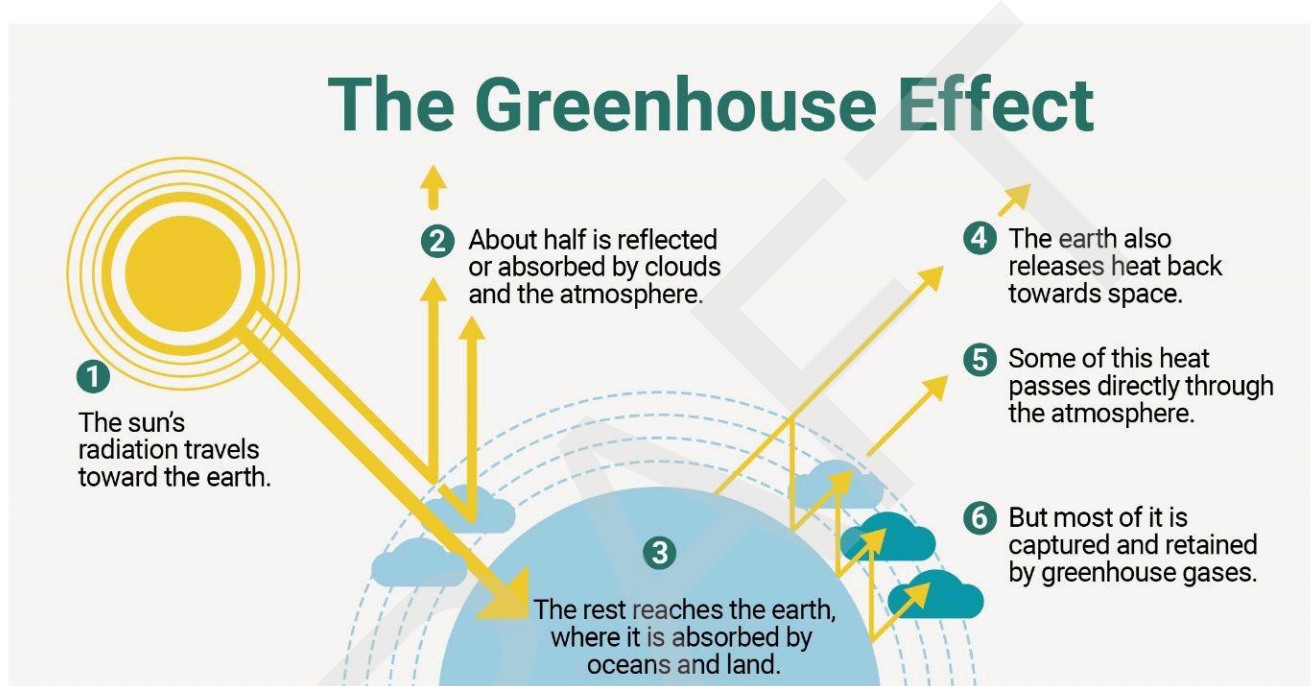


Figure #1. The Greenhouse Effect³

The greenhouse gases that contribute most to the greenhouse effect are carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). While they do 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.

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.

³ "The Greenhouse Effect," derived from Council on Foreign Relations, July 25, 2023. [The Greenhouse Effect | World101 \(cfr.org\)](#)

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 increase. Climate scientists use this data to create models that project global temperature changes and potential future climate impacts.

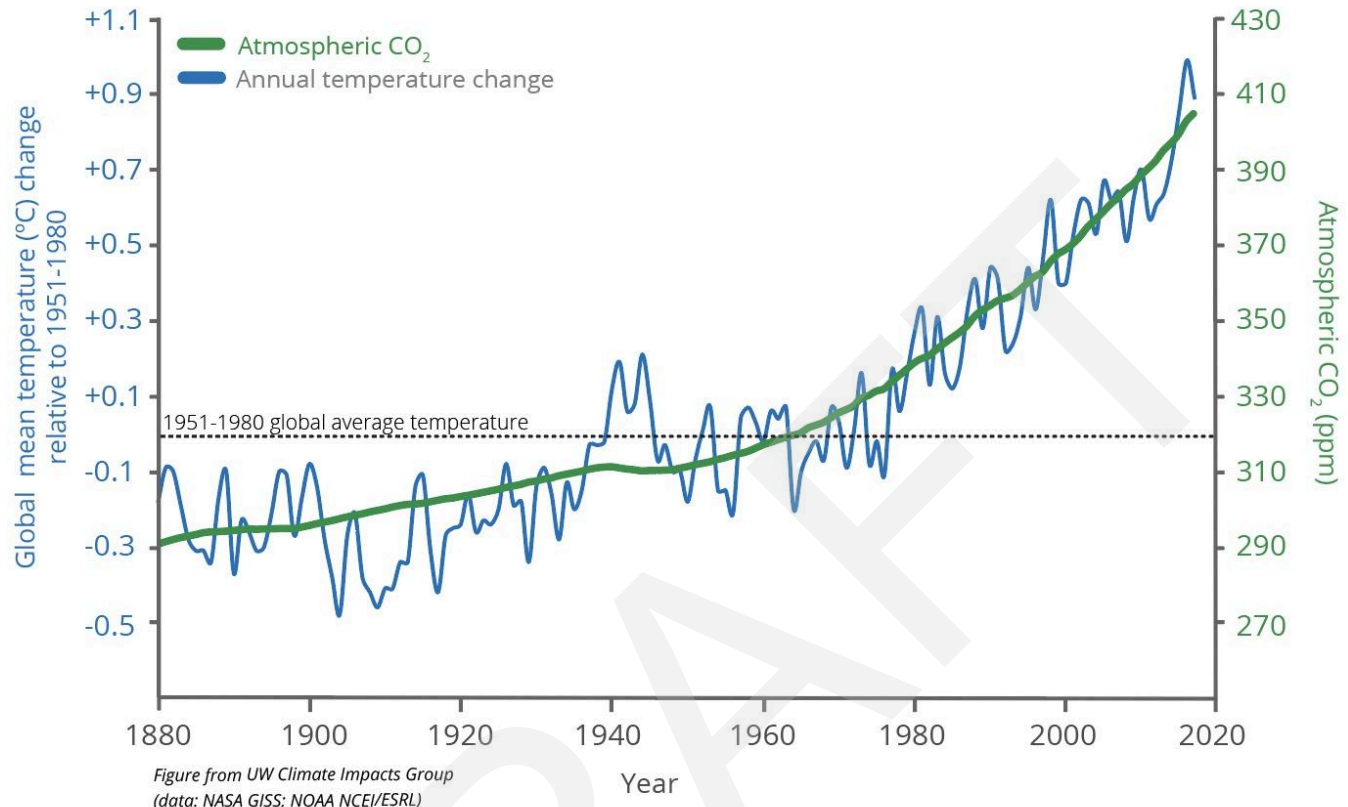


Figure #2. Atmospheric carbon dioxide and global mean temperature change 1880-2020⁴. Atmospheric CO₂ is measured in parts per million⁵.

The International 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.

Scientific observation and modeling provide important data about the impact of even a small but

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 02/2019. [No Time to Waste: The IPCC Special Report on Global Warming of 1.5°C and Implications for Washington State \(uw.edu\)](https://uw.edu)

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, doi: [10.59327/IPCC/AR6-9789291691647](https://doi.org/10.59327/IPCC/AR6-9789291691647)

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.

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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 [Kansas Homeland Security Region K Hazard Mitigation Plan](#)⁸, among other national sources, to identify our regional climate risks.

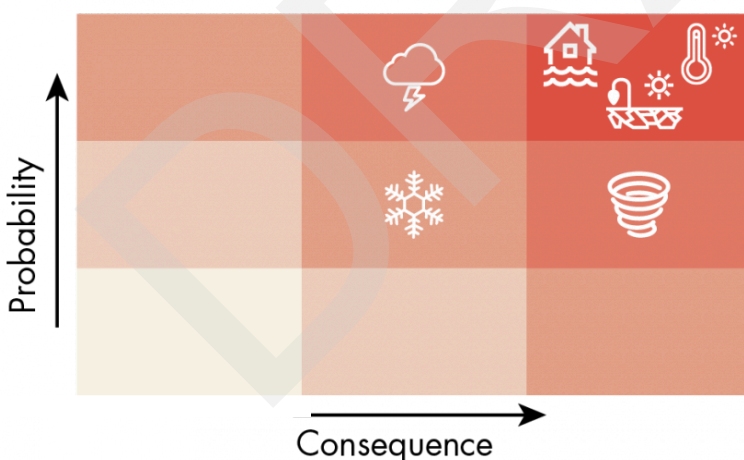
These assessments warn that we can expect to endure the following:

- 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. (see footnote)

Figure #3. Risk matrix summarizing each hazard facing our region and how they compare to one another. (see footnote 6)



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.

⁷ *Climate Risk & Vulnerability Assessment*. Mid-America Regional Council. May 2022. [Climate-Risk-and-Vulnerability-Assessment.pdf \(marc.org\)](#)

⁸ *Kansas Homeland Security Region K Hazard Mitigation Plan 2019*. Blue Umbrella Solutions, LLC. July 2019. [Kansas Homeland Security Region K Hazard Mitigation Plan | Douglas County, KS \(douglascountyks.org\)](#)

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 communities⁹.

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 change¹⁰. 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

⁹ *Equity in Climate Planning*. ICLEI-Local Governments for Sustainability USA. December 2023. [Equity in Climate Planning: Trends and Best Practices for U.S. Local Governments \(iclei.org\)](https://www.iclei.org/Equity-in-Climate-Planning-Trends-and-Best-Practices-for-U.S.-Local-Governments)

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. 3. Antioch University New England 2022. [Centering Equity in Climate Resilience Planning and Action: A Practitioner's Guide \(noaa.gov\)](https://www.noaa.gov/centering-equity-in-climate-resilience-planning-and-action-a-practitioner-s-guide)

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 foster equity in climate resilience and avoid unintentionally exacerbating inequities through their implementation.

Having investigated these foundational inquiries into who will be impacted, how, and our role in proactively preventing harm, 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.

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.

Inventory Results: Summary by Sector



Sector	2021 Emissions (Mt CO ₂ e)	Percentage of Total Emissions
Residential Energy	392,907	28%
Transportation & Mobile Sources	371,917	27%
Commercial Energy	357,568	26%
Industrial Energy	132,046	9%
Agriculture	73,613	5%
Solid Waste	49,617	3%
Process and Fugitive	19,776	1%
Water & Wastewater	2,430	1%
Total Gross Emissions:		1,399,873
Forests & Trees	-151,262	
Total Emissions with Sequestration:		1,248,611

Figure #4. Details of Douglas County’s emissions broken down by sector¹¹. Emissions are measured in metric tons of CO₂e (MTCO₂e)¹².

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

¹¹ Douglas County, Kansas: 2021 Inventory of Community-Wide Greenhouse Gas Emissions. ICLEI-Local Governments for Sustainability USA. October 2, 2023. [Douglas County, KS: Community-Wide Greenhouse Gas Emissions \(douglascountyks.org\)](https://douglascountyks.org)

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 (CO₂).

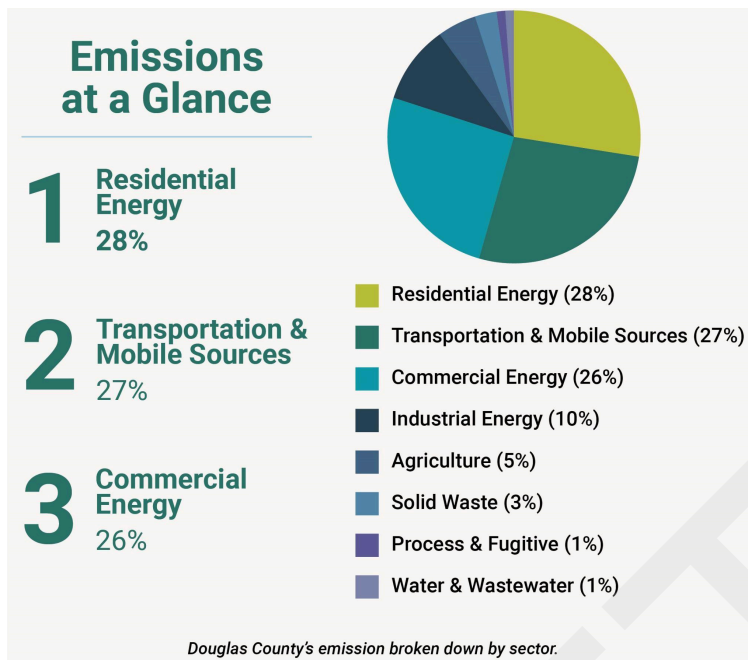


Figure #5. Douglas County's emissions broken down by sector. (see footnote 11)

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 Evergy¹³ and other local electric utility companies¹⁴. 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.

An Emissions Reduction Scenario:

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

¹³ "Sustainability," Evergy, 2024 .<https://investors.evergy.com/sustainability>

¹⁴ ICLEI calculated a weighted average change with/for other utilities, resulting in an expected 35% reduction in electric emissions intensity (CO₂e/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 Agreement¹⁶ 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*).

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 (see *footnote 11*). Proactive policy and collaborative planning will be needed to move toward decarbonization of our regional electricity supply (see strategy G2-S2).

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 2050¹⁵.

¹⁵ *The ICLEI Climate Neutrality Framework*. ICLEI-Local Governments for Sustainability. October 5, 2020. [The ICLEI Climate Neutrality Framework - ICLEI](#)

¹⁶ The Paris Agreement. United Nations Framework Convention on Climate Change. December 2015. <https://unfccc.int/process-and-meetings/the-paris-agreement>

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 (see footnote 1), our community comprehensive plan, officially charged staff to develop a climate change mitigation and adaptation plan, specifying that it reduce 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 our 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.



Committee Guidance

Two key committees offered direction and advice through Plan development:

- Staff Advisors representing multiple departments and leadership across five municipal 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 ten 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 in regard to 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

The final stage of community listening toward building this Plan was to host a series of focus groups targeting some 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*.

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 the effects of 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 stand-alone Indigenous 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, trained volunteers who 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*. A total of five open houses were held throughout the county, where members of the public were invited to review the greenhouse gas inventory, provide input on the 14 Plan goals, ask questions, and engage in discussion with the planning team. Public presentations were given to advisory boards and elected officials across the county. 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:

Energy: Powering where we live, work, and play

Mobility: Moving around the community safely and efficiently

Living Systems: Balancing land uses, ecosystems, and natural functions

Thriving Community: Nurturing health and resilience across the county

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.

How to find 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	<ul style="list-style-type: none">• Living Systems• Thriving Community
Biodiversity	<ul style="list-style-type: none">• Mobility• Living Systems
Local Economy and Jobs	<ul style="list-style-type: none">• Energy• Thriving Community
Land Use and Green Infrastructure	<ul style="list-style-type: none">• Thriving Community
Renewable Energy	<ul style="list-style-type: none">• Energy• Living Systems

Energy

Powering where we live, work, and play

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 energy needs to renewable electric 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 energy generation to conservation and innovation, and from affordability and reliability to public and ecosystem health.

What We Heard:

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

Reducing energy consumption overall not only serves to keep emissions in check as our community grows, it also decreases demand for resources that contribute to our energy sector. As technology and policy encourage a transition of our energy grid 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 access a diverse and decarbonizing energy grid while balancing other values and natural resources.

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 Partnership¹⁷ program. As part of this program, the equivalent of a portion of their facility usage is generated through utility-scale renewable energy. On average since 2021, Douglas County government buys 62% of the organization's electricity use and the City of Lawrence government buys 100% of its energy 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

Between increasing extreme weather hazards and elevated daily usage during extreme temperatures, we can anticipate more disruption and strain on the energy grid. The impacts of these incidents can range from inconvenient to life-threatening, especially for members of our community experiencing a range of vulnerabilities. But building resilience in the energy sector 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.

GHG reduction number graphic placeholder.

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.

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

1. Partner with organizations that advocate at the Kansas Corporation Commission¹⁸ for increased, equitable renewable energy options.
2. Work with regional policymakers and utilities, including engaging in Evergy's Integrated Resource Plan¹⁹, to rapidly advance the most reliable, affordable, and clean grid supply and storage measures for our region's resources and demand.
3. Pursue locally relevant policies for solar and wind power purchase agreements, community-owned solar, and net metering that incentivize and enable more access to renewable energy.

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.

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.

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. [Sustainability - Evergy](#)

Mobility

Moving around the community safely and efficiently

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.

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.

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.

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 (*see footnote 1*). to build on momentum for emission reduction already at work in our transportation sector.

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

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.

²⁰ Transportation 2050: Lawrence-Douglas County Metropolitan Transportation Plan. Amended. October 2023. <https://lawrenceks.org/mpo/t2050/>

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 Recommendation

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

GHG reduction number graphic placeholder.

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 incentivizing 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 ride-sharing, 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 City? The 15-minute city 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.

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

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 provide degrees of natural protection from the rain events to which we will increasingly become 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 (see *footnote 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.

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

Co-benefits

- Sustained habitat for plants and animals
- Emissions reduction through carbon-sequestering soils and landscapes
- Supporting public health through sustained future 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, water quality protection initiatives, and runoff and erosion reduction.

1. Review development codes for opportunities to reduce the causes of erosion and runoff around waterways.
2. Select materials used for 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 municipal codes to further protect floodplain both within and beyond the urban growth area.
2. Any 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 Plan²¹ 2022 update and continue to promote proactive statewide water policy thereafter.

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, sensitive lands, and other natural 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.

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 climate-smart and regenerative agriculture, including voluntary transition to practices that mitigate emissions and products that are resilient to local climate changes.
3. Develop or expand training programs, apprenticeship opportunities, and innovative land access partnerships that support aspiring farmers and farm entrepreneurs.

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

Thriving Community

Nurturing health and resilience across the county

While reducing greenhouse gas emissions is the pivotal strategy for adapting to climate change, to nurture a thriving community we must address the threats to public health and prosperity that 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 posttraumatic 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 partnerships and advances in research and innovation, entrepreneurial opportunities, and job training and growth positions Douglas County to not only be self-reliant in community solutions, but to lead in the region. 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.

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

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 change 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. Provide employer resources and encourage peer support among front-line 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 and risk 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 Management²². 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.

G11-S3. Ensure buildings are protected from increased precipitation.

1. Review and update municipal stormwater management guidelines to prepare for increasing frequency and intensity of precipitation.
2. Promote awareness of funding mechanisms, programs, and tools for flood protection, mold prevention, and remediation in homes.
3. Examine 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.

²² Douglas County Community Emergency Response Team.

<https://www.douglascountyks.org/emergency-management/community-emergency-response-team>

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.

G13-S2: Develop and implement programs and policies that eliminate or limit single-use items.

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.

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 1-3 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 5-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 of this Plan, 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:	Opportunities to achieve co-benefits with this Plan:
Increased and enhanced community access to green spaces	<p>G5-S2.2: Apply vegetation practices that enable native species to thrive and deter invasive encroachment.</p> <p>G6-S2.3: Integrate accessible green space, recreation into floodplain conservation.</p> <p>G7-S1.4: Foster carbon-sequestering land management practices.</p>

Apply Tools in this Plan

Having identified a prime opportunity for action or adaptation in their community, 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 have:

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

reach out to Douglas County Sustainability to get started.

Taking Action

Priority and timing of particular 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.

Activity / Strategy	Lead / Partners	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
<p><i>Why This Action Now?</i> 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.</p>			
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
<p><i>Why This Action Now?</i> 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.</p>			
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
<p><i>Why This Action Now?</i> 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, future growth, and demand capacity in mind.</p>			
Comprehensively	Douglas County and	Douglas County	2024-2025

update the County Solid Waste Management Plan / G13-S2	City of Lawrence / Multiple municipal and institutional partners, solid waste service providers		
<p><i>Why This Action Now?</i> 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 5-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.</p>			
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
<p><i>Why This Action Now?</i> 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 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.</p>			
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
<p><i>Why This Action Now?</i> Increased exposure to climate impacts will affect our health outcomes.²³ 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.</p>			

²³ Understanding the Connections Between Climate Change and Human Health.

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 \(IRA\)](#)²⁴ 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.

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 integrating with existing staff capacity and work planning. Proactively planning for climate risk in local government—functions and services, regulatory requirements 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 1-3 years.

²⁴ Inflation Reduction Act. 2022. www.epa.gov/inflation-reduction-act

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, celebrating successes and achievements of co-benefits, and involving their input whenever possible. Forms of community updates and engagement may include:

- Periodic public discussions and update 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 Bicyclists²⁵.

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.

²⁵ Bicycle Friendly Driver Training. League of American Bicyclists.
<https://bikeleague.org/ridesmart/bicycle-friendly-driver-training/>

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 Team²⁶ 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 Academy²⁷. 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 resources²⁸ 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)

²⁶ Douglas County Community Emergency Response Team.

<https://www.douglascountyks.org/emergency-management/community-emergency-response-team>

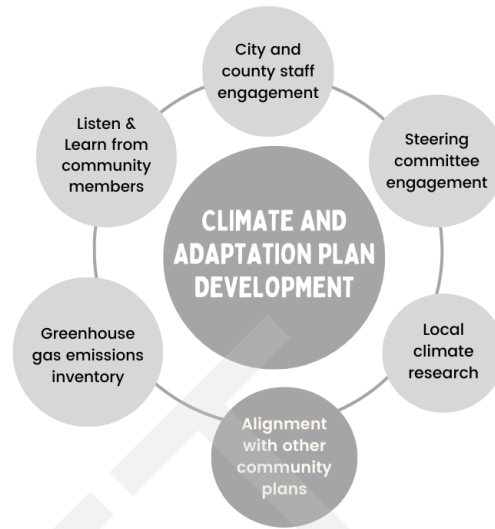
²⁷ Douglas County Sheriff's Office Citizen's Academy. <https://www.dgso.org/wordpress/index.php/dgso-citizens-academy/>

²⁸ Douglas County Elected Officials and Reports.

<https://www.douglascountyks.org/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 \(2024\)](#)
- [Douglas County Plan 2040 \(2019\)](#)
- [Douglas County Transportation Plan 2050 \(2023\)](#)
- [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 \(2017, Updates: 2019\)](#)
- [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 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. [Building Energy Codes Program | Department of Energy](https://www.energy.gov/eere/buildings/building-energy-codes-program) (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](https://www.nrel.gov/state-local-tribal/community-solar.html) (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. Douglas County has been a participant since 2019, and our profile page can be found here: <https://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](https://www.evergy.com/smart-energy/environmental-impact-link/sustainability-hub) (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](https://www.kcc.ks.gov) ([kcc.ks.gov](https://www.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. <https://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](https://betterbuildingsolutionscenter.energy.gov) (betterbuildingsolutionscenter.energy.gov)
- **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." [Home | SolSmart](https://solsmart.org) (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)
- **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. (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. For more : [Nature-Based Solutions - FEMA, Climate Action Plan for Resilience - USDOT](#) (www.fema.gov/emergency-managers/risk-management/climate-resilience)

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. For more: [AgriTourism - USDA](#) (www.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. For more, see: [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 CO₂, 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!](https://www.itreetools.org/) (itreetools.org) and [LEARN - ICLEI USA](https://www.iclei.org/LEARN) (iclei.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](https://www.nrcs.usda.gov/conservation-basics/natural-resource-concerns/climate/climate-smart-mitigation-activities) (nrcs.usda.gov/conservation-basics/natural-resource-concerns/climate/climate-smart-mitigation-activities)
 - Environmentally Sensitive Lands are defined, and procedures for their protection in the case of proposed development are described, under [Douglas County Code Section 12-314-2](https://www.douglascountyks.org/administration/county-code). (www.douglascountyks.org/administration/county-code)

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](https://www.apa.org/pubs/mental-health-and-our-changing-climate). (*Mental Health and Our Changing Climate: Impacts, Implications, and Guidance*. 2017. American Psychological Association, and ecoAmerica).
- 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.
- 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.
- [The National Healthy Housing Standard | NCHH](https://www.nchh.org/tools-and-data/housing-code-tools/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)
- Social cohesion refers to the strength of relationships and the sense of solidarity among members of a community. [Social Cohesion - Healthy People 2030 | health.gov](https://www.health.gov/healthypeople/priority-areas/social-determinants-health) (https://health.gov/healthypeople/priority-areas/social-determinants-health)
- Universal Design is the design of buildings, products, or environments to make them accessible to people, regardless of age, disability, or other factors.

DOUGLAS COUNTY, KANSAS

2021 Inventory of Community-Wide Greenhouse Gas Emissions



Prepared For:

Douglas County,
Kansas

Produced By:

ICLEI – Local Governments
for Sustainability USA
October 2, 2023

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ICLEI – Local Governments for Sustainability USA

This template was updated by ICLEI USA in 2023.

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Executive Summary

Douglas County, Kansas recognizes that greenhouse gas (GHG) emissions from human activity are catalyzing profound climate change, the consequences of which pose substantial risks to the future health, wellbeing, and prosperity of our community.

In late 2019, Douglas County adopted PLAN 2040, A Comprehensive Plan for Unincorporated Douglas County & The City of Lawrence, which lays out a vision for the future. PLAN 2040 specifically calls for our community to:

1. Adopt a climate change adaptation and mitigation plan incorporating potential climate change scenarios and identifying specific actions to reduce greenhouse gases, risk, and exposure to hazards.
2. Manage air quality in the community to limit outdoor air pollution, excessive greenhouse gases, and indoor air pollution.

Douglas County and the City of Lawrence were invited to join a ten-county collaboration in the development of a Kansas City Regional Climate Action Plan. The regional plan, adopted by Mid-America Regional Council in March 2021, provides high-level regional guidance to reduce greenhouse gas emissions while mitigating the many risks climate change poses. Douglas County's participation in the regional plan fosters a systems approach to shared regional challenges and the area plan provides a wide foundation for the development of our locally-specific climate action and adaptation plan.

In late 2021, Douglas County launched the development of its own county-wide climate action and adaptation plan (CAAP); a plan that is tailored to our community's priorities, which will account for our assets and vulnerabilities and recommend short and long-term policy and program development. An important element of the forthcoming plan is a baseline year of greenhouse gas emissions.

The following report serves this purpose by providing estimates of greenhouse gas emissions resulting from activities in Douglas County, Kansas in 2021.



Key Findings

Figure 1 shows community-wide emissions by sector. The largest contributors are Residential Energy (28%), Transportation & Mobile Sources (27%), and Commercial Energy (26%). Industrial Energy, Agriculture, Solid Waste, Water & Wastewater, and Process & Fugitive emissions were responsible for the remaining (less than 20%) emissions.

The Inventory Results section of this report provides a detailed profile of emissions sources within Douglas County; information that is key to guiding local reduction efforts. The inventory data provides a baseline against which the county will be able to compare future performance and demonstrate progress toward reducing emissions.

EMISSIONS AT A GLANCE

1 Residential Energy
28%

2 Transportation & Mobile Sources
27%

3 Commercial Energy
26%

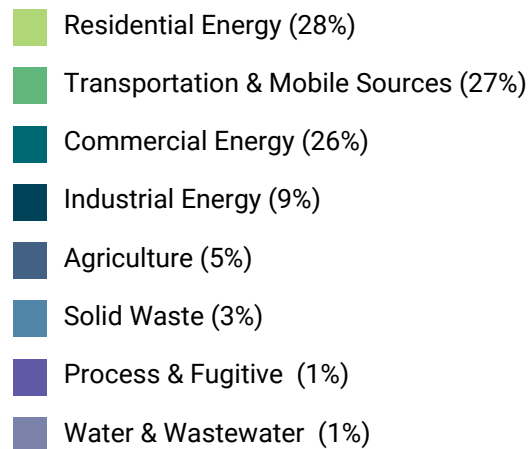
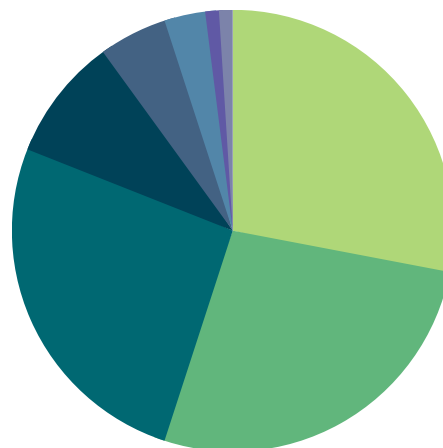


Figure 1: Community-Wide Emissions by Sector

Introduction to Climate Change

Naturally occurring gases dispersed in the atmosphere determine the Earth's climate by trapping solar radiation. This phenomenon is known as the greenhouse effect. Overwhelming evidence shows that human activities are increasing the concentration of greenhouse gases and changing the global climate. The most significant contributor is burning fossil fuels for transportation, electricity generation and other purposes, which introduces large amounts of carbon dioxide and other greenhouse gases into the atmosphere.

Collectively, these gases intensify the natural greenhouse effect, causing global average surface and temperatures in the lower atmosphere to rise, threatening the safety, quality of life, and economic prosperity of global communities. Although the natural greenhouse effect is needed to keep Earth warm, a human-enhanced greenhouse effect with the rapid accumulation of GHGs in the atmosphere leads to too much heat and radiation being trapped. The Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report confirms that human activities have unequivocally caused an increase in carbon emissions [1]. Many regions are already experiencing the consequences of global climate change, and Douglas County is no exception.



[1] IPCC, 2021: [Summary for Policymakers](#). In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [MassonDelmotte, V., P. Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M. I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J. B. R. Matthews, T. K. Maycock, T. Waterfield, O. Yelekçi, R. Yu and B. Zhou (eds.)]. Cambridge University Press. In Press.



According to the 2019 National Climate Assessment, the Great Plains region of the U.S. will experience potentially devastating impacts from seasonal changes and hazards occurring at unprecedented magnitudes [2]. Northeast Kansas, including Douglas County, is at particular risk for more frequent and more intense droughts, heavy downpours, and heat waves. While this region is accustomed to variable weather and hazards including floods, droughts, severe storms, tornadoes, and winter storms, these conditions and events are likely to increase in frequency and intensity as a result of climate change. Agricultural production is a significant contributor to this region's economy, which is at extreme risk from potential shifts to the growing season. In addition to impacts on the local economy, climate change will continue to produce warmer seasons and extreme temperatures that threaten many sectors within Douglas County including natural systems and regional biodiversity, public health, and mobility.

Many communities in the United States have started to take responsibility for addressing climate change at the local level. Reducing fossil fuel use in the community can have many benefits in addition to reducing greenhouse gas emissions. More efficient use of energy decreases utility and transportation costs for residents and businesses. Retrofitting homes and businesses to be more efficient creates local jobs. In addition, when residents save on energy costs, they are more likely to spend at local businesses and add to the local economy. Reducing fossil fuel use improves air quality, and increasing opportunities for walking and bicycling improves residents' health.



[2] U.S. Global Change Research Program. 2019. *National Climate Assessment* – Ch 19: Southeast. Retrieved from <https://nca2019.globalchange.gov/chapter/19/>.

Greenhouse Gas Inventory as a Step Toward Carbon Neutrality

To complete this inventory, Douglas County utilized resources from ICLEI - Local Governments for Sustainability (ICLEI), which provides authoritative direction for greenhouse gas emissions accounting. ICLEI defines climate neutrality as follows:

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. In parallel to this, it is critical to adapt to climate change and enhance climate resilience across all sectors, in all systems and processes.

To achieve ambitious emissions reduction, Douglas County will need to set a clear goal and act rapidly following a holistic and integrated approach. Climate action is an opportunity for our community to experience a wide range of co-benefits, such as creating socio-economic opportunities, reducing poverty and inequality, and improving the health of people and nature.

Douglas County recognizes the essential role of our community in establishing both targets and identifying co-benefits, and supplements ICLEI’s guidance with experience derived directly from the community through robust public engagement and community input.

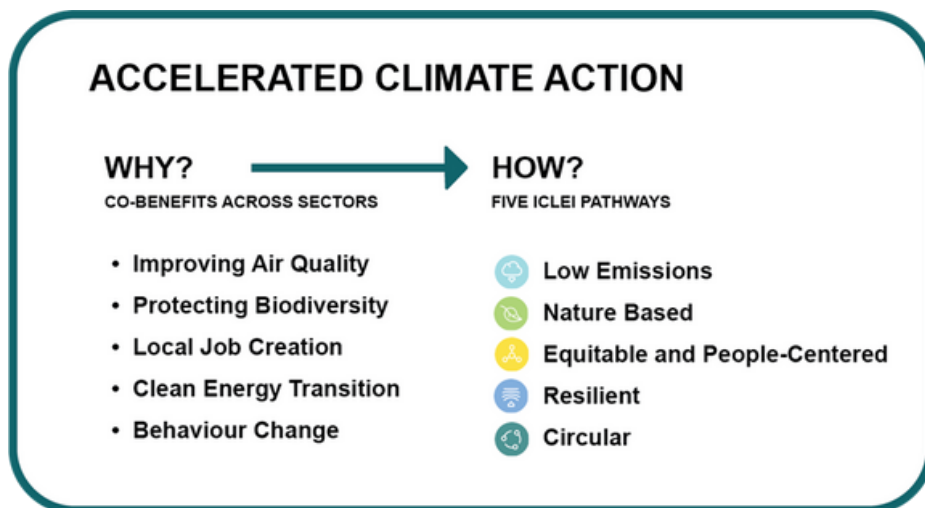


Figure 2: Co-Benefits and ICLEI Pathways to Accelerated Climate Action

Douglas County, Kansas Interactive Planning Process

In response to the climate emergency, many communities in the United States are taking responsibility for addressing emissions at the local level. Through proactive measures around land use patterns, transportation demand management, energy efficiency, green building, waste diversion, and more, local governments can dramatically reduce emissions within their boundaries and influence regional emissions through partnerships and advocacy. In addition, local governments are primarily responsible for the provision of emergency services and the mitigation of natural disaster impacts.

ICLEI works with local governments to identify sources of greenhouse gas emissions and set targets for reduction. Douglas County utilized ICLEI’s services to inventory greenhouse gas emissions in concert with a community-led climate planning process. These are the interacting components of the development process:



Figure 3. Douglas County’s Interactive Planning Process

This report represents the completion of a baseline inventory of emissions, and provides a foundation for future work to reduce greenhouse gas emissions in Douglas County.

Inventory Methodology

Understanding a Greenhouse Gas Emissions Inventory

A significant step toward achieving tangible greenhouse gas (GHG) emission reductions requires identifying baseline emissions levels, and sources and activities generating emissions in the community. This report presents emissions from the Douglas County community as a whole.

As local governments continue to join the climate protection movement, the need for a standardized approach to quantify GHG emissions has proven essential. This inventory uses the approach and methods provided by the U.S. Community Protocol for Accounting and Reporting Greenhouse Gas Emissions (Community Protocol).

Three greenhouse gases are included in this inventory: carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O). Many of the charts in this report represent emissions in “carbon dioxide equivalent” (CO₂e) values, calculated using the Global Warming Potentials (GWP) for methane and nitrous oxide from the IPCC 5th Assessment Report. Global Warming Potential (GWP) refers to the heat-trapping ability of each GHG relative to that of CO₂. For example, the GWP of methane is 28 and the GWP of carbon dioxide is 1. This means that methane is 28 times more potent than carbon dioxide in terms of its heat-trapping ability.

Table 1: Global Warming Potential Values (IPCC, 2014)

Greenhouse Gas	Global Warming Potential
Carbon Dioxide (CO ₂)	1
Methane (CH ₄)	28
Nitrous Oxide (N ₂ O)	265

Completion of another GHG inventory in two to five years is recommended to assess progress resulting from any actions implemented. The detailed methodology section of this report, as well as notes and attached data files in the ClearPath Climate Planner tool and a master data Excel file provided to Douglas County, will be helpful to complete a future inventory consistent with this one.

Community Emissions Protocol

Version 1.2 of the Community Protocol [3] was released by ICLEI in 2019, and represents a national standard in guidance to help U.S. local governments develop effective community GHG emissions inventories. It establishes reporting requirements for all community GHG emissions inventories, provides detailed accounting guidance for quantifying GHG emissions associated with a range of emission sources and community activities, and provides a number of optional reporting frameworks to help local governments customize their community GHG emissions inventory reports based on their local goals and capacities.

The community inventory in this report includes emissions from the five Basic Emissions Generating Activities required by the Community Protocol. These activities are:

- Use of electricity by the community
- Use of fuel in residential and commercial stationary combustion equipment
- On-road passenger and freight motor vehicle travel
- Use of energy in potable water and wastewater treatment and distribution
- Generation of solid waste by the community

The community inventory also includes the following activities:

- Wastewater treatment processes
- Process and fugitive emissions from industrial processes and natural gas distribution
- Agriculture, forestry, and other land use



Quantifying Greenhouse Gas Emissions

Base Year

The inventory process requires the selection of a base year with which to compare current emissions. Douglas County's community GHG emissions inventory utilizes 2021 as its baseline year because it is the most recent year for which the necessary data are available.

[3] ICLEI. 2019. U.S. Community Protocol for Accounting and Reporting Greenhouse Gas Emissions. Retrieved from <https://icleiusa.org/us-community-protocol/>

Quantification Methods

GHG emissions can be quantified in two ways:

- Measurement-based methodologies refer to the direct measurement of GHG emissions (from a monitoring system) emitted from a flue of a power plant, wastewater treatment plant, landfill, or industrial facility.
- Calculation-based methodologies calculate emissions using activity data and emission factors. To calculate emissions accordingly, the basic equation below is used:

$$\text{Activity Data} \times \text{Emission Factor} = \text{Emissions}$$

Most emissions sources in this inventory are quantified using calculation-based methodologies. Activity data refers to the relevant measurement of energy use or other GHG-generating processes such as fuel consumption by fuel type, metered annual electricity consumption, and annual vehicle miles traveled. Please see the appendices for a detailed listing of the activity data used in composing this inventory.

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



Community Emissions Inventory Results

The total community-wide emissions for the 2021 inventory are shown in Table 3 and Figure 4.

Table 2: Community-Wide Emissions Inventory

Sector	Fuel or Source	2021 Usage	Usage Unit	2021 Emissions (Mt CO2e)
Residential Energy	Electricity	501,967,770	kWh	254,593
	Propane	262,288	MMBtu	16,277
	Natural Gas	22,945,073	Therms	122,037
Residential Energy Total				392,907
Commercial Energy	Electricity	546,905,708	kWh	259,509
	Natural Gas	18,436,795	Therms	98,059
Commercial Energy Total				357,568
Industrial Energy	Electricity	255,145,356	kWh	131,020
	Natural Gas	193,309	Therms	1,026
Industrial Energy Total				132,046
Transportation & Mobile Sources	Diesel	71,515,579	VMT	102,860
	Gasoline	670,347,276	VMT	267,086
	Public Transit			1,971
Transportation & Mobile Sources Total				371,917
Solid Waste	Waste Sent to Landfill	74,188	Tons	48,458
	Yard Waste for Compost	14,759	Tons	1,028
	Methane Flaring			131
Solid Waste Total				49,617
Water & Wastewater	Septic Systems			1,527
	Combustion of Digester Gas			6
	Flaring of Digester Gas			34
	N2O			862
Water & Wastewater Total				2,430

*Blank cells are a result of variability in the format of available data by sector and fuel or source type.

Table 2: Community-Wide Emissions Inventory (continued)

Sector	Fuel or Source	2021 Usage	Usage Unit	2021 Emissions (Mt CO2e)
Process & Fugitive Emissions	Natural Gas Distribution	4,157,500	MMBtu	7,213
	Fugitive Emissions from Oil Wells			237
	Industrial Process Emissions			12,326
Process & Fugitive Emissions Total				19,776
Agriculture	Enteric Fermentation			30,632
	Manure Management			2,436
	Crop Residues			40,545
Agriculture Total				73,613
Total Gross Emissions				1,399,873
Forests and Trees	Forests and Trees			-121,888
	Trees Outside of Forests			-29,374
Forests & Trees Total				-151,262
Total Emissions with Sequestration				1,248,611

*Blank cells are a result of variability in the format of available data by sector and fuel or source type.

Figure 4 shows the distribution of community-wide emissions by sector. Residential Energy is the largest contributor, followed by Transportation & Mobile Sources and Commercial Energy.

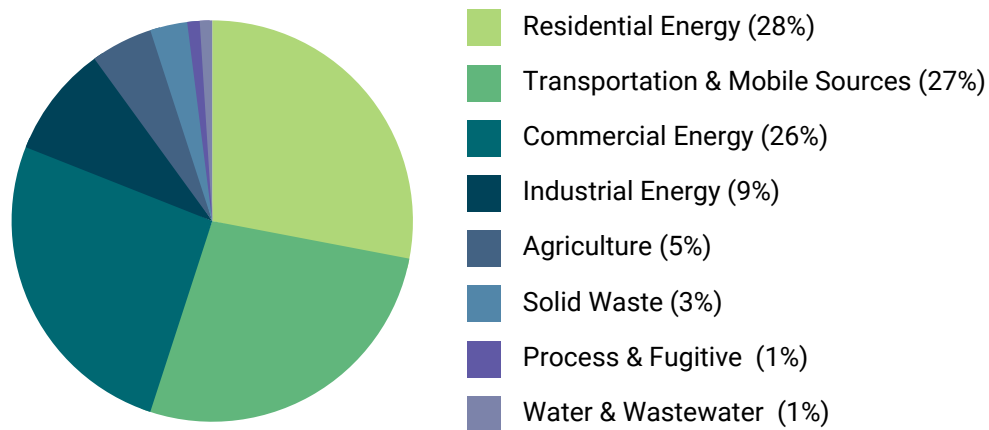


Figure 4: Community-Wide Emissions by Sector

Conclusion

With this inventory, Douglas County can forecast emissions, set an emissions-reduction target, and complete a robust climate action and adaptation plan that identifies specific quantified strategies that can cumulatively meet that target.

The Intergovernmental Panel on Climate Change (IPCC) states that to meet the Paris Agreement commitment of keeping warming below 1.5°C we must reduce global emissions by 50% by 2030 and reach climate neutrality by 2050. Equitably reducing global emissions by 50% requires that high-emitting, wealthy nations reduce their emissions by more than 50%. More than ever, it is imperative that countries, regions, and local governments set targets that are ambitious enough to slash carbon emissions between now and mid-century.

Science-Based Targets (SBTs) are calculated climate goals, in line with the latest climate science, that represent a community's fair share of the global ambition necessary to meet the Paris Agreement commitment [4]. Community education, involvement, and partnerships will be instrumental to achieve a science-based target.

Using this inventory, ICLEI calculated Douglas County's SBT at 60.4%. In other words, this is how much Douglas County must reduce community emissions by 2030 in order to play its part in meeting this global commitment.

With fast-approaching and bold targets, every effort at local emissions reduction matters. For more on Douglas County's forthcoming climate action and adaptation plan, visit: douglascountyks.org/climate.



[4] "Science Based Climate Targets: A Guide for Cities." Science Based Targets Network, November 4, 2021. <https://sciencebasedtargetsnetwork.org/>.

Appendix: Methodology Details

Energy

Table 3: Energy Data Sources

Activity	Data Source	Data Gaps/Assumptions
Residential, Commercial, & Industrial Electricity Consumption	Evergy	Electricity usage including the cities of Lawrence, Baldwin City, Lecompton, and Unincorporated Douglas County.
Residential, Commercial, & Industrial Electricity Consumption	Eudora	No data gaps or assumptions identified.
Residential, Commercial, & Industrial Electricity Consumption	Baldwin Electric	No data gaps or assumptions identified.
Residential, Commercial, & Industrial Electricity Consumption	FreeState	Data provided as a total for commercial and residential. FreeState estimated that 6,500,000 kWh of this was attributed to commercial and the remaining to residential.
Residential Propane Consumption	U.S. Energy Information Administration	Estimations from 2021 EIA and U.S. Census data.
Residential, Commercial, & Industrial Natural Gas Consumption	Black Hills	Industrial natural gas consumption was included with commercial natural gas consumption.
Residential, Commercial, & Industrial Natural Gas Consumption	Atmos Energy	No data gaps or assumptions identified.
Residential, Commercial, & Industrial Natural Gas Consumption	Kansas Gas Service	No data gaps or assumptions identified.

Table 4: Emissions Factors for Electricity Consumption

Emissions Factor	CO2 (lbs./MWh)	CH4 (lbs./GWh)	N2O (lbs./GWh)	Data Gaps and Assumptions
2021 Evergy	1,134.5			Evergy does not provide CH4 and N2O independently from CO2.
SPP North (SPNO) eGRID 2021	991.7	108	16	No data gaps or assumptions identified.

Table 4: Emissions Factors for Electricity Consumption (continued)

Emissions Factor	CO2 (lbs./MWh)	CH4 (lbs./GWh)	N2O (lbs./GWh)	Data Gaps and Assumptions
Baldwin City 2021	723.2	108	16	CO2 lbs/MWh calculated based on Baldwin mix of generation and purchased electricity. CH4 and N2O from eGrid.

Transportation

Table 5: Transportation Data Sources

Activity	Data Source	Data Gaps/Assumptions
On-Road Gasoline and Diesel Consumption	Google Environmental Insights Explorer	No data gaps or assumptions identified.
Public Transit Gasoline and Diesel Consumption	Lawrence Transit	CH4 and N2O (g/mile) assumptions from 2021 National Defaults updated in 2023.

For vehicle transportation, it is necessary to apply average miles per gallon and emissions factors for CH4 and N2O to each vehicle type. The factors used are shown in Table 8.

Table 6: MPG and Emissions Factors by Vehicle Type

Fuel	Vehicle Type	MPG	CH4 (g/mile)	N2O (g/mile)
Gasoline	Passenger car	25.30	0.0084	0.0069
Gasoline	Light Truck	18.20	0.012	0.0087
Gasoline	Heavy Truck	5.38	0.072	0.061
Gasoline	Transit Bus	6.42	0.012	0.009
Gasoline	Para Transit	5.86	0.012	0.009
Gasoline	Motorcycle	44.00	0.0084	0.0069
Diesel	Passenger Car	25.30	0.00050	0.0010
Diesel	Light Truck	18.20	0.00100	0.0015
Diesel	Heavy Truck	6.56	0.00510	0.0048
Diesel	Transit Bus	4.95	0.00100	0.0015
Diesel	Para Transit	18.20	0.00100	0.0015
Diesel	Motorcycle	44.00	0.00050	0.0010
Diesel Hybrid	Transit Bus	4.47	0.00100	0.0015

Wastewater

Table 7: Wastewater Data Sources

Activity	Data Source	Data Gaps/Assumptions
Combustion and Flaring of Digester Gas	City of Lawrence	No data gaps or assumptions identified.
N2O Effluent Discharge & Process N2O	City of Lawrence	No data gaps or assumptions identified.
N2O Effluent Discharge & Process N2O	Eudora	No data gaps or assumptions identified.
Combustion of Digester Gas	Eudora	No data gaps or assumptions identified.
N2O Effluent Discharge & Process N2O	City of Baldwin	No data gaps or assumptions identified.
Septic Systems	Zoning & Codes and U.S. Census Data	No data gaps or assumptions identified.

Solid Waste

Table 8: Solid Waste Data Sources

Activity	Data Source	Data Gaps/Assumptions
Waste Sent to Landfill	Ottawa Sanitation	Data provided as estimates based off of average route weights that primarily run in Douglas County.
Waste Sent to Landfill	City of Lawrence	No data gaps or assumptions identified.
Waste Sent to Landfill	Honey Creek Disposal	Total tonnage was estimated by Honey Creek.
Yard Waste for Compost	City of Lawrence	No data gaps or assumptions identified.
Methane Flaring	HAMM Landfill	No data gaps or assumptions identified.

Fugitive Emissions

Fugitive Emissions: Fugitive emissions are those that are not physically controlled but result from the intentional or unintentional release of GHGs. They commonly arise from the production, processing, transmission, storage and use of fuels or other substances, often through joints, seals, packing, gaskets, etc. Examples include HFCs from refrigeration leaks, SF6 from electrical power distributors, and CH4 from solid waste landfills.

Table 9: Fugitive Emissions Data Sources

Activity	Data Source	Data Gaps/Assumptions
Natural Gas Distribution	Black Hills	No data gaps or assumptions identified.
Natural Gas Distribution	Atmos	No data gaps or assumptions identified.
Natural Gas Distribution	Kansas Gas Service	No data gaps or assumptions identified.
Fugitive Emissions from Oil Wells	Kansas Geological Survey	No data gaps or assumptions identified.
Industrial Process Emissions	EPA FLIGHT	No data gaps or assumptions identified.

Agriculture, Forestry, and Other Land Use

Table 10: Agriculture, Forestry, and Other Land Use Data Sources

Activity	Data Source	Data Gaps/Assumptions
Forests & Trees	LEARN Tool	LEARN combines methods outlined in the ICLEI Greenhouse Gas Protocol's Appendix J with national data sources to derive a first-order approximation of annual GHG impacts over a given time period
Agriculture	Douglas County and U.S. Department of Agriculture (USDA)	2017 is the most recent available data from USDA.

Inventory Calculations

The 2021 inventory was calculated following the Community Protocol and ICLEI's ClearPath Climate Planner software. As discussed in Inventory Methodology, the IPCC 5th Assessment was used for global warming potential (GWP) values to convert methane and nitrous oxide to CO₂ equivalent units. ClearPath Climate Planner's inventory calculators allow for input of the sector activity (i.e. kWh or VMT) and emission factor to calculate the final carbon dioxide equivalent (CO₂e) emissions.



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Climate Action Plan Community Narrative

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INTRODUCTION

The Douglas County Sustainability Office is leading an effort to build a Climate Action Plan that will be tailored to our community's priorities, account for our assets and vulnerabilities, and include specific short-term and longer-term action items and strategies.

These values will guide the establishment of the Climate Action Plan from community engagement through adoption.

- **Authentic and Transparent:** listening to understand, sharing what we gather, and checking to make sure we get it right
- **Equitable:** centering those who are most impacted by the burdens of climate change
- **Collaborative:** incorporating the input, lived experience, and expertise of community members and staff
- **Relevant:** connecting climate to people's everyday lives

Ensuring that communities who are more vulnerable to climate change are represented in the data is a core component of the Climate Action Plan. We prioritized communities who face historic and current inequities and marginalization, have limited resources to adapt to the effects of climate change, or both. The Sustainability Office contracted with the Climate + Energy Project and Sunrise Project to hire and train ten Community Coordinators who reach a variety of communities in Douglas County, including residents who are Black, Indigenous, and People of Color (BIPOC), Spanish speakers, LGBTQIA2S+, elders, women of color, youth, disabled, low-income, unhoused, and outdoor workers, as well as those in addiction recovery and the foster care system. Across Fall of 2021, our Community Coordinators processed, documented, and synthesized information and stories that were collected to ensure the Climate Action Plan reflects the lived realities of all of our community members.

This document reflects those narratives and was written by the Climate + Energy Project with editorial support from Sunrise Project.

OUR PEOPLE. OUR STORIES.

A brief overview into our different, more thoughtful, approach to collecting stories for the **Climate Action Plan**.

our commitment to equity

When we designed our approach for this project, we knew it was vital to acknowledge that traditional approaches to policy-making perpetuate racism and often exclude the experiences of marginalized groups. The environmentalism movement has historically centered the experiences and input of privileged, able-bodied, white people. This has resulted in policies that reinforce systems of oppression and worsen the experiences of those most impacted by climate change, namely creating a system of environmental racism. By centering the experiences of systemically marginalized communities, our hope is that this engagement project will lead to equitable policies for a more just Douglas County.

This project centers the experiences of people in our community who are systematically marginalized from public policy processes. Through our strategic approach to reach underrepresented groups, we were able to collect stories from many diverse perspectives, including the BIPOC community, the LGBTQIA+ community, low income individuals and families, disabled and chronically ill individuals, unhoused individuals, children, teens, college-aged, and elderly individuals, individuals experiencing food insecurity, and more.

We prioritized privacy and respect, and collected a signed Consent Form from each participant. We are proud to have offered stipends to many of our interviewees to thank them for participating in a conversation that can often be challenging and deeply personal. We also offered aid with transportation, childcare, and access to community resources. We ensured each of our Community Coordinators had the knowledge and skills to approach sensitive topics with empathy, understanding, and equity at the forefront of their research.

"It's the only way to do it. Organize, get the numbers, generate enthusiasm, and go all out on all fronts!"

- Climate Action Plan Interviewee



"Wondering With" (2021)

An original collage by Mad Marshall - inspired by their experience as a Community Coordinator.

CONTRIBUTORS

Lawrence-Douglas County Community Members

One hundred fifteen community members from Douglas County shared their stories and insights with our Community Coordinators. Without them, this project would not have been possible.

Community Coordinators

Anna Balmilero
Jenna Bellemere
Kelly Chellberg
Fatima Cruz
Billie David

Ezekiel Gibbs
Tiana Harding
Mad Marshall
Jasmine McBride
Emmy Rivera

Sunrise Project

Melissa Freiburger, *Executive Director*
Ella Dominguez, *Director of Programs*
La'Pourchea McConico, *Board of Directors*
President

Climate + Energy Project

Dorothy Barnett, *Executive Director*
Rachel Myslivy, *Former Assistant Director*
Erin Kruse, *Program Director*
Ma'Ko'Quah Jones, *Project Coordinator*

Lawrence and Douglas County Sustainability Offices

Jasmin Moore, *Former Sustainability Director*
Kim Criner-Ritchie, *Sustainability & Food Systems Analyst/Interim Sustainability Director*
Jamie Hofling, *Food Waste Reduction Specialist*
Kathy Richardson, *Interim Sustainability Director*

PROCESS AND TIMELINE

SEPTEMBER 2021: Community Coordinators participated in two days of training led by Climate + Energy Project with support from Sunrise Project. The training included leadership development, climate change informational seminars, and opportunities to practice skills while building relationships and community with one another.

OCTOBER - DECEMBER 2021: Community Coordinators went out into the community and collected stories from a range of perspectives. They prioritized collecting stories from underrepresented groups through strategic outreach. Community Coordinators also distributed Douglas County's Climate Survey to participants.

JANUARY - MAY 2022: All of the data and research collected have been synthesized to create a central narrative and pull out notable themes. Climate + Energy Project created Spotlights that documented the Community Coordinators' experience in the project. Sunrise Project hosted a Recognition Celebration to commemorate the accomplishments of the Community Coordinators.

NARRATIVE

Community Coordinators documented 115 stories in an online archive of over two hundred transcribed pages. These stories were then reviewed with the Community Coordinators, using their personal reflections of the process to highlight eight key focus areas and themes: [Community Solutions & Justice](#), [Physical & Mental Health Impacts](#), [Accessibility & Safety](#), [Food Systems & Security](#), [Transportation](#), [Housing & Anti-Displacement](#), [Financial Stability & Energy Justice](#), and [Environmental Stewardship](#). Within each of these themes, there are several subthemes. Each story was then key-worded for every time an experience, emotion, or suggestion aligned with each of these themes and subthemes, which are synthesized below and supported with several compelling direct quotes pulled from interviews with community members.



Climate change affects the community in myriad ways that are not immediately obvious. Any adaptation plan must take this into account and be flexible so that it can help all members of the community, not only those with the most common or easily apparent problems.

KEY FOCUS AREAS/THEMES

Community Solutions & Justice

“While climate change is causing unprecedented weather-related events, Douglas County community members felt as if the county itself was also one of the main causes of their unknowing regarding the climate. Reflecting on the conclusion of my role as a Community Coordinator, I feel like the Climate Action Plan project came at the opportune time to start the process of updating policy to mediating the community's anxieties around climate change. Moving forward I think one of the biggest challenges the Douglas County Climate Action Planning team has is doing justice to the population they sought input from. One of the challenges addressed during our Community Coordinator training was how to not treat the underrepresented individuals we were collecting stories from. We had to be intentional so that storytellers felt like their story was being genuinely heard and not like they were being used. A lot of the people who shared their story were vulnerable and trusted me, and I would like to see that taken seriously by Douglas County decision makers in both the policies they write, the grants they approve, and the way they communicate with their constituents even after this project has concluded.” - Jasmine McBride Reflection

Indigenous Knowledge

In more than 10 stories, the need to truly engage Indigenous Knowledge into the plan and involve Indigenous leaders at every level of decision-making was prioritized. One community member and anonymous expert on Indigenous issues challenged traditional climate science for failing to go beyond merely explaining the mechanisms of climate change and emphasized that policy planners not only need to shift their perspectives of the environment as a resource but also examine the role of community.

- “The interviewee stressed that the Indigenous movement and climate movement are inextricably tied together. Indigenous activism, the interviewee argued, will always be concerned with the environment, which means that making the environmental movement more inclusive to Indigenous voices is absolutely critical. The interviewee stressed that just reading articles written by Indigenous peoples isn’t enough (and neither is it enough for the County Commission to just read this summary). **Instead, the climate movement needs to focus on making sure that Indigenous voices are present at every level of decision-making, and that non-Indigenous members of the climate movement meet with Indigenous leaders in-person, so that they can form personal as well as professional relationships.** The interviewee stressed that these conversations have to be had with an acknowledgement of the power imbalances inherent when primarily white, middle-class climate activists try to work with less privileged members of the population.” - *Anonymous Expert on Indigenous Issues, Collected by Jenna Bellemere*



Collaboration

Collaboration was referenced 15 times, in a variety of ways, all encouraging that the policy and decision-making process should be intentional in creating community partnerships, open and transparent, and based in community solutions and self-determination.

- “Despite this feeling of hopelessness, which seems to have in some capacity arisen from the sort of isolation our current socio-political moment has constructed, most everyone I spoke with was excited by and interested in: 1) better, more hands-on education about the ‘how, why, and now what?’ of climate change for children and adults alike, 2) more holistically-accessible and environmentally-aware indoor and outdoor community hubs and infrastructures, and 3) deeper, more meaningful community connection and support networks.” - *Mad Marshall Reflection*

Community

Community was a highlight of nearly every Community Coordinator, with over 30 stories referencing the spirit of Douglas County’s community, as well as needs that could help foster greater community engagement in a climate-safe way, as extreme weather becomes commonplace. While many see Douglas County’s sense of community as a place to foster greater collective mobilization and climate action, it is important to note that many community members also feel that bigotry and white supremacy keep spaces from being fully welcoming, inclusive, and engaging, primarily for BIPOC and LGBTQIA2S+ neighbors.

- “I think also, again, Lawrence prides themselves on community and the small businesses, but what does it look like for a very elitist place like The Merc to invest in the community to show things like food sustainability or to promote free classes on how to be environmentally friendly? But also we don't have local news channels. I'm thinking about places like the Haus of McCoy. That is the only place in Lawrence where we have an excessively queer space for students, for young people for Black and BIPOC folks that are queer.” - *Rinne Fruster, Collected by Anna Balmilero*

- “A theme that came up in many of the conversations I had about climate change – a need for deeper community and support structures for all aspects of people’s wellbeing with specific care to the new sorts of experiences of this precarious climate moment. Folks feel isolated, hopeless, and fearful because they aren’t given the time or space to invest in community connection, care and relation. Developing support groups (with access to financial resources as well) to deal with climate grief, to support physical and emotional needs, as well as educate on climate change, etc. seem to be an impactful part of an approach to facing and working in accordance with the stressors being put on the world at large (especially those most marginalized folks) as a result of climate change as it continues to emerge and progress.” - *Mad Marshall Reflection with Created Collage (above), Collected by Mad Marshall*



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Education

Education was mentioned across 26 stories. Whether they were young and discussing current teachings in classrooms, elderly and reflecting on past teachings, or parents concerned for their children's future, all storytellers had the same general theme: we need more community outreach and education focused not only on the issues and impacts, but also on the solutions and ways forward to adapt and coexist with a changing climate.

- “The topic that people were most emphatic about was education, teaching our young people how to deal with what is coming. Many had suggestions on how to do this, including thematic lesson plans, getting kids outside more and teaching them how to reduce the impact of climate change, encouraging environmental clubs, and providing plenty of hands-on experience, such as helping set up solar panels.” - *Billie David Reflection*
- “I think it'd be such a good thing like Lawrence has so many community centers, so many wellness centers, we have the library without such a big budget. I think having classes on something like how to collect rainwater, like one like what are the laws against that and how do we collect rainwater? How do we reduce our carbon footprint? But also like, again, how do we make it accessible to working families, undergraduates, graduates who are already six figures in debt? What are ways that you can invest in the people around us? How can you make this a collective effort?” - *Rinne Fruster, Collected by Anna Balmilero*
- “In all there is a case to be made for the development of educational resources and opportunities that uplift the Indigenous people who live here, as well as redistributing wealth and land back to Indigenous communities for the betterment of the relationship to the land. Likewise, education on the native ecology of our location and how to exist, grow, and develop new modes of being with our environment instead of acting upon it. In line with this, folks also expressed interest in an increased investment in spaces that foster this sort of ‘play, learn, experience’ mode of learning about and addressing larger climate change impacts. Folks talked about ensuring spaces were free, accessible, and comfortable even in more strenuous weather situations (e.g. shade, cooling, water for extreme heat), interactive pollinator and native flora gardens, community gardens, and other modes of growing and community development.” - *Mad Marshall Reflection*

Physical & Mental Health Impacts

“Every person I talked to made at least one comment about how the extreme heat in the summer and the extreme cold during the winter affected their physical health and mental wellbeing. Storytellers shared memories of how they used to be able to do more outdoor activities all year long in Kansas, and now things have become unbearable, and their physical health does not enable them to be able to be outdoors as much as they used to. Parents shared stories about their children’s asthma getting worse over this past year because of the intense summer heat and one young woman shared with me how, during this past summer, she would see people walking to the Lawrence Pantry on extremely hot days pass out in front of her house. These experiences were traumatic for both her family and the people suffering from heat exhaustion.” - Jasmine McBride Reflection

Climate Grief

Overwhelmingly, nearly all Community Coordinators had interviews that were coded with negative emotions regarding climate impacts both current and impending. Grief, anxiety, vigilance, unwelcomeness, concern, stress, depression, disturb, sadness, exhaustion, trauma, and overwhelm were referenced a collective 87 times. Some discussed how this grief has impacted them severely to cause depression and a fear of the unknown, especially for future generations and their ability to thrive.

- “Reid Nelson said that climate change has affected him emotionally in the form of stress, not only because of what he sees is coming and the impact it will have on people, but also its impact on other species. This knowledge has had an impact on Reid's decision-making, including what he buys for his house, the car he drives, and the economic choices he makes. ‘With global warming, things are going to be bad for our economy and for our lives,’ Reid explained, ‘but there are still things we can do. It is going to happen, but we have to mitigate it. It's a moral obligation.’” - *Reid Nelson, Collected by Billie David*
- “It concerns me for my baby. It was terrifying thinking about bringing a child into the world the way it is. Like right now it looks like the earth has been pushed to its limit of toxins it's taken as well as damage to the ozone layer. How will it be when he is my age? What will he have to live with? It is scary to think that there will not be a sustainable planet left for him to live on... There should be more conservation efforts in place in the US, like there are in other parts of the world. The United States is not on track to fix what's going on. Are we running out of time or is it too late?” - *India, Collected by Emmy Rivera*
- “I feel like they should be able to give free counseling services. Like I know Watkins has some free services and stuff like that if you're a KU student, but not everyone is. A lot of Lawrence is homeless, and I'm sure they still are in crisis mode, and they need help too. For instance, I've been having some mental health issues along with some other friends of mine, and I went to a medical provider and I won't be able to seek therapy about issues that I'm having for like, four to six weeks I'm on a waitlist and who knows if I'll even have a therapist by then. I feel like we don't have enough access to what we need to I guess the lines have been like extremely busy for I don't know different mental health services like the suicide hotline. And just having access to counselors and medical providers.” - *Alissa, Collected by Ezekiel Gibbs*
- “Those who exist at the intersections of more marginalizations tended to be more hyper-aware/anxious about climate change and, likewise, more activated about action regarding climate change. These feelings of anxiety and fear were also almost always paired with at least an initial feeling of hopelessness or defeat.”
 - “These feelings of anxiety and fear were also almost always paired with at least an initial feeling of hopelessness or defeat. A recent KU grad and trans woman author in Lawrence, on this subject, noted that, ‘To be honest I also sometimes feel kind of hopeless about our prospects of redirecting the path we seem to be on and trying to create a better future, although I try to not get overwhelmed by that feeling. I just think about how society needs to be radically overhauled and how much resistance there is to that from governments, corporations, etc.–like not to go on a tangent but the whole pandemic has been a pretty glaring example of how people in power respond to crises by just protecting their self interests... and that just makes me think about how the climate crisis will just cause more and more natural disasters and other emergencies, and how marginalized people will suffer the most.’”



- *Mad Marshall Reflection with Collage Created by Violet (above)*

Heat Impacts

Heat Impacts was another concern that was referenced in over 30 stories. From impacting one's ability to work, to causing chronic illness and pain flare ups, from the risks of heatstroke and heat exhaustion, to being confined to the house rather than enjoying the outdoors with pets and children, many community members are already experiencing several impacts from the increased hot weather days in Lawrence.

- “And now that I'm paying for my bills for heating and cooling, it's like oh, wait, I don't want to turn it on. But the summers are really bad because I don't do well in heat. So that's the biggest issue for me is having to keep it on for longer parts of the year. Just being able to like sleep because I was living on the third floor of a place at the very top level and it was so extremely hot. And I had one little window on the side. And it was just not enough air and it would be sweltering in there. Even with AC on.” - *David Balmilero, Collected by Anna Balmilero*
- “He repairs A/C units for a living and he has definitely been affected. He states that he has been working in more severe heat, especially when having to climb around in attics. He states that it is becoming more difficult to do his job. He has also experienced an increase in utility expenses.” - *Resident, Story Collected by Kelly Chellberg*
- “He enjoys playing sports and being outdoors. He is concerned about the hot summers and bugs that bite him during the summer. He does not enjoy the heat at all.” - *M.H. III, age middle school, Collected by Tiana Harding*

Flooding & Housing Impacts

Flooding is a large cause for concern for many community members and was mentioned over 50 times. Many listed business and housing impacts, health-related concerns, and displacement as major impacts of unmanaged flooding.

- “She notices that there has been a decrease in humidity, and an increase in diseases spreading such as Covid-19. She lives in Eudora and experiences increased flooding. She states that it seems like it is flooding everywhere. She has had an increased cost associated with allergy medication.” - *Sonja K Collected by Kelly Chellberg*
- “All the homeless people are being forced to the north side. And that's like the worst place. There's a lot of flooding going on over there. There's no protection from the elements. There's no trees during the summer, you can't hang clothes out to dry or anything. Just no protection from the sun or the winds or nothing and we're right there by the levee. It's like you go cross that bridge 20 degree drop in temperature alone and you freeze. How many times are people going to have to move to survive? How many times have you had to move locations in order to make it through being homeless? We've had to move five times down and that's just since June.” - *Jennifer, Collected by Fatima Cruz*

Health/Allergies/Asthma

Health, allergies, and asthma were all of major concern, with nearly all community members stating that these issues have worsened over the years. Allergies (22), asthma (12), sickness (27), medication (11), and health (67) were referenced numerous times across all 115 stories. Others emphasized the disparate impacts of health and medical access across marginalized poor, BIPOC, and LGBTQIA2S+ communities.

- “The house was always loud and full of love but we were poor when I was growing up. I remember nights with no heat in the house. The family would have to sleep together to keep warm at night. They were hard winters. I still suffer from seasonal affective disorder. Vitamin D is important but how do we get it if it's too hot to go out in the summer and too cold to go out in the winter? During the short breaks between summer and winter I have allergies to contend with, and they are getting worse every year.” - *Kalila Vega, Collected by Emmy Rivera*

- “Most recently he has had breathing difficulties due to the high pollen count. The sweltering heat in the summer keeps him homebound as well due to the humidity.” - *M. H., Sr. Age 70+, Collected by Tiana Harding*
- “One specific fear I have is the way trans people will be affected in unique ways. While everyone is going to be impacted by resource shortages and difficulties supplying essential things, I feel like trans people will feel that especially hard because there’s already so few support systems in place for us and these problems are invisible to mainstream cis society.” - *Violet, Collected by Mad Marshall*

Extreme Weather

Extreme weather—mentioned over 40 times along with heat (34) and cold (14)—impacted the community in several ways: from anxiety of what’s to come, to autoimmune disease flare ups, to physical impacts due to energy burdens and lack of shelter.

- “It’s like 60 degrees, like December 15—that’s weird. And I think that almost worries me more. Just from like the wildlife and like insect populations with bird population. We might be able to adapt to these occasional floods, but like, there’s some things that we probably aren’t even going to feel the effects of. But then 20 years down the line afterward, it’s just like, kind of all it feels like it’s like silently building.” - *Maddie Backus, Collected by Anna Balmilero*
- “Last winter I was able to [manage the cold]. I was staying inside then, but this fall when it came up, I was homeless—boy it got cold at nights, and I got into this shelter down here. And it’s cold in there too. Yeah, there isn’t very much ventilation in the shelter. So it gets cold in there at night too, especially in the morning time. Yeah, it’s real cold.” - *Archie, Collected by Fatima Cruz*

Accessibility and Safety

Community members would like to see planning that encapsulates disaster preparedness, more community spaces for safe recreation, and greater accessibility to vital information and community resources.

Safe Recreation

Community members were concerned about a lack of outdoor activities, several noting that there aren’t very many places to take their children, indoors or outdoors, with extreme temperatures both in the summer and winter. Others explained how lack of access to community spaces impacted their health, or the ways they provided enrichment for their pets. These issues were detailed in forty-six stories, collectively.

- “The parents, young teens, and people who moved to Lawrence from out-of-state all expressed that they wished Lawrence had things to do during the winter and summer seasons. Parents of young children wished that Lawrence had splash parks—like you find in cities on the East Coast—during the summer that they could take their children to so that they could cool off. Parents of teens, and teenagers themselves, wished that during the winter Lawrence offered winter activities like a portable ice-skating rink. People highlighted that in other places around the country where they moved from, that also had extremely hot summers and colder winters, there would be activities provided by the city for them to do, which improved their quality of life.” - *Jasmine McBride Reflection*
- “Another result of climate change that has affected Nedra personally is that the chiggers are more abundant, and she must deal with chigger bites every time she goes out. The impact of climate change on the COVID pandemic has also created distress for Nedra, she said, because the city had to close the swimming pool early this summer and she depends on the low-impact exercise that she can get there because she has painful joints. ‘It really affected me hugely when they closed the swimming pool,’ she said. ‘I was so depressed about that. I gained a lot of weight because I couldn’t exercise at the pool.’” - *Nedra, Collected by Billie David*

- “Allison’s daughter got exposed to COVID at her school and as a result now has long COVID in her lungs. Her daughter is only 5, so over the summer it was hard to find activities/things to do in Lawrence for young children outside of going to the park which was not good for her daughter’s health (heat+long COVID lungs).” - *Allison, Collected by Jasmine McBride*
- “Many clients don’t have access to wifi. Improving access to wifi for low-income residents.”- *Alli Presnell, Collected by Jenna Bellemere*

Disaster Preparedness

“The overwhelming anxiety being felt by the storytellers I talked to all revolved around the unknown immediate and long-term effects of climate change. People criticized the City of Lawrence for the lack of preparedness and planning during the winter, highlighting that the snap freeze last winter which showed them how unprepared the city was at keeping them safe. Grandparents talked to me about the fears they have of the city not acting fast enough to do enough change so that their grandchildren would be able to live a healthy adult life. An older woman of color highlighted that whenever she is moving to a new apartment in Lawrence, she makes sure she is never living on the second floor because the fear of flooding is greater than the toll walking upstairs does on her body and is doubtful that the city would do anything to help mitigate her concerns.” -

Jasmine McBride Reflection

- “Helping them be prepared, helping them to know what’s coming, because the not knowing is what’s really kicking us in the butt. And like me, I don’t have phone service. So even to go catch Wi Fi somewhere when you’re not allowed out. I can’t even check the weather on a daily basis. You know, it just makes it really difficult. So it’s mainly knowledge and information, making it available for people and not just people who can afford to pay for it or people who can go places where it is got to be put out there where people who don’t get to do that can get it. It’s very hard to do.” - *Jennifer, Collected by Fatima Cruz*
- “One woman of color shared how everyday she is nervous leaving the house and making sure her school-aged children are properly dressed because of how drastic the weather changes each day. She moved to Lawrence from St. Louis and was upset that Lawrence did not have their own local news station or radar that she could get daily weather updates from so she could make sure her children with asthma did not end the day wheezing and having difficulty breathing because the temperature from the morning was drastically different from the temperature in the late afternoon.” - *Jasmine McBride Reflection*
- “More efficient/safe planning regarding shelter for those facing home insecurities during the winter **and** summer—safety from extreme cold and extreme heat while also maintaining social distancing protocols.” - *Suggestion Collected by Jasmine McBride*
- “I also spoke to an expert on Indigenous and sustainability issues, who asked to remain anonymous. The expert emphasized the importance of community in adapting to climate change. They argued that climate change is analogous to a disaster scenario, and that the most effective disaster responses always center community decision-making and autonomy. This source emphasized the importance of informal meetings where community members can interact, build friendships, and eat together. These meetings absolutely must be accessible to low-income people and people with disabilities. This means offering transportation to people without access to it, and holding meetings at times when people are not working. They stressed that this community-building is especially important as a way to include Indigenous voices in conversations about climate change, and bridge whiteness-centering climate science with traditional Indigenous knowledge.” - *Jenna Bellemere Reflection*

Food Systems & Security

Several community members were concerned about access and affordability of food, as a whole food issues were discussed in 28 stories. Many offered community solutions like more community gardens, but a few were concerned about the accessibility and inclusivity of those already in place. Aside from growing their own food, community members also advocated for a greater regional food hub and stronger reliance on local food systems rather than national and international distribution.

Agricultural & Food Impacts

Concern for erratic weather patterns and the agricultural impacts of the region were common among a few community members, while others were concerned about how much more people were needing affordable food resources.

- “I noticed that there's food drives. A lot more food drives coming in to help people in need. I know that there's this place in Lawrence that you can go once a week or a few times. I think you can go every day actually. To go and get free groceries. For those that can't afford it because I know a lot of people have been out of their job, or because like sickness, and I don't know just people being laid off and such like that. There hasn't been I don't know there's just been people not able to make the money that they can to comfortably live and especially families with multiple people in their household. I know it's been a little bit difficult, like I am in a Lawrence Community Facebook group, I know a lot of people are struggling with being able to provide for their children right now. So I can't really imagine how it's going to affect future generations. Hopefully it'll get better but we don't know.” - *Alissa, Collected by Ezekiel Gibbs*
- “Farmers are suffering (husband's family in KS are beef and pork farmers) because of the inconsistencies of recent past weather (polar vortex) v. this winter/fall weather—they can't accurately predict seasons as easily.” - *Story Collected by Jasmine McBride*

Community Gardens

Many saw community gardens as one bridge to close the gap between local food access and renters, as well as food apartheid in areas without accessible grocery stores. However, it is important to note that the culture surrounding these gardens need to be accessible and inclusive, as existing ones have made Black, Indigenous, and People of Color feel less than welcome and hypervigilant of their presence and safety in predominantly white spaces.

- “Yes, we see a lot of these food, these community gardens, but who is it accessible to because these are predominantly white spaces. These are predominately neoliberal femme spaces. Right? And uh, you've [Anna] walked me past them and I'm like, it doesn't even feel as a Black person walking by I do not feel welcomed. I do not feel accepted. I feel hyper-vigilant.” - *Rinne Fruster, Collected by Anna Balmilero*
- “You have to own land in order to do that [grow food/garden/etc.], you know, you need a place you can go and stuff. And yeah, I've been homeless, you just don't really have that. You know, I was more vagrant. Right now I'm down, but it seems like I'm not gonna be kicked out, you know, but I've got a lot of times, you know, property trespass scenes and stuff from where I had my camp and whatnot. And so it's just really having a place to do that. That would be nice. I want to go to the community gardens and stuff when they come up, and help out if I can. It did seem like some of the stuff that they have this year didn't seem to do so well, on a lot of gardens, I think.” - *Karlin, Collected by Mad Marshall*

Local Foods

As people continue to want access to fresh, local, affordable food, community members have also expressed a need for community education on how to be more self-reliant in community food systems. There is also growing concern about food shortages and price increases.

- “Dan said that citizens should grow plenty of plants, and the city should consider encouraging people to grow food in their yards and do away with conventional lawns along with the chemicals that destroy diversity, and the city shouldn’t prosecute people who turn their lawns into gardens. They should be less concerned about what lawns look like, thus reducing lawn mowing and the pollution it produces, and should help make it easy for people to grow food in their yards, and also make it easy and legal to collect rainwater.” - *Dan Bentley, Collected by Billie David*
- “It was interesting to see what days people would come on, and it's different when the weather is really severe, we'll have less of a crowd because, honestly, it's tough for them to get out. We do have a lot of people who are wanting to get food and so that makes a big impact on them. And especially if they're having to wait, I mean, we can serve up to 300 people in a night and yeah, it shows how important these things are but I also believe that they can continue to expand and support helping with whatever needs are in the way of people's access to food and stuff.” - *Sunrise Project Volunteer, Collected by Mad Marshall*

Transportation

“Transportation and Public Transportation was mentioned in every interview [of Anna’s] except one, and was an important thread connecting folks. Folks want to see improved public transit that is more reliable and has enclosed shelters to protect people from the weather (shade for heat, cover for rain/snow, cover from wind, etc. instead of a bench or sole sign).” - Anna Balmilero Reflection

Bus Stops

Six community members detailed that maps and shelter enclosed benches are not currently available at most stops. Neighborhoods have had to install their own chairs and seating because of a lack of provision of accessible seating. The removal of bus stop enclosures for benches has been perceived by community members as anti-homeless hostile architecture and many advocated for full shelters protected from the elements to be reinstated at all bus stops.

- “They're taking the fully enclosed [bus stops] down. I've noticed to put weird, trendier benches where it really just seems like it's targeted at people affected by homelessness. Taking away any protection from the elements that they might have. Just to have something that just like, doesn't offer anything besides a bench. Yeah, it really doesn't seem like it's aimed at being a useful thing for people it really just seems like it is supposed to be targeted toward the most affected by wealth inequality here and then like if you're using for public transportation for the most part, it's like you're not doing this because you want to, it's really your only option to be able to get around and then yeah, having you sit in the heat, cold and rainy snow, extreme weather. Because being in Kansas we get all of it. And then just having just a bench with no covering or they've moved from down to like two thirds or like, back wall and maybe one side. It just doesn't make sense. Because they're taking away something and then spending more money for less. And also a lot of the bus places here people are having to put up benches and chairs, like there's lawn chairs and benches people in the communities have made because the city doesn't invest in literally just, besides a sign, on the side of the road instead of having a bench for someone. Not everyone is able to stand. Some people need to sit down and it makes no sense but people in the communities had to go out and spend time and money to do something that the city should be providing.” - *David Balmilero & Tara Zhang, Collected by Anna Balmilero*

- “LeFanzo also often uses public transit in Lawrence to get around. He said that, while the bus system is fairly intuitive, it might be more popular if bus stops had maps posted near them for people who prefer to learn more visually.” - *LeFanzo Wesley, Collected by Jenna Bellemere*

Bus Routes

Twelve community members specifically desired bus routes that are more inclusive of the rest of the community outside of KU students, stating that if routes were expanded and buses reliable they would drive less, and that current routes and reliability are often an economic barrier to gainful employment, as folks cannot guarantee that they will arrive to work on time.

- “I would say a bigger influence on public transit for sure from both of us. Going to KU and having that transit of that small little bubble of getting anywhere and everywhere we needed to from where we were living close to campus, being the ease of going back and forth between home and school. And then it seemed like the difference between that and then the rest of the whole city because it is a college town. So not everyone can afford to just pay for parking on campus. So making sure that's taken care of because it's not just a problem for students. It's a problem for everyone who lives in the county and especially in the Lawrence area. It's a right to be able to have safe and effective public transportation.” - *David Balmilero & Tara Zhang, Collected by Anna Balmilero*
- “She also talked about the lack of good bike routes in Lawrence. She said that the city needs another route from east to west, like the 21st street route. She said that the current route is insufficient, because it requires going up and down the hills on campus.” - *Kaylen Peterson, Collected by Jenna Bellemere*

Walkability

Several factors of accessibility were of concern to 25 storytellers. From sidewalk maintenance and ADA compliance, to car-free downtown ideas. Of primary interest still was that many community needs and resources, like food, are not accessible by bus or walking and that policies and development planning need to take these issues into priority, creating walkable neighborhoods with scattered smaller markets across town instead of big box stores, where people can walk to do shopping.

- “A lot of the sidewalks are on people's property or like it's on the owner's responsibility, but it's never going to get fixed that way. I think if you invested in making an accessible neighborhood, people could use their cars less because a lot of things it's like I could have walked here in theory, but your sidewalks are crooked. I can't use that.” - *Rinne Fruster, Collected by Anna Balmilero*
- “It was interesting to see what days people would come on, and it's different when the weather is really severe, we'll have less of a crowd because, honestly, it's tough for them to get out. We do have a lot of people who are wanting to get food and so that makes a big impact on them. And especially if they're having to wait, I mean, we can serve up to 300 people in a night and yeah, it shows how important these things are but I also believe that they can continue to expand and support helping with whatever needs are in the way of people's access to food and stuff.” - *Sunrise Project Volunteer, Collected by Mad Marshall*

Housing & Anti-Displacement

Housing as a climate issue is of high priority to many community members, with related keywords like housing, sprawl, energy efficiency, building codes, and more referenced 95 times. Folks advocated for more community programs to provide resources for efficiency upgrades, building electrification, and renewable energy infrastructure, as well as policies to increase affordable housing for both homebuyers and renters, with greater renter protection. Gentrification and displacement were also of great concern, emphasizing that rather than curbing public use projects, local officials should enact policies that mitigate displacement. Community members also recounted personal experiences of being housing insecure and the lack of adequate resources and shelter available while more and more infrastructure and policies are creating barriers to access stable housing.

Housing Stock Quality & Affordability

Many community members lamented that housing is getting harder and harder to find at an affordable price. Meanwhile, many homes are without necessary upgrades to help with energy efficiency and cost savings. Folks advocated for more community programs to provide resources for efficiency upgrades, building electrification, and renewable energy infrastructure, as well as policies to increase affordable housing. Several stories mentioned sprawl and sustainable development that include retrofitting and renovating existing structures rather than building new, conserving residential green space, and implementing building codes for better energy efficiency and conservation of local farmland for community agriculture. Rather than curb public use projects, enact policies that mitigate displacement.

- “By the time I was ready to buy a home, Lawrence had become unaffordable for me. During the time I lived in Lawrence I moved every year. Usually due to roommate issues, like them getting married. When I finally found myself in the position to afford to live alone, I sadly had to leave Lawrence, and I bought my first home, in Paola.” - *Melissa Martin, Collected by Emmy Rivera*
- “Kaylen discussed the need for more affordable housing in Lawrence. Her gas bills have been higher recently as a result of climate change, and she said that more affordable housing for people who aren’t seniors could help residents make rent and avoid getting evicted.” - *Kaylen Peterson, Collected by Jenna Bellemere*
- “So I guess that would be the kind of support that would be helpful, to have enough money, or just like just a resource, like something that maybe the city could provide as far as what you can do if you need to get new windows or what you can do if you need a backup source of heat, etc.” - *Sunrise Project Volunteer, Collected by Mad Marshall*

Renters

Renting creates another set of challenges for 15 community members, who have less decision-making power in their housing stock, heating and cooling, water, repair, and abilities to do things like recycle, compost, or garden.

- “We had a burst pipe. In the downstairs on the washing machine because it wasn't insulated. Burst. Yeah, it flooded the whole ground floor. It was a huge mess. It wasn't insulated, and it's like been a hidden problem but it was so bitterly cold for so long. That it literally just burst the pipe. It was such a mess because we walked down stairs after doing a load of laundry. And then as soon as you hit the stairs, it's right next to the front door. And then it was just all water. And it was just screaming. It's like I don't know what's going on. Alright, and just trying to figure out where the water had come from. Because when we had moved in, we had leaks everywhere. Because they'd ridden a bunch of stuff so every single pipe leaked. So it's just like which one is it? Why is this happening? And it was an insane amount of water. I think we contacted the landlord but I mean like he had to come in and just cut a hole in the wall. Because like there was really nothing like at the time he could really do because the pipe was outside. It was right on the outside wall. So you just got the hole to have some hot air going in. And then we couldn't do laundry for like a week plus. Because you'd have to heat at the time it took to heat up to unfreeze. Oh, that was terrible.” - *David Balmilero, Collected by Anna Balmilero*

Sprawl

Fifteen stories mentioned sprawl and sustainable development that include retrofitting and renovating existing structures rather than building new, conserving residential green space, and implementing building codes for better energy efficiency and conservation of local farmland for community agriculture. Several were also diligent to point out that continued development has harmed local ecosystems like the wetlands split by highway infrastructure.

- “Ask developers to contribute to a prairie tax, contribute to allow prairies to thrive.” - *Verónica Rodríguez-Méndez, Collected by Anna Balmilero*
- “One way Douglas County could address climate change would be to have better building codes that would encourage energy-efficient houses and also discourage sprawl, which contributes to climate change by requiring longer driving distances and by decreasing cropland. Also, legislation could encourage more local farming and consumption of local food.” - *Clark Coan, Collected by Billie David*

Gentrification

“Storytellers upset about the gentrification going on in Lawrence all expressed the same complaints about how making Lawrence less urban and rural has made it unlivable during the heat and cold. During the summer there is not enough shade or places to sit because the city is getting rid of trees, and during the winter resources to maintain roads and keep people warm are not distributed equally. One family shared a story about how they made the decision to move out of Lawrence to Baldwin because they enjoy being outside and missed having an abundance of trees in their neighborhood to provide shade during the summer.

*The Indigenous woman, who shared multiple stories with me, brought to my attention how the Haskell Wetlands have been slowly deteriorating, and the animals who inhabited the Wetlands have been suffering due to the noise pollution from the new developments being built in West Lawrence. She expressed how even though her community has been trying to talk to the city about this issue—about how the new construction is separating the Baker Wetlands from the Haskell wetlands, causing further harm—she feels like their concerns are unheard and there is no accountability.” - **Jasmine McBride Reflection***

- Gentrification specifically was discussed among six different community members, including areas of downtown, as well as new developments that focus on “luxury rentals” rather than affordable housing and dense neighborhoods.

- “Julie mentioned gentrification as a major concern: changes to a neighborhood, like planting more trees or adding a splash pad, can increase property values and force people out of their homes.”
 - Rather than curb public use projects, enact policies that mitigate displacement.
- Julie, Collected by Jenna Bellemere

Housing Insecurity / Hostile-Anti Homeless Architecture

There are several concerns with resources and shelter for housing insecure folks, primarily in Lawrence, where hostile architecture has been implemented at bus stops, tent communities are being forced to north Lawrence where flooding has increased and there is a lack of protection from the elements, and city shelter programs have changed and may not be as sufficient. These concerns were referenced across 16 stories, both from folks experiencing housing insecurity and neighbors concerned for their well-being and treatment.

- “Due to unstable housing in the last couple of years a tent community has grown along the river in North Lawrence. A lot of them got out when it flooded this spring but it was sad to see that the little they did have was washed away.” - Chris Herman, Collected by Emmy Rivera
- “Last winter I was able to [manage the cold]. I was staying inside then, but this fall when it came up, I was homeless—boy it got cold at nights, and I got into this shelter down here. And it's cold in there too. Yeah, there isn't very much ventilation in the shelter. So it gets cold in there at night too, especially in the morning time. Yeah, it's real cold.” - Archie, Collected by Fatima Cruz
- “[Redacted] talked about the city’s program last year to provide hotel rooms to unhoused people in the winter. The program was started because of the harsh winters Lawrence has been experiencing as a result of climate change. The program [Redacted] referenced didn’t come back this year; instead, the city is housing people in the rec center. **Is the new program sufficient? This seems like something we should look into more.**” - Story of a homeless individual collected by Jenna Bellemere
- “Jane is an individual that wishes to remain anonymous. We met over the phone, and she was scheduled for an in-person visit. She is not secure in housing and faced criminal charges in Douglas County where she was taken to jail. We spoke about current conditions for the unhoused population and the impact climate has had with finding shelter. While incarcerated she was only allowed out of her cell for two hours per day because they were ‘full.’ Upon release Jane was awaiting shelter determined by the County based on the temperature outside. Severe weather has impacted her ability to maintain housing when most employers require a home address. I provided a list of services to assist with her transition.” - Jane Doe, 40+, Collected by Tiana Harding

Financial Stability & Energy Justice

A common theme for community members were the core tenants of energy justice: “social and economic equity in the energy system and remediating social, economic, and health burdens on those disproportionately harmed by the energy system” (www.iejusa.org). High bills and energy burden, financial stress and anxiety that led community members to not heat and cool their homes adequately to their health and safety, and a lack of access to resources for solutions were referenced nearly 70 times.

“There needs to be a comprehensive look at how poor communities, people of color, and poorer rural agricultural areas are used,” he said, explaining that if one looks at local and regional maps, including the Kansas City area, they show that fossil fuel emissions are found next door to communities with the lowest incomes, producing health problems such as children coping with asthma. These issues can be improved with strictly regulated rezoning and the outlawing of fossil fuels, he said.” - Creed Shepard, Collected by Billie David

High Bills / Energy Burden

High bills and energy burden were detailed and referenced 50 times, collectively across all Community Coordinators' story collection. This financial strain negatively affects how community members eat, use transportation, and keep homes at stable and healthy temperatures.

“Climate change has put massive financial strain on many community members: Ali Presnell, a financial empowerment specialist at a local charity, said that many of her clients struggle with paying power bills caused by extreme high and low temperatures. Even families who are mostly stable can be blindsided by high utility bills because of harsh winters and hot summers. She added that measures intended to help can often make this problem worse: the city can stop energy shutoffs, but then people can get behind on their bills and end up in debt. The city can also set up payment plans, but they often have unexpectedly high balances that catch some low-income people by surprise. Ali also talked about her own experience with climate change. Her charity doesn't have enough funding to keep the heating and cooling on during the extreme heat and cold caused by climate change.” - Ali Presnell, Collected by Jenna Bellemere

- “My electric is like crazy high. My gas is okay. Because I don't use gas that much. I mean, I cook with it, but it's not that bad. But my God, my electric is like through the roof. It's like double what it used to be. And my water I don't know, because it's wrapped into my rent. I try to limit the use of the electricity of the house. Because it's sky high. I try not to go places I don't need to go. So I don't have to use gasoline in my car so often. I've told my kids they need to find their own way home from work. And their own way to work. Because I can't afford the gas.” - Jacky, Collected by Fatima Cruz

Financial Stress & Anxiety

The community was overwhelmingly anxious about the rising costs of living, primarily with energy bills, many opting to go without when they would and should rather not. Most storytellers had anxiety for loved ones and their futures as climate impacts progress. Most notably, fears were high after energy blackouts and the following rising energy costs from the 2021 winter storms and polar vortex. These concerns were referenced a collective 112 times across all 115 stories.

- “I now attend Haskell Indian University full time, and work part time making food deliveries with Eatstreet. Most nights are worth it but some nights I spend more money on gas than what I make, which can be frustrating. It is an older car so if it's too cold out, the heater goes in and out. If it's too hot out, the A/C doesn't work at all. I don't know which is worse but it is all I can afford right now. I try to save money to replace the car but it's impossible with food and bills.” - Kalila Vega, Collected by Emmy Rivera

How to Access Climate Solutions

Many community members advocated for greater expansion of programs to access community climate solutions such as weatherization, energy efficiency upgrades, and renewable energy investments, both residentially and as a community.

- “Why not have programs that could help get solar panels to people that can't afford that kind of technology?” - *Dalylah & Created Collage (right), Collected by Mad Marshall*
- “One important way that the city can address climate change is by updating its building and residential codes, addressing energy efficiency improvements so that we burn less fossil fuel, he said, adding that the city is looking at going to renewable energy, and they have already passed the resolution, and he hopes that they pursue that. “I would love for the city to look into more solar energy,” he said, pointing out as an example how Baldwin City now has a solar field that supplies the city's energy.” - *Reid Nelson, Collected by Billie David*
- “More solar power is needed, and houses should be weatherized and insulated, Dan continued. This is something the city could sponsor, and it would put people to work and help them lower their energy bills.” - *Dan Bentley, Collected by Billie David*



Environmental Stewardship

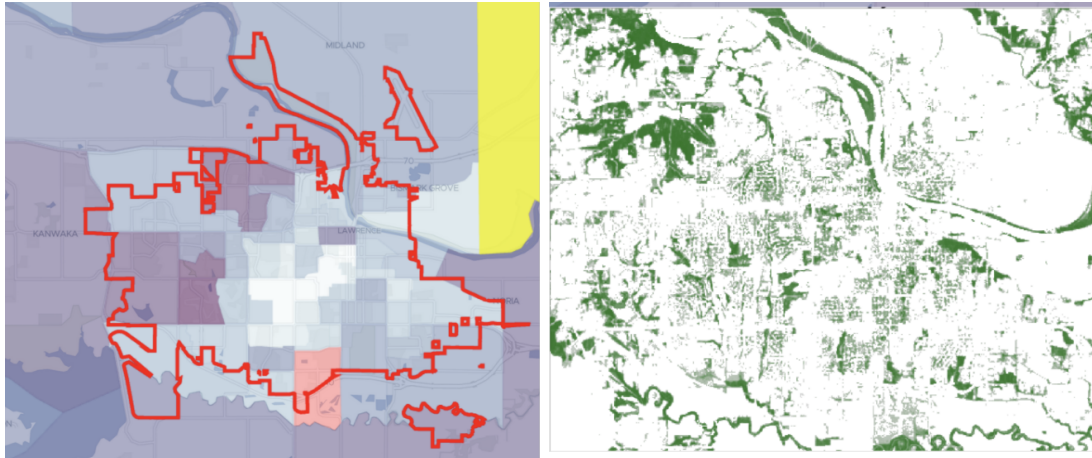
A natural direction toward environmental stewardship was common in community members' climate stories, with several people advocating for more natural green space, protection of the wetland ecosystems and Kaw River as well as other bodies of water, and better management of recycling and waste programs.

Agriculture/Green Space

Thirty-seven community members advocated for more nature parks, native prairie restoration and a movement away from traditional lawn landscaping, the planting of more native trees for increased shade that won't create large plumes of pollen, and additional areas for pet recreation beyond the off-leash park at Clinton Lake.

- “Another undertaking we should adopt, he said, is regenerative agriculture, or agricultural practices that improve the ecological system as a whole rather than planting just one crop with the main goal of producing high yields. That's because working with natural ecosystems and encouraging the interaction between soils and microbes improves the soil, which improves air quality, Creed explained. Not only does healthy soil absorb carbon dioxide, but it also encourages better growth of trees and plants, thus lowering the concentration of carbon dioxide in the atmosphere. In addition to regenerative agriculture, air quality can be improved by adding green corridors, preferably with native plants, preserving natural areas, and creating much tighter local food hubs, he added.” - *Creed Shepard, Collected by Billie David*
- “People would like to see more trees planted in Lawrence (NOT ones that produce a lot of pollen).”
 - For aesthetic appearance
 - For shade in the summer - the lack of shade in Lawrence for people who want to walk around/don't have a car- *Story Collected by Jasmine McBride*

- “Living in Lawrence was an overall positive experience, but Lawrence didn’t have enough shade: ‘In Eudora, we’ve got shade all over the place... but not in Lawrence.’ Eudora also had more open space and wildlife, he said, and adding more trees would make a big difference in Lawrence.” - *Eric, Collected by Jenna Bellemere*
- *Tree Cover and Income Maps provided through Jenna Bellemere’s story collection.*



Wetlands

One Douglas County-specific issue—referenced 25 different times—is that of the Wakarusa Wetlands, which used to be 18,000 acres. Now, they’re massively diminished. Lawrence and the county, however, have continued to develop around them, gradually encircling a critical ecosystem. - *Key takeaway from Anonymous Expert on Indigenous Knowledge, Collected by Jenna Bellemere*

- “The Indigenous woman, who shared multiple stories with me, brought to my attention how the Haskell Wetlands have been slowly deteriorating, and the animals who inhabited the Wetlands have been suffering due to the noise pollution from the new developments being built in West Lawrence. She expressed how even though her community has been trying to talk to the city about this issue—about how the new construction is separating the Baker Wetlands from the Haskell wetlands, causing further harm—she feels like their concerns are unheard and there is no accountability.” - *Jasmine McBride Reflection*
- “The South Lawrence trafficway has expanded from two slow lanes on 31st street to four lanes of high-speed highway right through the wetlands, and we’ve had other developments, like the Nest and the Union Loop, in the area. These developments are absolutely devastating to the wetlands ecosystem health. The side of the wetlands near Haskell is particularly damaged, which has had massive cultural as well as ecological impacts. Put simply, Lawrence is slowly destroying a massively important ecosystem, an issue that will only become more dire as rainfall in the region increases and the water has nowhere to go. The interviewee discussed reading the county’s climate preparedness documents (he called them the “2050 docs”) and finding little mention of the Wakarusa wetlands. Urban planning in Lawrence has completely ignored the need to protect the wetlands, which he characterized as an extremely egregious omission. **Any functional Climate Action Plan absolutely must include expanded protections for the wetland ecosystem.**” - *Jenna Bellemere Reflection*

River/Flooding

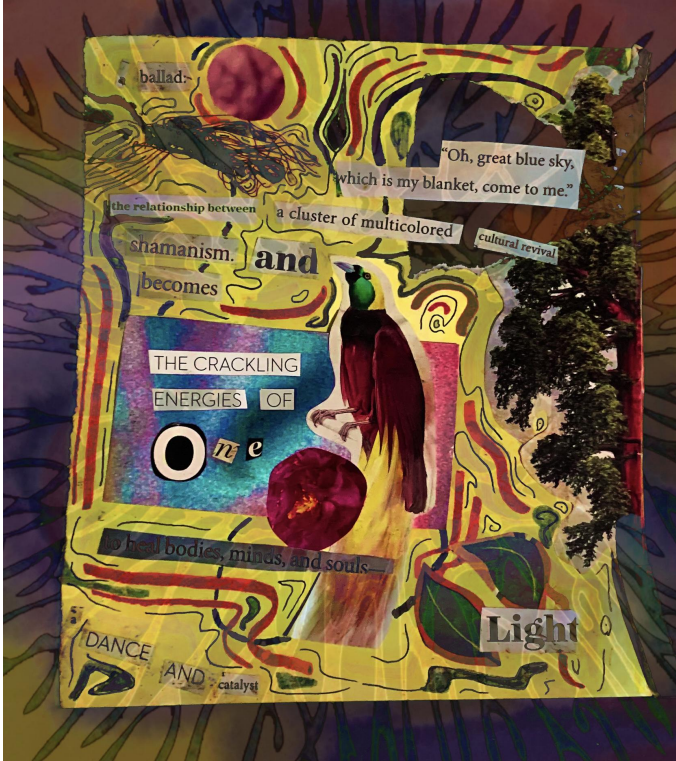
Thirty-nine community members showed great concern not only for health and housing impacts of increased flooding, but also for the quality of the Kaw River and other bodies of water, especially with a lack of a state water plan. Others recounted again how the wetlands which are being disturbed could help mitigate flood impacts but the ecosystem is at risk with continued developments.

- “As climate change becomes more of a threat and the population of the city continues to grow, citizens must deal with the problem of standing water and the insects, such as mosquitos, that thrive there.”
- “I have seen some environmental impacts while working along the Kansas River where the water levels change often. A few years ago, we had record breaking rainfall all across the state. Water levels were high and we could see floods happening in a lot of areas, and it was just wild to see how much gets washed down the river. They had to time the opening the dam, so water could pass down all the way to Missouri before they could release water from the dam. There was so much water because of the rain and if they were to release it all at once it would flood all through the river and surrounding areas which would have included downtown Lawrence. I was working one night and the water level was so high up that the city officials were sent out. We put sandbags on our bottom floor which is right along the river. Usually, the water’s edge is very far down. You can see the water but it’s 35 to 40 feet away from us, but that night it got within 4” of coming over and cresting which would have flooded our hotel and area.” - *Chris Herman, Collected by Emmy Rivera*

Recycling & Waste Management

Several community members have concerns about wide accessibility and efficacy of community recycling programs, litter in greenspaces and bodies of water, and potential policy action regulating plastic pollution, all mentioned a collective twenty times.

- “Then In 2015, out of the blue, a teacher showed the 4th grade students at Kennedy Elementary School a 5-minute film by Greenpeace about plastics. The students asked what they should do about it, and they went to the City Commission. ‘And we also went to the City Commission and two other Earth care groups went,’ Thad said. ‘They told us to go to the Sustainability Advisory Board that meets monthly, and we went to them, and they said they will make it a priority.’ Word got out to the state legislature as the Sierra Club in Wichita also got involved, and the Kansas government put a stop to it, but the city could still do it, Thad said, but at this point they haven’t done anything. One reason for that is because COVID slowed it down, not only because people wanted to make sure that the bags they carried their groceries home in were not contaminated with the virus, but also because plastic equipment is needed in the hospitals to treat patients with COVID. ‘But we can limit the use of plastics and then move toward some alternative,’ Thad said.” - *Thad Holcombe, Collected by Billie David*
- “So I noticed that they have recycling bins and the trash bins, but then after that, as the trash will come, they don’t even separate it. They just like put it all together. And it doesn’t make any sense how they say we should recycle but then again, like they’re not separating that whatsoever. So how are we supposed to keep recycling if like, you know, you keep putting it back in the landfill area. So that doesn’t make sense. I think that’s one of the things that should be brought up about that is you know, have a different trim trashcan I don’t know like vehicle to get just recyclables only. Yeah. And then after that, like just get the the ones that are not nonrecyclable. Yeah, I think that would help a lot.” - *Autumn, Collected by Jasmine McBride*



A special thank you to the one hundred fifteen community members who shared their stories with us. This narrative of Our Climate Story in Douglas County would not have been possible without you!

Mad Marshall Individual Feelings Collage Art Piece

Appendix C

DOUGLAS COUNTY COMMUNITY ENGAGEMENT SURVEY RESULTS



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Executive Summary

Douglas County Kansas is creating a Climate Action Plan for municipalities and unincorporated areas of Douglas County. The plan will prepare our community to reduce greenhouse gases and better adapt and recover from the risks of climate change. One part of community engagement and feedback was a community engagement survey distributed in in 2021. Survey outreach included distribution of project flyers with survey QR codes around Lawrence, a tabling event at EudoraFest and at Art Emergency in Lawrence, Baldwin City Lumberyard Art Center, and at the Douglas County Farm Tour. Survey links were placed in Lawrence’s Flame newsletter, included with utility bills. Links were also distributed through email lists of the Sunrise Project and Just Food. Links were posted on the Lawrence-Douglas County Sustainability Facebook page, and on the [Climate Action in Our Community](#) website.

[Appendix III](#) displays the survey questions and format. Respondents are predominantly full-time employed college-educated Lawrence residents with adequate incomes for their cost of living. Most are White 25-65+ year old homeowners. Climate change, water quality, and heat are the top environmental issues faced by their neighborhoods. The vast majority use cars for transportation. Energy from fossil fuels and insulated homes keep residents cool in the summer and warm in the winter. The community would like to increase the efficiency of their homes and use renewable energies, often mentioning their concerns about using fossil fuels to heat and cool their homes. Residents rely most on sidewalks and trails, the food shed, and green space to be healthy. Lack of healthcare access, poor environmental quality, and a lack of healthy food makes them and their families unhealthy.

Demographic Representation

[Appendix I](#) covers demographic information of respondents. None of the demographic questions were required questions, thus each graph includes a “Total responses” count of respondents who disclosed information. The survey captured 554 total responses from zip codes within Douglas County. 25 responses were excluded for being outside the Douglas County limits. 46 respondents did not disclose their zip code but were included. Lawrence residents represented 83.9% of respondents. [73.5%](#) of respondents have at least an undergraduate degree. This is disproportionate to the 2020 Census 5-year estimates that 31.9% of respondents have at least an undergraduate degree. 77.3% of respondents are not college students. 49.5% of respondents are employed full time. 83.6% of respondents self-estimate that they have either enough income or more than enough income for their living needs. 68% of respondents are homeowners, which is disproportionate to the 2020 Census 5-year estimates that homeowners account for 51% and renters account for 49% of the total number of households in Douglas County. 56.3% of respondent’s households have 2 to 3 members.

[82.8%](#) of respondents are 25 years old or older. This is disproportionate to the 2020 Census 5-year estimates showing that 58.4% of residents are 25 years old or older, while 24.5% are 19 years old or younger. 51% of respondents identified as female, while 34% identified as male. 75% of respondents are White. This closely matches the 2020 Census 5-year estimates showing that 78% of Douglas County is White. However, only 3% of the English-language survey respondents are Hispanic/Latino, compared to the 6% shown in the 2020 Census 5-year estimates to reside in Douglas County. Spanish-language survey responses filled out and in possession by a local organization have yet to be translated and integrated into the data. Asian, Native American, and Black residents were similarly underrepresented by survey respondents. The Douglas County CAP Survey Demographics dashboard (not yet published) will represent this data in graph form, while [Appendix I](#) shows count and percentage tables.

Note that in order to obtain multicultural representation in our community outreach, community coordinators were hired to interview members of our community. Those results will be shared in a separate document.

Climate and Community

[Appendix II](#) covers survey responses related to climate change and health of the community. The first survey question asked respondents to indicate the top environmental issue that is facing them

and their neighbors. [36.4%](#) of respondents selected climate. This included increased hazard events like tornadoes. Water quality and heat were the next highest concerns at 10.8% and 10.1% respectively. 28 respondents selected the category “other” and explained their concern for habitat and land degradation and loss from development and damaging agricultural practices. These responses were grouping into the “Green space access” category. Others expressed concern about light and noise pollution, a lack of walking/biking infrastructure, the coal plant, aging infrastructure, and a need for renewable energy. These responses were grouped into the “Nearby polluting infrastructure” category. Several expressed concern for the overuse of pesticides and fertilizers. These responses were put into the “Water quality” category. The remaining “other” responses were not clarified by the respondent, or the comments were unrelated to the question and were not included into the categories.

At the end of the survey, respondents were asked what topic areas of the CAP Plan they would like to give input on during the development process. Respondents could select as many categories as they would like. 42 respondents chose to not select any input categories. The top three categories of input selected were “Energy Generation” at [46.6%](#), “Food Systems” at 46.2%, and “Land” at 44.9%.

[81%](#) of respondents have thought “some” or “a great deal” about taking action to reduce greenhouse gas emissions. [74.2%](#) have thought “some” or “a great deal” about preparing for extreme weather. Responses to open-ended questions from the survey were categorized and represented in Appendix II pages 8 – 11, selected quotes are included alongside the questions in Appendix II. All of the quotes can be made available by request to Douglas County Sustainability staff. Most responses fit into multiple categories. Some respondents chose to leave questions blank, thus “Total responses” represents the total number of respondents who disclosed information. Exceptions include the questions “What would you change about how you keep cool?” and “What would you change about how you keep warm?”. With these questions, giving no response was categorized together into the “Satisfied” category with respondents indicating they were satisfied with how they choose to keep warm and keep cool.

Over [90%](#) of Douglas County residents who responded to the survey use a personal vehicle to get around. [87%](#) use energy to keep cool, giving responses mentioning energy use, conventional air conditioning, heat pumps, geothermal cooling systems, and using fans. 31% use ventilation, mentioning window dressings, opening and closing windows, insulated homes, and wearing appropriate/light clothing. An almost equal percentage mention using local environmental resources such as going to the

lake, staying in the shade, planting trees, spending time under trees, exercising/doing activities outdoors during cool times of day, lake and pool swimming. 0.7% are unable to keep cool.

[39.7%](#) of respondents would like to change how they keep cool by increasing building efficiency, mentioning passive cooling architecture, updating windows, insulation, painting house white, landlords changing systems/weatherizing, increasing energy efficiency, and using less energy. 19.5% would like to use renewable energy sources. 11.6% would like to improve environmental resources and infrastructure, mentioning wanting a clean river, misting stations, pools, splash pads, and planting trees. 6.3% would like to reduce the cost of keeping cool. [Numbers are similar](#) for how surveyed residents would like to change how they keep warm. However, environmental resources are not mentioned and a higher percentage (28.9%) of respondents would like to use renewable energy to keep warm.

[86.6%](#) of respondents use energy sources to keep warm, mentioning heating units, adjusting the thermostat, electric space heaters, zone heating, fireplaces, warm drinks, and warm food. 46% mention insulation as a method to keep warm, discussing closing/insulating windows and doors, opening shades for sunlight, weatherstripping, insulated house, staying indoors, dressing warmly, and using blankets. 0.4% use public spaces such as the housing shelter to keep warm. 0.2% don't stay warm.

[47.1%](#) of respondents think that public infrastructure keeps them healthy, mentioning walkability, biking/bike trails as exercise infrastructure, running, gyms, pools, exercise facilities, and water quality as it relates to drinking water. 37% think community food access keeps them healthy, mentioning grocery stores, The Merc, healthy food, farmers markets, and farms and gardens. 34.7% think community green space keeps them healthy, mentioning the outdoors and outdoor spaces, parks, trails, hikes, yard work, and air quality. 19.1% think community health care keeps them healthy, mentioning clinics, insurance, vaccinations, and mask access. 13.9% think people in the community keep them healthy, mentioning safe neighborhoods and communities, local leadership and government, policing, sport clubs, teams and classes, and connecting with friends. 3.2% think housing keeps them healthy, mentioning quality housing, access to housing, apartment complex exercise facilities, indoor air quality, and stable housing.

[32.4%](#) of respondents think a lack of healthcare access makes them unhealthy, mentioning stress, anxiety, hereditary health conditions, age, pathogens, unsafe work conditions, and sedentary work. 30.5% think bad environmental quality makes them unhealthy, mentioning air pollution, the coal plant, allergies, wildfire smoke, mold, indoor air quality, soil pollution, lead in the soil, and a dirty river.

28.9% think public infrastructure makes them unhealthy, mentioning proximity to transportation infrastructure, lack of safe bike paths, not being able to be outside, noise and light pollution, poor water quality, and excessive heat. 20.5% think lack of food access makes them unhealthy, mentioning fast food, poor diet choices, and processed food. 8.6% think the cost of living is making them unhealthy, mentioning high taxes, housing costs, unaffordability, and overwork. 5.9% think poor housing quality makes them unhealthy, mentioning slumlords, homes not being kept to code, mold, chemicals and products in housing construction.

Appendix I: Demographics

Cities		
CAP Survey		
Lawrence	465	83.9%
Eudora	19	3.4%
Baldwin City	13	2.3%
Lecompton	2	0.4%
Overbrook	1	0.2%
Undisclosed	54	9.7%
Total Responses	500	

Education Level					
CAP Survey			2020 Census		
Post Graduate	221	40.4%	Post Graduate	16626	13.7%
B.A./B.S	186	34.0%	B.A./B.S.	22063	18.2%
Some College	106	19.4%	Some College	35887	29.6%
H.S. Diploma	31	5.7%	H.S. Diploma	18077	14.9%
Some H.S.	3	0.5%	Some H.S.	4123	3.4%
Undisclosed	7	1.3%	Total	121,304	
Total	547				

Student Status		
CAP Survey		
Not a student	428	77.3%
College Student	102	18.4%
Undisclosed	24	4.3%
Total Responses	530	

Employment Status		
CAP Survey		
Full time	274	49.5%
Retired	96	17.3%
Part time	94	17.0%
Unemployed	48	8.7%
other	41	7.4%
Undisclosed	1	0.2%
Total Responses	553	

Income Estimate Self-Evaluation		
CAP Survey		
About Enough	286	51.5%
More than Enough	179	32.3%
Not Enough	79	14.2%
Undisclosed	10	1.8%
Total Responses	544	

DGCO Tenure by Household					
CAP Survey			2020 Census		
Owner	378	68%	Owner	24,333	51%
Renter	149	27%	Renter	23,639	49%
Other	15	3%	Total	47,972	
Undisclosed	7	1%			
No permanent Housing	5	1%			
Total Responses	547				

Appendix I: Demographics continued

Members in Household		
CAP Survey		
1	94	17.0%
2 to 3	312	56.3%
4 to 5	98	17.7%
5 to 7	14	2.5%
Undisclosed	36	6.5%
Total Responses	518	

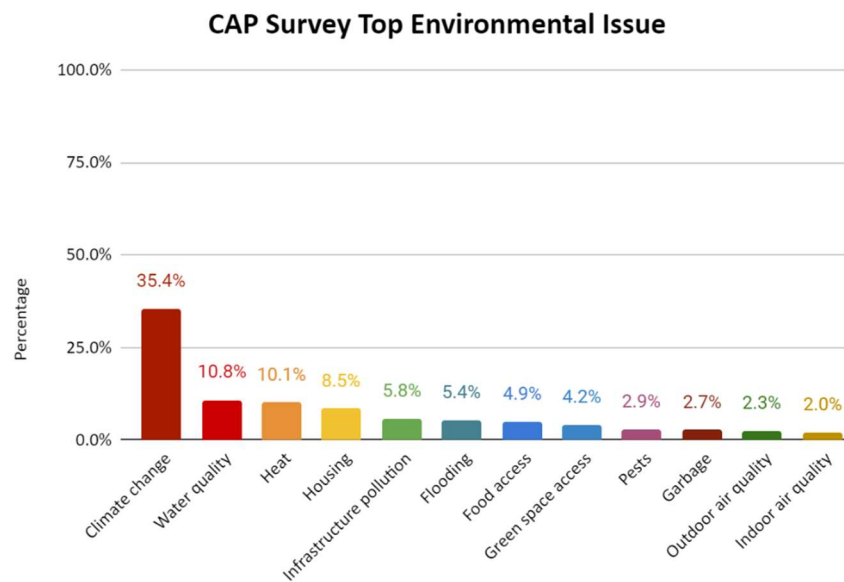
DGCO Age				
CAP Survey			2020 Census	
17 or under	5	0.9%	19 or under	29,732 24.5%
18-24	78	14.1%	20-24	20,683 17.1%
25-34	95	17.1%	25-34	17,843 14.7%
35-44	102	18.4%	35-44	14,558 12.0%
45-54	69	12.5%	45-54	11,446 9.4%
55-64	71	12.8%	55-64	12,216 10.1%
65+	122	22.0%	65+	14,826 12.2%
undisclosed	12	2.2%	Total	121,304
Total Responses	542			

DGCO Gender		
CAP Survey		
Female	285	51%
Male	190	34%
Undisclosed	58	10%
Gender Nonconforming	21	4%
Total Responses	496	

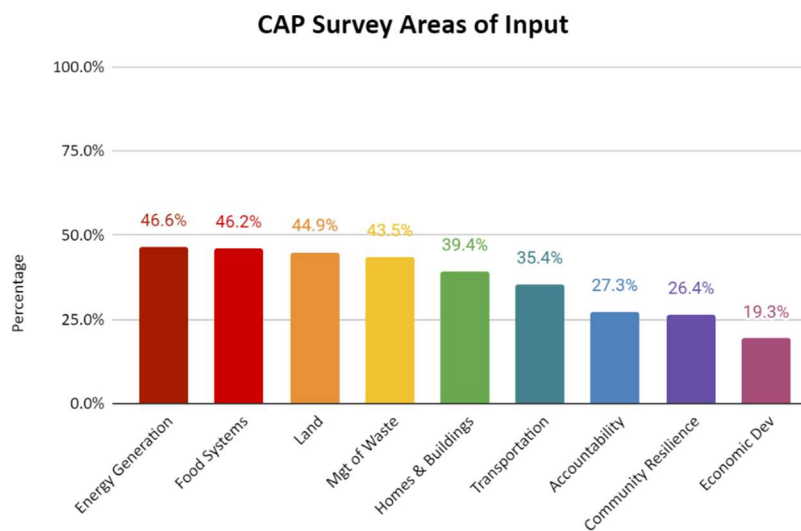
DCGO Race				
CAP Survey			2020 Census	
White	413	75%	White	94,090 78%
Undisclosed	68	12%	-	- -
Multiple Races	36	6%	Multiple Races	5,648 5%
Hispanic or Latinx	14	3%	Hispanic or Latinx	7,762 6%
Asian	12	2%	Asian	6,343 5%
Native American	6	1%	American Indian & Alaska Native	2,178 2%
Black	5	1%	Black	4,812 4%
Total Responses	486		Total	121,304

Appendix II: Climate and Community

Top Environmental Issue		
Climate change	196	35.4%
Water quality	60	10.8%
Heat	56	10.1%
Housing	47	8.5%
Infrastructure pollution	32	5.8%
Flooding	30	5.4%
Food access	27	4.9%
Green space access	23	4.2%
Pests	16	2.9%
Garbage	15	2.7%
Outdoor air quality	13	2.3%
Indoor air quality	11	2.0%
Noise	0	0.0%
Other	27	4.9%
Total Responses	526	



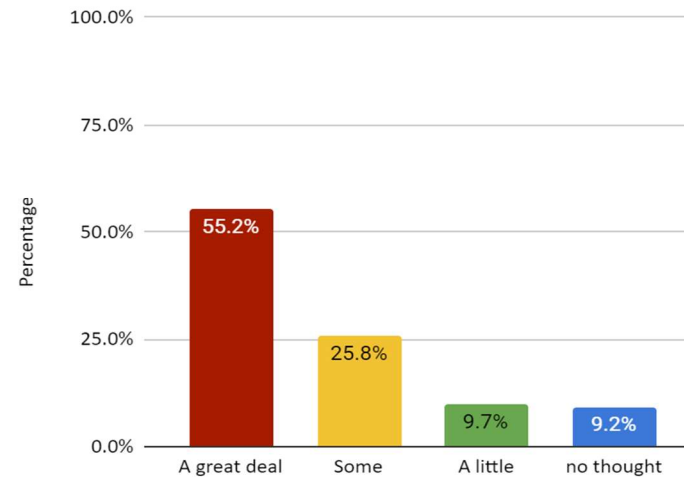
Which of these topic areas are you most interested in giving input on during the development of the Climate Action Plan?		
Energy Generation	258	46.6%
Food Systems	256	46.2%
Land	249	44.9%
Mgt of Waste	241	43.5%
Homes & Buildings	218	39.4%
Transportation	196	35.4%
Accountability	151	27.3%
Community Resilience	146	26.4%
Economic Dev	107	19.3%
None	42	7.6%
Total Responses	512	



Appendix II: Climate and Community continued

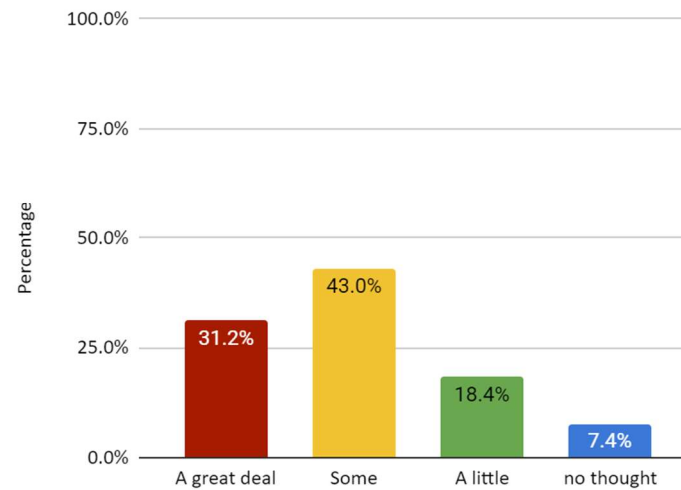
How much have you thought about taking action to reduce greenhouse gas emissions?		
A great deal	306	55.2%
Some	143	25.8%
A little	54	9.7%
no thought	51	9.2%
Total	554	

How much have you thought about taking action to reduce greenhouse gas emissions?



How much have you thought about preparing for extreme weather like major flooding and extreme heat or cold?		
A great deal	173	31.2%
Some	238	43.0%
A little	102	18.4%
no thought	41	7.4%
Total	554	

How much have you thought about preparing for extreme weather?



Appendix II: Climate and Community continued

How do you get around in your community?		
Car	508	91.7%
Walk	194	35.0%
Bike	135	24.4%
Public Transit	60	10.8%
Ride Share	8	1.4%
No Response	13	2.3%
Total Responses	541	

“We love biking the bike paths and do some errands on them but we drive too. We have put our bikes on bus and taken them downtown too. We hope to buy electric vehicles soon.”

“I drive (blegh).”

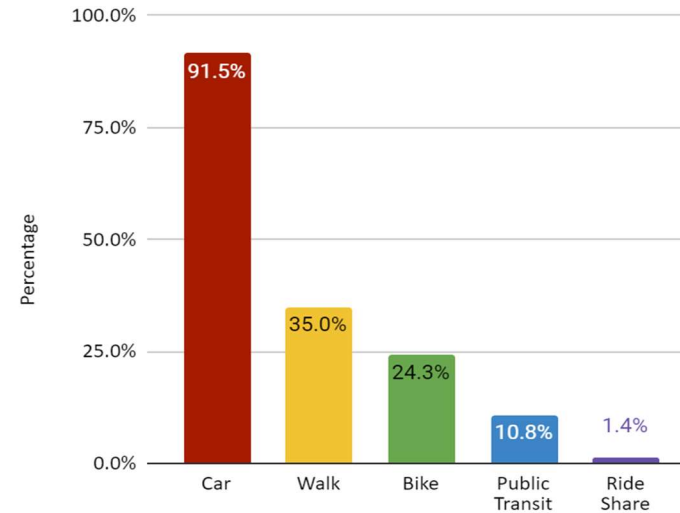
How do you keep cool in the summer?		
Energy Sources	482	87.0%
Ventilation	172	31.0%
Environmental Resources	168	30.3%
Don't Stay Cool	4	0.7%
No Response	11	2.0%
Total Responses	543	

“Acclimate to weather; air conditioning; trees for shade; appropriate home infrastructure i.e. light colored house paint; window shades, etc.”

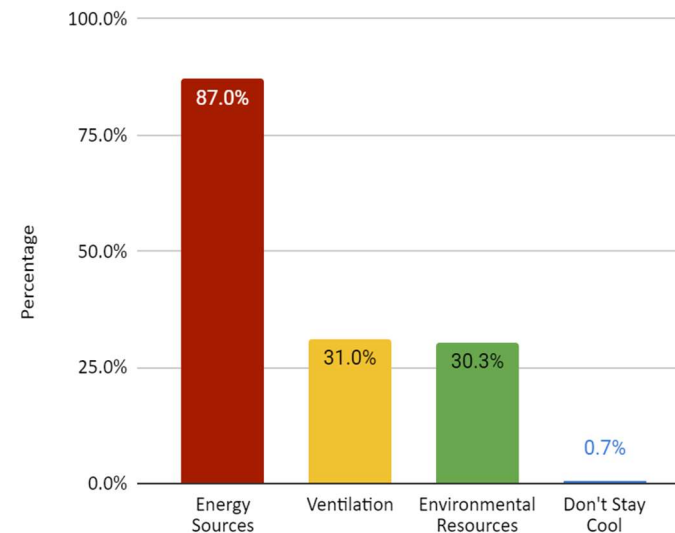
“Go to public places with AC.”

“I keep air set to 75 degrees and shut shutters against the sun, put up awnings, even put white foam core in windows between the closed shutters that get the most heat. I’ve planted shade trees everywhere I’ve lived, too.”

How do you get around in your community?



How do you keep cool in the summer?



Appendix II: Climate and Community continued

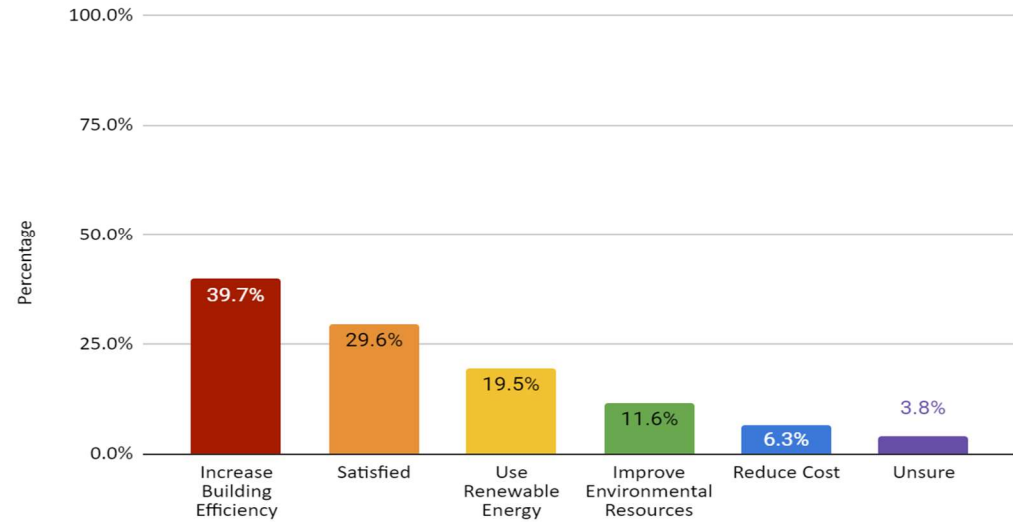
What would you change about how you keep cool?		
Increase Building Efficiency	220	39.7%
Satisfied	164	29.6%
Use Renewable Energy	108	19.5%
Improve Environmental Resources	64	11.6%
Reduce Cost	35	6.3%
Unsure	21	3.8%

“I'd like to use the AC less and have better windows/insulation to allow that.”

“My family is saving to get solar panels so electricity isn't coming from the coal plant.”

“Would love to have more places to swim with clean water”

What would you change about how you keep cool?

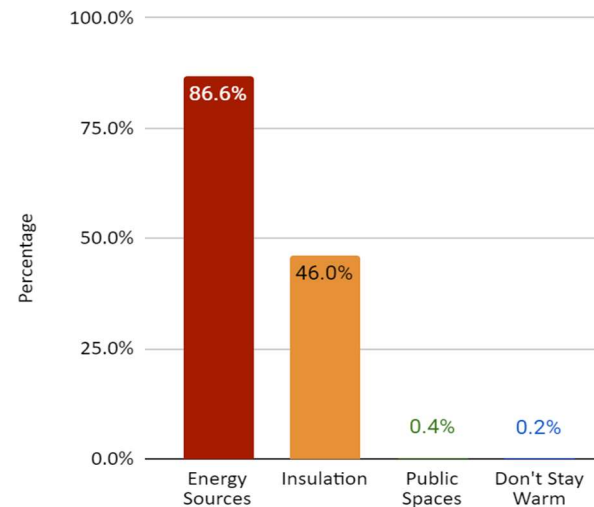


How do you keep warm?		
Energy Sources	480	86.6%
Insulation	255	46.0%
Public Spaces	2	0.4%
Don't Stay Warm	1	0.2%
No Response	19	3.4%
Total Responses	535	

“Wood stove as a primary. Mini split heaters and gas furnace as back up. Also exercise; biking, walking, working outside in the winter keeps you naturally warm.”

“Dress appropriately, insulate home, use sunlight to warm house”

How do you keep warm?



Appendix II: Climate and Community continued

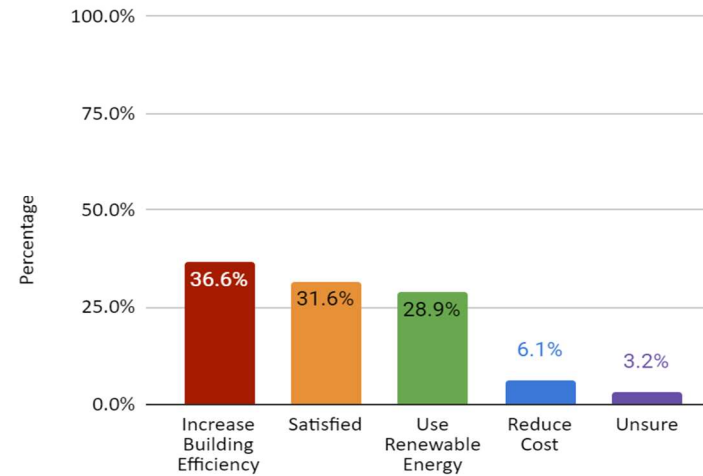
What would you change about how you keep warm?		
Increase Building Efficiency	203	36.6%
Satisfied	175	31.6%
Use Renewable Energy	160	28.9%
Reduce Cost	34	6.1%
Unsure	18	3.2%

“Better insulated home, more efficient heating unit and appliances.”

“We are planning to switch to electric heat. We would like to add emergency battery power and wood stove.”

“Add a humidifier to keep air from being too dry. Would be nice to have it all in one package and a purifier too.”

What would you change about how you keep warm?



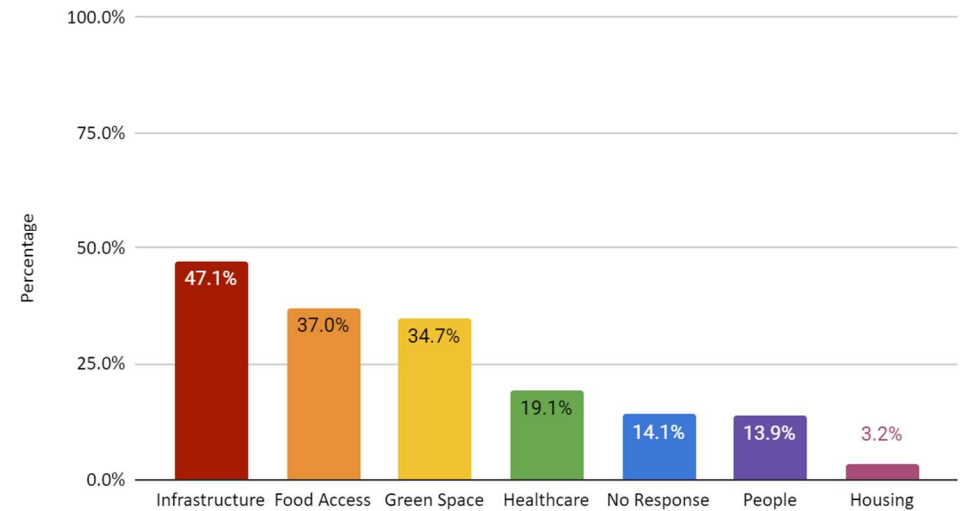
What in your community keeps you and/or your family healthy?		
Infrastructure	261	47.1%
Food Access	205	37.0%
Green Space	192	34.7%
Healthcare	106	19.1%
People	77	13.9%
Housing	18	3.2%
No Response	78	14.1%
Total responses	476	

“The trails around town, the outdoors space, and the opportunities to get outside in nature. Also, the campus clinic.”

“My privilege to buy fresh produce and have safe places to run”

“Access to clean, filtered drinking water, Just Food, amenities like the gym or the pool at my living complex.”

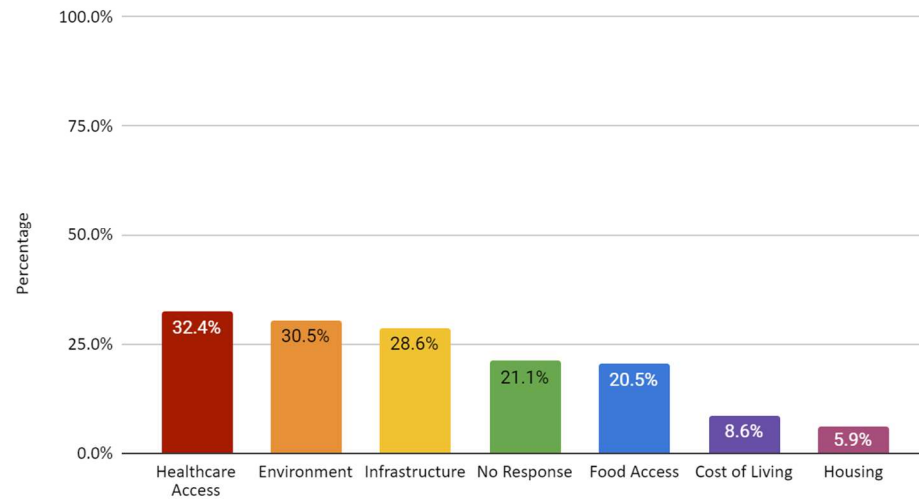
What in your community keeps you and/or your family healthy?



Appendix II: Climate and Community continued

What do you think makes you and/or your family sick or unhealthy?		
Healthcare Access	180	32.4%
Environment	169	30.5%
Infrastructure	159	28.6%
Food Access	114	20.5%
Cost of Living	48	8.6%
Housing	33	5.9%
No Response	117	21.1%
Total Responses	437	

What do you think makes you and/or your family sick or unhealthy?



“The heat making it too hot to be outside much”

“Climate change causing poor air quality.”

“Every coal plant nearby, the pollution from all of the cars on our roads, and poor water and air quality in badly maintained/not upgraded rental houses.”

“Community stress -- worrying about unhoused neighbors, families who don't have what they need, and climate change. Also the grind of work/school, and being very busy.”

“Shortage of affordable housing, employers that take advantage of low minimum wage, lack of affordable childcare.”

“Poorly maintained infrastructure. Lack of support for low-income families and houseless individuals. Urban planning that doesn't incorporate walkability.”

Appendix III

CLIMATE ACTION PLAN COMMUNITY ENGAGEMENT SURVEY



The City of Lawrence and all of Douglas County are building a Climate Action Plan to adapt to the impacts of a changing climate and do our part to slow climate change. We are looking for voices from every corner of the community. We want to hear from you. *(required questions have an *)*

1. Rank the top **three** environmental issues you believe you and your neighbors are facing, **rank them in order of 1st, 2nd, and 3rd**. Ignore the remaining choices. *

<input type="checkbox"/> Heat	<input type="checkbox"/> Water quality	<input type="checkbox"/> Garbage (including from illegal dumping)
<input type="checkbox"/> Flooding	<input type="checkbox"/> Indoor air quality (including mold, lead paint, dust exposure)	<input type="checkbox"/> Permanent/reliable housing
<input type="checkbox"/> Noise	<input type="checkbox"/> Outdoor air quality	<input type="checkbox"/> Climate change (including increased hazards such as tornadoes)
<input type="checkbox"/> Access to parks or green space	<input type="checkbox"/> Access to food	<input type="checkbox"/> Other:
<input type="checkbox"/> Pests, such as roaches, rats, or bed bugs	<input type="checkbox"/> Nearby polluting infrastructure or activities (like a highway/ high traffic area or factory)	<hr/> <hr/>

2. How much have you thought about preparing for extreme weather like major flooding and extreme heat or cold? (choose one)

- A great deal
- Some
- A little
- none

3. How much have you thought about taking action to reduce greenhouse gas emissions? (choose one)

- A great deal
- Some
- A little
- none

4. How do you keep cool in the summer?
5. What would you change about how you keep cool?
6. How do you keep warm in the winter?
7. What would you change about how you keep warm?

- 8. How do you get around in your community?
- 9. What in your community keeps you and/or your family healthy?
- 10. What do you think makes you and/or your family sick or unhealthy?

11. Which of these topic areas are you most interested in giving input on during the development of the Climate Action Plan? (check one or as many as you want)

- | | |
|---|--|
| <input type="checkbox"/> Transportation: Getting people from place to place | <input type="checkbox"/> Food Systems: Improving how we produce, buy, eat, and dispose food |
| <input type="checkbox"/> Land: Using land to reduce greenhouse gases and absorb extreme weather events | <input type="checkbox"/> Management of Waste: Reducing, reusing, and recycling materials |
| <input type="checkbox"/> Healthy & Resilient Homes and Buildings: Preparing buildings and homes for extreme weather and energy efficiency | <input type="checkbox"/> Community Resilience: Preparing for and recovering from extreme weather events as a community |
| <input type="checkbox"/> Energy Generation: Producing energy with less emissions | <input type="checkbox"/> Leadership & Accountability: Implementing and reporting progress of the climate plan |
| <input type="checkbox"/> Economic Development & Innovation: Supporting businesses and entrepreneurs | <input type="checkbox"/> None. |
| | <input type="checkbox"/> Other (please describe here). |

Provide your email address if you would like to continue to share input throughout the Climate Action Plan development and have a chance to win some prizes.

Demographics

It is important to hear from all types of people who live, work, and spend time in our community. Please share a few details about yourself so that we can better understand whose voices are present and may be missing.

- 1. What is your race/ethnicity?* (check all that apply)
 - Asian
 - Black
 - Hispanic or Latino/a/x
 - Native American
 - White
 - Multiple races
 - Do not wish to disclose
 - Other, please describe here: _____

2. Gender*

- Female
- Male
- Non-binary
- Transgender female
- Transgender male
- Do not wish to disclose
- Other, please describe here:_____

3. What is your age?*

- Under 18
- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65 or older
- Do not wish to disclose

4. What is your zip code?*

5. How many people (including you) live in your home?

- 1
- 2-3
- 4-5
- 6-7
- Other, please describe here:_____

6. What is your household income?

- My household does not have enough
- My household has about enough
- My household has more than enough

7. Housing status:

- Do not have permanent housing
- Rent
- Own
- Other, please describe here:_____

8. Employment status

- Working part-time for pay
- Working full-time for pay
- Not currently employed, looking for paid work
- Not currently employed, not looking for paid work
- Fully retired
- Other, please describe here:_____

9. Current student status:

- Not a college student
- K-12 student
- Community college or trade school student
- College or university student

10. What is the highest level of education you have received?

- Some high school
- High school diploma
- Associate's degree/ some college
- Bachelor's degree
- Trade school or certification
- Post graduate degree
- Other, please describe here:_____

Douglas County Climate Action & Adaptation Plan

Report on Focus Groups

Summary

Douglas County is building a plan to mitigate and adapt to the impacts of climate change; it will be tailored to our community's priorities and account for our assets and vulnerabilities. Starting in the fall of 2022, the Douglas County Sustainability Office hosted 11 focus groups to hear directly from groups identified as being especially impacted by climate change. The focus groups also served as a means to distribute listening geographically across the county. Vocational focus groups included first responders, human services, outdoor workers, and agricultural producers. The concerns and priorities identified by each group are in the Vocational section of this report, including demographics served and an organization list. Community focus groups included youth, Community Emergency Response Training (CERT) trainees, residents within and surrounding Eudora, Baldwin City, and Leocompton residents, Indigenous, and BIPOC (Black, Indigenous, People of Color) residents. Concerns and priorities identified by each community group can be found in the Communities section of this report. Concerns shared by the groups included, but were not limited to, weakened community relationships, mental and physical strain of extreme weather, loss of native habitat and agricultural land to development and weather changes, cost of energy, barriers/tradeoffs of renewable energy, lack of confidence in effectively responding during and after extreme weather events.

Feedback from the focus groups is included in this report, additional community listening and engagement conducted through narrative interviews and a community survey can be found on the [Community Climate Action Plan](#) website in the *Building the Plan Together* section. Further public engagement will follow the drafting of strategies by staff in consultation with the climate action plan steering and staff advisory committees.

Table of Contents

- Priority Groups
- Outreach
- Structure
- Feedback
 - Vocational
 - Communities
- Conclusion

Priority Groups

Vocational groups identified as being heavily impacted by climate change:

- First responders are on the frontline of assisting residents during and after extreme weather events.
- Human services workers provide services to individuals coping with issues that are exasperated by extreme weather, such as housing and health conditions.
- Outdoor workers endure extreme heat and cold temperatures throughout the year.
- Agricultural producers observe and respond to the effects of sudden and seasonal weather changes that affect crop productivity and therefore their livelihood.

Community groups were prioritized by recognizing some noticeable gaps in the geography and demographics of previous phases of outreach and by targeting meaningful learning areas for the planning team.

- Youth voices at the Boys and Girls Club helped connect the plan to the future of Douglas County.
- Reaching the surrounding unincorporated areas and municipalities of Eudora, Baldwin City, and Lecompton was essential to striving for county-wide perspectives.
- [Community Emergency Response Training \(CERT\)](#) participants are trained volunteers who watch for and prepare for hazards affecting their neighborhood.
- By holding a focus group for BIPOC community members, and one for Indigenous perspectives, both with a trusted facilitator, staff hoped to provide a safe space for those present to share perspectives on climate impacts that they experience uniquely. The separate Indigenous perspective focus group was held as recommended in the collection of narrative interviews earlier in this process.

	Focus Group	Attendance	Location	Date
Vocational	First Responders	10	Douglas County Fairgrounds Flory Hall	10/13/22
	Human Services	14	Douglas County Fairgrounds Flory Hall	11/18/22
	Outdoor Workers	26	Douglas County Fairgrounds Flory Hall	12/14/22
	Agricultural producers	21	Douglas County Fairgrounds Flory Hall	1/26/23
Communities	Boys & Girls Club	9	Center for Great Futures Boys and Girls of Lawrence	7/19/22
	CERT Training	16	Douglas County Fairgrounds Flory Hall	10/16/22
	Eudora & Townships	19	Eudora USD 491 District Office	11/3/22
	Indigenous	14	Tommaney Library Haskell Indian Nations University	12/7/22
	Baldwin City & Townships	21	Lumberyard Arts Center, Inc.	1/5/23
	BIPOC (Black, Indigenous, People of Color)	15	Lawrence Public Library	1/10/23

Lecompton & Townships	9	Lecompton Community Building	1/18/23
total	174		

Structure

Each focus group meeting began with an informational presentation to prepare participants for a conversation about the impacts of climate change in Douglas County.

Discussions were facilitated by Douglas County staff and community members. Community members that were hired to help with facilitation built trust through their identities and work independently from Douglas County Sustainability. Alex Kimball-Williams facilitated the Indigenous focus group and co-facilitated the BIPOC (Black, Indigenous, People of Color) group with Cody Haynes. Scott Thellman, owner of Juniper Hill Farms, facilitated the Agricultural Producers group. A variety of options were available for participants to share their thoughts during the discussion section of the focus group.

In general, groups were asked what they believe are the top issues facing them, their community, or their professional cohort. Participants were asked to reflect on the physical and mental health impacts of hazards and environmental degradation on the community, and which specific weather extremes affect their lives most. Participants were asked how prepared their household, workplace, and community are for extreme weather and what barriers they experience in being prepared. Vocational groups discussed weather-related adaptations that have been made or should be made to remain effective while the community copes with a changing climate. Groups were asked what may be needed for the Douglas County community to thrive amid challenges posed by climate change, and what new connections participants found after participating in focus group discussions. Participants were asked to provide feedback via a survey and shown where to follow the process through the [Community Climate Action](#) website.

Resilience is defined as a community's capacity to cope with hazardous events, trends or disturbances, responding in ways that maintain essential function, identity and structure, while also maintaining the capacity for learning and adaptation.

Summary of Feedback

Main ideas and themes captured from the discussions are organized below. Each point summarizes a topic discussed and may represent the view of an individual, several participants, or the group as a whole. This is not comprehensive but a high-level summary of recurring themes.

Vocational

First Responders

Staff

- Current staff capacity is already stressed by increasing demand.
- Large community events such as festivals, games, and graduations during extreme weather, like storms and heat, strain first responder staff capacity.
- Extended fire seasons require more resources.
- New energy technology requires staff training and community education.
- Community preparedness programs could be an important resource.
- Communication infrastructure systems essential to effective response wear more rapidly in weather extremes.

Community Impact

- Mental health is strained by compounding, chronic stresses such as COVID, tornado recovery, and cost-of-living.
- Accommodations like translation and guardianship of minors may be challenging to access when emergency response is required at irregular hours.
- Extreme heat events burden institutional energy infrastructure.
- Partner with community preparedness programs such as Community Emergency Response Training (CERT) and community resource hubs such as local libraries.

Departments Represented

- Lawrence / Douglas County Fire Medical
- Douglas County Emergency Communications
- Douglas County Emergency Management
- Eudora City Fire & Emergency Medical Services
- Lawrence Police
- University of Kansas Police
- University of Kansas Office of Public Safety

Human Services

Intersections of Housing and Health

- Mold or other chronic issues in rental homes may be difficult to remediate due to owner dynamics, code requirements, feelings of comfort accessing code services, and enforcement capacity.
- Life expectancy of the houseless population is reduced due to chronic exposure.
- Current shelter housing is not built as a storm shelter, nor is its community spacing designed to minimize air-borne infections. .
- Front-line workers face compounding work-related secondary trauma and cost-of-living stresses.
- Housing construction centered around universal design and accessibility is needed.
- Equity investments including racial and LGBTQ considerations are needed.
- Everyone needs or will need accessibility aids and Universal Design at some point.

Transportation

- Sidewalks and roads degraded by climate change affect people with disabilities first.
- Isolation impacts the mental and physical health of all service groups.
- Include people with disabilities in preparedness plan discussions.
- Exposed bus stops without weather protection are a mobility barrier.

The Douglas County organizations that participated in this focus group serve low-income, adults, physically disabled, mentally disabled, houseless, prenatal, young families, and immigrant / Spanish-speaking community members.

Outdoor Workers

Essential Skills and Services

- Skills required to do technical infrastructure work need to be acknowledged and respected by the community.
- Reinforce the need and importance of infrastructure projects in communications with the public.

Productivity and Adjustment to Practices

- Day-to-day weather shifts alter equipment and labor tasks, slowing productivity.
- Increased safety awareness positively affects worker mindsets about personal safety.
- Install drought-resistant species and expand watering capacity after installation to mitigate new street tree and landscaping loss.
- Clear communication with the public about projects is needed to protect on-the-ground workers during construction and maintenance.
- Incorporate extreme weather days for outdoor crew members into payroll.

Agricultural Producers

Natural Resources

- Potential solar and wind developments raise concerns about the potential impacts on agricultural land.
- Concerns were expressed about water quality impacts from runoff, as well as water rights, usage, and future needs in a changing climate.
- Improving soil health can be a land stewardship strategy for carbon sequestration.

Weather

- High winds frequently damage farm infrastructure like high tunnel greenhouses, and getting repair help is difficult and costly.
- High tunnel greenhouses are an adaptation for protecting specialty crops from temperature fluctuation.
- Drought is a big concern for those with less access or water rights than long-established farmers.
- Flooding limits productivity and damages farm infrastructure like service roads.

Community

- Quick, on-call labor is needed to respond to rapid weather swings.
- Resource and labor sharing is practiced among rural landowners; could be an opportunity for expansion, building connections, and sharing between generations and practices.
- Engagement with farm service businesses and youth groups like 4-H and FFA could connect youth and farmers.

Communities

Community Response Emergency Training (CERT)

Risk to Vulnerable Neighbors

- Low-income or elderly neighbors may use unsafe heating methods.
- Aging neighbors are at higher risk to chronic extreme heat and cold.
- Individuals with illness and disability need extra community connection for safety during and after extreme weather and disaster events.

Housing Concerns

- Extremely dry soil from drought can shift home foundations after extreme rain events.
- Existing older homes are not built for new weather shifts.
- Building codes for new construction need to reflect these changes.

Boys & Girls Club of Lawrence

Outdoor Play

- Extreme heat makes pavement and unsheltered play areas and streets unsafe to play outdoors.
- Allergies limit playing outside.
- Prioritize safer pedestrian crossings from residential areas to nearby parks to improve access to cooler, shaded play spaces.

Climate Impact Concerns

- Feelings of worry, nervousness, exhaustion, stress, fear, anger, powerlessness, and sadness were expressed by students.
- Building community connection and placing focus on proactive action and the ability to adapt may ease mental health burden.

Eudora and Surrounding Townships

Environmental Protection and Green Spaces

- Protect air, soil, and water quality, increase wildlife biodiversity, and expand habitat.
- Preserve and expand Eudora “Tree Streets”; plant native landscaping in public spaces.
- Floods are expanding beyond mapped floodplain boundaries.
- Increase county-wide trail infrastructure and green space connection.
- The future Panasonic development raises concerns about sprawl, batteries, and loss of farmland.

Land Access

- Regulate development to prevent it from happening on productive agricultural land and historical sites.
- The opportunity for affordable land acquisition is decreasing.
- Off-set industrialization with planned green space and renewable energy requirements.

Utilities

- Increase grid resilience and access to quality HVAC systems to lower household utility costs.
- Create energy efficiency and stormwater management incentives for residents.

County-wide Relationships

- Weak community relationships are worsening mental health.
- Strengthen county-wide relationships by expanding community education opportunities on conservation and adaptation practices.
- Provide an information hub with research, long-term disaster assistance resources, local risk maps, and development projects to increase transparency and trust.

Indigenous Perspectives and Allies

System Awareness

- A healthy community for all species depends on access to clean drinking and surface water, and healthy food.
- Intense heat and drought lower the availability of foraged foods and the productivity of other food crops including livestock.
- Wildlife behavior is noticeably shifting as a result of the extremes of climate change.
- Prioritize protection of the wetland ecosystem from current and future development.
- Biodiversity loss weakens life-sustaining species relationships that maintain our resilience.
- Surrounding rural areas' drinking water infrastructure is seen to deteriorate.
- Rising food and utility costs strain Indigenous communities.
- Incorporate Indigenous biocentric knowledge into county decision-making.

Community Relationships

- Connect with Haskell University and Indigenous community groups before making land use decisions that may have cultural implications.
- Invest in youth voices for the future through engagement and education opportunities.
- Consider a holistic theory of sustainability for county projects that centers relationships with all life.

Baldwin City and Surrounding Townships

Community Connection

- Identify or create rural community centers for social and educational events, intergenerational knowledge, and resource sharing.
- Unincorporated areas contain diverse agricultural knowledge and practices from big farms to small farms and agritourism operations.

Land Use and County Management

- Solutions for climate change must include a holistic look at protecting native plants and wildlife as they struggle with swift changes in weather conditions.
- Agritourism and small specialty farms are emerging land uses for unincorporated Douglas County.
- Investigate options for local, low-cost recycling and community amenities to minimize travel time.

Energy Grid Considerations

- Intense concern was expressed for the potential unintended consequences of industrial energy, including negative impacts on wildlife, property values, farmland, agritourism, and rural character.
- Advocate for renewable energy funding for residential and institutional building installations.
- Grid resilience measures are needed to prevent brownouts and blackouts in southern Douglas County.

- Many rural residents in attendance are prepared for a short-term loss of power but primarily rely on wood, propane, and natural gas heating systems in extreme cold.

BIPOC (Black, Indigenous, People of Color) Perspectives

Community Inclusion

- Educate and work with community assistance groups to provide culturally relevant resources and assistance.
- New immigrant community members depend on strong cultural groups for local knowledge; immigrants without these networks may feel less prepared.
- Social support is significant when facing a crisis. This may be inaccessible or absent in white spaces.

Diverse Knowledge

- Indigenous elder strategies must be used along with other BIPOC community knowledge networks to guide strategies.
- Work with BIPOC communities to expand upon institutional resources; they should go beyond academic knowledge and traditional outreach methods.

Housing Resilience

- Rental housing may not sufficiently and/or affordably keep residents cool or warm during extreme temperatures.
- Concern about lack of preparedness knowledge, resources, and control over housing to add adaptation or efficiency enhancements.
- Wealth gaps may cause household damage to be much more devastating to People of Color.

Lecompton and Surrounding Townships

Development

- No incentive to buy land and conserve it, raising taxes instead.
- Fear of losing land value, agriculture, and nature due to wind and solar developments.
- Concern about government decision-making and eminent domain.

Natural Resources and Weather Patterns

- Concern about water availability into the future.
- More extreme rain, flooding, and drought than in the past is affecting farming.
- Water quality and water rights are a concern as drought extremes worsen.

- Access to the outdoors and active rural life is essential for a healthy community.

Public Services

- Trash dumping occurs frequently on rural roads.
- Smaller municipalities would benefit from cost assistance for infrastructure improvements.
- Rural road maintenance and stormwater are more difficult to manage than in urban areas.

Community Connection

- The pandemic, and dependence on technology, have weakened in-person connections.
- Find common ground to solve problems and think about the next generation.
- Sustainability is a way of life for the rural community, as well as neighbors helping neighbors.

Conclusion

While each focus group was uniquely shaped by the experience and dialogue of attendees, the threads of several foundational values and concerns were identified across the 11 groups gathered. Shared themes included: meeting everyday needs safely and affordably; sustaining or restoring healthy ecology and natural resources; providing environmental awareness and education; a sense of worry and imminence about development; the systemic inequities at all levels which, unless addressed, will compound climate change impacts; feelings of stress or loss; and the importance of community relationships and local solutions.

Thank you to the 174 community members, and additional partners, hosts, and guest facilitators, who generously shared their time, lived experience, concerns, and opportunities with the planning team. The perspectives shared during these sessions continue to strongly influence planning efforts - from additional learning, goal setting, and strategy exploration - to bring forward a climate action and adaptation plan crafted around the Douglas County community.