



**CLIMATE
ACTION** **KC**

CLIMATE ACTION

PLAYBOOK

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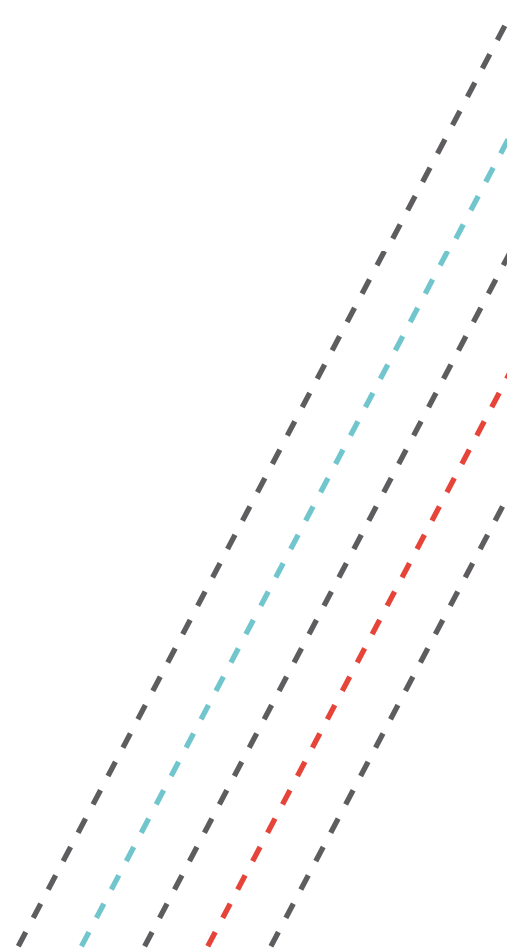
















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INTRODUCTION

Friends,

In 2018, Mayor Mike Kelly (Roeland Park, Kansas) and Councilmember Lindsey Constance (Shawnee, Kansas) found themselves alarmed by U.S. and international scientific reports warning that urgent action on climate change was needed to avoid dangerous and irreparable damage to our planet and our children’s futures. A broad community partnership emerged with 100+ elected officials from two states, 25 municipalities, county government, school districts, water and community college boards. As a result, Climate Action KC was formed to advance climate solutions on the local level in the Kansas City region.

Climate Action KC began its work by examining Paul Hawken’s “Drawdown,” which posits that available technologies and processes, when fully deployed, can reverse current climate trends, while creating more prosperous, healthy and resilient communities. This Climate Action Playbook translates the Drawdown pollution reduction strategies into actions and policies that can be taken by local governments.



In many ways, you'll see the structure of "Drawdown" echoed in the Playbook, which is organized according to the six sectors from Hawken's book:



Within each sector, a range of strategies are included to address varying local priorities, attitudes and opportunities.

Within each strategy, you'll find focused actions that local governments can choose to take, depending on how well they fit the needs and challenges within their own municipalities.

The first step for many governments will be to **Lead By Example**, altering the way the government entity itself approaches its buildings, fleets, procurement, employee training programs, and related tax payer investments. The next step might be to **Encourage Action** by the private sector, through financial or non-financial incentives, or challenge and recognition programs. Many local governments will proceed with **Enacting Policy** to ensure private sector participation.

This Playbook is focused on short-term opportunities for success at reducing pollution. The playbook focuses exclusively on actions that already demonstrate success. We hope that local leaders will see this playbook as a menu of ideas that are ready for implementation. We've included examples of existing programs in other cities, resources such as reports from federal and state agencies, and recommendations from non-profit groups.

The playbook doesn't include everything that local governments need to be doing to act on climate change. It doesn't include policies that would require changes to state law, nor the adaptation work that local governments must undertake to keep their communities resilient in the face of observed climate changes. It also doesn't analyze how the various solutions stack up with regard to our goal that climate solutions advance equity in our community and that our most vulnerable neighbors be protected from climate impacts. Climate Action KC will seek to address these topics in the coming months and years as we build a shared, community-wide Climate Action Plan.

We are excited to see which Playbook solutions our neighbors embrace. Please share your choices with us and tell us how we can help. Together we can transform our local challenges into stories of success for cities throughout the Kansas City region.

Melissa Cheatham

Melissa Cheatham
Climate Action KC Steering Committee



BUILDINGS AND CITIES

SOLUTIONS



Green, Regenerative Buildings

The operation, heating and cooling of buildings contributes nearly 40 percent of climate change pollution and consumes over 70 percent of electricity used in the United States.



LED Lighting

Lighting accounts for 15 percent of global electricity use. LEDs (light emitting diodes) require less energy and create less wasted heat than other bulbs.



Water Distribution

Pumping water requires enormous amounts of energy. By minimizing leaks in water-distribution networks, which currently waste 8.6 trillion gallons annually, both energy and water are saved.

Green, Regenerative Buildings



ACTION: Fund a Clean Energy Resource Center

Make it easy for your residents to go green. Fund and staff a clean energy resource center with concierge-style services to connect residents and businesses to existing regional clean energy and energy-efficiency resources.

The resource center staff could provide education, knowledge-sharing and exhibitions about local, state, federal, and utility rebates and tax credits; financing options; available technology; bulk purchasing discounts; and could also provide a list of approved contractors to perform services.

Examples:

[Seattle](#): Lighting Design Lab

[New York](#): NYC Retrofit Accelerator

[San Francisco](#): PG&E Energy Centers

[Kansas City](#): Metropolitan Energy Center

A clean energy resource center could be operated out of an existing nonprofit agency and funded by contributions from several local governments, which would promote the center to their residents.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Encourage: *Establish a Clean Energy Resource Center to assist interested citizens and businesses with evaluating alternative energy efficiency and renewable energy decisions.*

Additional Resources:

- [MEC, Energy Solution Hub](#)



ACTION: Adopt Strong Building Codes

Building codes establish minimum standards for the construction of new buildings or major renovations. Municipalities in Kansas and Missouri adopt building codes to protect the safety of building occupants, as well as to require minimum energy conservation standards.

The International Energy Conservation Code (IECC), a model code, is updated every three years through a lengthy consensus process. As municipalities update their own codes, it is important that they maintain the strong new efficiency provisions of the latest code without amending it to outdated, lower efficiency standards.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Enact: *Adopt the IECC model code as written, without weakening amendments ([Columbia, Missouri](#)).*



ACTION: Stretch Your Building Code

Stretch codes, or locally mandated codes that bridge the gaps formed in outdated default codes, allow cities to pursue more aggressive building standards that can be either voluntary or mandatory. Stretch codes provide an opportunity to demonstrate success in advanced building practices before adopting more efficient energy codes in the future. Stretch codes can call for better energy performance or can utilize parts or all of alternative code or certification protocols.

The International Green Construction Code (IGCC) is an “overlay” code that incorporates sustainability measures for an entire construction project and its site. Cities can adopt the IGCC as an optional code that allows them to officially recognize green building projects or can adopt the code as the minimum for all construction projects.

Cities who wish to go even further can establish a net-zero carbon goal and strive to continually amend their building code toward achieving that goal.

Local Government Role(s): ■ Lead by Example ■ Encourage Action ■ Enact Policy

Lead: Construct new municipal buildings to meet a stretch code ([Boise, Idaho](#)).

Encourage: Offer zoning bonuses, including floor area, building height and density, for projects that meet a stretch code. Create a voluntary green building program ([Scottsdale, Arizona](#)). Include IGCC as an optional code ([Phoenix](#); [Boise, Idaho](#)).

Enact: Adopt the IGCC Building Code ([Baltimore](#); [Carbondale, Colorado](#); [Dallas](#)). Adopt a mandatory stretch code ([Santa Monica, California](#)).

Additional Resources:

- [International Green Construction Code \(IGCC\)](#)
- [Buildings Codes Assistance Project](#)
- [U.S. Department of Energy: Going Beyond Code](#)
- [U.S. Department of Energy: NetZero Energy Commercial Building Initiative \(CBI\)](#)
- [New Buildings Institute, Stretch Codes](#)



ACTION: Improve Training and Enforcement of Energy Codes

Building codes establish minimum standards for the construction of new buildings or major renovations, including standards that save energy. However, codes only save energy when they are actually implemented and enforced.

According to the Institute for Market Transformation (IMT), the vast majority of jurisdictions lack the necessary training and enforcement resources to ensure compliance with building energy codes, and compliance rates in many jurisdictions are well below 50 percent. IMT has found that each dollar spent on code compliance achieves a six-fold payoff in energy savings and estimates that fully funding code compliance would eventually save American consumers \$10.2 billion annually.

Local governments should maintain or increase funding for code compliance and encourage building professionals to use existing training tools.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: Fully fund code compliance in city building departments, set a goal for code compliance, and utilize City Energy Project’s “Assessment Methodology for Code Compliance in Medium and Large Cities” to assess code compliance ([Greensboro, North Carolina](#)).

Additional Resources:

- [City Energy Project, Implementing Energy Codes](#)
- [Policy Maker Factsheet, Building Energy Code Compliance](#)
- [U.S. Department of Energy Building Energy Codes Program](#)



ACTION: Benchmarking

“Benchmarking” a building is tracking its energy and water use and comparing its performance over time to similar buildings. Benchmarking allows owners and occupants to better understand their building’s relative energy and water performance and waste output. They can then use that information to make strategic decisions that will potentially save money and energy while improving comfort and health.

In cities where benchmarking is required for large buildings, data is published, empowering tenants to choose to rent in energy-efficient properties.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: Jurisdiction benchmarks its own buildings and makes the results public ([Arlington County, Virginia](#)).

Encourage: Challenge large building owners to benchmark voluntarily ([St. Paul, Minnesota](#); [Columbus, Ohio](#); [Des Moines, Iowa](#)).

Enact: Require all large buildings to benchmark ([Kansas City, Missouri](#); [St. Louis](#); [Denver](#); [Chicago](#)).

Additional Resources:

- [City Energy Project, Understand Building Energy Use](#)



ACTION: Retrocommissioning

According to the American Council for an Energy Efficient Economy (ACEEE), “retrocommissioning” — or *existing building commissioning* — is a systematic process for identifying and implementing operational and maintenance improvements in a building in order to ensure good performance over time.

Retrocommissioning focuses on operations and maintenance improvements and diagnostic testing, and may identify capital improvements. Local governments can use retrocommissioning in their own buildings to reduce energy waste and implement policies to encourage retrocommissioning in the private sector.

Local Government Role(s): ■ Lead by Example ■ Encourage Action ■ Enact Policy

Lead: Conduct retrocommissioning of existing public buildings ([University of Missouri-Kansas City](#); [Reno, Nevada](#)).

Encourage: Offer financial incentives to help fund the cost of retrocommissioning, typically through a utility efficiency program ([Sun Prairie, Wisconsin](#)).

Enact: Require large buildings to undergo retrocommissioning periodically (e.g. every 10 years) ([New York](#); [Boulder, Colorado](#)).

Additional Resources

- [ACEEE, Commissioning and Retrocommissioning](#)
- [Building Efficiency Initiative](#)
- [Office of Energy Efficiency and Renewable Energy \(EERE\)](#)
- [Sample Retrocommissioning Resolution](#)



ACTION: Green Building Standards for New Buildings or Major Renovations

Green buildings are designed and constructed to minimize the overall impact of buildings on human health and the natural environment through improved energy and water efficiency, use of sustainably sourced materials, and consideration of building location. Local governments can take action to support green building standards, such as the U.S. Green Building Council's LEED standards, WELL Building Standard, Living Building Challenge certification from the international Living Future Institute, or to ensure buildings are designed to have net-zero carbon emissions.

Local Government Role(s): ■ Lead by Example ■ Encourage Action ■ Enact Policy

Lead: Construct new municipal buildings to meet a green building standard ([Kansas City, Missouri](#); [St. Louis](#)).

Encourage: Offer financial ([Middletown, Connecticut](#); [Longmont, Colorado](#)) or non-financial ([Jacksonville, Florida](#)) incentives for buildings that achieve a green building standard. Require green building for public-private partnership projects ([St. Paul, Minnesota](#)).

Enact: Require large new commercial or multi-family buildings to be built to meet a green building standard ([San Francisco](#)). Require buildings in certain zoning categories to meet a green building standard ([Clayton, Missouri](#)).

Additional Resources:

- [U.S. Green Building Council for Cool Cities](#)
- [Energy Star, State and Local Governments](#)
- [NAIOP Research Foundation](#)
- [International Living Future Institute](#)
- [International WELL Building Institute](#)



ACTION: Home Energy Disclosure

According to the U.S. Green Building Council, buildings account for 39 percent of carbon dioxide (CO₂) emissions in the U.S., with residential buildings accounting for a large portion of that percentage. Making homes more energy efficient reduces climate pollution, lowers energy bills and makes housing more comfortable by better managing temperature and air leakage.

A Home Energy Score policy requires home sellers and landlords to disclose a home’s energy information to buyers or renters at the time of sale or rental. This score, developed by the U.S. Department of Energy and determined by an energy audit, explains how a home performs compared to others in the U.S. and recommends improvements to efficiency.

Examples:

[Minneapolis](#): Residential Energy Disclosure
[Austin, Texas](#): ECAD Ordinance
[Portland, Oregon](#): Home Energy Score

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Enact: *Require sellers of single-family homes and landlords of rental properties to obtain and disclose a Home Energy Report.*

Additional Resources

- [Earth Advantage, City HELP](#)



ACTION: Train City Staff in Energy Efficient Behavior

Energy conserving practices by government employees can reduce energy use and save money on operating costs. In addition, surveys have found that more than 80 percent of workers are attracted by an employer with an environmental reputation. Governments can recruit green ambassadors and institute awareness campaigns, including: posters, an internal education website, articles, emails, events, contests, recognitions and awards to remind employees of energy conserving behaviors such as turning off lights in unoccupied areas, shutting down equipment when not in use and using daylight. If utility bills are paid through a general fund, consider giving departments part of the savings if they reduce their usage.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: *Train city employees in energy conserving behaviors, using resources such as the Metropolitan Energy Center.*

Additional Resources

- [Energy Star, Engage Employees and Other Occupants](#)

Examples:

[Durham, North Carolina](#): FACSTEP
[Philadelphia](#): Energy Master Plan
[St. Mary’s, Maryland](#): Conservation Plan



ACTION: PACE Financing

A Property Assessed Clean Energy (PACE) program allows local government to help its residents overcome the high up-front cost on investing in clean energy and energy efficiency. PACE allows local and state governments to loan money to home and business owners for energy improvements, which owners repay over time through property taxes. Cities must authorize and provide support for a PACE program. PACE is currently authorized by the state of Missouri, but is not authorized in Kansas.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Encourage: Authorize and provide support for PACE financing of residential and commercial energy efficiency ([Kansas City, Missouri](#)).

Additional Resources

- [Show Me PACE, Participating Municipalities](#)
- [PACE Nation](#)
- [Missouri Department of Economic Development, Division of Energy](#)
- [Missouri Clean Energy District](#)



ACTION: Energy Efficiency Competition

Establish an annual energy-reduction challenge for commercial buildings in conjunction with the Building Owners and Managers Association (BOMA) and other partners in order to encourage participants to reduce their buildings' energy consumption.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Encourage: City runs an energy challenge competition to encourage participants to reduce their buildings' energy consumption ([Kansas City, Missouri](#); [New York](#)).



ACTION: Property Tax Abatement for Residential Energy Efficiency

A property tax abatement can help make cost-effective energy efficiency investments more affordable. An energy efficiency tax abatement allows a property owner to avoid paying property taxes on the full cost of their energy efficiency investment for a period of time. In this way, the property owner receives an annual financial benefit that can be used to help finance the investment.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Encourage: Provide tax abatement to encourage residential energy efficiency ([Cincinnati](#)).

Additional Resources

- [Database for State Incentives for Renewables and Efficiency](#)



ACTION: Grants for Green Roofs and/or Cool Roofs

A green roof is a vegetative layer grown on a building's rooftop. Cool roofs are made of highly reflective and emissive materials that remain cooler than traditional materials during high temperatures. According to the U.S. Environmental Protection Agency (EPA), both cool and green roofs are beneficial because they lower surface and air temperatures and decrease energy demand. Green roofs offer added benefits such as reducing and filtering stormwater runoff; absorbing air pollutants, including carbon dioxide; and providing natural habitat. By lowering air-conditioning demand, green and cool roofs can decrease the associated pollution from conventional power sources.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: *Install green or cool roofs on municipally-owned buildings ([Chicago](#)).*

Encourage: *Provide grants or rebates for private entities to install green or cool roofs ([Chicago](#); [Cincinnati](#); [New York](#); [Nashville, Tennessee](#); [Philadelphia](#)). Provide density bonus for buildings that install green roofs ([Austin, Texas](#)).*

Additional Resources

- [EPA, Using Green Roofs to Reduce Heat Islands](#)
 - [EPA, Soak up the Rain: Green Roofs](#)
 - [Department of Energy, Cool Roofs](#)
 - [General Services Administration, Green Roofs](#)
-



ACTION: Energy Performance Contracts

Energy Savings Performance Contracts allow entities to improve the energy performance of their buildings by partnering with an energy services company. An Energy Service Company (ESCO) identifies energy improvements, provides the capital required, installs the efficiency improvements and guarantees energy savings. The ESCO guarantees that the savings from efficiency measures will pay the monthly financing costs of the loan for the upgrades. If the savings are not enough to pay the loan, the contract guarantees that the ESCO pays the difference. After the loan is paid, energy savings are kept by the building owner.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: *Local governments can enter into Energy Savings Performance Contracts for their own operations ([Shawnee, Kansas](#)).*

Additional Resources

- [Office of Energy Efficiency and Renewable Energy \(EERE\), Energy Savings Performance Contracts](#)
- [Data and Resources](#)

LED Lighting



ACTION: Switch Municipal Lighting to LED

Light-emitting diodes (LEDs) are one of today's most energy-efficient lighting technologies. According to the U.S. Department of Energy, quality LED light bulbs are longer-lasting, more durable and have similar or better light quality than alternative types of lighting. In street lights, LED lights consume about 50 percent less energy compared to their predecessors, high pressure sodium lights. Because they last longer, LEDs also incur lower maintenance costs.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: *Switch municipal lighting to LED.*

Additional Resources:

- [U.S. Department of Energy, LED Lighting](#)
- [Office of Energy Efficiency and Renewable Energy \(EERE\), DOE Municipal Solid-State Street Lighting Consortium](#)

Examples:

[St. Paul, Minnesota](#): LED Light Installation
[Chicago](#): Smart Lighting Project
[Overland Park, Kansas](#): Streetlight Conversion

Water Distribution



ACTION: Implement a Leak Detection Program

The minimization of leaks in water-distribution networks has the potential to save significant amounts of both energy and water. WaterOne in Johnson County, Kansas, and the Water Services Department of Kansas City, Missouri, already operate leak detection programs to reduce "non-revenue" (leaking) water. Under such programs, the water utility typically performs leak detection and the owner is responsible for repairs when leaks are found on private property. Leaks found in the public right of way are repaired by the utility.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: *Water utility performs leak detection ([Racine, Wisconsin](#); [Dallas](#)).*



ELECTRICITY GENERATION

SOLUTIONS



Utility-Scale Clean Energy

Utility-scale renewable energy projects include wind and solar farms that are typically 10 megawatts or larger. According to the National Renewable Energy Laboratory (NREL), Kansas has the second best wind resources in the U.S. and the 4th best solar resource in the country, while Missouri's solar resources rank 18th nationwide. Utility-scale renewable energy projects can benefit from local policies and programs that help to address and overcome potential barriers to implementation.



Distributed Renewable Electricity

Distributed renewable electricity includes rooftop solar panels, micro wind turbines and distributed batteries, and refers to electricity that is generated near the location of use rather than at centralized generation sources such as power plants. This results in less wasted energy and increased efficiency, as well as increased resiliency since energy is generated closer to where it is used.



Methane Digesters

Large methane digesters associated with agriculture, manure and wastewater facilities produce biogas to be used for electricity generation in dedicated biogas or combined heat and power plants. Methane digesters repurpose waste as a valuable byproduct and reduce the emission of methane, a powerful greenhouse gas.

Utility-Scale Clean Energy



ACTION: Join Renewables Direct Program

Utility-scale clean energy production, such as wind and solar, is among the most cost-effective ways to deploy carbon-free energy. Evergy (formerly Kansas City Power & Light and Westar) serves the Kansas City metro area, and offers the Renewables Direct program that allows large public and private energy users to buy into wind farms, enabling energy use to be powered by up to 100 percent renewable energy.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: *Participate in Evergy's Renewables Direct program to power public buildings with renewable energy.*

Additional Resources

- [Evergy, Renewables Direct](#)
- [American Cities Climate Challenge, Green Tariff Archives](#)

Examples:

[Kansas City, Missouri](#)

[Olathe, Kansas](#)

[WaterOne Utilities](#)

[Johnson County, Kansas](#)

[Overland Park, Kansas](#)

[Johnson County](#)

[Leawood, Kansas](#)

[Mission, Kansas](#)

[Community College](#)

[Lenexa, Kansas](#)

[Prairie Village, Kansas](#)

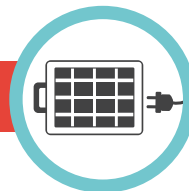
[Shawnee Mission](#)

[Merriam, Kansas](#)

[Shawnee, Kansas](#)

[School District](#)

Distributed Renewable Energy



ACTION: Adopt Solar-Friendly Codes and Permitting Practices

The Department of Energy's SolSmart program recognizes local governments for making it faster, easier and more affordable for their communities to go solar. Local governments can signal they are "open for solar business" by eliminating red tape that otherwise increases costs and discourages solar companies from moving to the area. Improvements can be made to provide for cost-effective permit approval, maximum siting options for solar, and codes and standards that provide clear guidance on installation requirements and solar rights.

Communities can achieve Gold, Silver and Bronze certifications, depending on their level of achievement. No-cost technical assistance is available. SolSmart designation echoes many of the Solar Best Management Practices identified by the Solar Ready KC initiative, a collaboration between the Mid-America Regional Council, five local governments and Evergy.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: *Get SolSmart certified or increase the level of certification.*

Examples: *Johnson County, Kansas; Shawnee, Kansas; Belton, Missouri; Clay County, Missouri; Gladstone, Missouri; Independence, Missouri; Kansas City, Missouri; Kearney, Missouri; Lee's Summit, Missouri; Raymore, Missouri*

Additional Resources

- [SolSmart](#)
- [Office of Energy Efficiency and Renewable Energy, Becoming SolSmart](#)
- [Solar Ready KC](#)
- [Best Management Practices for Solar Installation Policy in Kansas City and Beyond](#)
- [Model Code, Solar-Ready Provisions](#)

ACTION: Solar Ready Roofs

Solar Ready roof ordinances seek to ensure that new homes are built with a clean energy future in mind and are one component of Solar Ready KC’s best practices. A basic Solar Ready roof ordinance provides simple guidance to home builders and designers to ensure that the best solar roof space is kept clear of obstructions such as plumbing vents. A basic Solar Ready roof ordinance also keeps future costs down by ensuring that the electrical system of the home does not need to be upgraded if and when a homeowner decides to install solar.

A more robust Solar Ready roof ordinance may also seek to ensure that roofs are built to be strong enough to support a future solar array and that the electrical conduits and chases are pre-installed.

Examples:

[Scottsdale, Arizona](#): Residential Requirements
[Austin, Texas](#): Solar Ready Guidelines
[Tucson, Arizona](#): Solar Ready Ordinance

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Enact: *Pass Solar Ready roofs ordinance.*

Additional Resources

- [Solar Ready KC](#)
- [Best Management Practices for Solar Installation Policy in Kansas City and Beyond](#)
- [National Renewable Energy Lab, Solar-Ready Building Design](#)

ACTION: On-site Solar Generation

Municipalities, schools and other public jurisdictions should explore installing on-site renewable generation such as geothermal, wind and solar power, and battery storage. On-site renewable energy generation is an opportunity to visibly showcase the community’s commitment to sustainability, provide education and outreach opportunities, and increase community resilience through self-powered buildings that can be utilized in times of power outages, natural disasters and other emergencies.

Examples:

[Shawnee, Kansas](#): Solar Panels
[Lawrence, Kansas](#): Solar Arrays
[Wichita, Kansas](#): Maize High School
[Johnson County, Kansas](#): Community College

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: *Install and operate renewable energy systems on city buildings.*

Additional Resources

- [American Cities Climate Challenge, On-Site Solar](#)
- [EPA Local Government Solar Project Portal](#)



ACTION: Bulk Purchase Programs

Solarize initiatives allow residents, businesses, nonprofits and even groups of municipalities to take advantage of the cost-cutting power of bulk purchasing when buying solar power.

Purchasing solar energy collectively can significantly reduce the upfront cost of installing solar panels on a home or business.

A well-organized Solarize initiative includes three key aspects: competitive contractor selection, community-led outreach with a trusted community partner, and limited-time offering. Cities, counties and even homeowners associations can create Solarize initiatives, and city governments can facilitate, serving as a facilitator.

Examples:

[Athens, Georgia](#): Solarize Athens

[Lee's Summit, Missouri](#): Meadows HOAs

[Portland, Oregon](#): Bulk Purchase Program

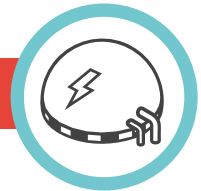
Local Government Role(s): Lead by Example Encourage Action Enact Policy

Encourage: *Municipality or local jurisdiction facilitates Solarize program.*

Additional Resources

- [Grow Solar](#)
- [Solarize Guidebook, National Renewable Energy Lab](#)
- [Solar Energy Industry Association Community Solar Information](#)

Methane Digesters



ACTION: Biogas Generator at Wastewater Plants and Landfills

Organic waste created through agricultural, industrial and human digestive processes releases methane during decomposition. Methane is a greenhouse gas that creates a warming effect up to twenty-five times more powerful than carbon dioxide, on a 100-year scale. Methane digesters utilize microbial activity to convert organic waste into biogas and nitrogen-rich fertilizers, harnessing methane emissions and generating alternative energy sources.

For example, large methane digesters allow wastewater facilities and landfills to produce biogas for electricity and on-site heat generation. This solution replaces the importing of fuels such as propane. Surplus biogas may also be transferred offsite and sold to commercial and private consumers, which generates revenue for municipalities. Additionally, excess biogas fuel can be compressed and used as a vehicle fuel in compressed natural gas vehicles.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: *Install methane digesters at water treatment plants and landfills.*

Additional Resources

- [Environmental Protection Agency, Biosolids](#)
- [Environmental Protection Agency, Landfill Methane Outreach Program](#)

Examples:

[Dodge City, Kansas](#): Water Treatment

[Johnson County, Kansas](#): Water Treatment

[Johnson County, Kansas](#): Landfill



FOOD

SOLUTIONS



Composting and Biochar

Methane pollution in landfills from food waste and other organic matter can be reduced through composting and biochar practices. Compost is a mixture of organic matter which has decayed or been digested in either a backyard bin or at a commercial facility. Biochar results from slowly “baking” biomass in the absence of oxygen. Both can improve soil composition and nutrient levels, while reducing carbon and nitrous oxide pollution that results from fertilizer use.



Conservation and Regenerative Agriculture

Conservation agriculture and regenerative agriculture restore lost organic matter in soil and reverse degraded soil biodiversity. Using technologies that improve soil and land quality, agriculture can improve the water cycle and draw down, or reduce, carbon in the atmosphere.



Plant-Based Diet

Livestock production is responsible for 18 percent of global greenhouse gas emissions. Plant-rich diets reduce pollution and lower rates of chronic illness.



Reducing Food Waste

Food waste accounts for 8 percent of total greenhouse gas emissions globally, according to the Food and Agriculture Organization of the UN. Interventions can reduce waste at key points as food moves from farm to fork.

Composting and Biochar



ACTION: Use Biochar and Compost in Managed Landscapes

An estimated two-thirds of landfill waste contains biodegradable organic matter like leftover food and yard waste. As it decomposes in the anaerobic conditions of the landfill, this organic material releases methane gas, which traps up to 25 times more heat in the atmosphere than carbon dioxide. Cities may divert organic matter from landfills to compost facilities, but may also choose to model the use of compost and biochar in their own landscapes. City staff and contractors can transition away from the use of conventional fertilizers to the use of biochar or compost mixes that will improve the soil's capacity to sequester carbon, feed plants and hold rainwater.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: *Demonstrate good soil management and carbon sequestration practices by using biochar and compost in managing local landscapes ([New York](#)).*

Additional Resources

- [EPA, Examples and Resources for Transforming Waste Streams in Communities #77](#)
- [MidWest Biochar](#)
- [Missouri Organic Recycling](#)



ACTION: Promote Small- and Large-Scale Composting

According to the EPA, about 24 percent of waste in the U.S. is compostable organic material. Composting on the residential scale keeps kitchen and yard waste out of the landfill and compost can be used as a natural fertilizer, providing essential nutrients for healthy soils and plant growth. Local governments can make it easy for residents to switch from putting food and yard waste into the landfill by providing free indoor or outdoor composting kits. A strong composting program will also educate residents about how and why to compost correctly. In addition, municipalities can negotiate to add organic waste collection bins alongside the trash and recycling bins.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: *Compost waste at municipal facilities ([Kansas City, Missouri](#); [Lawrence, Kansas](#); [Shawnee Mission, Kansas, School District](#)).*

Encourage: *Provide free backyard composting kits to residents ([Orlando, Florida](#)). Offer residents curbside carts for organic waste collection ([Iowa City, Iowa](#)).*

Enact: *Require municipally approved trash haulers to add composting to their services ([Minneapolis](#); [Seattle](#); [Portland, Oregon](#); [Denver](#)). Require separation of organic matter from trash and recyclables ([New York](#); [San Francisco](#); [Austin, Texas](#)).*

Additional Resources

- [EPA, Transforming Waste Tool](#)
- [EPA, Sustainable Management of Food](#)
- [Bridging The Gap, Start Composting](#)
- [Missouri Organic Recycling, Compost](#)

Conservation and Regenerative Agriculture



ACTION: Support and Incentivize Urban Agriculture

Urban agriculture — the growing of food and the raising of small animals for meat or dairy in city neighborhoods — transforms land to productive green space that can cool the surrounding environment, absorb stormwater and, with good management practices, sequester carbon. It also can increase healthy food access, create jobs and provide focal points for neighborhood interaction and identity. Municipalities across the country and the Midwest are implementing new codes that make food production easier for city residents, and are establishing grant programs that address some of the economic challenges to urban agriculture.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Encourage: Give grants for urban agriculture ([Cincinnati](#)). Reduce property taxes for urban agriculture ([San Francisco](#); [San Diego](#); [Baltimore](#)).

Enact: Update zoning codes, building codes and animal regulations to allow for urban agriculture ([Baltimore](#)).

Additional Resources

- [EDIS, How to Establish an Urban Agriculture Ordinance](#)
- [University of California, The Urban Agriculture Incentive Zones Act](#)
- [USDA, Natural Resources Conservation Service, Urban Agriculture](#)

Plant-Based Diet



ACTION: Reduce Meat Consumption

Implement programs and strategies to reduce your municipality's meat consumption, curbing the production of greenhouse gases. Programs such as "Meatless Mondays" can be promoted both internally to employees and externally to residents, employers and a wide variety of institutions like hospitals and schools. Local governments, schools and agencies can evaluate their current practices for snack machines, in-house cafeteria services and catering paid for by municipal or county budgets, and implement purchasing guidelines to reduce meat procurement.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: *Implement internal programs to promote reduced meat consumption in places like public schools or hospitals ([New York](#)). Set purchasing guidelines that prioritize non-meat food options ([Portland, Oregon](#)).*

Encourage: *Launch an educational campaign to inspire individuals, companies and nonprofits to reduce meat consumption ([Escambia County, Florida](#); [Jersey City, New Jersey](#)).*

Additional Resources

- [Meatless Monday](#)
- [CDC, Healthy Food Service Guidelines](#)
- [The Good Food Purchasing Program](#)

Reducing Food Waste



ACTION: Raise Awareness About Household Food Waste

The average household loses \$1,500 per year in wasted food. The EPA developed the “Food: Too Good to Waste” program for community organizations and local governments interested in reducing food waste from households. Local governments can take the lead in implementing a small-scale campaign, may participate as a partner, and/or provide additional resources. Implementing a “Food: Too Good to Waste” campaign may align with organizational long-term objectives (e.g., reducing solid waste management costs, reducing carbon footprint or building a sustainable food system).

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Encourage: *Launch a public campaign to inspire and promote reduction of food waste.*

Additional Resources

- [EPA, Food: Too Good to Waste Implementation Guide and Toolkit](#)
- [Save the Food](#)
- [Further with Food](#)
- [US Department of Agriculture, Food Loss and Waste](#)
- [Natural Resources Defense Council, Tackling Food Waste In Cities](#)

Examples:

[Seattle](#): Love Food, Stop Waste Program
[Honolulu](#): Food: Too Good to Waste Cookbook



LAND USE

SOLUTIONS



Trees

Trees mitigate climate change in two ways, reducing emissions related to air conditioning and heating with their shade, and sequestering carbon and other greenhouse gas emissions. Trees also contribute to climate change resilience, reducing heat island effects by as much as 10 degrees Fahrenheit.



Native Plants

Native plants store carbon and also reduce emissions from landscape machinery. In addition, native plants provide numerous benefits to the local ecosystem, are necessary for a thriving pollinator population and filter groundwater and stormwater runoff.



Open Space

Green open spaces, such as wooded and grassy areas, reduce urban climate pollution by sequestering carbon, improve environmental resilience and cool urban heat islands.



ACTION: Protect and Increase Urban and Suburban Forests

As of 2013, approximately 28 percent of the Kansas City region was covered with tree and shrub canopy (including undesirable invasive plants). This is well below the 40 percent coverage recommended by the American Forest Association, and may also be overstated because of technological limitations of aerial survey technologies. The region's tree coverage is expected to decline due to age and disease.

However, these trees still mitigate 37,000 tons of air pollution per year and remove an additional 1.0 million tons of carbon per year, providing ecosystem benefits valued at \$320 million.

In urban areas, trees are especially valuable, providing cooling shade, improved pulmonary health for residents, increased real estate values, neighborhood beautification, topsoil and stormwater retention, and wildlife habitat. Because of these benefits, it is estimated that urban trees return at least \$3 for every \$1 invested in their planting and care over their lifetime. Cities and counties should develop and implement a management plan and best practices to assure the long-term vitality of urban and suburban forests.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: *Complete an assessment of current urban forests and develop a master plan to fund, maintain and improve them through capital improvement programs, public works and parks budgets ([Kansas City, Missouri](#); [Oxford, Mississippi](#); [Cleveland](#)).*

Enact: *Adopt ordinances to require tree preservation, replacement and planting for private development, including enhanced inspection and enforcement capabilities ([Olathe, Kansas](#); [Smyrna, Georgia](#); [New Brunswick, New Jersey](#); [Fayetteville, Arkansas](#); [Atlanta](#)).*

Additional Resources

- [Bridging The Gap, Heartland Tree Alliance](#)
- [MARC Regional Forestry Framework](#)
- [U.S. Forest Service, Urban Forests and Climate Change](#)
- [Vibrant Cities Lab, Planning: Best Practices in Urban Forestry](#)
- [International Society of Arboriculture, Tree Ordinance Guidelines](#)
- [Missouri Department of Conservation, Conservation Planning Tools for Missouri Communities](#)



ACTION: Plant and Protect Street Trees

Street trees provide special benefits in that they protect sidewalks and asphalt, reduce automobile accidents by slowing traffic, absorb UV rays and pollution, improve retail viability, reduce energy use and even reduce crime, which increases with heat. Their cool greenery also provides a more appealing atmosphere that encourages walking and biking. Local governments should plant and protect street trees, including in medians.

Local Government Role(s): ■ Lead by Example ■ Encourage Action ■ Enact Policy

Lead: *Ensure city planning master plan incorporates increased street tree plantings, and that tree planting is funded ([Kansas City, Missouri](#); [Miami-Dade County, Florida](#)). Use “Silva Cell” construction to increase the life span of street trees ([Fairway, Kansas](#); [12th Street Corridor, Kansas City, Missouri](#)).*

Encourage: *Fund a community tree program that provides residents with free street trees and information about their planting and care ([Kansas City, Kansas](#); [Lenexa, Kansas](#); [Prairie Village, Kansas](#); [Westwood, Kansas](#); [Kansas City, Missouri](#); [Liberty, Missouri](#); [Austin, Texas](#)).*

Enact: *Require street trees to be planted in new developments ([Vancouver, Washington](#)).*

Additional Resources

- [EPA, Heat Island Community Actions Database](#)
- [Environmental Protection Agency, Urban Street Trees and Green Infrastructure](#)
- [22 Benefits of Urban Street Trees](#)
- [University of Washington, Safe Streets](#)
- [Missouri Department of Conservation, Street Trees Pay Us Back](#)
- [Heartland Tree Alliance](#)



ACTION: Earn Recognition for Urban Forest Stewardship with a Tree City USA Growth Award

Thirty-four local cities already meet the standards of the Tree City USA program, which recognizes cities and towns that meet core standards of sound urban forestry management. Cities that go beyond those standards may receive a Tree City USA Growth award, which can highlight innovative programs and a greater level of commitment to urban forestry. Develop and implement a plan to achieve these core urban forestry management attributes.

Local Government Role(s): ■ Lead by Example □ Encourage Action □ Enact Policy

Lead: *Earn a Tree City USA Growth award.*

Additional Resources

- [The Arbor Day Foundation, Tree City USA Growth Awards](#)

Examples:

[Bonner Springs, Kansas](#): Tree City U.S.A.
[Boulder, Colorado](#): Tree City for 35 Years



ACTION: Plant Shade Trees

Carefully-sited shade trees can play a powerful role in reducing air condition burdens and utility bills. A deciduous shade tree placed on the southwest corner of any building can reduce air conditioning bills by at least 25 percent, and these benefits begin to accrue within just a few years of planting. In winter, evergreen trees are effective when placed on the northeast corners of buildings, serving as wind breaks and reducing heating bills.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Encourage: *Provide cost-sharing for planting of shade trees.*

Additional Resources

- [Department of Energy, Landscaping for Energy Efficient Homes](#)
- [Energy Savings From Tree Shade](#)

Examples:

[Riverside, California:](#) Shade Tree Incentives
[Washington, D.C.:](#) RiverSmart Homes
[San Antonio:](#) Green Shade Rebates
[Waupun, Wisconsin:](#) Tree Planting Incentives



ACTION: Harvest and Utilize High-Value Wood Products from Trees that Must be Removed

As with any living resource, it is inevitable that some trees will die every year and need to be removed. While some of this wood is not salvageable, there is often reusable wood material that is highly sought after by the public for use in creating high-value items like furniture or art. Harvesting this wood rather than disposing of it can provide an additional source of income, reduce product in the landfill, and provide resources for useful products.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: *Create an urban wood utilization program for trees cut down by the city ([Davenport, Iowa](#)).*

Encourage: *Create educational materials or programs to make arborists and homeowners aware of alternate options for disposing of harvested wood ([Wisconsin Urban Wood](#); [Illinois Urban Wood](#)).*

Additional Resources

- [Colorado State Forest Service, Urban Wood Utilization](#)
- [Urban Lumber, Kansas City](#)

Native Plants



ACTION: Plant Native Plants

Native plants serve a foundational role in local ecosystems by providing food sources and shelter for native organisms. Additionally, native plants sequester carbon in their deep roots and these same root systems prevent soil erosion and stormwater runoff. Local governments should incorporate native plants instead of turf grass into municipally managed land, and should give residents the legal opportunity to plant them as well.

Local Government Role(s): ■ Lead by Example ■ Encourage Action ■ Enact Policy

Lead: *Ensure that municipal property includes native and sustainable landscaping ([Jerry Smith Park, Kansas City, Missouri](#); [Rocky Point Glades at Swope Park, Kansas City, Missouri](#); [Flagstaff, Arizona](#); [Albuquerque, New Mexico](#)).*

Encourage: *Create public awareness, such as through participation in the Million Pollinator Garden Challenge ([St. Louis](#)). Offer cost sharing and education to facilitate plantings of native species ([Johnson County, Kansas](#)). Encourage native plantings in site design standards ([Lenexa, Kansas](#)).*

Enact: *Update noxious weed ordinances to ensure they allow native plantings ([Columbia, Missouri](#)). Adopt ordinances that require sustainable landscaping at commercial and multi-family locations ([Santa Clara, California](#)).*

Additional Resources

- [Bridging The Gap, Native Plants](#)
- [Deep Roots KC](#)
- [Million Pollinator Garden Challenge](#)
- [National Wildlife Foundation, Mayor’s Monarch Pledge](#)
- [Model Native Plant Landscape Ordinance Handbook](#)
- [Sustainable Landscaping Guideline Manual](#)
- [Missouri Department of Conservation, Conservation Planning Tools for Missouri](#)
- [The Sustainable Sites Initiative](#)



ACTION: Remove Invasive Species in Parks and Along Greenways

Invasive species are non-native species that often aggressively choke out native tree and wildflower species, thus reducing native plants’ ability to sequester carbon and reducing appropriate habitat and food sources for native wildlife. Currently, the leading invasive plant species in Greater Kansas City is the Asian bush honeysuckle.

Though it is labor-intensive work to remove invasive plants, doing so allows room for native plants to be re-established. Additionally, in greenways where non-native plants have been cultivated, returning those areas to native species can result in reduced maintenance costs. Natural resource stewardship in parks and greenways will increase the ability of local communities to meet air and water quality goals.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: *Develop an invasive species plan ([Johnson County Parks and Recreation Department, Kansas](#); [Austin, Texas](#); [Indianapolis](#); [Seattle](#)).*

Encourage: *Provide financial assistance for removal of invasive species ([Bradford County, Florida](#); [Sarasota County, Florida](#))*

Additional Resources

- [Bridging The Gap, Kansas City Wildlands](#)
- [Missouri Department of Conservation, Invasive Plants](#)
- [Kansas Department of Agriculture, Noxious Weed Control Program](#)
- [USDA, National Invasive Species Information Center](#)

Open Space



ACTION: Conserve Key Natural Assets and Open Space, Including Working Lands (Agriculture)

Define and execute a comprehensive policy and plan to conserve key natural assets and open space, including agricultural land. These plans may include zoning, stream buffers, and collaborative agreements such as conservation easements. Conservation of key natural assets and open spaces can also be achieved through direct land acquisition and management.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: *Acquire land to be conserved as open space ([Municipal Farm in Kansas City, Missouri](#); [Camp Branch Park in Johnson County, Kansas](#)).*

Encourage: *Use conservation easements to protect key areas.*

Enact: *Enact Stream Setback ordinances ([Lenexa, Kansas](#); [Overland Park, Kansas](#); [Platte County, Missouri](#)), including protections for small and ephemeral streams ([Kansas City, Missouri](#)). Create vegetation protection zones ([Wayland, Michigan](#)).*

Additional Resources

- [APA, Policy Guide on Agricultural Land Preservation](#)
- [Mid-America Regional Council \(MARC\), Green Infrastructure Framework](#)
- [MARC, Stream Setback Ordinances](#)
- [Heartland Conservation Alliance](#)
- [MARC, Natural Resource Inventory](#)

30 LAND USE



ACTION: Fully Fund Parks and Recreation System

Ensure that existing parks and recreation areas are well maintained to optimize usability, educate the public on natural landscaping, and support the ongoing benefits of natural landscapes to the environment.

Create a per capita spending goal, define a plan to achieve that goal and explore creative financing options.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: Provide funding to enhance existing green space and parks ([Indianapolis](#)).

Additional Resources

- [Financing the Future: The Critical Role of Parks in Urban and Metropolitan Infrastructure](#)
- [MARC, MetroGreen/Parks](#)



MATERIALS

SOLUTIONS



Residential Water Saving

Moving and treating water is estimated to consume 3 to 4 percent of the nation's energy use. Conserving water and using it more efficiently will reduce climate pollution associated with that energy use.



Recycling

Recycling at the commercial, institutional, industrial and residential levels can draw down carbon emissions by decreasing the energy used in the manufacturing of goods and reducing emissions from incinerators and landfills.

Residential Water Saving



ACTION: Water Efficiency Measures

The use of low-flow fixtures and pressure regulators in households saves water — particularly hot water — reducing a household’s emissions.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: *Implement an internal conservation plan to conserve water in city operations ([Wichita, Kansas](#)).*

Encourage: *Offer rebates, giveaways or other financial incentives for installing water-efficient appliances ([Wichita, Kansas](#); [Beaverton, Oregon](#)) or water efficient landscaping ([San Antonio](#)). Distribute free water conservation kits to low-income households ([Kansas City, Missouri](#)).*

Enact: *Require water efficiency measures through building codes ([Dallas](#)).*

Additional Resources

- [Alliance for Water Efficiency](#)
- [U.S. Department of Energy, Going Beyond Code](#)
- [Project Living Proof](#)



ACTION: EPA WaterSense Partnership

EPA created WaterSense as a credible, national water-efficiency brand to help consumers choose water-efficient products. State and local governments can become promotional partners for the WaterSense program, committing to promote the value of water and help consumers and organizations make smart choices regarding water use and water-using products. WaterSense is free to join and partners receive access to free materials and tools, access to a network of water efficiency experts, and recognition as a leader in water efficiency.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Encourage: *Become a WaterSense partner to encourage residents and businesses to use water efficiently ([Wichita, Kansas](#); [Branson, Missouri](#)).*

Additional Resources

- [EPA, WaterSense](#)



ACTION: Conduct a Waste Audit

Conduct waste audits to identify waste reduction opportunities, improve data collection tools and resources to document success and/or shortcomings of various strategies. A waste audit is an inventory of the volume and types of materials in the waste and recycling streams. Waste audits help tailor education programs, identify waste reduction opportunities, improve data collection tools, and document the success and/or shortcomings of various waste reduction and recycling strategies.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: *Conduct a waste audit for all municipal buildings and operations ([Johnson County, Kansas](#); [Philadelphia](#); [Honolulu](#)).*

Encourage: *Offer free waste audits to private businesses and organizations ([MARC Solid Waste Management District](#)).*

Additional Resources

- [EPA, Waste Audit Introduction](#)



ACTION: Set a Waste-Reduction Goal

Set a waste-reduction goal (even zero waste) for certain sectors (municipal operations, residential, commercial) and implement programs to achieve the goal. Setting a goal can galvanize support for reducing waste through reducing, reusing and recycling materials.

A waste-reduction goal communicates a community's ambition, focuses attention on alternatives to throwing materials away and can highlight tangible savings in municipal solid waste programs. Waste-reduction goals guide policymakers toward other policies and programs that should be enacted to achieve the goal. Waste-reduction goals can be set for the community as a whole, and/or for specific sectors such as municipal operations, residential, commercial or construction and demolition debris.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: *Set a waste reduction goal for all municipal buildings and operations ([Fayetteville, Arkansas](#); [Minneapolis](#); [Austin, Texas](#); [Dallas](#)).*

Encourage: *Challenge residents, businesses, organizations and institutions to meet a waste reduction goal ([Flagstaff, Arizona](#); [Eden Prairie, Minnesota](#)).*

Additional Resources

- [MARC, The Recycling Challenge](#)
- [Zero Waste Challenge](#)



ACTION: Increase Waste Reduction and Recycling

Promote and practice waste reduction and recycling in municipal operations, and provide recycling infrastructure and services at public places and at large public events. The carbon mitigation benefits of recycling come from the lower “embodied carbon”, or emissions given off in manufacturing, of products made with recycled materials. Even cities with successful recycling programs have opportunities to increase the recycling rate.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: *Promote, practice and expand waste reduction and recycling in municipal operations, and provide recycling infrastructure and services at public places and large public events ([Hamilton County, Ohio](#); [St. Paul, Minnesota](#)).*

Encourage: *Provide free education, technical assistance or funding for waste diversion program purchases, and certification of businesses that increase recycling ([Johnson County, Kansas](#)). Provide grants to increase recycling ([Lincoln, Nebraska](#)).*

Enact: *Enact policy to require recycling be available at commercial and/or multifamily properties ([Lenexa, Kansas](#)).*

Additional Resources

- [Bridging The Gap, Recycling in Kansas City](#)
- [EPA, Municipal Government Toolkit, Improving Your Recycling Program](#)
- [Institute for Local Government, Commercial Recycling 17 Leadership Stories](#)
- [MARC Solid Waste Management District](#)



ACTION: Enact Pricing Policies

Fixed-rate pricing for collection of municipal solid waste does not create a price signal to reduce waste. Volume-based pricing (sometimes called variable-rate pricing or “pay-as-you-throw”/ P.A.Y.T.), where the unit price to dispose of waste increases as the volume of waste increases, is one example of a policy that creates a price signal to reduce waste. When paired with unlimited recycling, pricing policies have the effect of reducing waste disposal and increasing recycling rates. According to 2006 data, eight Kansas communities and 36 Missouri communities were P.A.Y.T.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Encourage: *Augment or replace existing free trash programs, like city-sponsored bulky-item collections or drop-offs, with free “hard-to-recycle” events to encourage residents to think of their items not as waste, but as reusable or recyclable commodities ([Overland Park Recycling Extravaqanza](#)).*

Enact: *Require haulers of municipal solid waste to implement volume-based pricing ([Austin, Texas](#)).*

Additional Resources

- [EPA, Pay-As-You-Throw Programs](#)



ACTION: Adopt a Green Purchasing Policy

Environmentally preferable purchasing (sometimes called Green Purchasing or Environmental Procurement Policy) prioritizes buying products and services that minimize the negative effects, or increase positive effects, on human health and the environment.

Impacts are considered throughout a product's life cycle, from raw material extraction through production, packaging, use and disposal. Environmentally preferable purchasing prioritizes reducing purchases when possible, followed by prioritizing reusable, recyclable and recycled products.

Examples:

[Seattle](#): Green Purchasing Program

[San Jose, California](#): Environmentally Preferable Procurement

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: *Adopt or strengthen environmentally preferable purchasing program for municipal operations.*

Additional Resources

- [National Association of State Procurement Officials, Green Purchasing Guide](#)
- [EPA, Environmentally Preferable Purchasing Program](#)



TRANSPORTATION

SOLUTIONS



Walkable Cities

Walkable cities prioritize the use of two feet over four wheels through careful planning and design. They minimize the need to use a car and make the choice to forego driving appealing, which can reduce greenhouse gas emissions.

Walkable trips not only span a manageable distance, but also offer a density of fellow walkers, a mix of land and real estate uses and key design elements that create compelling environments for people on foot.



Clean Vehicles

About 17 percent of America’s climate pollution comes from light duty vehicles. Advanced technologies, including plug-in hybrids and 100 percent fully electric cars and trucks, promise to dramatically reduce these emissions. Common sense, no-cost solutions like reduced idling and increased ride sharing will help reduce total emissions of petroleum- fueled cars already on the road.



Mass Transit

Increased ridership of public mass transit systems reduces the number of single-occupancy vehicles navigating through cities, thus lowering greenhouse gas emissions. Increased mass transit use can reduce conventional air pollution, congestion for all road users, and can promote equity by eliminating need for car ownership.



Bicycle Infrastructure

Infrastructure is essential for supporting safe, pleasant and widespread bicycle use — which can relieve city congestion, improve public health and reduce emissions from cars.



ACTION: Prioritize Infill Development

Prioritize infill development before expansion at city edges. Revitalizing core areas will reduce adverse impacts on natural resources and infrastructure, while increasing the potential for successful mass transit and walkability programs.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: *Initiate city planning guidelines focused on optimizing infill locations ([Kansas City, Missouri](#)). Upzone urbanizing locations ([Minneapolis](#))*

Encourage: *Provide grants and tax breaks for infill projects ([Overland Park, Kansas](#)).*

Additional Resources

- [EPA, Smart Growth](#)
- [MARC, Sustainable Code Framework](#)
- [MARC, Planning Sustainable Places](#)



ACTION: Update Zoning Codes to Promote Walkability

One way to reduce the impact of transportation on the environment is to reduce the need for transportation. By creating communities that are pedestrian-oriented rather than car-oriented, the need for cars is reduced. A variety of planning and zoning tools may be used to make communities more walkable, including setbacks, street widths, parking requirements and tree canopy coverage.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: *Integrate walkability enhancements into maintenance and infrastructure-related projects ([Independence, Missouri](#)).*

Encourage: *Complete an assessment of current community walkability and recommendations to enhance walkability. Provide these recommendations to the community to encourage awareness and integration of the recommendations into their planned construction and maintenance projects ([Amery, Wisconsin](#)).*

Enact: *Implement development requirements that follow form-based code principles ([Downtown Overland Park, Kansas](#); [West Gateway, Mission, Kansas](#); [Fort Worth, Texas](#))*

Additional Resources

- [Walkable City Rules by Jeff Speck](#)
- [ITDP, Pedestrians First: A New Tool for Walkable Cities](#)
- [MARC, Sustainable Code Framework](#)
- [Form-Based Code Institute](#)



ACTION: Complete Streets

A complete street is designed to provide safe access for all road users, including pedestrians, bicyclists, drivers and transit riders. Complete streets serve all users regardless of age or ability. Cities should define and adopt holistic policies to benefit all road users, including updated street design standards, based on guidelines from the National Complete Streets Coalition. Complete streets are also green streets that ensure that urban forest canopy coverage and stormwater management practices are embedded in street design to meet policy goals.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: *Enact and implement a municipal Complete Streets ordinance ([Kansas City, Missouri](#); [Baltimore](#)). If an existing policy is in place, review its effectiveness ([Austin, Texas](#); [Lewiston, Maine](#)).*

Enact: *Review and adopt Complete Streets policies to help inform and connect existing and future development in communities ([Hennepin County, Minnesota](#))*

Additional Resources

- [Smart Growth America, National Complete Streets Coalition](#)
- [The Elements of a Complete Streets Policy, National Complete Streets Coalition](#)
- [U.S. Department of Transportation, Complete Streets](#)
- [MARC, Complete Streets Policy](#)
- [MARC, Complete Streets Handbook](#)



ACTION: Sidewalks

Pedestrians require safe paths to walk. Local governments should evaluate the walkability of the environment, including the existence of well-maintained, properly-designed sidewalks that are proportionate to intersections with pedestrian signals.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: *Initiate a sidewalk repair program ([Fort Scott, Kansas](#); [Ann Arbor, Michigan](#); [Kansas City, Missouri](#)).*

Encourage: *Provide a sidewalk repair incentive program ([Fort Scott, Kansas](#); [Kansas City, Kansas Sidewalk Incentive Program](#); [Richardson, Texas](#)).*

Enact: *Implement development regulations that require sidewalks in new private developments or in significant rebuild projects ([Knoxville, Tennessee](#)).*

Additional Resources

- [Public Health Law Center, Sidewalks in Kansas](#)
- [Minnesota Walks: Sidewalk Repair Funding Guide](#)



ACTION: Earn Walk-Friendly Community Designation

A Walk Friendly Communities (WFC) designation recognizes towns and cities that support safe walking environments that are accessible and comfortable. According to WFC, “*To be truly Walk Friendly, a community must address and prioritize pedestrian needs in all program areas, from developing plans and building sidewalks to establishing and monitoring performance measures and evaluating projects. Communities should build programs that incorporate all of these strategies to comprehensively address walking and pedestrian safety.*”

The program offers five levels of recognition to distinguish among different levels of achievement.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: *Earn the Walk Friendly Community designation. Once earned, look for ways to achieve the next level of designation for their community.*

Additional Resources

- [Walk Friendly Communities](#)
- [MARC, Making Your Communities Work for All Ages, A Toolkit for Cities](#)
- [MARC, Regional Pedestrian Policy Plan](#)

Examples:

[Lawrence, Kansas](#): A Walk Friendly Community
[Lee’s Summit, Missouri](#): A Walk Friendly Community
[Somerville, Massachusetts](#): Walk Friendly Gold Level



ACTION: Accessory Dwelling Units (ADUs)

An accessory dwelling unit is a small residence that shares a single-family lot with a larger primary dwelling. These can include garage apartments and backyard cottages and are sometimes lovingly called “granny flats.”

These units create economic value, increase housing options and affordability. They provide environmental benefits associated with their smaller size and by adding low-visibility density to existing neighborhoods, they reduce the pressure to accommodate population growth by expanding urban growth into undeveloped natural land, reduce the need for expanded roadways, and increase the efficacy of mass transit.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Encourage: *Offer small loans to build accessory dwellings ([Barnstable, Massachusetts](#)); simplify the building permit process for ADUs, waive or reduce permit and impact fees for ADUs ([Encintas, California](#)). Pre-approve model ADU designs and adopt legislation to encourage ADUs ([Seattle](#)).*

Enact: *Allow all types of accessory dwellings ([Minneapolis](#)).*

Additional Resources

- [Accessory Dwellings, Model Code for Accessory Dwelling Units](#)
 - [AARP, All About Accessory Dwelling Units](#)
 - [The City of Portland, Oregon, Accessory Dwelling Units](#)
 - [Accessory Dwelling Units in New Hampshire, A Guide for Municipalities](#)
-



ACTION: Reduce Minimum On-Site Parking

Current on-site parking requirements often discourage entrepreneurs and businesses from locating in downtown and commercial districts, where small lot sizes cannot meet parking requirements. When these policies cause urban lots to remain empty, rather than filled with productive, tax-paying businesses and residential units, those areas are deprived of wealth. When the policies encourage reserving large swaths of developable land for vehicle parking, those areas are deprived of vibrant and walkable corridors.

In order to encourage pedestrian-focused downtown and commercial districts, local government should develop alternative methods to provide community-based parking.

Local Government Role(s): ■ Lead by Example ■ Encourage Action ■ Enact Policy

Lead: *Build centralized public parking structures ([Lenexa, Kansas](#)); Study parking challenges and establish plans to address them ([Overland Park, Kansas](#)).*

Encourage: *Allow property owners to lease parking credits in public parking garages ([Pasadena, California](#)). Provide incentives to shared parking facilities ([Overland Park, Kansas](#)).*

Enact: *Eliminate minimum on-site parking requirements ([Sandpoint, Idaho](#); [Kansas City, Missouri](#)).*

Additional Resources

- [Walkable City Rules by Jeff Speck](#)
- [Strong Towns](#)
- [The High Cost of Free Parking and Parking and the City by Donald Shoup](#)
- [Smart Growth](#)

Clean Vehicle Fleets and Fuels



ACTION: Green Vehicle Purchasing

The availability of alternative-fueled and green vehicles has never been greater. In 2019, there are hundreds of light-duty and passenger vehicle options, dozens of medium-duty and heavy-duty vehicle options and a growing selection of purpose-built equipment with alternative-fuel options. Green vehicle purchasing policies set guidelines for purchasing low-emission, zero-emission, high-efficiency, and/or alternative fuel vehicles. Green vehicle purchasing policies may guide fleet managers to procure hybrid electric, battery electric, plug-in hybrid electric, fuel cell, compressed or liquid natural gas, or hydrogen-fueled vehicles, each with better fuel efficiency and often lower to zero greenhouse gas emissions when compared to internal combustion engine vehicles.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: *Adopt a green vehicle purchasing policy for the city.*

Additional Resources

- [Kansas City Regional Clean Cities Coalition, Metropolitan Energy Center](#)
- [Kansas City Regional Clean Cities, U.S. Department of Energy](#)
- [Cambridge Community Development Department, Green Fleet](#)
- [EPA, Federal Fleets using Low-Greenhouse Gas Emitting Vehicles](#)
- [Climate Mayors Electric Vehicle Purchasing Collaborative](#)

Examples:

[Columbus, Ohio](#): Green Fleet Action Plan
[Ann Arbor, Michigan](#): Green Fleets Policy
[Minneapolis](#): Green Fleet Policy
[San Jose, California](#): Green Fleet Policy



ACTION: Promote Electric Vehicles (EVs) and EV-Ready Code

Electric vehicles have lower emissions of both greenhouse gases and traditional air pollution (such as ozone and carbon monoxide), compared to vehicles with internal combustion engines. Vehicles that are charged exclusively by clean energy reduce emissions by 95 percent compared to conventional vehicles. Even when electric vehicles are charged from conventional grid power, emissions drop by 50 percent.

Municipalities' role in expanding electric vehicles includes ensuring clean energy charging stations can be deployed safely in places where people need to charge. Municipalities should prepare for the increase in electric vehicles by anticipating the installation of charging infrastructure today through updates to building codes and comprehensive plans.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: *Install electric vehicle charging stations at public buildings and facilities ([Irving, Texas](#); [San Francisco, California](#)).*

Encourage: Offer grant funding to offset the cost of purchasing and installing electric vehicle charging stations, especially in equity zones ([San Francisco, California](#)). Offer funding to transportation service providers to purchase EVs ([Columbus, Ohio](#)). Educate consumers about the benefits of EVs ([Columbus, Ohio](#)). Waive fees for EV charging stations ([Spokane, Washington](#)).

Enact: Amend building code to require EV-ready or EV-capable parking in new residential and commercial buildings ([Oakland, California](#); [Denver](#); [Atlanta](#)).

Additional Resources

- [U.S. Department of Energy, Reducing Pollution With Electric Vehicles](#)
- [MEC, Electrify Heartland](#)
- [KCP&L Chargepoint Program](#)



ACTION: No Idling Zones

Idling not only wastes fuel, but can actually produce more pollution per minute than driving. The U.S. Department of Energy estimates that eliminating idling by personal vehicles would be the equivalent to removing five million vehicles from the road. While not all idling can be avoided, eliminating 10 minutes of idling time from a single vehicle can prevent the production of up to a pound of carbon dioxide. Designate “no idling zones” at locations where large numbers of vehicles often idle such as schools, transit centers and construction sites. Provide education campaigns to make users aware of opportunities to turn off their vehicles, as well as to debunk common misconceptions related to idling. (i.e., restarting your car does not burn more fuel than leaving it idling).

Local Government Role(s): ■ Lead by Example ■ Encourage Action ■ Enact Policy

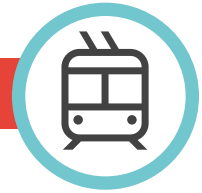
Lead: Adopt a city anti-idling policy ([Madison, Wisconsin](#)).

Encourage: Create a community awareness campaign to reduce idling ([Fitchburg, Wisconsin](#); [Flagstaff, Arizona](#)).

Enact: Adopt anti-idling law ([Johnson County, Kansas](#); [Kansas City, Missouri](#); [Washington, D.C.](#)).

Additional Resources

- [MARC, Idle-Free Zones](#)
- [IdleBox, Toolkit for Idling Reduction Education and Outreach, Clean Cities Coalition Network, DOE](#)
- [EPA, Idle-Free Schools Toolkit for a Healthy School Environment](#)



ACTION: Increase Ridership

Expanding transit service to and increasing transit ridership on heavily-traveled corridors can reduce reliance on single-occupancy vehicles, therefore reducing greenhouse gas emissions and local air pollution. In U.S. metropolitan areas that provide transit service, less than 5 percent of daily commuters use it, while in the Kansas City metro area, less than 2 percent of commuters use transit.

Establish specific goals and an implementation plan to grow mass transit ridership. Specific topics that local governments might consider include linking transit service to jobs, linking land use and development to public transportation, expanding funding to expand the breadth and frequency of service, and connecting transit with pedestrian and bicycle infrastructure.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: *Collaborate with transit agencies, regional and state partners and other municipalities to fund targeted expansions to transit service and implement policies and programs to increase transit ridership ([IndeBus, Independence, Missouri](#); [The Unified Government of Wyandotte County/Kansas City, Kansas](#); [Johnson County Transit](#)).*

Encourage: *Work with community partners to provide free or reduced cost transit rides for students, employees or other targeted audiences ([University of Missouri-Kansas City](#)).*

Additional Resources

- [RideKC](#)
- [Smart Moves 3.0](#)
- [Kansas Department of Transportation, Public Transportation](#)
- [Missouri Department of Transportation](#)



ACTION: Transit-Oriented Development

Prioritize development projects on and near transit corridors in support of regional goals to improve mobility in targeted corridors and activity centers. By creating more trip origins and destinations on existing corridors, ridership may go up without necessarily expanding transit service. Further, it will increase potential employment and economic growth opportunities with measurably less consumption of energy and emission of greenhouse gases.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: *Position municipal development projects and services in transit-served locations instead of areas not served by transit ([Chicago](#)).*

Encourage: *Provide grants and tax incentives for projects located in transit-served locations ([Kansas City, Missouri](#)).*

Enact: *Incorporate Transit-Oriented Development (TOD) provisions into local zoning codes for development near transit stops ([Kansas City, Missouri](#))*

Additional Resources

- [Transit Supportive Planning Toolkit](#)
 - [Urban Land Institute, Ten Principles for Successful Development Around Transit](#)
 - [Center for Transit Oriented Development](#)
-



ACTION: Commuter Ridesharing Incentives

Traditional ridesharing describes a group of people sharing transportation to a common destination. Commuting by rideshare has many benefits associated with limiting the number of vehicles on the roads, including requiring less energy, improving air quality, reducing traffic congestion and reducing costs by sharing the expenses associated with travel. New technology may enable increased ridesharing, producing low-cost emission reductions.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Encourage: *Create commuter challenge contests ([RideshareKC](#)). Encourage municipal employees to use alternative modes of transportation to commute to work ([Portland, Oregon](#)). Facilitate ride matching ([Research Triangle, North Carolina](#)). Promote ridesharing with tools for the community ([Austin, Texas](#)). Offer vanpool lease agreements ([Capital Metro Transportation Authority, Texas](#)). Offer reserved parking and reduce parking permit fees for carpooling ([University of Texas](#)). Encourage local businesses to adopt commuter incentives for employees ([Seattle Children's Hospital](#)).*

Additional Resources

- [Department of Transportation, Ride Sharing](#)
- [Environmental Protection Agency, Carpool Incentive Programs](#)
- [Department of Energy, Ride Sharing](#)

Bicycle Infrastructure



ACTION: Earn Bicycle-Friendly Community Designation

The desire to travel by bicycle is not enough to get most people cycling. Cities have to be designed to make cycling safe, easy and comfortable. The League of American Bicyclists awards “Bicycle Friendly Community” designations to cities that make cycling safe and convenient. The Bicycle Friendly Community designation is awarded at five different levels, from Bronze to Diamond, to recognize different levels of achievement. The Bicycle Friendly report card examines a community’s ridership, crash and fatality rates; examines enforcement, education and engineering policies and efforts; whether a city has a bike plan and bike staff; and how a community encourages cycling.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: *Earn the League of American Bicyclists Bicycle Friendly Community designation ([Shawnee, Kansas](#)).*

Encourage: *Encourage businesses, organizations and universities in your metro area to seek Bicycle Friendly designations ([Tampa, Florida](#); [Arlington, Virginia](#))*

Additional Resources

- [League of American Bicyclists, Bicycle Friendly Communities](#)
- [League of American Bicyclists, Bicycle Friendly Businesses](#)
- [League of American Bicyclists, Bicycle Friendly Universities](#)



ACTION: Safe Routes to School

Nationally, 10-14 percent of morning rush hour trips are travel for school. Ensuring that school children have safe routes to walk or ride bikes to school eliminates some of these trips. Safe Routes to School programs bring together transportation, public health and planning professionals, school communities, community groups and families to educate, encourage and engineer changes to the physical environment; and law enforcement officials to enforce traffic laws protecting these kid-safe routes. Recommendations can include upgrading sidewalks and crosswalks to create separation between sidewalks and roadways.

Local Government Role(s): Lead by Example Encourage Action Enact Policy

Lead: *Incorporate Safe Routes to School engineering guidelines in municipal projects ([Phoenix](#)). Launch a Safe Routes to School program ([Wyandotte County, Kansas](#)).*

Encourage: *Provide a sidewalk repair incentive program ([Fort Scott, Kansas](#)).*

Enact: *Implement development regulations that require sidewalks in new private developments ([Overland Park](#)).*

Additional Resources

- [National Center for Safe Routes to School](#)
 - [Safe Routes Partnership](#)
 - [Kansas Department of Transportation](#)
 - [Missouri Department of Transportation](#)
 - [BikeWalkKC Safe Routes to School Program](#)
-



ACTION: Create Cycling Networks

Communities that are bike-friendly can reduce dependence on automobiles. Creating a cycling network that includes diverse facility types such as bike paths, bicycle boulevards, cycle tracks, conventional lanes and slow-flow streets supports this goal. Regional partners should collaborate to connect on and off-road bicycle facilities with existing and planned regional trail networks. Plans should also support infrastructure needs, such as bicycle parking in various facility types.

Local Government Role(s): ■ Lead by Example ■ Encourage Action ■ Enact Policy

Lead: *Include bicycle parking at municipal facilities ([San Jose, California](#); [Philadelphia](#)). Fund and construct cycling networks throughout the community ([Indianapolis Cultural Trail](#))*

Encourage: *Provide grants for bike parking in business districts or neighborhoods ([Cambridge, Massachusetts](#)).*

Enact: *Implement development requirements that minimum bicycle parking be provided in new private development projects ([Portland, Oregon](#)).*

Additional Resources

- [MARC, Greater Kansas City Regional Bikeway Plan](#)
- [Bike Friendly Cities - Seville, Spain](#)
- [Department of Transportation, Noteworthy Local Policies](#)
- [Pedestrian and Bicycle Information Center, Connected Multimodal Networks](#)



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