

RED DIRT RESILIENCY:

A PLAN FOR STRONGER INFRASTRUCTURE & RISK REDUCTION



A Comprehensive Climate Action Plan For Central Oklahoma



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Canadian County

- City of Yukon
- City of Piedmont
- City of El Reno
- City of Mustang
- Canadian County Emergency Management
- Canadian County District 2

McClain County

- City of Blanchard
- Town of Goldsby

Cleveland County

- Cleveland County District 3
- City of Moore
- City of Blanchard
- City of Norman
- Town of Slaughterville
- Cleveland County Health Department

Pottawatomie County

- City of Shawnee

Logan County

- City of Guthrie

Oklahoma County

- City of Bethany
- City of Choctaw
- City of Del City
- City of Edmond
- City of Harrah
- City of Midwest City
- City of Oklahoma City
- City of The Village
- Town of Luther
- Oklahoma County Emergency Management
- Oklahoma County District 1
- Oklahoma County District 3

Stakeholders

- Oklahoma City Community Foundation
- Oklahoma City Chamber of Commerce
- Oklahoma Department of Environmental Quality
- Oklahoma Natural Gas
- Oklahoma Gas & Electric
- One Gas
- EightTwenty Solar
- Urban Land Institute of Oklahoma
- Neighborhood Alliance of Central Oklahoma
- Environmental Federation of Oklahoma
- OKC Beautiful
- Oklahoma Electric Cooperative
- Oklahoma Indian Legal Services
- Oklahoma Insurance Department
- The University of Oklahoma



EXECUTIVE SUMMARY

Central Oklahoma stands at a pivotal moment. With nearly 1.5 million residents across eight counties, the Oklahoma City Metropolitan Statistical Area (MSA) faces mounting challenges from extreme weather, aging infrastructure, and rapid population growth. The “Red Dirt Resiliency” Comprehensive Climate Action Plan (CCAP), led by the Association of Central Oklahoma Governments (ACOG), provides a coordinated, actionable roadmap to reduce climate risks, strengthen resilience, and promote prosperity for all communities in the region.

Why This Plan?

Authorized under the federal Climate Pollution Reduction Grants (CPRG) Program, this plan responds to increasing risks from natural hazards (tornadoes and strong winds, droughts, floods, ice storms, deep freezes, extreme heat, wildfires, and more) that threaten public safety, economic stability, and quality of life. Local governments are stretched thin, facing rising costs and limited resources, while certain populations bear the brunt of these impacts. The CCAP brings together municipalities, counties, tribal nations, technical experts, and community stakeholders to address these challenges through shared vision and collective action.

Planning Process

The CCAP was developed through a deliberate, inclusive, and data-driven process. It began with a review of existing plans and policies, followed by extensive stakeholder engagement (workshops, interviews, and public surveys) to identify regional challenges and opportunities. Data analysis assessed climate hazards, emissions, and evolving risks. The result is a set of prioritized strategies tailored to Central Oklahoma’s unique needs.

Key Findings

Emissions

Buildings and transportation are the largest sources, accounting for over 80% of regional emissions. Without action, emissions will remain high, worsening climate impacts and contributing to air quality issues.

Natural Hazards

Extreme weather events are increasing in frequency and severity, with disproportionate effects on low-income and disadvantaged communities.

Infrastructure & Land Use

The region's combination of densely populated urban centers and expansive rural areas requires flexible, scalable solutions. Aging infrastructure and fragmented planning slow progress.

Funding & Capacity

Limited local revenue and competition for grants hinder long-term investments. Regional coordination, pooled resources, and forward-thinking policies are essential.

Strategic Actions

The Plan prioritizes actions that build institutional capacity, foster collaboration, and remove barriers to implementation. High-impact strategies include:

- Coordinating regional planning, funding, and emergency response.
- Updating codes and development procedures for consistent, regional standards.
- Investing in clean transportation, energy efficiency, and resilient infrastructure.
- Expanding tree canopy, green space, and nature-based solutions.
- Supporting workforce development and economic diversification.

Benefits & Equity

The CCAP emphasizes a distribution of benefits that targets investments in underserved communities to improve health, safety, and economic opportunity. Climate action is framed not as a limit on growth, but as a pathway to prosperity, cleaner air and water, and stronger communities.

Implementation & Monitoring

ACOG will lead regional coordination, technical support, and progress tracking. Municipalities, counties, and partners will implement projects, with ongoing evaluation to ensure transparency and effectiveness. Annual reporting will document emissions reductions, community benefits, and lessons learned. Importantly, achieving lasting and impactful emissions reductions will require leadership and coordinated action from federal and state government, as well as market incentives and broad policy shifts that extend beyond the capacity of ACOG and its regional partners.

Conclusion

By aligning policies, resources, and partnerships, Central Oklahoma can proactively address climate risks, safeguard public health, and build a resilient future. The “Red Dirt Resiliency” plan is a call to collective action - ensuring that every community has the tools, knowledge, and support needed to thrive in the face of change.

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List of Abbreviations

ACOG	Association of Central Oklahoma Governments	FTA	Federal Transportation Authority
BAU	Business as Usual	GDP	Gross Domestic Product
BLS	U.S. Bureau of Labor Statistics	GHG	Greenhouse Gas
BMP	Best Management Practices	GI	Green Infrastructure
BRT	Bus Rapid Transit	HUD	Department of Housing and Urban Development
BUILD	Better Utilizing Investments to Leverage Development	HVAC	Heating Ventilation and Air Conditioning
CCAP	Comprehensive Climate Action Plan	IBC	International Building Code
CDBG	Community Development Block Grants	IECC	International Energy Conservation Code
CDD	Cooling Degree Days	IIJA	Infrastructure Investment and Jobs Act
CEDS	Comprehensive Economic Development Strategy	INCOG	Indian Nations Council of Governments
CH₄	Methane	IRA	Inflation Reduction Act
CNG	Compressed Natural Gas	LGGIT	Local Government Greenhouse Gas Inventory Tool
CO₂	Carbon Dioxide	LIDAC	Low Income and Disadvantaged Communities
CPRG	Climate Pollution Reduction Grants	LWCF	Land and Water Conservation Fund
DER	Distributed Energy Resource	MOU	Memorandum of Understanding
DEQ	Oklahoma Department of Environmental Quality	MSA	Metropolitan Statistical Area
DOE	Department of Energy	N₂O	Nitrous Oxide
DOT	Department of Transportation	NAAQS	National Ambient Air Quality Standards
EDA	U.S. Economic Development Administration	NEI	National Emissions Inventory
EPA	Environmental Protection Agency	NEVI	National Electric Vehicles Infrastructure
ESF	Emergency Support Functions	NLCD	National Land Cover Database
EV	Electric Vehicle	NOAA	National Oceanic and Atmospheric Administration
FEMA	Federal Emergency Management Agency	NOLA	New Orleans Louisiana
FHWA	Federal Highway Administration	NREL	National Renewable Energy Laboratory
FLIGHT	Facility Level Information on Greenhouse Gases Tool	NWS	National Weather Service
		ODOT	Oklahoma Department of Transportation

OEMA	Oklahoma Emergency Management Agency
OEMA	Oklahoma Environmental Management Authority
OKC	Oklahoma City
OSU	Oklahoma State University
OTSA	Oklahoma Tribal Statistical Area
PCAP	Priority Climate Action Plan
RTA	Regional Transportation Authority
RTP	Recreational Trails Program
SOC	Standard Occupation Codes
SPEER	South-Central Partnership of Energy Efficiency as a Resource
STBG	Surface Transportation Block Grant
TAP	Transportation Alternatives Program
TIP	Transportation Improvement Program
USDA	U.S. Department of Agriculture
USDOT	U.S. Department of Transportation
VMT	Vehicle Miles Traveled

Glossary

Adaptation¹	Climate change adaptation means taking action to prepare for and adjust to both the current and projected impacts of climate change. For example, as we expect summers to get hotter, communities are investing in increased tree canopy, efficient HVAC systems, and water features for cooling.
Association of Central Oklahoma Governments²	The regional planning agency for Central Oklahoma and the federally designated Metropolitan Planning Organization (MPO) for the region's urbanized areas. ACOG brings together local, state, and federal partners to guide investments, shape policy, and improve quality of life across county boundaries, including Canadian, Cleveland, Oklahoma, Logan, Grady, and McClain.
Climate Change³	Climate change involves significant changes in average conditions - such as temperature, precipitation, wind patterns, and other aspects of climate. Climate change involves increasingly unpredictable weather trends, such as shifts toward warmer, wetter, or drier conditions, resulting in more extreme weather events. These trends can be caused by natural variability in climate over time, as well as human activities that add greenhouse gases to the atmosphere like burning fossil fuels for energy.
Comprehensive Climate Action Plan (CCAP)⁴	A narrative climate planning report that provides an overview of all GHG sources/sinks and sectors following industry standard protocols. The CCAP will establish near-term and long-term GHG emission reduction targets and identify GHG reduction measures to achieve those goals.
Emergency Management⁵	Emergency management is a part of climate change adaptation, and refers to the coordinated effort to prepare for, respond to, recover from, and mitigate the impacts of disasters and emergencies. It involves planning, organizing, and managing resources and responsibilities to deal with all aspects of emergencies, particularly preparedness, response, recovery, and mitigation.
GHG Emissions⁶	Greenhouse gas emissions refer to the release of gases that trap heat in the Earth's atmosphere, contributing to global warming and climate change. Human activities have been primarily responsible for the increase in atmospheric greenhouse gases over the past 150 years.
GHG Inventory⁷	A summary of all GHG emission sources and sinks by sector and the associated emissions quantified using commonly accepted calculations. The CCAP must include a comprehensive inventory of GHG emissions and sinks for the following sectors: industry, electricity generation/use, transportation, commercial and residential buildings, agriculture, natural and working lands, and waste and materials management.

Greenhouse Gases (GHG)⁸	Greenhouse gases (GHGs) are gases in the Earth's atmosphere that trap heat. They allow sunlight to enter the atmosphere freely, where the Earth absorbs it and radiates it back as heat. GHGs absorb this heat and re-radiate it, warming the planet. Unlike oxygen and nitrogen, greenhouse gases like carbon dioxide (CO ₂), methane (CH ₄), nitrous oxide (N ₂ O), and fluorinated gases trap heat and contribute to the greenhouse effect.
Low Income / Disadvantaged Communities (LIDACs)⁹	Communities with residents that have low incomes, limited access to resources, and disproportionate exposure to environmental burdens. Although the Inflation Reduction Act does not formally define LIDACs, EPA publishes publicly available data sets that identify LIDACs based on different vulnerability indices: the Climate and Economic Justice Screening Tool and the Environmental Justice Screening and Mapping Tool. These tools identify LIDACs by assessing indicators for categories of burden: air quality, climate change, energy, environmental hazards, health, housing, legacy pollution, transportation, water and wastewater, and workforce development.
Metropolitan Statistical Area (MSA)¹⁰	Metropolitan statistical areas as defined by the U.S. Census 2020 MSA population. A list of eligible MSAs can be found in Appendix 15.2 of EPA's CPRG: Formula Grants for Planning, Program Guidance for States, Municipalities, and Air Control Agencies.
Mitigation¹¹	Climate change mitigation refers to actions limiting the magnitude and rate of future change by reducing greenhouse gas emissions and/or advancing nature-based solutions. For example, a municipal government may want to reduce its impacts on climate and pursue a fleet transition plan to phase out gas-powered vehicles with hybrid or electric vehicles.
Oklahoma Tribal Statistical Area (OTSA)¹²	This designation is used by the U.S. Census Bureau to identify statistical entities delineated by federally recognized American Indian tribes in Oklahoma. These areas are used for census and survey purposes and often overlap with Tribal Jurisdictional Areas where tribes provide government services and assert authority.
Priority Climate Action Plan (PCAP)¹³	A narrative climate planning report that includes a focused list of near-term, high-priority, and implementation-ready measures to reduce GHG pollution and an analysis of GHG emission reductions.
Resilience¹⁴	Resilience is the ability to anticipate, prepare for, respond to, and recover from significant multi-hazard threats with minimum damage to social well-being, the economy, and the environment.

PLAN BACKGROUND

Authorized under the 2022 Inflation Reduction Act, the Climate Pollution Reduction Grants (CPRG) Program provides \$5 billion in federal funding to states, metropolitan statistical areas, and tribal nations to develop climate action plans that reduce polluting emissions and prepare for extreme weather. This plan is meant to outline ways the Oklahoma City Metropolitan Statistical Area (MSA) (see Figure 1) can reduce risks from natural hazards, prepare for the future, and promote prosperity for everyone.

Investments in climate action planning go beyond developing a plan. The process brings partners together to address complex and correlated environmental, economic, and social challenges.

Red Dirt Resiliency: A Plan for Stronger Infrastructure & Risk Reduction (Plan) has been developed for the Oklahoma City MSA that covers eight counties in Central Oklahoma. Led by the Association of Central Oklahoma Governments (ACOG), this multi-jurisdictional, coordinated strategy will result in a plan that can guide partners through policy, program, pilot project design, and implementation while reducing emissions, improving air quality, and integrating municipal and community needs and priorities into planned investments.

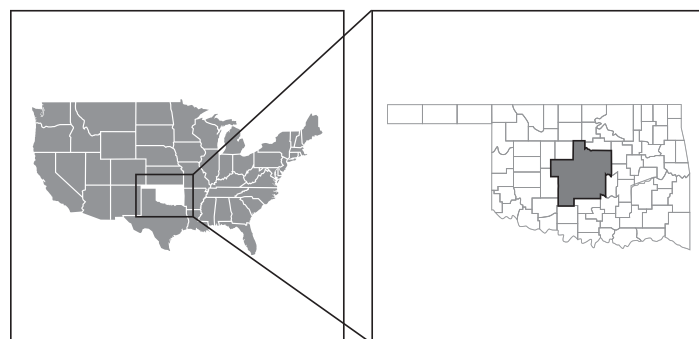
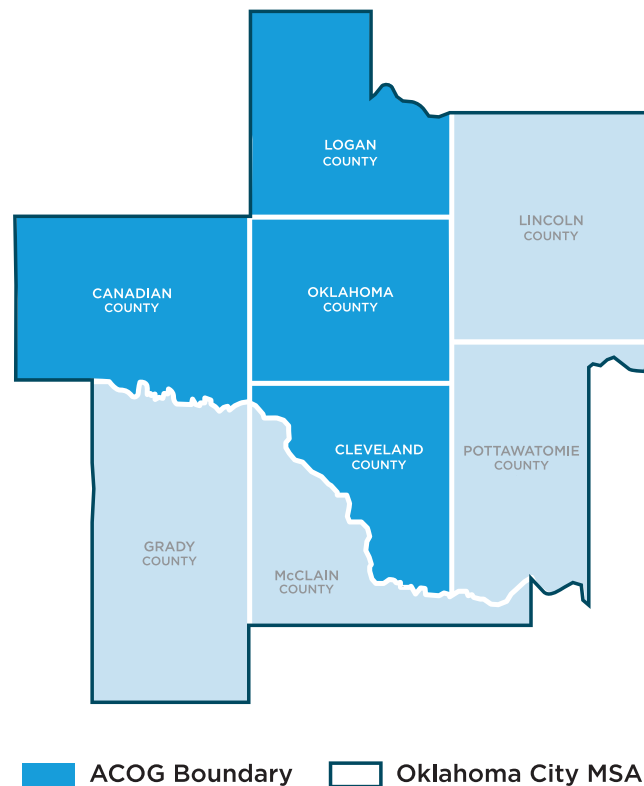


Figure 1: Placeholder: Planning Area Map

Cities, towns, tribal nations, and regions are interconnected at every level. The Oklahoma City MSA depends on a vibrant economy whose backbone is in natural resource development that supports transportation, jobs, education, and quality of life. Municipalities and decision-makers are being pushed to make tougher choices while providing critical services like waste, water, energy, and transportation on shrinking budgets. Communities are faced with ever-changing stressors like increased food costs, higher heating and cooling bills, and impacts from extreme weather all while the most vulnerable populations are disproportionately impacted. This Plan is a structured approach that frames climate action as a way to reduce risks and maintain conditions that promote prosperity for all.

By combining our lived experiences with data-driven insights into environmental changes and natural hazard risks, we can create a strong foundation for collaboration. This foundation guides us in developing and implementing climate actions that strengthen government operations, enhance community well-being, optimize resource use, and most importantly, improve public safety.



A Nationwide Approach

In 2024, the first phase of the CPRG program led to the submittal of over 200 Priority Climate Action Plans (PCAPs) from 45 states, the District of Columbia, 80 metropolitan areas, four U.S. territories, and over 80 Tribes and Tribal consortia (see Figure 2). In Oklahoma, these plans included those submitted by: the State of Oklahoma (DEQ), the Choctaw Nation of Oklahoma, the Muscogee (Creek) Nation, the Kiowa Tribe (under the consortium - The Native Nation's Climate Program of Oklahoma, including the Kiowa Tribe, Delaware Nation, Apache Tribe, Caddo Nation, Comanche Nation, and Cheyenne and Arapaho Tribes), the Tulsa metro area (INCOG), and the Oklahoma City metro area (ACOG). These plans started the process of climate action planning and will be updated and improved as Comprehensive Climate Action Plans (CCAPs) under this second round of CPRG planning.

A special thank you to the Kiowa Tribe, the State of Oklahoma, and Tinker Air Force Base for the cooperative conversations around how we can partner and collaborate to align our shared priorities.

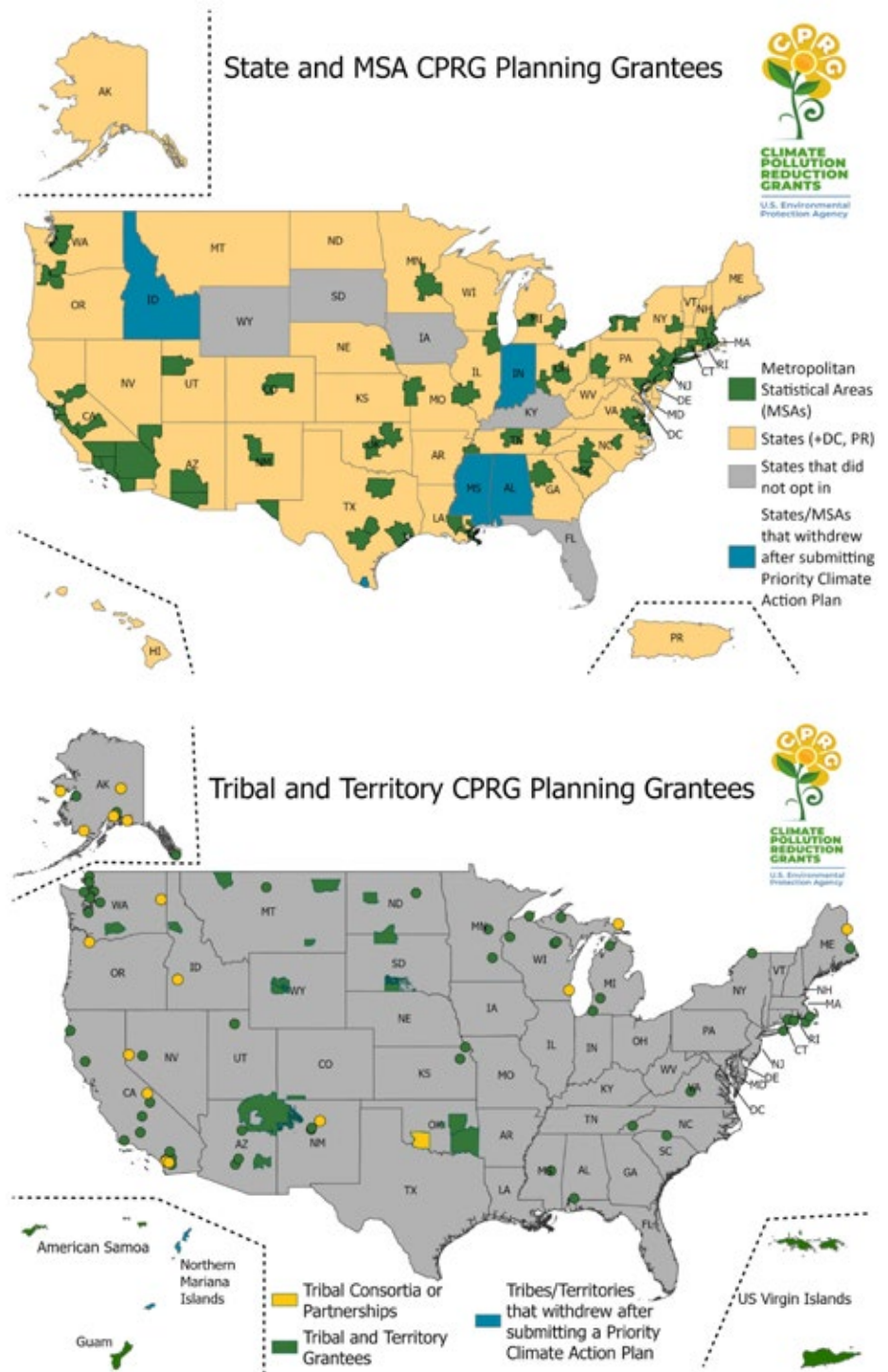


Figure 2: EPA CPRG Program Reach

The Plan Process

To build a strong foundation for regional climate action, the planning process was designed as a deliberate, inclusive, and data-informed roadmap. It began with a comprehensive review of existing plans and policies, followed by meaningful engagement with stakeholders and the broader community through interviews, workshops, and a public survey. This input helped identify key challenges and opportunities unique to our region. At the same time, data was collected and analyzed to assess climate hazards, emissions trends, and evolving risks. Through multiple rounds of strategy development and refinement, the process culminated in a set of actionable recommendations tailored to our region's needs and aspirations (see Figure 3).



Figure 3: What Makes the Foundation for Actions?

1. Document Review

The process began with a comprehensive review of dozens of regional plans, best practices from state and federal agencies, and climate mitigation and adaptation strategies from industry and trade associations. These sources informed the development of an initial suite of potential action strategies.

2. Workshop #1: Stakeholder Engagement

County-wide workshops were held to introduce the planning process to regional stakeholders, including city and county staff, nonprofit organizations, universities, and trade associations. Participants provided input on local challenges, opportunities, and potential solutions.

3. Challenges Assessment

Feedback from Workshop #1 was synthesized to identify recurring themes related to regional challenges. These insights helped shape how action strategies could be designed to address specific barriers and needs.

4. Opportunities Assessment

Local successes shared during Workshop #1 were consolidated to highlight existing efforts. These examples revealed opportunities for scaling effective initiatives and expanding successful programs.

5. Emissions Data Analysis

An updated greenhouse gas (GHG) inventory was compiled, covering the past five years and projecting emissions through 2050. Sector-

specific breakdowns helped identify where the most impactful emission reduction strategies could be applied.

6. Natural Hazard Risk Assessment

Data on climate-related natural hazards such as rainfall variability, drought, and flooding were collected and analyzed. This included both predictive modeling and anecdotal evidence from stakeholders, providing a clearer picture of regional vulnerabilities.

7. Initial Action Strategy Development

Insights from the previous steps were used to refine the initial suite of action strategies. This resulted in a collection of several dozen proposed actions, which were then prepared for stakeholder review, ranking, and modification.

8. Workshop #2: Strategy Review & Refinement

The same stakeholder groups reconvened to evaluate the proposed actions. They provided feedback on feasibility, potential impact, and suggested modifications. This step also helped further align new strategies with ongoing efforts to minimize duplication.

9. Final Action Strategy Selection

Following additional rounds of review and refinement, final rankings were used to determine which strategies would be included in the plan. In some cases, actions were combined to increase their reach and effectiveness.

This foundation of understanding has resulted in the development of a comprehensive list of actions that:

- Identify opportunities to reduce energy and **save money**
- Reduce risks and reactive repairs to critical infrastructure
- **Avoid costly damage** from climate hazards
- **Enhance quality of life** through strategic investments with multiple benefits
- Create or expand **workforce opportunities**

The solutions envisioned through this plan encompass a wide range of strategies, including transportation, land use and development planning, advances in alternative energy and fuels, expansion of greenspace and nature-based stormwater systems, greater shade and tree canopy coverage, and enhanced regional coordination around emergency management and response to natural disasters.

Together, these actions represent Central Oklahoma's commitment to building a safer, more resilient, and more sustainable future for all communities across the region.

Role of the Association of Central Oklahoma Governments (ACOG)

ACOG serves as Central Oklahoma's hub for collaboration, coordination, and long-term planning related to transportation, economic development, and the environment. Established in 1966, ACOG brings together cities, towns, and counties across the region to plan for shared challenges, align resources, and promote sustainable regional growth. ACOG serves the counties of Canadian, Cleveland, Logan, Oklahoma, and parts of Grady, and McClain. For this Plan, the counties of Lincoln and Pottawatomie were also included in the planning process for a more comprehensive representation of the Oklahoma City MSA (see **Figure 4**).

For this Plan, ACOG's role includes:

- Facilitating multi-jurisdictional coordination so that municipalities, counties, utilities, and communities work together on climate mitigation, adaptation, and emergency management.
- Serving as a technical and administrative resource – helping member governments access data, design strategies, and pursue funding for clean energy, resilient infrastructure, water resource planning, and more.
- Promoting the region's voice in the planning process by convening public input, engaging all communities, and aligning climate efforts with transportation, air quality, and economic development goals.



Figure 4: CCAP Planning Team



CENTRAL OKLAHOMA: CHALLENGES & OPPORTUNITIES

Central Oklahoma is a diverse and dynamic region defined by its rich history, resilient people, and deep connection to the land. Stretching across eight counties – Canadian, Cleveland, Grady, McClain, Oklahoma, Logan, Lincoln, and Pottawatomie – this region encompasses nearly 1.5 million residents and more than 6,000 square miles of urban centers, small towns, the Great Plains, and Tribal Nations. Indigenous populations account for nearly 10% of the total population in the planning region and are represented by the Wichita-Caddo-Delaware, Chickasaw Nation, Cheyenne-Arapaho, Kiowa-Comanche-Apache, Sac and Fox Nation, Iowa Tribe, Kickapoo Tribe, Potawatomi Tribe, and Absentee Shawnee Tribe.¹⁵

**Central Oklahomans
are no strangers
to overcoming
adversity.**

This land's history reflects both hardship and resilience, shaped by the displacement of Indigenous Peoples, environmental challenges like the Dust Bowl and tornadoes, and generations of rebuilding, innovation, and growth. Central Oklahomans are no strangers to overcoming adversity. The region's economy has long been anchored by its natural resources, serving as a national hub for energy, transportation, and industry. These activities support a vibrant culture where people from all walks of life come together to live, work, and shape a shared home. With its diverse perspectives and enduring spirit, Central Oklahoma is ready to respond to modern uncertainties with a collective vision for the future.

The Challenges

Central Oklahoma understands the unique natural hazards that come with its position in the Great Plains: tornadoes, droughts, severe storms, flooding, and wildfires are a natural part of life in this community (see Figure 5). In recent decades, these events have grown more intense and more frequent, and residents are increasingly feeling the impacts of everyday life. Given that these risks do not recognize county or city boundaries, it has become essential for the region to work together to identify shared challenges and to develop coordinated, forward-looking solutions.

At the same time, local governments need to continue to deliver essential services like waste management, water, public safety, infrastructure repair and replacements, public health services, and support local development – all of which are impacted by increasingly extreme natural hazards.

Navigating this complex landscape requires clear investment priorities, efficient use of funds, and, in many cases, collective regional action to prepare for the future and reduce shared risks. This reality underscores the need to strengthen the foundation for regional collaboration: building partnerships, fostering relationships, and supportive leadership, particularly through ACOG regional planning initiatives.

This new reality isn't just conjecture; city and county staff, elected officials, and non-governmental partners across Central Oklahoma understand and agree on the top ten challenges they are facing.



Figure 5: Local Weather Report of Severe Storms

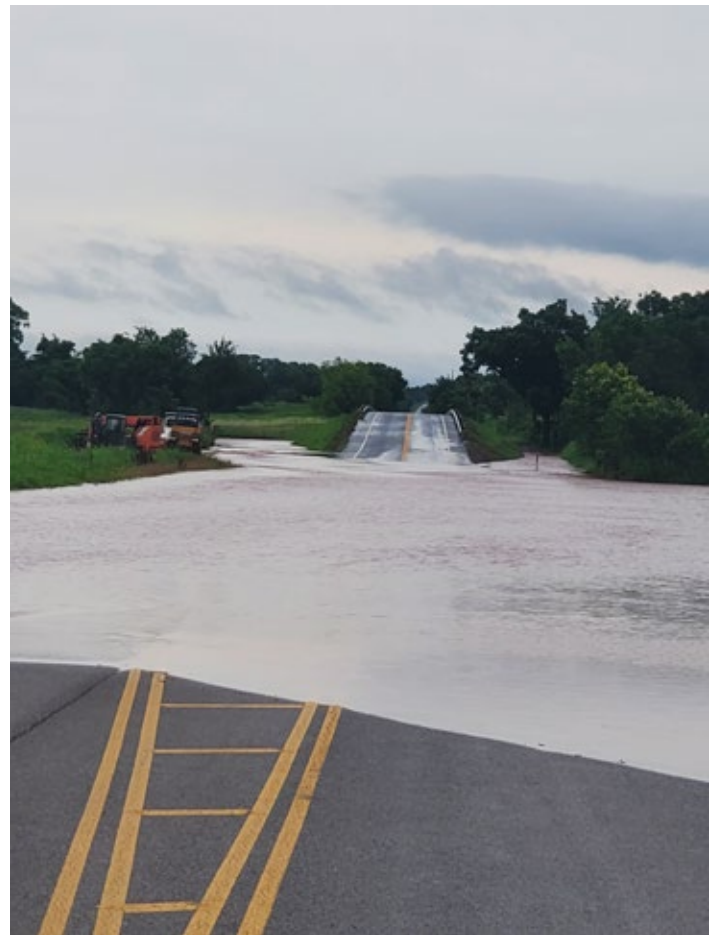


Figure 6: Flooded Roadway in Central Oklahoma

The Top Ten Challenges

1. Infrastructure is aging, brittle, and unprepared for extreme weather.

Roads, water systems, and electric infrastructure are failing under stress from storms, heat, flooding, and wildfire (see Figure 6). Repairs are often reactive, repetitive, and costly due to outdated design standards and obsolete construction practices.

2. Staffing and training gaps are a major operational barrier.

Local governments frequently cited understaffing, reliance on institutional knowledge, and lack of access to updated training or consultants. Emergencies pull staff from routine tasks, disrupting public services, and delaying work on planned projects.

3. Disaster recovery is slow, expensive, and often unsupported.

Federal financial support is delayed or unavailable for smaller events. Municipalities must front costs without reimbursement certainty. There's a need for state-level micro-disaster funds and clearer roles for counties in coordinating recovery.

4. Planning capacity and coordination are uneven across the region.

Many municipalities lack comprehensive plans, asset inventories, or contracting mechanisms for interjurisdictional collaboration. There's demand for standard permitting, design protocols, and a stronger coordinating role from regional bodies like ACOG.

5. Communication breakdowns—before, during, and after events—limit public trust and safety.

Public warnings are misunderstood or ignored because of the frequency, and at times, inaccuracy. Internal communication silos block information flow between agencies. There's widespread support for tiered communication strategies and outreach tailored to residents, businesses, and local leaders.

6. Funding constraints and fragmentation hinder project delivery.

Most local budgets depend on sales tax and are not designed to support long-term investments. Many communities lack the capacity to apply for grants or meet matching fund requirements. There's strong interest in pooled match funds, shared contracting templates, and standardized strategies.

7. Clean energy and efficiency projects offer major opportunities if scaled.

Cities like Norman, Mustang, and El Reno have demonstrated savings through solar, LEDs, and water reuse. Energy performance contracts, hybrid vehicle policies, and local renewable generation are emerging solutions, but need replication and support.

8. Resilience co-benefits are often missed in capital planning.

Tree canopy, stormwater management, energy efficient upgrades, multi-modal trails and other retrofits support both mitigation and livability but are not embedded in routine budgeting or road/trenching projects. Local leaders want tools to quantify and communicate returns on investments.

9. Climate risks are increasingly acknowledged but still met with a reactive mindset.

Many communities accept high risk related to natural hazards as “normal” and defer preparedness in favor of short-term fixes. There is growing interest in shifting toward proactive planning, but this requires cultural, educational, and political shifts.

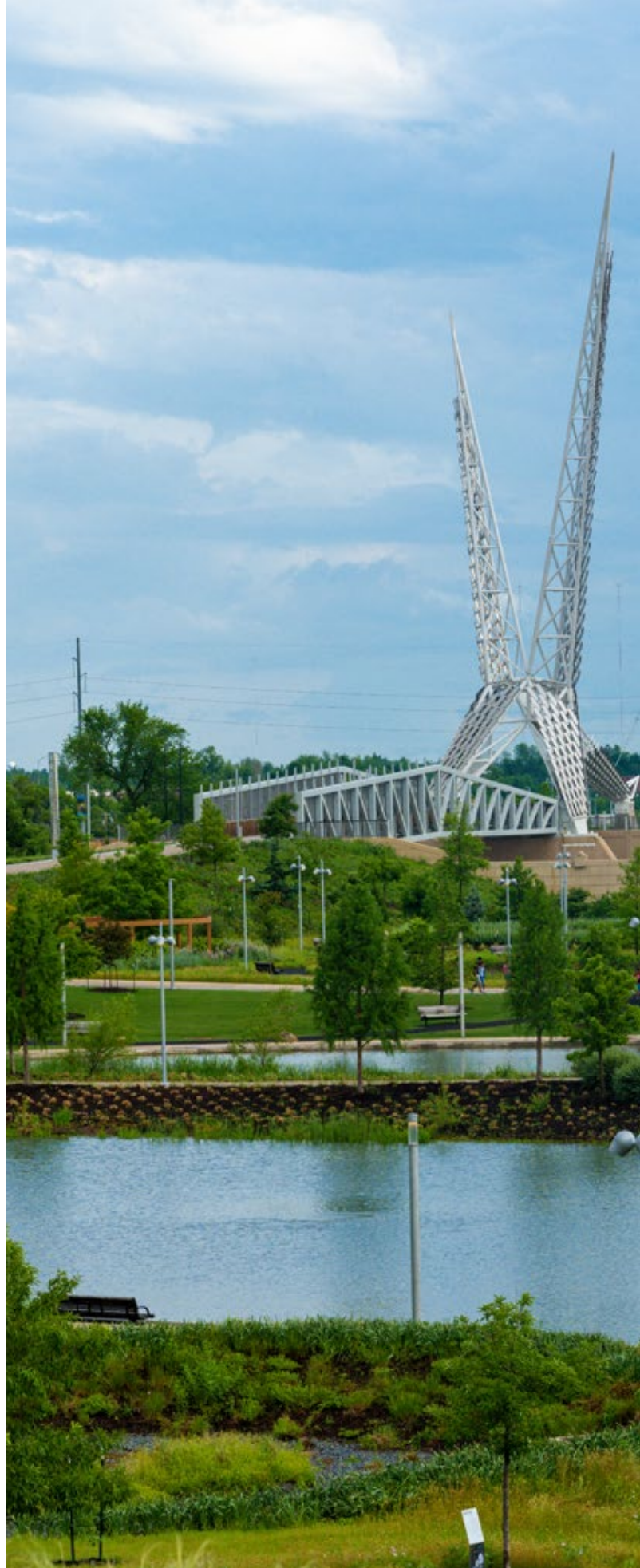
10. There is a strong appetite for regional standardization and shared solutions.

Whether it's permitting, training, evacuation planning, trenching ordinances, or utility coordination, localities want replicable models and collaborative frameworks, especially to help small towns and rural areas implement equitable, resilient infrastructure.

Regional Air Quality & Risk of Nonattainment

Central Oklahoma's air quality is closely tracked under the National Ambient Air Quality Standards (NAAQS) set by EPA. Rising ozone levels put the region at risk of a nonattainment designation, which is a costly label that can limit federal funding, slow economic growth, and trigger stricter regulations. Estimates indicate that without action, the cost of nonattainment could be as high as \$10 million annually of lost funding.

To stay in compliance, the ACOG Central Oklahoma Regional Air Quality Plan coordinates local governments, industry, and transportation partners to reduce emissions from vehicles and other major sources. Proactive action today protects public health, keeps the region economically competitive, and avoids the burdens of federal nonattainment. This Plan aligns with the 2025 Regional Air Quality Plan and also seeks to lower emissions of airborne pollutants. See Appendix D for more information.



The Opportunities

Many communities in Central Oklahoma are already engaged in climate action whether knowingly or unknowingly. Adjustments to everyday operations that improve efficiency, reduce waste and emissions, or increase the preparedness of the region for inclement weather are all positive steps toward reducing risk, improving the quality of life for communities, and supporting environmental stewardship. The action strategy recommendations included in this Plan have been designed to build off the good work that is already happening in communities now. The examples showcased below were highlighted by stakeholders at engagement workshops held during the planning process.

Municipal Leadership & Innovation

Cities across Central Oklahoma are finding creative ways to make their operations more efficient and resilient. In El Reno, airport and fire station lighting upgrades to LED bulbs (see Figure 7) are reducing energy costs and maintenance needs, while city contractors now include provisions for post-construction remediation when broadband or utility trenching occurs. The City is also exploring joint trenching projects to coordinate new construction with repair and replacement efforts, saving both time and money. Additionally, El Reno operates a community alert system that enables residents to receive real-time notifications about hazardous weather and other emergencies.

Nearby, Mustang has launched an innovative water reclamation and reuse program that looks to capture gray water from splash pads and other municipal areas for irrigating local ballfields, saving up to 30 million gallons of potable water annually (see Figure 8). Across Canadian County, significant investments of American Rescue Plan Act (ARPA) funds have strengthened rural water infrastructure, including new looping systems that improve water pressure and reliability. The region is also seeing success with the adoption of compressed natural gas (CNG) for trash and recycling fleets, improving air quality, and lowering operating costs.



Figure 7: LED Streetlight in Choctaw



Figure 8: New Water Reclamation Facility in Mustang¹⁶

In Cleveland County, the City of Norman continues to lead in environmental design and energy innovation. The City's water treatment and reclamation facilities now operate with two large solar arrays offsetting about 30% of their annual electricity use (see Figure 9). Norman has also upgraded its flood control infrastructure by incorporating bioswales into the James Garner Avenue corridor. Moore continues to be nationally recognized for its strengthened building codes – raising wind resistance standards from 90 to 135 miles per hour to better protect residential homes during tornado events.

Within Oklahoma County, cities are experimenting with data, design, and financial tools to strengthen local resilience. Oklahoma City has launched a detailed urban heat island study (see Figure 10) and hosted workshops to address heat risk, while Bethany and The Village have successfully leveraged grant funding and general obligation bonds to modernize streets, water systems, and civic spaces. Nichols Hills is exploring underground power lines to reduce storm damage, while Guthrie voters approved an extension of a dedicated sales tax to fund water, sewer, and public projects, including relocating critical infrastructure out of flood zones.

Even smaller municipalities are leading by example. Luther has implemented a resilience hub to provide community support during emergencies, and Choctaw's partnership between schools and the county to build a new high school bus lane demonstrates how shared investment can deliver safer and more efficient infrastructure.



Figure 9: Solar Array in Norman¹⁷

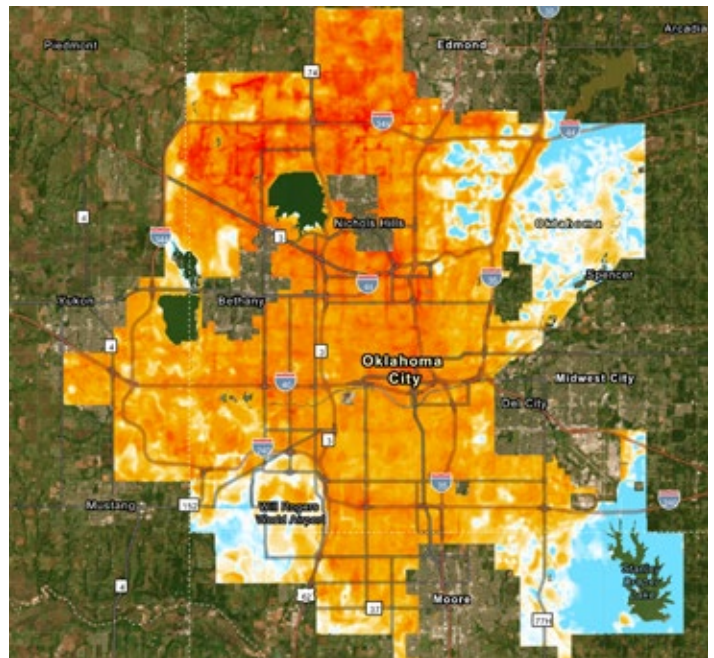


Figure 10: Interactive Heat Map from Oklahoma City¹⁸

County & Regional Collaboration

Counties are also taking an increasingly active role in supporting climate-related infrastructure improvements. Canadian County's use of ARPA funding has been instrumental in modernizing rural water systems and expanding reliable service to previously underserved areas.

Cleveland County has invested in backup natural gas generators for essential facilities such as the courthouse, and multiple counties report growing adoption of CNG-powered fleets for public works and waste collection.

Informal collaboration is also strengthening regional resilience. Countywide gatherings of mayors and city managers have helped local leaders identify shared priorities and pursue funding opportunities together, making it so that limited resources can go further.

Partners & Community-Led Efforts

Regional partners complement municipal and county efforts through outreach, education, and incentive programs. The Oklahoma Department of Insurance's "OK Ready" program offers grants and roof-fortification discounts to improve household resilience to severe weather (see Figure 11).

OKC Beautiful, a nonprofit focused on environmental education and beautification, has successfully planted more than 5,000 trees across the Oklahoma City metro area and continues to expand community composting and sustainability outreach.

Local organizations like Fertile Ground and ACOG's composting program are also helping residents and businesses reduce waste and enrich soils, serving as replicable models for other communities.

From LED upgrades and solar installations to storm-resilient building codes and cooperative infrastructure projects, Central Oklahoma communities are already advancing meaningful climate action and prioritizing public safety. These local successes demonstrate that effective work is already underway, and that continued collaboration can amplify these opportunities regionwide.



Figure 11: OK Ready Logo

Self-Determination & Regional Cooperation

This plan is not a mandate. We understand that each community in Central Oklahoma is unique, with its own traditions and priorities, and that one size does not fit all. Even so, conditions are changing, and growth is occurring in communities that have remained relatively stable for decades. These changes necessitate regional action - not as a form of top-down decision-making, but because large-scale, transformative strategies can only succeed through collaboration and economies of scale. By aligning policies, standards, and best practices across the region, **communities can preserve local self-determination while benefiting from shared resources, coordinated planning, and collective solutions that strengthen resilience to extreme events, promote community safety, and leave the region more durable and unified in the face of future changes.**



Tinker Air Force Base: A Critical Stakeholder for Central Oklahoma

Throughout the planning process, the project team engaged with Tinker Air Force Base (see Figure 12) to better understand its operations, boundaries, and role within the surrounding community. As a major military installation with over 35,000 staff members, Tinker significantly shapes the region's economic and environmental landscape. The base has developed its own climate action priorities as part of the 2023 Air Force Climate Campaign Plan, which offers opportunities for alignment and collaboration with regional civic initiatives.

2023 Air Force Climate Campaign Plan: Strategic Objectives & Actions²⁰

1. Modernize Infrastructure and Facilities

- Make targeted investments in base resilience
- Fully implement Severe Weather and Climate Hazard Playbook
- Conduct Energy Resilience Readiness Exercises to identify vulnerabilities
- Create Installation Energy Plans and work toward net-zero emissions by 2046

2. Develop a Climate-Informed Workforce

- Integrate climate topics into military education and planning
- Build understanding of climate's impacts on operations, logistics, and readiness

3. Integrate Climate into Operations, Planning, and Acquisitions

- Embed climate risk into operational plans and wargames
- Include energy and climate metrics in acquisition and logistics
- Analyze and mitigate climate-related risks in the defense supply chain
- Pilot sustainable aviation fuel, microreactors, and carbon-free electricity solutions



Figure 12: Tinker Air Force Base¹⁹

Potential Connections with Civic Initiatives

Infrastructure Resilience Investments

- Advocate for joint city-base climate risk assessments and capital improvements

Energy Resilience and Emergency Preparedness

- Coordinate with Tinker AFB on Energy Resilience Readiness Exercises and use findings to inform local emergency response and energy backup plans
- Integrate base-level Installation Energy Plans into broader regional decarbonization and grid reliability strategies

Zero-Carbon Transition

- Include Tinker's progress toward net-zero emissions by 2046 in regional GHG reduction targets
- Highlight plans to adopt carbon-free electricity and zero-emission vehicles

Climate-Informed Planning and Risk Mapping

- Reference the Air Force's Severe Weather and Climate Hazard Playbook for assessing and addressing climate hazard risks

Community and Government Partnerships

- Collaborate through interagency partnerships to leverage federal programs (e.g., DOE, DOD resilience grants) and integrate efforts around transportation, electrification, grid updates, and workforce training
- Use ACOG CCAP to reinforce mutual goals on decarbonization, workforce development, and disaster resilience

Climate Literacy and Training

- Encourage cross-training and knowledge sharing between city staff and Tinker personnel participating in the DAF's climate education initiatives

Although base emissions are managed internally, the above considerations offer valuable insights for broader climate action planning across Central Oklahoma, helping foster regional alignment. Tinker Air Force Base can be thought of as a small city-state, largely self-determined in its operations and emissions management yet deeply interconnected with the surrounding region. Its infrastructure, workforce, and environmental footprint influence local transportation, energy use, and resilience planning. As such, the base's leadership and collaboration remain essential to shaping a cohesive regional response to climate challenges.





INTEGRATING DATA & NATURAL HAZARD RISKS

Information from leaders, partners, and our communities continues to highlight a growing concern: the increasing frequency and severity of natural hazards. These concerns are supported by extensive data showing that rising levels of greenhouse gas (GHG) emissions are contributing to shifts in long-term weather patterns. While perspectives on climate change may vary, the risks associated with these changes are tangible and measurable. Communities are experiencing more frequent flooding, prolonged droughts, extreme heat events, and unpredictable storm activity, all of which pose real threats to infrastructure, public health, agriculture, and economic stability.

Regardless of the cause, the trend toward more volatile weather demands proactive risk management. By acknowledging these patterns and preparing for their potential impacts, organizations and communities can better safeguard assets, reduce disruption, and ensure resilience in the face of uncertainty.

The Data

What We See Today

Figure 13 illustrates that regional emissions stem from a variety of sources, with buildings and energy use, transportation, and industry being the most significant contributors. Identifying these sources enables targeted actions that can maximize risk reduction and optimize return on investment.

Understanding how the region is changing helps us make better decisions around investments that are proactive, equitable, and built to last.

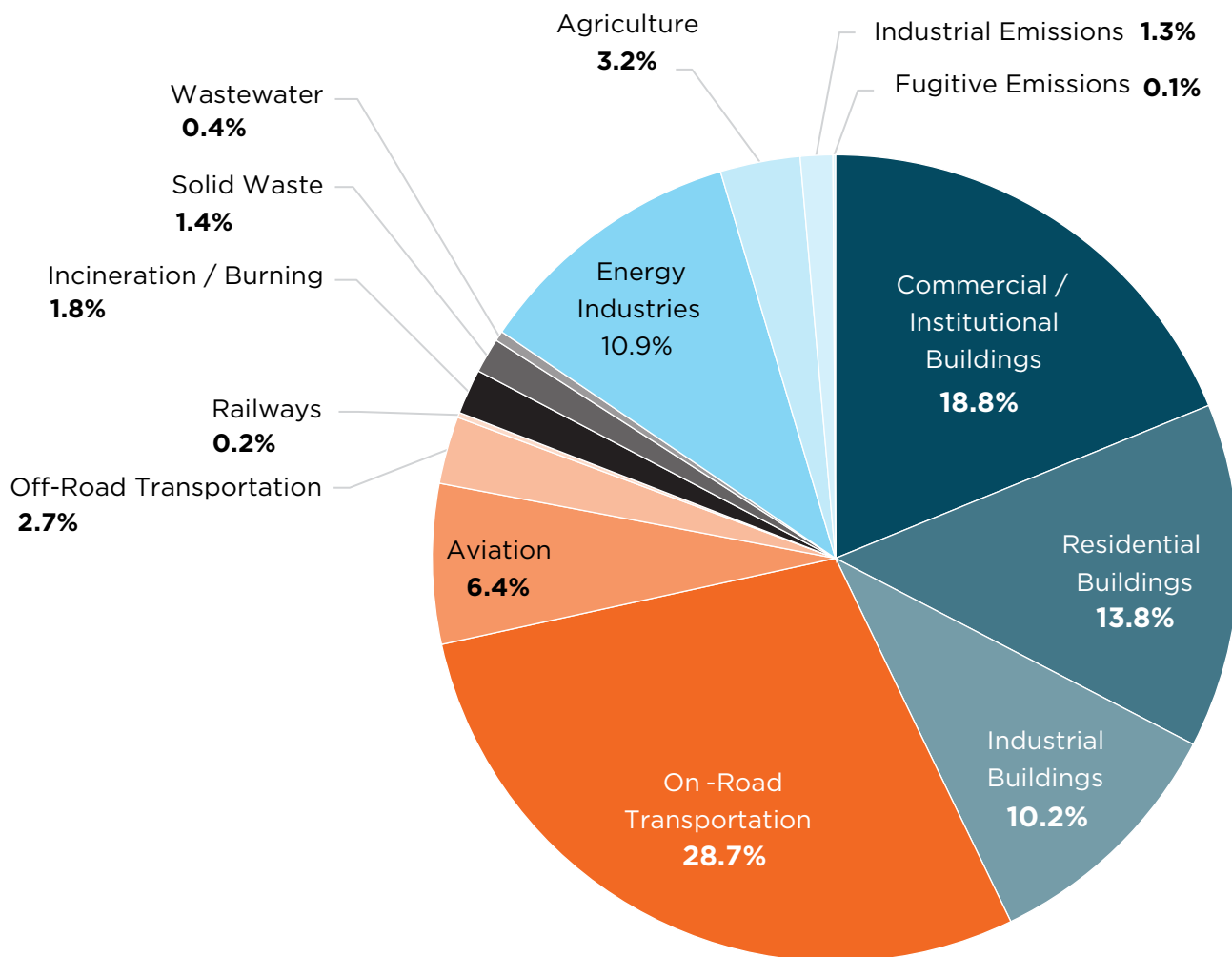


Figure 13: Central Oklahoma GHG Emissions 2023

Projecting Data for Future Scenarios

Understanding future emissions forecasts was essential in planning, given the long-term nature of climate investments and their returns. **Forecasts provide a forward-looking understanding to help ensure today's investments are relevant for future conditions.** Figure 14 shows future emissions under five different scenarios based on population projections, advancement of technology, and economic changes.

Emissions remain lowest when economic growth is slow and steady and when costs for zero-carbon technology are low. Emissions have the potential to be higher if either economic growth increases or zero-carbon technology costs remain high. The trajectory of regional emissions is not a perfect science but is used to **help estimate and understand a range of probable future outcomes if no action is taken.**

The full methodology for the GHG inventory and forecast presented here, along with additional details and sector-specific forecast projections are included in **Appendix A: Greenhouse Gas Methodology.**

It is widely accepted that without action, these emissions will continue to worsen climate change impacts that are already being felt. Hazards like severe storms, extreme heat, flooding, and wildfire are getting worse, but targeted action can be taken to help prepare for these impacts and reduce future risks. **The goal of this plan is to maximize the impact of our region's limited financial resources and workforce capacity by prioritizing action strategies that can achieve multiple benefits for the region and its residents.**

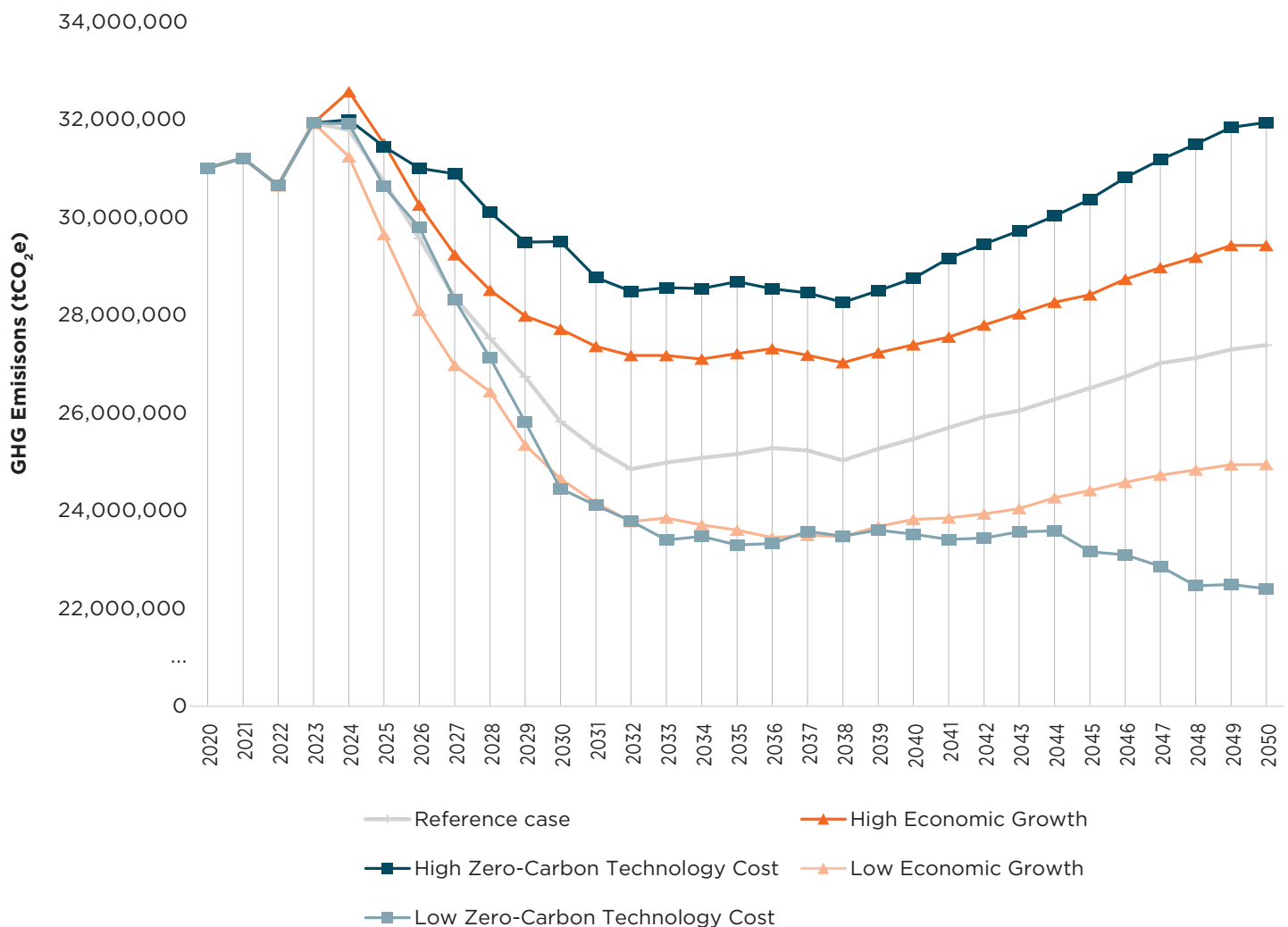


Figure 14: Central Oklahoma GHG Forecast Through 2050

The Natural Hazard Risks

Extreme weather events are natural hazards that occur with high intensity, frequency, or duration, and often cause significant damage or disruption to natural and human systems. Examples of extreme weather events include severe storms, flooding, heat, and drought.²¹ Climate change is causing extreme weather to happen more often and with greater impact.²² Figure 15 shows damage from an extremely violent 2013 tornado that touched down in Moore, Oklahoma.

Low-income and otherwise disadvantaged communities are often disproportionately affected by extreme weather events. These communities are particularly at risk because they most likely live in areas with deficient housing and aging infrastructure which may be more vulnerable to power outages, water issues, and damage.²³ These communities may also struggle to access resources and services during and after extreme weather events.²⁴

Extreme Heat & Urban Heat Islands

Extreme heat and urban heat islands are made worse by a warming climate. Extreme heat events, or heat waves, are periods of abnormally high temperatures that can cause heat exhaustion, heat stroke, and other heat-related illnesses.²⁶ Extreme heat is especially problematic when nighttime temperatures stay elevated, and people and animals do not have a chance to cool down. Urban heat islands are areas in cities that are significantly warmer than surrounding rural areas due to the built environment and lack of urban tree canopy.²⁷ These areas can be up to 14 degrees Fahrenheit hotter than surrounding rural areas (see Figure 16 on the next page).²⁸



Figure 15: Damage from Moore Tornado 2013²⁵

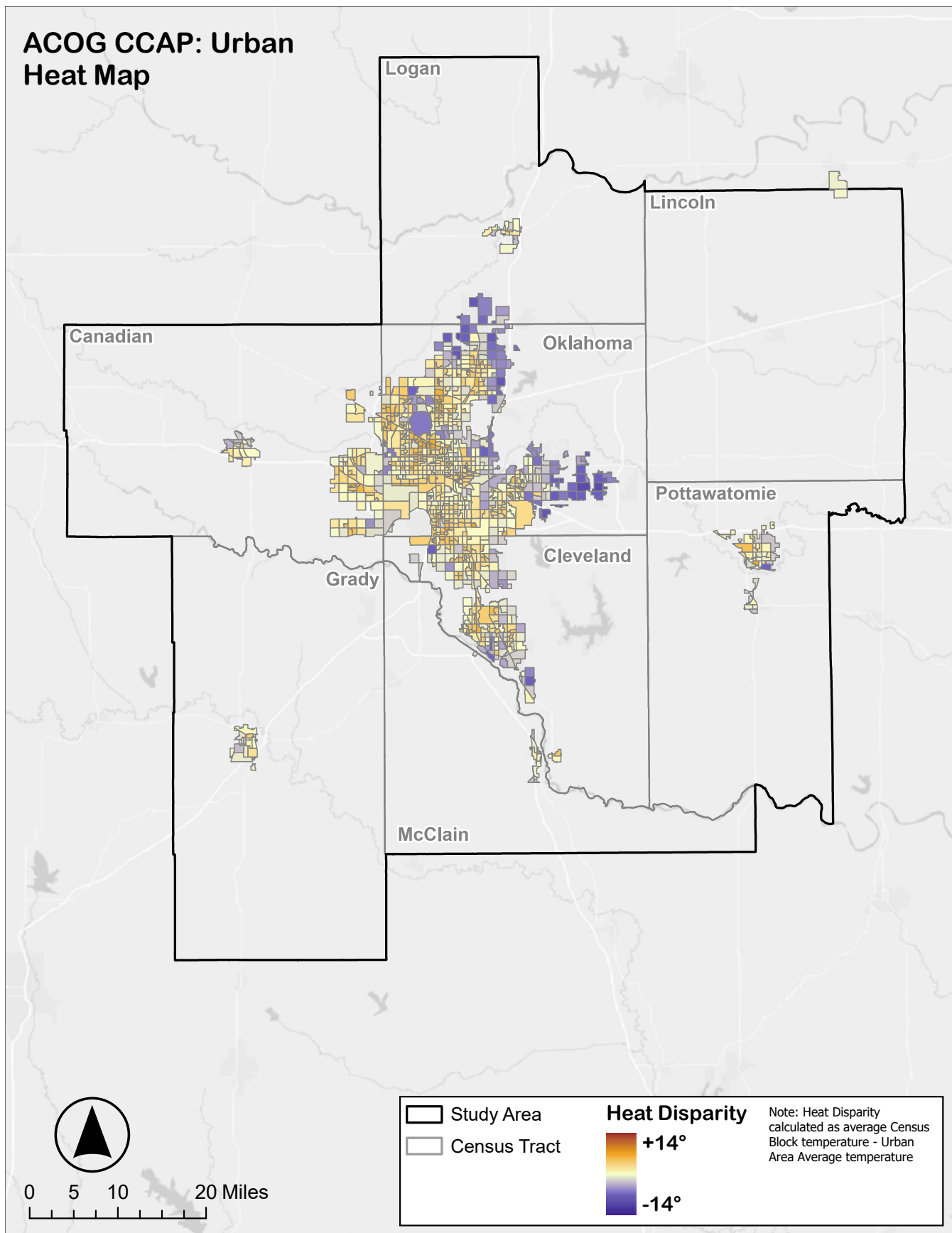


Figure 16: Urban Heat Island Map²⁹

For some communities, the ability to withstand and recover from these public health challenges is hampered by limited resources and an already stressed urban environment. **Climate change is expected to increase the frequency, duration, and intensity of extreme heat events, which will exacerbate the urban heat island effect and increase public health risks.** Low-income communities in urban areas, rural populations far from services, and aging populations are more vulnerable to the effects of extreme heat which can lead to more heat illnesses and deaths among socially vulnerable groups, increasing overall health disparities.³⁰ Increasing the urban tree canopy in impervious areas can help mitigate the impacts of heat risk and provide shade.

Federal estimates for climate trends regarding extreme heat are shown in Table 1, derived as the average across ACOG’s eight counties.³¹ Across all fields, temperatures are increasing and staying higher longer. One concerning indicator is that the number of days over 105 degrees Fahrenheit could rise from a few to nearly 40 by century’s end with higher emissions.

The *Lower Emissions* scenario represents a future where efforts to reduce emissions result in a global emissions peak around 2040, followed by decreasing emissions due to climate policy adoption and cleaner energy technologies. In this scenario, global average temperature rises by only about 4.6 degrees Fahrenheit, by 2100.³²

The *Higher Emissions* scenario represents a future with minimal climate action – the business-as-usual scenario. In this case, global average temperature rises by about 7.7 degrees Fahrenheit by2100.

Cooling Degree Days (CDD) is a metric used to estimate energy demand for cooling buildings, such as through air conditioning. This metric is calculated as the number of degrees a day’s average temperature is above a base temperature of 65 degrees Fahrenheit. For the Oklahoma City MSA, the number of Cooling Degree Days is expected to nearly double by Late Century.³³

Table 1: Climate Predictions: Extreme Heat

Indicator	Modeled History (1976-2005)	Lower Emissions Scenario	Higher Emissions Scenario
		Late Century (2070-2099)	Late Century (2070-2099)
Temperature Thresholds			
Annual Days with Max Temp >90° F	72	118	145
Annual Days with Max Temp >95° F	39	82	112
Annual Days with Max Temp >100° F	12	45	77
Annual Days with Max Temp >105° F	2	16	39
Annual Temperature			
Annual Single Highest Max Temp (° F)	105° F	111° F	115° F
Annual Highest Max Temp (5-day Average) (° F)	101° F	107° F	111° F
Cooling Degree Days (CDD)	2042	3044	3895

Flooding

Flooding in the Oklahoma City MSA occurs in two ways. Riverine flooding occurs when excessive rainfall happens over an extended period and causes waterways to overflow a river's edge. Surface flooding occurs when heavy rainfall inundates existing drainage and conveyance systems and stormwater flows into the streets and nearby structures or properties.

Climate change is expected to increase the frequency and severity of rainfall events and thus the likelihood and frequency of riverine and surface flooding.³⁴ Personal accounts

of Central Oklahomans support this; community members are noticing greater extreme rain events and flooding in areas where flooding has not historically been a concern.

Oklahoma is projected to see significant flood risks by 2050, ranking 12th compared to the rest of the U.S..³⁵ Generally, while annual precipitation amounts will remain stable, the frequency will decrease but the severity will increase. This can be seen in Table 2 below.³⁶

Increased flooding events can have negative impacts on low-income or remote communities with limited recovery resources through property damage, loss of wages, inaccessible schools, and power outages.³⁷ Flooding can also increase exposure to waterborne diseases, mold, and mental stress.

Red River Flood (May 2025)

In May 2025, prolonged and intense rainfall across Texas and Oklahoma caused the Red River to reach its highest levels in decades, resulting in widespread flooding throughout southern Oklahoma and northern Texas (see Figure 17). Although Central Oklahoma was not directly affected, the event underscores the region's vulnerability to increasingly severe climate-related hazards.

The flooding damaged homes and agricultural land, disrupted major transportation corridors, and led to significant economic losses due to infrastructure damage and lost productivity. Scientists attribute the growing frequency and intensity of such events to warmer atmospheric conditions, which increase moisture retention and amplify flood risks, particularly in river basins like the Red River.

This event highlights the urgent need for investment in flood-resilient infrastructure, enhanced stormwater management systems, and coordinated regional planning efforts. Strengthening these areas is essential to safeguard communities across Oklahoma and neighboring states that share vulnerable watershed systems.



Figure 17: Red River Flooding in 2025³⁸

Drought

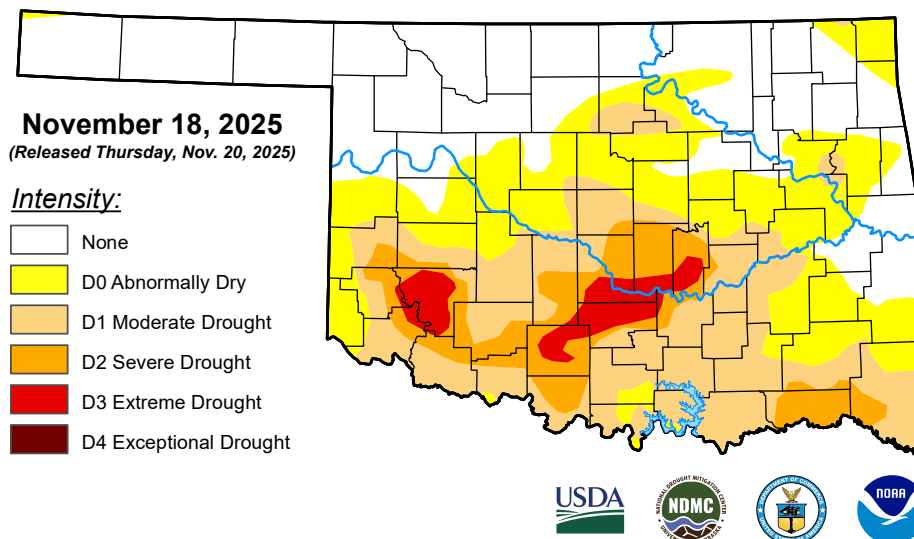
Drought results when moisture supply falls below crop threshold demands.³⁹ In the Oklahoma City MSA, drought can impact food production, water quality, and public health.⁴⁰ Climate change is likely to decrease the consistent availability of water while increasing demand via extreme heat. Droughts are also lasting longer; they are transitioning from a temporary extreme event to a new 'normal' that results in long-term aridification.⁴¹ Dry days are increasing in number and frequency. See Table 2 for federal estimates showing drought increasing over the coming decades.

Low-income and disadvantaged communities are particularly vulnerable to the impacts of droughts. Such households with marginal disposable income are especially sensitive to higher water costs and drought surcharges.⁴² Drought can lead to air quality changes associated with dust storms and wildfires, which in turn increases risk of cardiovascular/pulmonary disease and premature death. Drought affects water levels in rivers and lakes, affecting access to public waterbodies for recreational purposes and the ability to find relief from extreme heat. See Figure 18 for a current map of drought conditions in Oklahoma.

Table 2: Climate Predictions: Precipitation

Indicator	Modeled History (1976-2005)	Lower Emissions Scenario	Higher Emissions Scenario
		Late Century (2070-2099)	Late Century (2070-2099)
Precipitation			
Average Annual Total Precipitation (inches)	34	33	33
Days per Year with Precipitation	124	117	113
Days per Year without Precipitation	241	248	253
Maximum Number of Consecutive Wet Days	10	10	10
Maximum Number of Consecutive Dry Days	23	25	26

Figure 18: Oklahoma Drought Map ⁴³



Wildfires

Wildfires are becoming more frequent and intense due to the combination of extreme heat and drought. A wildfire is an uncontrolled fire that burns vegetation, often in rural areas (see Figure 19). They can start from a natural occurrence such as a lightning strike or a human-made spark.⁴⁴ Wildfires are dangerous because they can spread quickly and unpredictably, burning everything in their path including homes, infrastructure, and natural resources.⁴⁵ Wildfires also cause air pollution which can be harmful to human health.

Oklahoma has an especially high fire risk, and increasingly dry conditions will only heighten that risk.

Wildfires can have a disproportionate impact on low-income and disadvantaged communities who may lack the necessary resources to invest in fire safety. This can lead insurance companies to decline coverage in wildfire-prone regions to avoid major profit losses, resulting in fewer insurance options for these communities.⁴⁶ Smoke from wildfire increases air pollution and can affect regional air quality. Wealthier communities are more likely to have access to personal vehicles and the ability to afford temporary lodging during emergency evacuations. They are also more likely to have manageable insurance premiums and disposable income to invest in wildfire defense strategies for their homes.⁴⁷

Winter Storms

Winter Storm Uri took place in February 2021 and had a significant impact on Central Oklahoma. Six inches of snow, loss of power, dangerous wind chills that dipped to minus 18 degrees Fahrenheit, negative single digit temperatures (minus 6 degrees Fahrenheit), and dangerous road conditions all contributed to a weather event that Central Oklahoma was not prepared for. The legacy impact of this single storm is still being felt today. Utilities are still trying to recoup financial losses resulting from paying premium prices for natural gas due to market volatility to keep the power on. Ratepayers are shouldering some of this cost burden, which is especially hard for those households that already spend an outsized portion of their income on energy costs.



Figure 19: Wildfire Risk in Oklahoma ⁴⁸

PLANNING FOR THE FUTURE

Central Oklahoma is at a turning point. We understand the issues, we have the data, and we can see the changes already unfolding - from population growth and shifting development patterns to increasingly severe weather and aging infrastructure.

What's needed now is not a series of isolated fixes, but a systematic shift in how we plan, invest, and collaborate. The challenges we face are interconnected, and our responses must be as well.

This plan is driven by a shared goal: **reducing risk and improving safety** for the people, communities, and economies that make up Central Oklahoma. We no longer have the luxury of one-time investments or short-term solutions. Each decision made today - about land use, infrastructure, and funding - must be designed to deliver lasting, compounding benefits for the decades ahead. To do things differently, we must align policies, resources, and partnerships around long-term resilience and proactive planning based on our challenges and data (see Figure 20).

Through engagement with municipal and county staff, industry representatives, nonprofit organizations, community leaders, subject-matter experts, and other regional partners, three consistent themes emerged around our greatest challenges and our clearest paths forward: **People and Land Use, Funding, and Critical Infrastructure**. For each theme, we identify what we heard from community leaders and what we must do in the future to create safer, more resilient, and better-connected communities. These themes have been incorporated into the actions.



Figure 20: New Realities Necessitate New Solutions

People & Land Use

Central Oklahoma is changing: population growth (roughly 6% per decade⁴⁹), shifting development patterns, and wide variation in local capacity require a more coordinated, forward-looking approach to supporting where people live, work, and utilize public services. Successful land use and community planning can balance targeted density and economic opportunity in growth areas while protecting small-town character and incorporating the needs of rural communities - all while strengthening emergency preparedness, public health, utility expansion, and long-term service delivery.

What We Heard

- Rapid **population growth** in the region is **shifting demand** for housing, roads, utilities, and public services; local governments need data to plan staffing and maintenance.
- The region contains both dense **urban** cores and sparsely populated **rural** areas; a one-size-fits-all approach will not work.
- Local governments often lack dedicated planning **staff**; many employees juggle operations, planning, and emergency management roles.
- **Air quality** and public health concerns are increasingly tied to **land use and transportation** choices.
- **Emergency management** and continuity planning are uneven; smaller events can quickly exhaust local resources especially in rural communities.
- Fragmented utilities, inconsistent permitting, and **variable design standards** slow coordinated investment.
- Residents and leaders want clearer, **visual communication** about risks and co-benefits to support local decision-making.

What We Can Do

- Build and maintain a regional **data platform** to project population, housing needs, and infrastructure demand to inform staffing and capital planning.
- Develop model land use and **permitting templates** that local jurisdictions can adapt, enabling consistent and scalable design standards across the region.
- Prioritize compact, **mixed-use development** in appropriate locations while protecting small-town character through tailored local guidance.
- Strengthen regional emergency coordination via shared operations protocols, **mutual aid agreements**, and standardized risk communication tools.
- Produce visual **outreach** materials and targeted education campaigns, delivered through trusted local organizations, to make risks and co-benefits tangible for residents and officials.
- Offer **technical assistance** and capacity-building for smaller jurisdictions (e.g., planning clinics, shared staff resources, pooled consultants).

Funding

Long-term resilience and smarter infrastructure depend on predictable, flexible financing and regional coordination. Because many communities face legal and fiscal constraints, advancing the Plan's priorities requires new financing approaches, shared capacity, and clearer demonstration of return on investment.

What We Heard

- Limited local revenue flexibility (**reliance on sales taxes**, statutory constraints) makes long-term investment difficult.
- **Rising costs** for materials and labor increase the urgency of strategic project selection and bundling.
- **Jurisdictions compete** for limited grants; smaller communities struggle with grant writing and administration.
- State mandated functions (e.g., emergency management) sometimes **lack dedicated funding**.
- Short funding cycles push communities into **reactive maintenance** rather than proactive resilience.
- Leaders are interested in **shared models**: pooled local matches, bundled projects, and regional grant administration.
- There is demand for **better tools** to track project finance and show **fiscal and community returns**.

What We Can Do

- Convene a **regional finance working group** to develop pooled-match mechanisms, bundled financing strategies, and regional eligibility approaches for state/federal programs.
- Pilot a **shared grant writing** and administration service to increase access for smaller jurisdictions.
- Create a **finance tracking dashboard** to quantify costs, co-benefits, and return on investment for priority projects.
- Identify and **promote high impact, shovel ready projects** that are attractive to state, federal, and private funders (including ARPA and energy performance contracting).
- Support local adoption of **procurement and contracting templates** that enable green clauses, performance incentives, and accountability.
- Advocate collectively for **statutory changes** and state-level funding programs that enable long-term infrastructure investment.

Critical Infrastructure

Aging systems, shifting demand, and inconsistent design and data practices make it difficult for the region to move from patchwork repairs to durable, resilient infrastructure. Coordinated planning, shared standards, and smarter asset management will lower lifecycle costs and reduce disruptions from floods, storms, and other hazards.

We know the risks, we know the challenges, and we can take action building regional resilience through coordinated planning, shared resources, and proactive investment.

What We Heard

- Many water, wastewater, road, and energy systems are reaching the **end of their useful life** and are strained by changing development patterns.
- Inconsistent codes, poor enforcement, and outdated contract language lead to **repeated failures** and unnecessary expense.
- Smaller jurisdictions **lack staff and funding** for comprehensive asset inventories or master plans.
- Overlapping utility service areas and trenching practices create **inefficiencies and repeated disturbances**.
- Broadband and other new infrastructure create permitting and **right-of-way challenges** with limited local benefit.
- There is broad interest in **co-benefit approaches** (e.g., coordinating stormwater, broadband, and utility upgrades), but contractors and procurement practices do not consistently deliver resilience or community co-benefits.

What We Can Do

- Develop regionally consistent resilient design **standards**, project **templates**, and model **contracts** that include performance metrics and benefit clauses.
- Support creation of **comprehensive asset inventories** and GIS-based tracking tools to inform prioritization and lifecycle planning.
- Promote **coordinated trenching** and right-of-way policies to enable co-benefit projects and reduce repetitive disturbances.
- Facilitate regional procurement and **shared services strategies** to increase bargaining power and improve installation quality.
- Advance pilot projects that demonstrate high-return investments (e.g., pump station upgrades, LED streetlights, resilient water system upgrades) and **document cost-savings**.
- Provide **training, templates, and consultant networks** to help smaller jurisdictions adopt modern asset management and resilient design practices.
- Advocate for **funding and policy changes** that support long-term capital planning and integrated infrastructure upgrades.

DEVELOPING PRIORITY ACTIONS

The actions recommended here represent a collection of responses to the region's most pressing needs. They were developed through an iterative process - with continual feedback from the people working in these spaces every day, the results of a comprehensive document review, feedback from a publicly distributed survey, and prioritization feedback from a dozen in-person workshops all helped refine final actions (see Figure 21).

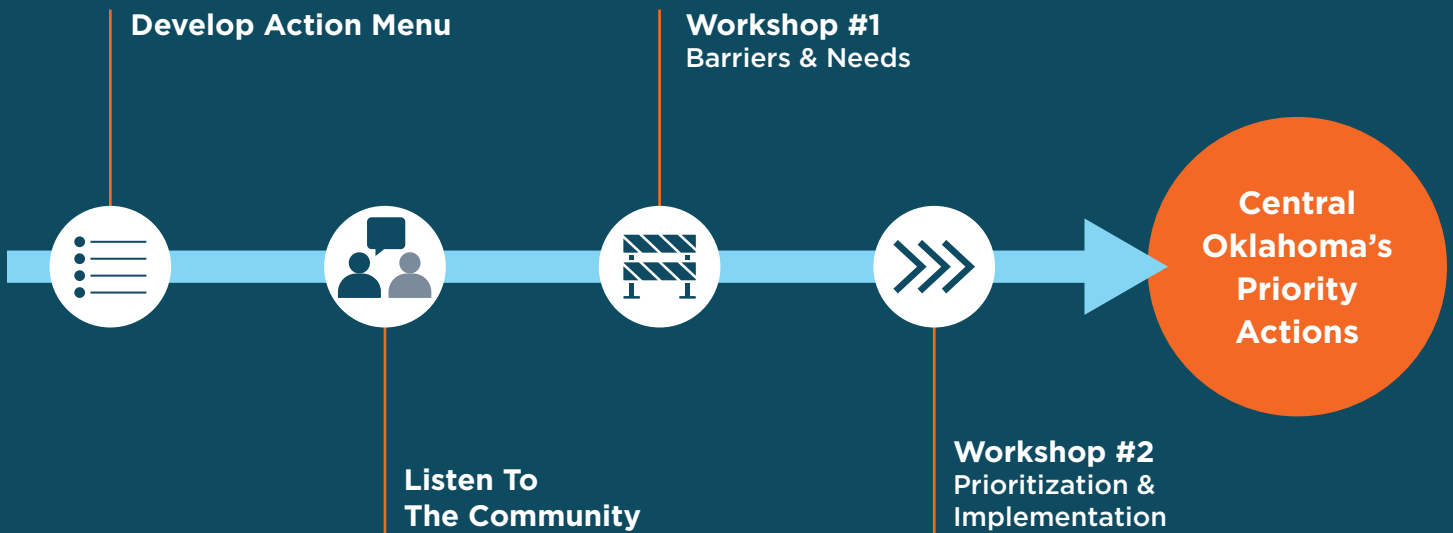
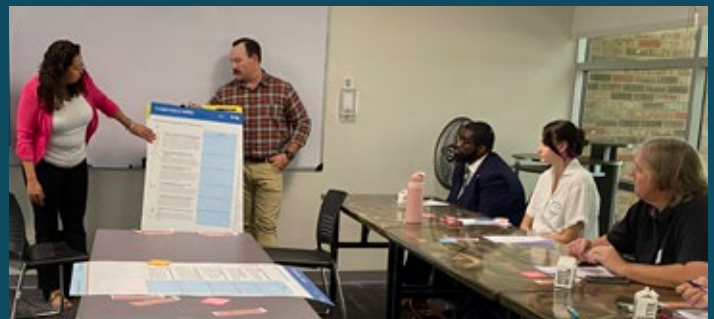
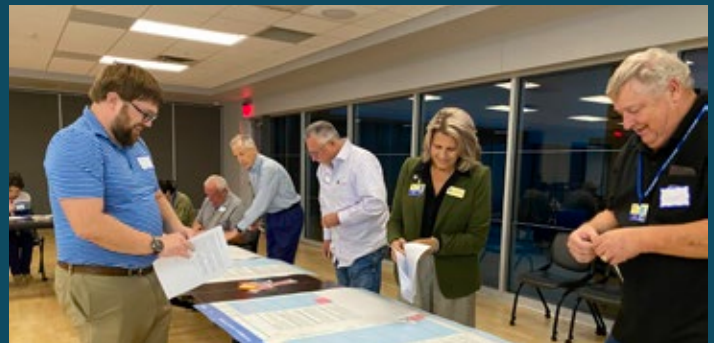


Figure 21: Action Identification Process



Workshops



Generating the Action Menu

A comprehensive list of over 150 climate change mitigation and adaptation strategies was compiled from sources such as the U.S. Department of Energy, Oklahoma Office of Energy, Electric Power Research Institute, International Petroleum Industry Environmental Conservation Association, and the U.S. Department of Agriculture.

Climate, transportation, clean energy, and waste plans from other metropolitan areas were also reviewed to gain insights into comparable regional and national approaches to decarbonization and resilience. A review of 19 local and state government climate action plans in the United States was completed based on similar regions and challenges that helped inform measures including plans from Arkansas, Wyoming, Texas, New Mexico, Kansas, Missouri, and Nebraska.

150+
Strategies
compiled from

U.S. Department of Energy

Oklahoma Office of Energy

Electric Power Research Institute

**International Petroleum Industry
Environmental Conservation
Association**

U.S. Department of Agriculture

**Climate, transportation, clean
energy, and waste plans from
other metropolitan areas**

**Local and state government
climate action plans**



Listening to the Community

To gather public input on priorities, a public survey was posted on ACOG's CPRG webpage and sent to relevant ACOG email lists. The responses reveal several key insights:

- Most respondents have already taken or are willing to take practical steps to reduce the impacts of extreme weather, such as developing emergency preparedness plans, installing insulation, and using fire-resistant materials.
- The most frequently cited challenges to preparedness and pollution reduction are limited financial help, uncertainty about how to prepare, and basic needs insecurity, indicating that targeted financial and informational support could have a significant impact.
- Community priorities for municipal action focus on infrastructure improvements (upgrading roads, bridges, and drainage), increasing urban tree canopy, and ensuring backup power and emergency plans, reflecting a strong desire for collective resilience measures alongside individual actions.

These viewpoints guided the first round of action strategy refinement and helped focus the plan on the practical concerns regarding infrastructure maintenance, regional coordination, data sharing, and emergency preparedness that community members care most about.



19
Surveys



12
Workshops



75
Participants

Understanding Barriers & Needs:



Workshop #1

An initial round of stakeholder engagement was held in June of 2025 with municipal and county representatives who support work around planning, engineering, flooding, operations, and emergency management. A total of five, two-hour in-person meetings were held where the CCAP process was introduced and participants were asked to discuss the most impactful barriers, opportunities, and successes related to existing challenges concerning the delivery of services and the durability of existing infrastructure in the face of risks from climate hazards. A separate two-hour meeting was held for representatives from local non-profits, universities, private, and industry groups to get input on barriers and needs.

Results from this initial round of meetings were thematically organized and used to drive additional strategy modification and prioritization. Based on feedback from municipal and public partners, strategies were reorganized under consolidated categories:

- Transportation & Mobility
- Infrastructure & Energy
- Industry & Economic Development
- Environment & Natural Systems
- Community Well-Being & Emergency Management

The initial suite of strategies was refined to around 50 priority regional enabling actions led by ACOG and approximately 30 nested voluntary county and municipal actions (actions enabled by ACOG but needing county or municipal authority to implement).

Prioritizing Actions, Understanding Implementation:



Workshop #2

In September 2025, a total of six 2-hour in-person workshops were facilitated as part of the second round of outreach. Discussions focused on leading participants through a ranking exercise of draft climate action strategies.

Meetings were held with:

- Canadian County
- Grady + McClain Counties
- Cleveland County
- Eastern Oklahoma + Lincoln + Pottawatomie Counties
- Western Oklahoma + Logan Counties
- General Partners

The same stakeholders that attended June meetings were invited again and asked to rank their top actions and give suggested modifications and comments concerning feasibility, impact, ongoing work, and regional context. Participants were asked to prioritize actions from five sectors that aligned with regional sources of greenhouse gas emissions. See Table 3 for a count of actions presented to workshop groups by sector.

Table 3: Count of Actions Presented to Workshops

Sector	# of Actions Presented
Transportation & Mobility	11
Infrastructure & Energy	16
Industry & Economic Development	12
Environment & Natural Systems	10
Community Well-Being & Emergency Management	10
Total Actions Reviewed	59

Participants placed dot stickers on 24"x36" posters displaying the listed actions to indicate their preference. They were encouraged to write any additions or modifications they wished to see in a column to the right of the actions (see Figure 22).

Despite each stakeholder's unique perspective, challenges, and opportunities, there were many areas where Central Oklahoma communities align on need.

- Pooling resources and coordinating funding, planning, and emergency response
- Updating planning process, codes, and development procedures for everyone to be on an equal playing field
- Building on the work of existing partnerships and organizations
- Developing tools, data processes, and standardization that will reduce duplicity in efforts

Barriers to implementation of proposed actions include:

- Differences in community priorities
- Communication silos
- Additional coordination given limited funds and staff capacity

Opportunities related to listed actions include:

- Regional coordination on building and development standards
- Interconnected and strategic planning and management for stormwater and flooding
- Developing tools that can be used regionally

Following the second and final round of stakeholder engagement, ACOG used the feedback to refine and finalize the top-ranked priority actions.

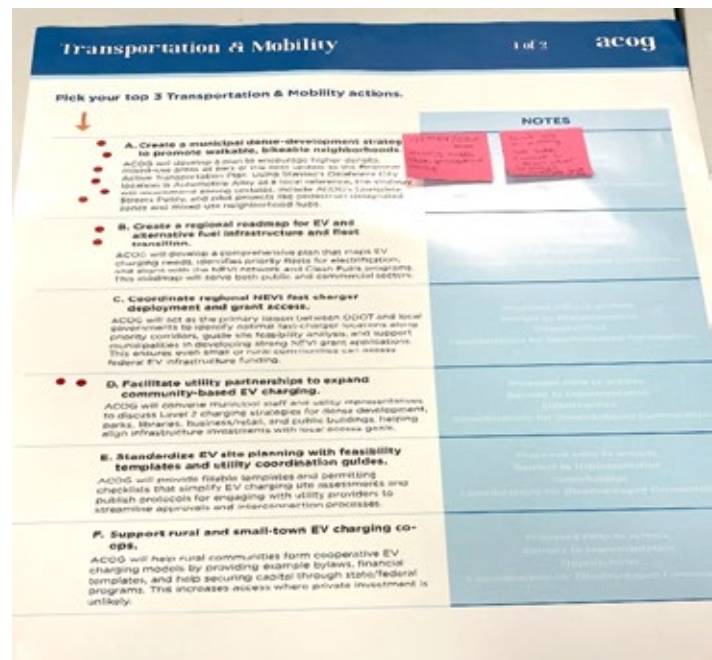


Figure 22: Example Action Prioritization Poster

During development of the CCAP, the planning team sought strong alignment with both the state-wide and tribal Priority Climate Action Plans (PCAPs) to ensure a cohesive regional approach.

Efforts were made to engage Tribal Nations and better understand the distinct challenges, priorities, and strengths within tribal communities. These relationships remain a valued and ongoing part of the CCAP process, extending into implementation. Central Oklahoma holds a unique position in this collaboration—many tribal members live, work, and lead within the metropolitan area rather than solely on tribal lands—creating meaningful opportunities for indirect engagement through county-level workshops and community-based discussions

ACOG & Authority to Implement

As a regional planning body with limited project authority, ACOG focuses on **enabling actions**, creating tools, data, and templates for municipal and county teams to use in implementation. These enabling actions are the main recommendations presented in this Plan. **Voluntary actions** that complement ACOG enabling actions but need municipal, county, or partner organization support to implement are also included in this Plan to show how regional collaboration could drive even further action to reduce risk and safeguard communities. See **Figure 23** for an illustration of how different partners come together to implement proposed actions.



Figure 23: Action Strategy Implementation Scheme



CENTRAL OKLAHOMA'S PRIORITY ACTIONS

Throughout the process, participants emphasized the importance of actions that establish durable frameworks for long-term emissions reduction. Rather than focusing solely on immediate technical interventions, stakeholders prioritized strategies that build institutional capacity, foster regional collaboration, and remove systemic barriers serving as critical steppingstones for effective implementation.

Overall, actions are focused on:

- Pooling resources and coordinating funding, planning, and emergency response across jurisdictions
- Updating planning process, codes, and development procedures for everyone to be on an equal playing field
- Building on the work of existing partnerships and organizations
- Developing tools, data processes, and standardization that will reduce duplicity in efforts

Implementation Barriers to Strategic Opportunities

Stakeholders identified recurring barriers that could impede successful implementation of strategies. Rather than treating these challenges as constraints, they were used as design inputs to create priority actions that are both feasible and responsive to on-the-ground realities. Each action was developed with embedded steps that directly address these barriers, improving the likelihood of adoption, scalability, and long-term impact.

Barrier	Action Step
Differences in community priorities	Coordinate regionally regarding building and development standards
Limited cross-sector and interjurisdictional communication	Develop integrated frameworks for planning and management
Limited funding and staff capacity	Develop shared resource pools and group procurement mechanisms

Building on the input and feasibility considerations, the following section presents the full set of priority actions. Each action is designed to either directly reduce GHG emissions (GHG Reduction Actions) or create supporting systems and conditions necessary for successful implementation (Supporting Actions).



GHG Reduction Actions:

These strategies result in measurable emissions reductions through changes in infrastructure, technology, behavior, or policy. They are aligned with regional climate targets and sector-specific decarbonization pathways.



Supporting Actions:

These strategies do not directly reduce emissions but are essential to supporting, scaling, and sustaining GHG-reducing efforts. Supporting Actions address barriers such as limited capacity, fragmented governance, and inequitable access. They include steps to build institutional readiness, improve coordination, and ensure long-term resilience.

Actions are organized by sector based on the region's emissions and stakeholder priorities.



Transportation & Mobility: Focuses on reducing emissions from vehicles through clean transportation and land use strategies that improve access, support mode shift, and reduce vehicle miles traveled.



Infrastructure & Energy: Covers actions targeting energy efficiency, renewable energy supply, resilient infrastructure, and sustainable resource management with regards to emissions from the energy, buildings, and waste sectors.



Industry & Economic Development: Addresses emissions from industrial fuel combustion, gas leaks, and chemical processes supporting clean technologies, workforce transition, and economic resilience.



Environment & Natural Systems: Includes agriculture and ecosystem management promoting carbon sequestration, climate adaptation, and nature-based solutions.



Emergency Management: Strategies focus on hazard mitigation, preparedness, and coordinated response to climate risks. This is not a direct GHG sector but is critical for climate resilience.

At the end of each sector, an additional menu of voluntary actions is provided for consideration by municipalities and individuals. These actions are presented as a curated list of practical steps that can be taken locally to support broader climate goals, enhance resilience, and foster community engagement.



TRANSPORTATION & MOBILITY

Central Oklahoma is a national freight hub, contributing **38%** of greenhouse gas emissions from transportation. The Oklahoma City MSA has experienced rapid growth in transportation warehousing jobs over the last decade.⁵⁰ Finding ways to prepare this sector for climate change hazards and prioritizing bold and comprehensive strategies for emissions reduction is critical for the region's future resilience.

Emission Generation & Reduction

Emissions from transportation and land use are generated from:

- On-road vehicles (e.g., emissions from semi-trucks and passenger cars)
- Off-road vehicles (e.g., forklifts and construction equipment)
- Water, air, and rail travel (e.g., passenger planes)

Emissions can be reduced by:

- Switching to alternative fuels like CNG
- Electrifying off-road equipment
- Engaging in behavior changes that reduce single occupancy vehicle (SOV) trips

Where to Focus

Most existing transportation systems were not designed to withstand the rising temperatures and increasing severity of precipitation associated with climate change. It is important that decision-makers begin to consider climate risks and vulnerabilities during routine transportation planning. Spatial mapping can be used to prioritize specific infrastructure or communities at heightened risk.

Priority Actions

Action	Type
1 Reduce fuel consumption by an average of 10% through the integration of cost-effective, engineered traffic solutions.	
2 Pilot the transition of 45 heavy-duty fleet vehicles to alternative fuel vehicles by 2030.	
3 Implement smart growth and multimodal infrastructure strategies to achieve a 10% reduction in on-road transportation ghg emissions by 2050.	
4 Collaborate with ODOT to integrate local government input during project initiation for context-sensitive planning.	

Barriers & Opportunities

Identified barriers to climate action in this sector include unsafe or incomplete pedestrian and bike infrastructure and long driving distances between places of interest.

Opportunities include fleet transition plans building out EV charging infrastructure, improving multimodal access, and tying transportation projects to public health, safety, and emergency response co-benefits.

GHG Emissions Avoided

If all priority actions are implemented, the transportation and mobility sector is projected to achieve the following reductions in emissions.

Year	GHG Emissions Avoided (Metric Tonnes)
2030	849,165
2050	1,915,493



Action #1: Transportation & Mobility

Reduce Fuel Consumption by an Average of 10% Through the Integration of Cost Effective, Engineered Traffic Solutions.

This action will enhance traffic efficiency and reduce vehicle fuel consumption across the Central Oklahoma region using engineered, cost effective traffic management solutions. The goal is to achieve an average 10% reduction in fuel use by 2030 by improving signal coordination, implementing time-of-day signal plans, actuated signal control, adaptive traffic signal technologies, intersection design, and corridor operations to reduce idling and improve traffic flow.

These improvements will help lower GHG and air pollutant emissions, while also providing measurable economic benefits such as reduced fuel costs and improved travel reliability. By addressing congestion and inefficient traffic movement, the initiative supports regional objectives for cleaner air, sustainable mobility, and energy efficiency.

The ACOG will lead coordination among local jurisdictions, transportation agencies, and state partners including the Oklahoma Department of Transportation. ACOG will assist member governments through data analysis, regional modeling, funding

support, and integration of this effort into existing programs such as the Congestion Management Process, the Unified Planning Work Program, and the Long Range Transportation Plan.

Progress will be evaluated using regional performance data such as fuel use trends, corridor travel times, and vehicle idling rates. Results will be tracked through traffic sensor systems, fleet telematics, and transportation modeling updates to measure the cumulative impact on fuel consumption and emissions over time.

Estimated Costs

The estimated regional cost to implement this action is between \$8 and \$12 million. This conservative range reflects a combination of signal optimization, intersection upgrades, adaptive control technology deployment, and supporting data and coordination activities.

Estimated Benefits & Outcomes

Metric	2030	2050	Cumulative (2030-2050)
Metric Tons of CO ₂ e Avoided	848,126	954,630	18,549,055
Total Fuel Saved (Mega Gallons)	92.9	104.6	2,302.5
NO _x Reduction (Metric Tons)	669	752	14,621
PM _{2.5} Reduction (Metric Tons)	31	35	671
CO Reduction (Metric Tons)	6,651	7,486	145,455
Potential Cost Savings	\$241,619,970	\$271,961,604	\$5,284,382,809

Implementation Steps

- Conduct a regional traffic and fuel use assessment to identify high idle zones, congestion hotspots, and corridors with the greatest potential for fuel savings.
- Evaluate cost benefit scenarios for engineered solutions including signal timing improvements, intersection redesigns, and lane configuration changes.
- Engage traffic engineers, public works departments, and local jurisdictions to prioritize feasible projects that deliver measurable reductions in congestion and idling.
- Develop a phased implementation plan focused on low cost, high impact improvements that can be deployed efficiently and evaluated using existing performance data systems.
- Monitor fuel consumption and traffic performance through telematics, traffic sensors, and GPS based datasets to measure results and inform future project phases.

Tracking Progress

- Average regional fuel consumption reduced by ten percent by 2030
- Reduction in greenhouse gas and criteria air pollutant emissions from decreased idling and improved traffic flow
- Measurable reductions in vehicle delay time and corridor travel time variability
- Improved public and private sector cost savings through reduced fuel expenditure
- Enhanced travel reliability and system efficiency for all users

Implementation Milestones & Schedule

Milestone	Timeframe
Complete baseline fuel and traffic efficiency assessment	2026
Identify and prioritize target corridors and intersections	2026-27
Develop regional traffic optimization plan with cost benefit analysis	2027
Launch pilot implementation projects in selected municipalities	2028-29
Evaluate pilot performance and expand successful measures region wide	2029-30
Publish regional progress report and update metrics	2031

Authority to Implement

Local governments and the Oklahoma Department of Transportation will oversee implementation through transportation planning and capital improvement processes. ACOG will coordinate regional efforts, provide modeling and technical support, and assist with funding and data tracking to ensure measurable regional progress toward emission reduction and fuel efficiency goals.



Action #2: Transportation & Mobility

Pilot the Transition of 45 Heavy-Duty Fleet Vehicles to Alternative Fuel Vehicles by 2035.

The action would involve piloting the transitioning of 45 municipal heavy-duty diesel- and/or gas-powered vehicles to alternative fuel models such as electric, hybrid, or renewable natural gas to reduce GHG emissions, lower fuel costs, and improve fleet resilience. This transition supports long-term climate goals, improves air quality, and positions the region to meet future regulatory and funding requirements.

Estimated Costs

The estimated regional cost to implement this action is between \$24 and \$25 million. The estimate reflects the cost to complete an infrastructure charging assessment, and the cost to purchase heavy duty electric vehicles and supporting changing infrastructure.

Estimated Benefits & Outcomes

Metric	2030	2050	Cumulative (2030–2050)
Metric Tons of CO ₂ e Avoided	1,039	6,233	115,312
Total Fuel Saved (Mega Gallons)	0.1	0.7	12.5
NO _x Reduction (Metric Tons)	<1	1	17
PM _{2.5} Reduction (Metric Tons)	<1	<1	1
CO Reduction (Metric Tons)	2	9	169
Potential Cost Savings	\$280,677	\$1,684,060	\$31,155,111

Implementation Steps

- Perform a fueling and charging infrastructure gap analysis in coordination with state agencies.
- Leverage and expand existing collaborative funding through ACOG Public Fleet Grants and the EPA’s Diesel Emissions Reduction Act grants
- Formalize a cooperative agreement between municipalities, counties, and other agencies that outlines shared procurement goals, timelines, and governance.

Tracking Progress

- Number of heavy-duty vehicles replaced with alternative fuel models
- Percent of total fleet transitioned to alternative fuels
- Annual fuel cost savings from alternative fuel use
- Estimated annual reduction in fleet GHG emissions
- Number of staff trained to operate and maintain alternative fuel vehicles
- Number of grants or external funding sources leveraged for fleet transition

Implementation Milestones & Schedule

Milestone	Timeframe
Perform a fueling and charging infrastructure gap analysis in coordination with state agencies	2026-28
Leverage and expand existing collaborative funding through ACOG Public Fleet Grants and EPA’s Diesel Emissions Reduction Act grants	2026-30
Formalize a cooperative agreement between municipalities, counties, and other agencies that outlines shared procurement goals, timelines, and governance	2028
Install charging infrastructure and procure / operate vehicles	2030+

Authority to Implement

ACOG can support regional fleet transition planning through its Public Fleet Grant Program, CMAQ project coordination, and other federal funding opportunities. Local governments and transit agencies maintain procurement authority for vehicle replacement, while ACOG facilitates regional planning, collaborative funding, and cooperative procurement among member jurisdictions.



Action #3: Transportation & Mobility

Implement Smart Growth and Multimodal Infrastructure Strategies to Achieve a 10% Reduction in On-Road Transportation GHG Emissions by 2050.

This action will reduce regional transportation emissions through the coordinated implementation of land use planning, multimodal infrastructure investment, and policy updates that integrate smart growth principles into ACOG transportation funding and planning processes. The initiative will guide development toward areas that are walkable and transit accessible, concentrate housing and employment near existing infrastructure, and reduce reliance on single occupant vehicles. The goal is to achieve a 10% reduction in transportation related GHG emissions by 2050 through improved land use efficiency, reduced vehicle miles traveled and enhanced multimodal connectivity. Bus rapid transit (BRT) and the proposed Regional Transportation Authority (RTA) commuter rail project are two examples of multimodal infrastructure that would advance this goal.

These strategies will strengthen the relationship between land use and transportation planning, resulting in lower GHG emissions and air pollutants, reduced congestion, and increased accessibility for all users. Mixed-use development supported by transit, bicycle, and pedestrian infrastructure has been shown by the Intergovernmental Panel on Climate Change (IPCC) and the U.S. Environmental Protection Agency (EPA) to reduce GHG emissions by 7 to 10% and vehicle miles traveled by up to 40% compared to conventional patterns.⁵² The action supports regional goals for air quality improvement, energy efficiency, and sustainable mobility, while ensuring that ACOG funded transportation projects advance these long term objectives.

Spotlight: Advancing Clean Waste Management in Central Oklahoma

OEMA Deploys New CNG Waste Trucks with ACOG Support (2024)

The Oklahoma Environmental Management Authority (OEMA) recently added four new *compressed natural gas (CNG)* waste collection trucks to its fleet, made possible through grant funding from the Association of Central Oklahoma Governments (ACOG).

The new vehicles replace older diesel models, cutting fuel costs and reducing greenhouse gas emissions. CNG technology produces significantly fewer pollutants, improving air quality and supporting OEMA's long-term commitment to sustainable operations.

"ACOG's support has been instrumental in helping us achieve our sustainability goals," said David Griesel, OEMA General Manager. "These new CNG trucks not only lower emissions but also reflect our dedication to providing cleaner and more cost-effective services for our communities."⁵¹

This project demonstrates how regional collaboration and clean technology investments can make essential public services more efficient, resilient, and environmentally responsible – one fleet at a time.



For this action, ACOG will coordinate with member governments, the Oklahoma Department of Transportation, and partner agencies to integrate smart growth principles into regional transportation funding criteria, zoning and development codes, and corridor investment planning. ACOG will provide technical assistance, modeling, and data support to local governments to evaluate potential emissions benefits, assess infrastructure needs, and prioritize multimodal projects that align with the regional transportation plans and the Congestion Management Process.

Progress will be evaluated using regional vehicle miles traveled, mode share, and land use performance indicators. The data will be collected through ACOG’s regional travel demand model, traffic sensor systems, and local comprehensive plan updates. Results will be reported through ACOG’s performance monitoring framework to measure cumulative emission reductions and verify that transportation funding is supporting compact and efficient development patterns.

Estimated Costs

The estimated regional cost to implement this action is between \$10 and \$20 million through 2030, with potential expansion to between \$40 and \$60 million by 2050 as compact development and multimodal infrastructure strategies are implemented across the Central Oklahoma region. These ranges are based on publicly available cost data from federal and regional transportation sources and will be refined using local bid and project information as ACOG develops implementation phasing.

Estimated Benefits & Outcomes

Metric	2030	2050	Cumulative (2030–2050)
Metric Tons of CO ₂ e Avoided	-	954,630	7,763,187
Total Fuel Saved (Mega Gallons)	-	104.6	850.6
NO _x Reduction (Metric Tons)	-	752	6,119
PM _{2.5} Reduction (Metric Tons)	-	35	281
CO Reduction (Metric Tons)	-	7,486	60,876
Potential Cost Savings	-	\$271,961,604	\$2,211,630,455

Implementation Steps

- Update zoning and development codes to support housing, jobs, and services near transit and community hubs, and encourage mixed-use development in well-connected areas.
- Establish transportation funding criteria that require compliance with idling restrictions, stormwater controls, asset management plans, complete streets policies, and parking lot design standards.
- Coordinate across jurisdictions by sharing model ordinances, offering technical assistance, and aligning land use and transportation planning through regional collaboration.
- Invest in multimodal infrastructure by funding sidewalks, bike lanes, transit stops, and green infrastructure, and retrofitting existing assets to support safe non-vehicle travel.
- Engage the public through education campaigns that highlight the benefits of walkable, transit-accessible development and showcase successful local projects.
- Monitor and evaluate progress by tracking reductions in vehicle miles traveled (VMT), mode shift, and emissions, and use performance data to refine policies and funding decisions.

Tracking Progress

- Number of zoning or land use updates that support walkable, transit-accessible development
- Miles of new or improved multimodal infrastructure (e.g., sidewalks, bike lanes, transit routes)
- Number of jurisdictions adopting complete streets policies or parking lot design standards
- Percent of ACOG transportation funding allocated to projects that support mode shift
- Reduction in vehicle miles traveled (VMT) per capita

Authority to Implement

Local governments will oversee implementation through zoning, land use planning, and capital improvement programs. ACOG will coordinate regional policy integration, provide technical assistance, and ensure that transportation funding aligns with adopted smart growth and multimodal objectives. The Oklahoma Department of Transportation will participate through coordination of transportation investment priorities, corridor design standards, and alignment with the state transportation improvement program.

Implementation Milestones & Schedule

Milestone	Timeframe
Complete regional baseline study and develop model ordinances, policy guidance, and funding criteria	2026-29
Local adoption of zoning, code, and funding updates across participating jurisdictions	2030-35
Capital implementation of multimodal infrastructure improvements through local transportation programs and available funding cycles	2035-50
Ongoing monitoring, data tracking, and emissions performance evaluation integrated into ACOG transportation performance reporting	Ongoing



Action #4: Transportation & Mobility

Collaborate with ODOT to Integrate Local Government Input During Project Initiation for Context-Sensitive Planning.

Coordinate with the Oklahoma Department of Transportation (ODOT) during the development of project initiation documents to ensure that impacted municipal and county representatives are actively engaged in the planning process. This collaboration will provide essential local context and help identify additional components such as multimodal access, equity considerations, and environmental impacts for inclusion in the project footprint.

Estimated Costs

Estimated costs will vary by project scope, but implementation may require building in considerations for staff coordination and planning support.

Implementation Milestones & Schedule

Milestone	Timeframe
Establish a formal protocol for early engagement with local governments during ODOT project scoping	2026
Develop a checklist of local priorities and context-sensitive elements to be reviewed during project initiation	2026
Host joint planning workshops or stakeholder meetings to gather input	2026-29
Document local feedback and incorporate it into project design and environmental review processes	2026-29

Tracking Progress

- Number of municipalities onboarded to the stakeholder group
- Documentation of instances where local priorities influenced project scope
- Establishment of formal protocols and Memorandums of Understanding (MOUs)
- Number of projects reviewed through collaborative process

Authority to Implement

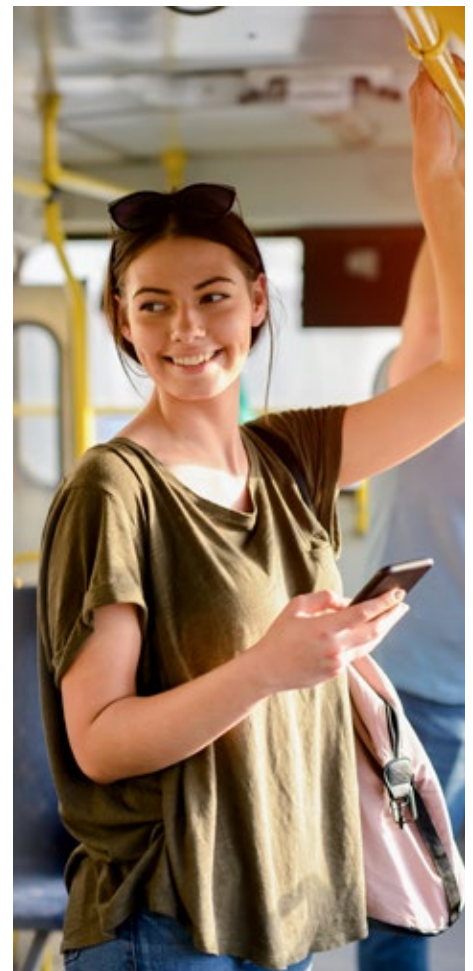
ODOT will lead project initiation, while municipal and county governments will provide local input; ACOG will support coordination, modeling, and funding alignment.

Transportation & Mobility Municipal/Partner Actions

- Deploy community-level EV charging using federal or DEQ grants
- Develop a fleet management plan to convert city or county fleets to EVs or hybrids
- Adopt and implement Complete Streets policies
- Adopt and implement no-idling zones
- Launch micro transit or bike-share pilot programs
- Identify and maintain fuel-resilient emergency evacuation routes
- Lead emissions mapping and planning for low emission freight corridors

Transportation & Mobility Individual Actions

- Switch to low- or zero-emission vehicles
- Shift to active and shared modes of transportation
- Plan and consolidate trips
- Advocate for and support sustainable infrastructure
- Maintain and use vehicles efficiently





INFRASTRUCTURE & ENERGY

Together, energy, water, buildings, and waste account for a total of 47% of Central Oklahoma's greenhouse gas emissions. Ensuring the reliability of critical services for energy, water, and waste is essential for maintaining quality of life in the region.

Emission Generation & Reduction

Emissions from buildings are generated from:

- Direct (on-site) Fuel Use (e.g., natural gas combustion)
- Indirect Emissions from Purchased Energy (e.g., purchased electricity)
- Fugitive Emissions (e.g., refrigerant leaks)
- Construction & Materials (e.g., embodied emissions in cement)

Emissions can be reduced by:

- Improving energy efficiency
- Enhancing the building envelope
- Switching to alternative fuels

Barriers & Opportunities

Identified barriers to climate action in this sector include power outages during storms, inefficient buildings with high energy costs, challenges to utility upgrades, and missed opportunities for community benefits during development.

Opportunities include expanded backup generation for critical facilities, renewable energy projects, energy audits and retrofits of public buildings, clear cost-benefit messaging for upgrades, a green building incentive menu for developers, and updates to building codes and enforcement.

Where to Focus

One of the biggest stressors that climate change will create for building and energy systems is extreme heat. Structures that lack proper shade and/or ventilation could be at risk for operational failure or excessive resource expenditure under the extreme temperatures anticipated by late century. Expanded floodplains may put buildings and energy infrastructure at additional risk.

GHG Emissions Avoided

If all priority actions are implemented, the infrastructure and energy sector is projected to achieve the following reductions in emissions

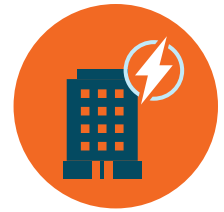
Year	GHG Emissions Avoided (Metric Tonnes)
2030	123,160
2050	1,092,102

Priority Actions

Action	Type	Action	Type
5 Increase the Share of New Buildings Voluntarily Exceeding International Energy Conservation Code (IECC) Standards by 1% Annually Through 2050		8 Strengthen Continuity of Critical Public Services During Disruptions	
6 Reduce Total Residential Energy Consumption by 7% by 2035 Through Standardized Building Energy Assessments		9 Create Municipal Asset Management Plans to Support Capital Budget Requests and Prioritize High-Impact Retrofits and Efficiency Measures Based on Operational Savings and Maintenance Needs	
7 Reduce Energy Costs by 20-30% Across All Municipal and County Buildings by 2035 Through Coordinated Efficiency Investments		10 Align Land use Planning with Utility Infrastructure to Support Grid Resilience and Reduce Infrastructure Strain	



Action #5: Infrastructure & Energy



Increase the Share of New Buildings Voluntarily Exceeding IECC Standards by 1% Annually Through 2050.

This action supports the voluntary integration of the latest International Energy Conservation Code (IECC) standards in new construction and major renovations across the region. This initiative will encourage developers, design professionals, and contractors to adopt advanced energy-efficient building practices beyond state-mandated codes. The effort will focus on technical education, recognition programs, and inter-jurisdictional coordination to accelerate market readiness for higher performance standards without imposing mandatory requirements. By promoting awareness, providing technical resources, and celebrating leadership examples, this initiative seeks to increase the proportion of new buildings and major renovations that voluntarily exceed Oklahoma's current minimum energy code requirements.

Estimated Costs

The estimated regional cost for implementation is \$0.4 to \$0.6 million through 2050, inclusive of staff time, stakeholder coordination, training delivery, recognition program management, and outreach. No direct construction or incentive costs are included. Comparable voluntary stretch-code and "beyond code" initiatives in peer metropolitan regions (DOE Better Buildings, 2023) operate within this range. Costs are expected to be partially offset through access to technical assistance grants and potential sponsorship partnerships with the building and construction industry.

Estimated Benefits & Outcomes

Because this action promotes the voluntary adoption of advanced building codes rather than funding direct retrofit projects, its primary benefits are enabling and indirect. It establishes the foundation for measurable future GHG and energy reductions by preparing the regional market, workforce, and permitting systems for higher performance standards. For modeling purposes, it assumes that approximately 1% of new building stock constructed each year will voluntarily meet or exceed the most recent IECC requirements, contributing to gradual but cumulative improvements in regional building efficiency.

Metric	2030	2050	Cumulative (2030-2050)
Metric Tons of CO ₂ e Avoided	28,931	524,076	5,859,519
Total Natural Gas Saved (MMBTU)	110,218	2,192,708	24,499,395
Total Electricity Saved (MWh)	28,931	524,076	5,859,519
NO _x Reduction (Metric Tons)	9	160	1,789
PM _{2.5} Reduction (Metric Tons)	0	0	0
CO Reduction (Metric Tons)	0	0	0
SO ₂ Reduction (Metric Tons)	9	156	1,749
Potential Cost Savings	\$3,932,257	\$72,050,268	\$805,501,332

Implementation Steps

Implementation will begin with a comprehensive regional review of existing building codes, retrofit programs, and contractor licensing requirements to identify where local codes fall short of current national energy standards. This assessment will help establish a clear roadmap for jurisdictions to align with the IECC and International Building Code (IBC) and will identify administrative or workforce gaps that limit adoption. Following the assessment, ACOG will convene a regional working group composed of planners, code officials, contractors, and building professionals to guide code update recommendations and develop consistent language for municipal adoption.

This collaborative process will allow jurisdictions to share lessons learned, reduce duplicative efforts, and move collectively toward the same energy and resilience objectives. Training and professional development will be introduced as a key implementation step. Short, accessible courses will be developed for city planners, inspectors, and contractors to ensure consistent understanding and application of updated codes. Training will also include guidance on advanced building envelope improvements, HVAC performance standards, and energy modeling basics to strengthen technical expertise across the region.

As code updates advance, ACOG and partner jurisdictions will support the development of a regional contractor registry that enables licensed professionals to work across city and county boundaries. This effort will reduce the need for redundant licensure requirements and promote the sharing of qualified tradespeople across the metropolitan area.

Finally, ACOG will assist in establishing voluntary programs that recognize and support developers who build beyond adopted codes. Incentives may include expedited permitting, technical support, public recognition, or access to demonstration grants. This approach helps cultivate leadership in high performance building design and increases public awareness of the benefits of energy efficient construction.

Implementation Milestones & Schedule

Milestone	Timeframe
Conduct regional assessment of existing codes, retrofit potential, and contractor licensing practices	2026–28
Establish ACOG regional working group and begin model policy and training framework development	2028–29
Launch pilot training and professional certification programs for planners, inspectors, and contractors	2029–31
Begin adoption of updated IECC and IBC based codes in participating jurisdictions	2031–34
Create and promote regional contractor registry and interjurisdictional licensing agreements	2033–35
Launch voluntary developer support and recognition program for above code construction	2035–38
Evaluate retrofit progress and publish first comprehensive regional performance report	2038–40

Tracking Progress

- Number and total square footage of projects voluntarily meeting or exceeding IECC 2024 or later standards
- Number of trained and certified professionals
- Participation in regional recognition or “High-Performance Building” programs
- Estimated indirect energy savings and GHG reduction potential modeled from participating developments

Authority to Implement

Local governments hold regulatory authority to adopt and enforce building codes and standards. ACOG will coordinate regional alignment by supporting member jurisdictions with technical assistance, model ordinance development, and collaboration with the Oklahoma Uniform Building Code Commission. The Oklahoma Department of Commerce and municipal permitting agencies will assist through integration of energy efficiency objectives into permitting and inspection processes. Additional coordination with local development councils, professional associations, and the Oklahoma State University Extension will support training, outreach, and voluntary adoption.

Spotlight:

Building Stronger for the Future

City of Moore Leads the Nation in Tornado-Resistant Building Standards

Following a devastating 2013 tornado, the City of Moore took bold action to strengthen its building codes - becoming the first city in the nation to adopt *tornado-specific construction provisions*. The city voluntarily increased wind resistance requirements for new homes from 90 mph to 135 mph, aligning local standards with the realities of severe weather in Central Oklahoma.⁵³

These enhanced codes include improvements to roof sheathing, framing connections, and garage door wind ratings - critical features that help homes better withstand powerful storms. By setting higher standards than those required by international code, Moore has reduced the potential for structural damage, improved safety, and set a national precedent for resilience-based planning.

This local leadership demonstrates how voluntary code strengthening can deliver long-term benefits - protecting lives, reducing recovery costs, and ensuring that communities are built to endure a changing climate.



Action #6: Infrastructure & Energy



Reduce Total Residential Energy Consumption by 7% by 2035 Through Standardized Building Energy Assessments.

This action establishes a standardized process for conducting residential building energy assessments across the region to identify and prioritize retrofit opportunities, paired with a coordinated incentive program to support implementation of recommended upgrades. The initiative aims to achieve a minimum 7% annual reduction in total residential energy consumption by 2035 through improvements to building envelope performance, HVAC efficiency, and appliance and lighting upgrades. A consistent audit and incentive framework will ensure equitable access to energy-saving opportunities by helping households understand their energy use, identify cost-effective improvements, and access direct financial support to complete upgrades. The program will develop a shared assessment methodology, regional tracking database, and funding mechanism that together reduce administrative complexity and increase participation across municipalities and utilities.

Estimated Costs

The total regional cost for this action is estimated at \$30–\$40 million through 2050, reflecting modeled program expenditures for regional coordination, assessment delivery, and homeowner incentives. Approximately 25–35% of total costs are associated with program administration, training, data infrastructure, and quality assurance, while the remaining 65–75% support direct incentive payments for retrofit implementation.

Estimated Benefits & Outcomes

This action directly reduces residential energy consumption and associated GHG emissions through targeted retrofit implementation. It assumes participation by approximately 20% of regional households by 2050, resulting in cumulative energy reductions equivalent to over 11 million MWh and 14.6 million MMBtu saved.

Metric	2030	2050	Cumulative (2030–2050)
Metric Tons of CO ₂ e Avoided	54,844	357,999	6,262,905
Total Natural Gas Saved (MMBTU)	200,022	1,229,656	22,386,744
Total Electricity Saved (MWh)	54,844	357,999	6,262,905
NO _x Reduction (Metric Tons)	17	109	1,912
PM _{2.5} Reduction (Metric Tons)	0	0	0
CO Reduction (Metric Tons)	0	0	0
SO ₂ Reduction (Metric Tons)	16	107	1,869
Potential Cost Savings	\$7,416,918	\$48,097,411	\$845,080,890

Implementation Steps

Implementation will begin with the development of a standardized regional energy assessment tool to evaluate building energy use, quantify cost-effective measures, and prioritize retrofit opportunities. ACOG will establish a Regional Residential Energy Efficiency Fund to pool resources from federal, utility, and local sources. Early phases will focus on outreach to older and low-efficiency homes, integrating utility data and demographic overlays to ensure equitable delivery. ACOG will coordinate contractor training, data reporting standards, and the development of a regional database for tracking audits, energy savings, and incentive disbursements. A tiered incentive structure will offer higher support for low- and moderate-income households (50–75% of measure cost) and lower rebates for market-rate participants (25–30%). Annual evaluation cycles will verify savings and refine cost-effectiveness metrics.

Tracking Progress

- Number of residential assessments completed annually
- Number of households receiving retrofit incentives
- Verified MMBtu and MWh savings
- Percent reduction in regional residential energy consumption
- GHG emissions avoided (tCO₂e)
- Average cost per unit of energy saved (\$/MMBtu, \$/MWh)
- Share of low- and moderate-income households served
- Annual and cumulative program ROI

Implementation Milestones & Schedule

Milestone	Timeframe
Develop standardized assessment and retrofit framework	2026–27
Establish funding pool and utility partnerships	2027–28
Launch pilot assessment and incentive program	2028–30
Expand to full regional implementation	2030–32
Integrate rental and multifamily housing	2032–35
Publish first regional performance report	2035
Conduct evaluation and adjust incentive tiers	2036–40

Authority to Implement

Local governments and utility providers have direct authority to design and administer residential energy efficiency programs. ACOG will coordinate regional alignment by developing the standardized assessment framework, facilitating data sharing among jurisdictions, and linking programs to existing energy incentive structures. The Oklahoma Department of Commerce and Oklahoma Municipal Power Authority (OMPA) can support integration with existing home weatherization and low-income energy efficiency initiatives. Partnerships with local electric and gas utilities, home performance contractors, and nonprofit housing organizations will ensure program scalability and equitable outreach.

Spotlight: Utilities Leading the Charge on Energy Efficiency

Regional Programs Helping Homes and Businesses Save Energy

Across Central Oklahoma, local utilities are already driving measurable progress in energy conservation, cost savings, and emissions reduction. Through rebates, audits, and renewable energy options, these programs demonstrate that climate action is already underway - and provide a strong foundation for expanding regional collaboration.

- OG&E offers residential and commercial rebates for insulation, smart thermostats, efficient HVAC systems, and LED lighting, alongside low-income weatherization programs and renewable energy options.⁵⁴
- Oklahoma Electric Cooperative (OEC) provides free home energy audits, virtual audit tools, and rebates for electric vehicles, geothermal systems, and energy-efficient new construction.⁵⁵
- Oklahoma Municipal Power Authority (OMPA) supports member cities with free residential audits, insulation and water heater rebates, and its *Demand and Energy Efficiency Program (DEEP)* for large-scale projects.⁵⁶
- Edmond Electric, an OMPA member, enhances these efforts with its *Edmond Green Business Certification* and one of the state's first utility-led green power purchasing programs.⁵⁷

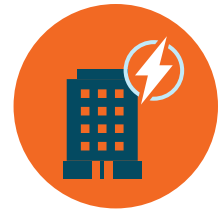
Together, these initiatives show that Central Oklahoma's utilities are not waiting for mandates - they are already empowering residents and businesses to make efficiency upgrades that cut costs and carbon emissions alike.

A regional, standardized residential energy audit framework would amplify this progress, ensuring consistent access, shared data, and equitable benefits across all communities in the ACOG region.





Action #7: Infrastructure & Energy



Reduce Energy Costs by 20-30% Across All Municipal and County Buildings by 2035 Through Coordinated Efficiency Investments.

This action supports the coordinated procurement and implementation of energy-efficient upgrades across municipal and county facilities, including LED lighting, HVAC systems, building envelope improvements, and smart controls. The initiative aims to achieve at least a 20% annual reduction in energy costs through a regionally coordinated investment and procurement strategy. By aggregating demand and aligning capital improvement plans, participating jurisdictions can leverage economies of scale, reduce administrative costs, and accelerate upgrades in high-priority buildings. This coordinated approach will ensure that smaller and medium-sized facilities, which represent the majority of public buildings, receive the technical and financial support needed to achieve measurable efficiency improvements and operational savings.

Estimated Costs

The estimated regional program cost for implementation is approximately \$5 million through 2050, inclusive of benchmarking, procurement coordination, audit support, and performance tracking. This estimate is based on DOE Better Buildings peer program data (e.g., Atlanta Better Buildings Challenge, 2018) scaled to approximately 50 million square feet of public facilities in the ACOG region at an average of \$0.15 per square foot. Costs are expected to be partially offset through energy savings, joint procurement efficiencies, and federal and state grant support programs.

Estimated Benefits & Outcomes

This action will generate direct financial savings for participating jurisdictions, extend the life of existing assets, and reduce GHG emissions from municipal operations. Upgrades will also improve occupant comfort, indoor air quality, and maintenance efficiency. Based on regional building inventories and DOE guidance, small and medium-sized public buildings have the potential to achieve 20-30% energy savings through coordinated retrofit programs. These savings will translate into significant cumulative GHG reductions and long-term operating cost reductions across local governments in Central Oklahoma.

Metric	2030	2050	Cumulative (2030-2050)
Metric Tons of CO ₂ e Avoided	39,385	210,027	3,853,065
Total Natural Gas Saved (MMBTU)	146,641	882,360	16,316,110
Total Electricity Saved (MWh)	39,385	210,027	3,853,065
NO _x Reduction (Metric Tons)	12	64	1,176
PM _{2.5} Reduction (Metric Tons)	0	0	0
CO Reduction (Metric Tons)	0	0	0
SO ₂ Reduction (Metric Tons)	12	63	1,150
Potential Cost Savings	\$5,338,838	\$28,889,811	\$530,536,882

Implementation Steps

Implementation will begin with a comprehensive benchmarking and audit process for all municipal and county facilities to identify energy use intensity and prioritize upgrade opportunities. A standardized audit checklist will be developed to align energy upgrades with asset lifecycles and capital improvement schedules. ACOG will establish a regional group procurement program to bundle purchasing of LED lighting, HVAC systems, building controls, and other high-impact efficiency measures. A cost-benefit framework will be created to evaluate retrofit options using lifecycle cost analysis, emissions reduction potential, and maintenance savings. Participating jurisdictions will integrate retrofit priorities into municipal asset management and budget planning processes to ensure funding alignment. Progress will be tracked through annual benchmarking updates to measure energy savings, emissions reductions, and return on investment across all participating facilities.

Tracking Progress

- Percent reduction in annual energy costs across municipal and county buildings
- Number and total square footage of buildings upgraded with efficiency measures
- Number of agencies participating in joint procurement or planning efforts
- Estimated annual energy savings and GHG reductions from implemented measures

Implementation Milestones & Schedule

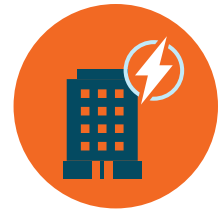
Milestone	Timeframe
Conduct regional facility inventory and energy benchmarking	2026-28
Develop regional procurement and vendor framework	2028-29
Complete pilot retrofit projects and validate savings	2029-31
Expand joint procurement program to all municipalities and counties	2031-34
Publish regional retrofit and energy savings performance report	2033-35

Authority to Implement

Municipal and county governments hold primary responsibility for facility management and capital planning and will lead implementation through their respective public works and facilities departments. The ACOG will coordinate regional procurement, benchmarking, and reporting activities, providing technical assistance and shared tools to support consistent implementation across jurisdictions. The Oklahoma Department of Commerce and the Office of Management and Enterprise Services (OMES) will assist through alignment with state energy management programs, data collection, and technical resource sharing. Local governments will integrate retrofit priorities into their annual capital budgets and facility maintenance plans.



Action #8: Infrastructure & Energy



Strengthen the Continuity of Critical Public Services During Disruptions.

Develop a resilient infrastructure framework to protect critical public facilities and services such as hospitals, schools, water treatment plants, emergency services, and energy systems by prioritizing risk mitigation strategies that ensure continuity during extreme weather and other disruptions. The framework will focus on floodproofing, energy redundancy, and backup systems to maintain essential operations.

Estimated Costs

Costs will vary depending on facility type and existing infrastructure conditions. Initial investments may include vulnerability assessments, planning, and design. Implementation costs will cover floodproofing measures, energy redundancy systems (e.g., solar with battery backup), and emergency communications upgrades.

Tracking Progress

- Number of critical facilities assessed for climate and hazard vulnerability
- Number of facilities upgraded with backup power or floodproofing systems
- Reduction in service downtime during extreme weather events
- Percentage of essential services maintained during disruptions
- Amount of funding secured for resilience upgrades
- Integration of continuity strategies into capital improvement plans

Implementation Milestones & Schedule

Milestone	Timeframe
Assess vulnerabilities of critical facilities to identify those most at risk from climate-related hazards	2026-27
Develop design standards for floodproofing and wind resistance using FEMA, IBC, and ASCE guidance	2026-27
Prioritize installation of backup power and microgrids for essential services like hospitals and water systems	2026-27
Create a regional resilience toolkit to guide infrastructure upgrades and capital planning	2027-28

Authority to Implement

Local governments and utility providers have the authority to assess and upgrade public facilities. ACOG can support regional coordination, technical assistance, and funding alignment. State agencies such as the Oklahoma Department of Emergency Management and the State Energy Office may provide regulatory guidance and financial support.



Action #9: Infrastructure & Energy



Create Municipal Asset Management Plans to Support Capital Budget Requests and Prioritize High-Impact Retrofits and Efficiency Measures Based on Operational Savings and Maintenance Needs.

This strategy establishes a proactive planning framework to help municipalities forecast the timing and scope of building upgrades and infrastructure replacements. By integrating lifecycle cost analysis and maintenance schedules, local governments can shift from reactive emergency spending to strategic budgeting. A cost-benefit menu of retrofit options will guide decision-makers in selecting investments that deliver long-term operational savings and resilience benefits.

Estimated Costs

Developing asset management plans will require moderate upfront investment in staff time, data collection, and planning support. Costs may include hiring consultants, conducting facility assessments, and integrating software tools.

Tracking Progress

- Number of municipalities with completed asset management plans
- Percentage of facilities with scheduled upgrades
- Operational savings achieved (energy, maintenance)
- GHG reductions from implemented retrofits

Implementation Milestones & Schedule

Milestone	Timeframe
Conduct a full inventory of municipal assets to document buildings, infrastructure components, and equipment, including age, condition, and expected lifespan	2026-27
Develop lifecycle cost models to forecast replacement timelines and long-term maintenance needs for major assets	2026-27
Create a cost-benefit retrofit menu to identify high-impact efficiency upgrades such as insulation, lighting, and HVAC systems, along with their associated costs, savings, and maintenance benefits	2027-28
Integrate asset management plans into capital budgeting processes to ensure future costs are anticipated and prioritized based on operational savings and infrastructure needs	2028-30

Authority to Implement

Local governments have the authority to develop and adopt asset management plans for their facilities and infrastructure. ACOG can support regional coordination, provide technical assistance, and help align funding opportunities.



Action #10: Infrastructure & Energy



Align Land Use Planning with Utility Infrastructure to Support Grid Resilience and Reduce Infrastructure Strain.

Advance coordinated land use and infrastructure planning between municipalities and utilities to reduce unnecessary costs, improve grid resilience, and support strategic development. The lack of comprehensive land use plans with accompanying development regulations can lead to extended utility service areas, inefficient infrastructure investments, and missed opportunities to integrate distributed energy resources. This strategy ensures that future developments such as housing, industrial sites, and high-impact projects like data centers are aligned with infrastructure capacity, climate resilience goals, and long-term investment trajectories.

Estimated Costs

Costs will include staff time for coordination between planning departments and utility providers, data integration, and updates to land use plans and infrastructure maps. Additional expenses may arise from technical modeling, stakeholder engagement, and policy development.

Tracking Progress

- Number of municipalities integrating utility infrastructure into land use plans
- Reduction in infrastructure extension costs for new developments
- Number of developments sited within existing utility service areas
- Number of DERs integrated into land use plans
- Improvement in grid reliability metrics (e.g., outage frequency/duration)
- Number of joint planning meetings or agreements between utilities and local governments

Authority to Implement

Municipal governments have authority over land use planning and zoning decisions. Utility providers manage infrastructure investments and grid operations. ACOG can facilitate coordination, provide technical support, and align regional planning efforts. State energy and planning agencies may offer guidance and funding support.

Implementation Milestones & Schedule

Milestone	Timeframe
Establish a joint planning framework between municipalities, utilities, and regional planning entities	2026-27
Map existing infrastructure capacity and identify areas vulnerable to overextension or underutilization	2026-27
Integrate distributed energy resource (DER) planning into land use decisions, including microgrids, solar, and battery storage	2026-27
Identify and prioritize high-impact developments (e.g., data centers) for early coordination to mitigate infrastructure strain	2027-28
Develop policy language and zoning updates that support compact, resilient development aligned with utility capabilities	2027-28
Monitor infrastructure performance and development patterns to refine planning assumptions and investment strategies	2029-30

Infrastructure & Energy Municipal/Partner Actions

- Convert lighting, HVAC, pumps, etc. to high-efficiency systems
- Benchmark and reduce public building energy use through standardization of building energy audits and implementation of retrofit strategies
- Install solar with battery backup at critical infrastructure
- Partner with utilities on green power or community solar
- Promote peak demand reduction in public and critical buildings
- Assess risks to utilities and identify strategies for climate hazards such as tornados, flooding, high winds, and heat
- Integrate best management infrastructure design practices
- Update the benchmarking tool with data collected through new energy audits

Infrastructure & Energy Individual Actions

Enroll in a green (wind, solar) power purchasing program

Invest in home-level backup and preparedness

Reduce personal peak demand through behavior changes like pre-cooling homes before peak hours

Buy energy efficient appliances and lighting

Recycle where possible

Conduct an at-home energy audit with utility assistance

Stay engaged in utility and city planning





INDUSTRY & ECONOMIC DEVELOPMENT

Industrial facilities generate a total of 11.5% of Central Oklahoma's greenhouse gas emissions. While ACOG does not directly set economic development policy, it plays a critical role in coordinating infrastructure, land use data, and regional clean industry partnerships.

Emission Generation & Reduction

Emissions from industrial facilities come from:

- On-site fuel combustion (e.g., natural gas for heating)
- Flaring or leaking of methane and other gases (e.g., from oil/gas operations)
- Chemical reactions during industrial processes (e.g., cement production)

Emissions can be reduced by:

- Switching to alternative feedstocks like green hydrogen
- Enhanced methane/flare gas emission limits
- Investing in energy efficiency projects
- Implementing new production processes that are less emissions intensive

Priority Actions

Action	Type
11 Partner with DEQ and other state agencies to Achieve a 10% Reduction in Energy Use Among Small and Mid-Sized Businesses by 2035	
12 Align Post-Disaster Economic Continuity Planning with the ACOG Comprehensive Economic Development Strategy to alternative fuel vehicles by 2030.	
13 Drive Policy and Legislative Action to Sustain Industry Emissions Reduction Programs Through Strategic State Partnerships	

Barriers & Opportunities

Identified barriers to climate action in this sector include road degradation from oil and gas activity, energy sector disruption due to storms and flooding, fragmented collaboration among regional stakeholders, and workforce gaps in high-growth sectors.

Opportunities include updated road use agreements, alternative fuels or emissions offsets for industry, strengthened infrastructure near energy assets, industry cost-share for upgrades, and an expansion of workforce development initiatives.

Where to Focus

Climate change presents growing challenges for industry and economic development in Central Oklahoma. More frequent extreme

heat, drought, and severe storms can disrupt operations, damage facilities, and strain energy and water supplies critical to industrial processes. These risks threaten productivity and long-term economic stability, particularly in sectors such as manufacturing, energy, and logistics. To stay competitive and resilient, Central Oklahoma's industries and economic development agencies should incorporate climate risk considerations into site selection, infrastructure investment, and workforce planning. Advancing clean energy, efficiency, and innovation will only strengthen the region's economic future in a changing climate.

GHG Emissions Avoided

If all priority actions are implemented, the industry and economic development sector is projected to achieve the following reductions in emissions

Year	GHG Emissions Avoided (Metric Tonnes)
2030	18,596
2050	96,649



Action #11: Industry & Economic Development

Partner With DEQ to Achieve a 10% Reduction in Energy Use Among Small and Mid-Sized Businesses by 2035.

This action establishes a joint program between ACOG and the Oklahoma Department of Environmental Quality (DEQ) to help small and mid-sized businesses reduce energy use and emissions. The program will provide coordinated technical assistance, energy and waste audits, and guidance on financing options for efficiency and clean energy improvements. By expanding access to technical resources and connecting local businesses to state and federal incentive programs, this initiative will accelerate the adoption of energy saving technologies and operating practices across the commercial and light industrial sectors. The goal is to achieve a 10% average reduction in site energy use by 2035 among participating businesses. The program will focus on small and mid-sized manufacturers and service sector businesses that represent a large share of regional energy consumption but often lack the in-house capacity to pursue energy and GHG emission reduction opportunities.

Estimated Costs

The estimated regional cost for implementation is \$2-3 million through 2035, inclusive of staff time, stakeholder coordination, training delivery, recognition program management, and outreach. No direct construction or incentive costs are included. Costs are expected to be partially offset through access to technical assistance grants and potential sponsorship partnerships with the building and construction industry.

Estimated Benefits & Outcomes

The program will expand access to energy efficiency and emissions reduction opportunities for hundreds of small and mid-sized firms. Based on verified results from DOE's Industrial Assessment Centers, participating businesses are expected to achieve durable energy savings of about 10% within three years of engagement.

Metric	2030	2050	Cumulative (2030-2050)
Metric Tons of CO ₂ e Avoided	18,596	96,649	1,800,762
Total Natural Gas Saved (MMBTU)	94,543	669,492	11,651,354
Total Electricity Saved (MWh)	18,596	96,649	1,800,762
NO _x Reduction (Metric Tons)	6	30	550
PM _{2.5} Reduction (Metric Tons)	0	0	0
CO Reduction (Metric Tons)	0	0	0
SO ₂ Reduction (Metric Tons)	6	29	537
Potential Cost Savings	\$2,626,468	\$14,395,084	\$264,771,108

Implementation Steps

Implementation will begin with the creation of a formal partnership between ACOG and DEQ. The program will start with an inventory of small and mid-sized businesses in the eight county region to identify energy intensive sectors. Standardized audit and reporting templates will be developed using DOE IAC methodologies. A pilot phase will provide 20 to 30 assessments annually, followed by expansion through chambers of commerce, utilities, and local trade networks. Data collected from audits will feed into ACOG's regional GHG emissions inventory and progress tracking system.

Tracking Progress

- Number of businesses participating and assessments completed
- Total energy and emissions reductions achieved (kWh, MMBtu, tCO₂e)
- Implementation rate and persistence of recommended measures
- Total cost savings achieved by participants
- Amount of external funding leveraged through state and federal programs

Implementation Milestones & Schedule

Milestone	Timeframe
Establish partnership and program design	2026 - 27
Develop audit tools, training, and outreach materials	2027 - 28
Launch pilot technical assistance program	2028 - 30
Expand program to full regional coverage	2030 - 35
Publish mid-term impact report	2035 - 40
Continue program delivery and performance tracking	2040 - 50

Authority to Implement

ACOG will coordinate program design, outreach, and reporting, while DEQ will provide technical tools, audit templates, and training support through its Small Business Assistance Program and Pollution Prevention (P2) initiatives. Local chambers of commerce, utilities, and economic development councils will assist with recruitment and funding opportunities. Cities and counties will support promotion through business licensing, economic development programs, and local energy initiatives.



Action #12: Industry and Economic Development

Align Post-Disaster Economic Continuity Planning with the ACOG Comprehensive Economic Development Strategy.

Advance regional climate resilience by integrating post-disaster economic continuity planning into the ACOG Comprehensive Economic Development Strategy (CEDS). This approach ensures that recovery efforts support long-term economic goals, protect critical industries, and maintain workforce stability in the face of climate-related disruptions.

Estimated Costs

Costs will primarily involve staff time for stakeholder engagement, risk assessments, and plan development. Additional expenses may include consultant support, data analysis tools, and pilot testing in high-risk communities.

Tracking Progress

- Number of stakeholders engaged and assessed for hazard vulnerability
- Number of continuity plans established
- Inclusion of continuity strategies in the updated CEDS

Implementation Milestones & Schedule

Milestone	Timeframe
Identify economic sectors and employers most vulnerable to climate hazards and disaster impacts through risk assessments	2026-28
Collaborate with local governments, chambers of commerce, workforce boards, and industry leaders to align continuity planning with regional economic priorities	2026-28
Create sector-specific continuity plans that include workforce retention strategies, supply chain stabilization, and access to recovery capital	2028-29
Embed continuity planning actions into the CEDS update process (due in 2029), ensuring alignment with long-term economic development goals	2028-29
Test continuity strategies in high-risk communities and scale successful models across the region	2030 onwards
Establish metrics to track economic recovery performance and adjust strategies based on post-disaster outcomes	2030 onwards

Authority to Implement

ACOG has the authority to lead integration of continuity planning into the CEDS process, in collaboration with local governments, chambers of commerce, workforce boards, and industry partners. State and federal agencies may provide technical assistance and funding support to advance regional economic resilience.



Action #13: Infrastructure and Economic Development

Drive Policy and Legislative Action to Sustain Industry Emissions Reduction Programs Through Strategic State Partnerships.

Advance coordinated policy and legislative efforts with state agencies to ensure the continuation and expansion of programs and incentives that reduce industrial greenhouse gas emissions. This strategy focuses on building strong partnerships with key organizations including the Environmental Federation of Oklahoma, Oklahoma State University's Industrial Assessment Center, the South-central Partnership for Energy Efficiency as a Resource (SPEER), and Oklahoma CareerTech to align technical expertise, workforce development, and policy advocacy. By leveraging these relationships, the region can support industries in adopting cleaner technologies, improving energy efficiency, and accessing financial and technical assistance for emissions-reducing upgrades.

Estimated Costs

Costs will include staff time for coordination, policy development, and stakeholder engagement. Additional expenses may arise from technical assessments, workforce program alignment, and communications materials.

Tracking Progress

- Number of partner organizations actively engaged
- Number of policy briefs, case studies, or testimonials produced
- Number of legislative proposals supported or passed
- Amount of financial or technical assistance accessed by manufacturers and industries

Implementation Milestones & Schedule

Milestone	Timeframe
Convene a policy advisory group with representatives from partner organizations and state agencies	2026
Identify and advocate for legislative opportunities to extend or expand emissions reduction incentives and programs	2026 onwards
Collaborate with OSU's Industrial Assessment Center to provide technical assessments and emissions reduction recommendations to manufacturers	2026 onwards
Work with CareerTech to align workforce training programs with emerging industrial decarbonization needs	2026 onwards
Coordinate with SPEER and the Environmental Federation of Oklahoma to develop policy briefs, case studies, and testimony supporting emissions reduction efforts	2026 onwards
Track and communicate the economic and environmental benefits of existing programs to build long-term legislative support	2026 onwards

Authority to Implement

ACOG can lead coordination and policy alignment efforts, working closely with state agencies and partner organizations. Legislative action will require collaboration with state lawmakers and regulatory bodies. Partner institutions such as OSU, SPEER, CareerTech, and the Environmental Federation of Oklahoma will provide technical expertise, workforce alignment, and advocacy support.

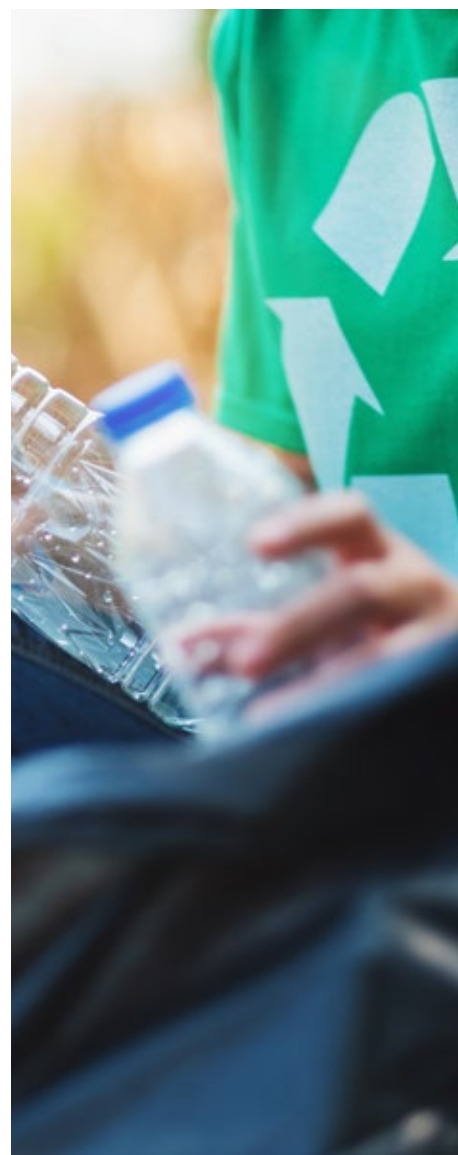
Industry & Economic Development

Municipal/Partner Actions

- Revise zoning and site reviews to guide clean industrial growth
- Require road use or emissions plans for heavy vehicle corridors
- Create low-emissions industrial districts or logistics zones
- Include climate risk overlays in industrial land use reviews

Industry & Economic Development Individual Actions

- Choose products with recycled content or lower embodied carbon
- Invest locally in clean industry and workforce development (e.g., community investment funds, green bonds, or applicable credit union programs)
- Mentor, volunteer, or donate to local vocational schools or training programs
- Return, recycle, or repair goods to increase their useful life
- Attend public hearings on permitting, zoning, or economic development





ENVIRONMENT & NATURAL SYSTEMS

Land use and agriculture generate a total of 3.2% of Central Oklahoma's greenhouse gas emissions. Central Oklahoma's ecosystems are under pressure from erosion, flooding, extreme heat, and biodiversity loss.

Emission Generation & Reduction

Emissions from land use and agriculture are generated from:

- Land use changes that reduce carbon sequestration potential (e.g., cutting down forest for cropland)
- Soil disturbance (e.g., tilling and development)
- Fertilizer use (e.g., nitrous oxide emissions)
- Fuel use for agricultural operations

Emissions can be reduced by:

- Planting trees
- Implementing green infrastructure solutions
- Decarbonizing agricultural operations

Barriers & Opportunities

Identified barriers to climate action in this sector include inadequate coordination with private landowners on wildfire mitigation, an under-planned urban tree canopy, and a disconnect across stormwater management practices due to lack of watershed planning.

Opportunities include incentives for green infrastructure projects on private land, the use of rain gardens, trees, and bioswales to reduce flood risk and heat, large-scale watershed planning, and the promotion of soil carbon practices and windbreaks.

Where to Focus

Increasing green space mitigates greenhouse gases by sequestering carbon and also helps communities adapt to climate change through nature-based stormwater management and heat reduction. As with natural lands, measures taken to reduce emissions in agriculture and food systems are often implemented hand-in-hand with strategies that help these systems adapt to a changing climate. Climate smart agricultural practices reduce the transfer of carbon from the soil to the atmosphere, rotate crops for soil health and erosion control, and take steps to reduce energy and water usage intensity.

Priority Actions

Action	Type
14 Reduce 500 Hectares of Impervious Cover in Parking Lots Annually and Enhance Green Space Through Parking Lot Design Standards Reform	
15 Increase Tree Canopy in 50 Hectares of LIDAC Areas with Less Than 25 % Cover by 5% by 2050	
16 Develop a Standardized Municipal Tool for Green Infrastructure Siting, Design, and Sizing	
17 Coordinate Multi-Jurisdictional Watershed Planning for Water Quality and Flood Risk Reduction	

GHG Emissions Avoided

If all priority actions are implemented, the environment and natural systems sector is projected to achieve additional carbon sequestration as noted below

Year	GHG Emissions Avoided (Metric Tonnes)
2030	123
2050	2,590



Action #14: Environment & Natural Systems

Reduce 500 Hectares of Impervious Cover in Parking Lots Annually and Enhance Green Space Through Parking Lot Design Standards Reform.

This action reduces impervious surface area and increases green space by reforming municipal parking requirements and launching a regional parking lot design guide. It targets a 10–30% reduction in paved surface area across new and retrofitted parking lots through the revision of minimum parking standards, encouragement of shared parking, and integration of green infrastructure. The design guide will be scalable by community size and include strategies such as green screening, landscaping, bioretention basins, and permeable pavements to reduce runoff, urban heat, and air pollution while enhancing local biodiversity and aesthetics.

Estimated Costs

The estimated cost of converting paved parking areas to green space is \$600,000 per hectare, inclusive of demolition, grading, planting, soil amendments, drainage infrastructure, and design/inspection costs. Over the 2026–2050 implementation period, restoration of 518 hectares of impervious surface will total approximately \$315 million. Annualized investment is projected at \$15 million per year.

Estimated Benefits & Outcomes

The environmental and public benefits of this action are extensive and quantifiable. By 2030, the program is projected to restore roughly 25 hectares (ha) of impervious surface, expanding to the 518 ha by 2050. These restored areas will sequester approximately 73 tCO₂e by 2030 and more than 1,500 tCO₂e annually by 2050, with a cumulative sequestration of nearly 17,000 tCO₂e over the program's duration. In addition to carbon and stormwater benefits, the conversion of paved parking surfaces to vegetated green space will improve local air quality by filtering particulate matter and ozone precursors, mitigate the urban heat island effect, enhance urban biodiversity, and increase property and community amenity values.

Metric	2030	2050	Cumulative (2030–2050)
Hectares Restored	25	518	518
Metric Tons of CO ₂ e Sequestered	(73)	(1,538)	(16,923)
Air Pollutants Reduced (Metric Tons)	2	46	511

Implementation Steps

Implementation will begin with a comprehensive review of municipal parking standards and land use regulations to identify opportunities to reduce excessive impervious cover. ACOG will collaborate with member jurisdictions to develop and adopt the regional parking lot design guide, which will establish design standards for green infrastructure, landscape integration, and shared parking configurations. Pilot projects will be launched between 2029 and 2033 to demonstrate cost-effectiveness and performance outcomes, followed by broader rollout and adoption across the region from 2033 through 2050. During this phase, participating jurisdictions will track progress toward annual impervious surface reduction targets and incorporate lessons learned into updated local ordinances and capital improvement plans.

Tracking Progress

- Number of hectares of impervious surface reduced annually in parking lots
- Number of jurisdictions adopting revised parking standards or design guides
- Percentage of new or retrofitted parking lots incorporating green infrastructure
- Square footage of new green space added through parking lot redesign
- Reduction in stormwater runoff volume from redesigned lots
- Annual air pollutant and CO₂ sequestration data

Implementation Milestones & Schedule

Milestone	Timeframe
Conduct regional assessment of existing parking requirements and identify opportunities for impervious cover reduction	2026–2028
Develop regional parking lot design guide with flexible standards for small, medium, and large communities	2028–2029
Launch pilot projects in key municipalities to demonstrate feasibility, costs, and stormwater benefits	2029–2031
Begin full-scale implementation of parking lot retrofits and adoption of revised design standards across the region	2031–2038
Expand program to additional jurisdictions and integrate lessons learned into municipal ordinances	2038–2042
Continue annual monitoring of impervious surface reduction, stormwater benefits, and pollutant sequestration	2031–2050
Conduct comprehensive program evaluation and publish final regional performance report	2048–2050

Authority to Implement

Local governments hold primary regulatory authority over zoning and parking minimums. ACOG will coordinate regional policy alignment by:

- Developing a Regional Parking Lot Design Guide with input from member municipalities
- Supporting updates to local ordinances that reduce excessive parking requirements
- Providing technical assistance and training for planners and engineers on green infrastructure retrofits

Partnerships with state transportation and environmental agencies, the Oklahoma Department of Commerce, and Oklahoma State University Extension will facilitate best-practice dissemination and performance tracking.



Action #15: Environment & Natural Systems

Increase Tree Canopy in 50 Hectares of Lidac Areas with Less Than 25% Cover by 5% by 2050.

The program directs plantings to heat and flood vulnerable neighborhoods using GIS analysis of canopy gaps, surface temperature, stormwater risk, and air quality indicators. Planting plans will specify native, drought tolerant trees and compatible prairie grasses, with establishment care and community stewardship to ensure long-term survival and benefits.

Estimated Costs

The estimated total program cost, including planning, planting, and maintenance, is \$25-\$27 million through 2050. This estimate reflects average urban forestry implementation costs of \$3,000 per planted and maintained tree.

Estimated Benefits & Outcomes

By 2030, the program is projected to plant approximately 418 trees, increasing to 8,768 by 2050 across priority LIDAC tracts. Using conservative sequestration rates, these plantings are expected to sequester 50 metric tons of CO₂e by 2030, 1,052 tons in 2050, and 11,573 tons cumulatively (2030-2050). Air-quality improvements, derived from modeled pollutant uptake factors per tree, are estimated to total 5 metric tons annually by 2050 and 56 metric tons cumulatively through 2050. These figures reflect direct biophysical benefits and do not yet account for indirect cooling or avoided emissions from reduced energy use.

Metric	2030	2050	Cumulative (2030-2050)
Trees Planted	418	8,768	8,768
Metric Tons of CO ₂ e Sequestered	(50)	(1,052)	(11,573)
Air Pollutants Reduced (Metric Tons)	0	5	56

Implementation Steps

Implementation will begin with the development of a regional canopy-equity analysis to identify LIDAC tracts below 25% tree cover and rank them by combined heat, flood, and air-quality exposure. ACOG and its partners will then develop standardized planting and maintenance guidelines to support equitable implementation across jurisdictions. Between 2028 and 2035, municipalities will launch phased tree and prairie plantings in priority blocks and public spaces, supported by community stewardship programs and nursery partnerships. Implementation will scale through 2042 to cover all eligible tracts, followed by a monitoring and maintenance phase to ensure canopy growth and survival. A final regional reassessment in 2048–2050 will evaluate progress toward the 5%-point increase target and document cumulative climate and health benefits.

Tracking Progress

- Percent-point increase in average canopy across treated LIDAC tracts
- Trees planted, survival rate, and establishment completion (3-year survival)
- tCO₂e sequestered annually and cumulatively
- Modeled heat-exposure and stormwater indicators in treated areas
- Number of jurisdictions and community groups participating in LIDAC projects

Implementation Milestones & Schedule

Milestone	Timeframe
Conduct GIS screening to identify LIDAC tracts <25% canopy and rank by heat/flood/air-quality risk	2026–27
Develop LIDAC planting standards, species lists, and block-level design templates	2027–28
Establish nursery supply and workforce partnerships; secure grants and local match	2028–29
Launch initial LIDAC plantings and prairie conversions; begin establishment care	2029–32
Expand implementation across additional priority blocks and public sites	2032–42
Continue annual planting, maintenance, and survival audits; mid-course adjustment	2042–48
Reassess canopy in treated tracts; publish final performance report	2048–50

Authority to Implement

ACOG will coordinate regional implementation using existing tree canopy baselines and the Priority Climate Action Plan framework. Member cities and counties will adopt local planting targets, manage projects on public land (streetscapes, parks, schools), and structure incentives for private land participation. Oklahoma Forestry Services and Oklahoma State University Extension will support nursery supply, species selection, and maintenance training, with non-profits and neighborhood groups engaged for planting and stewardship.

Spotlight: Growing a Greener Future Together

ACOG and OKC Beautiful Collaborate to Expand Tree Canopy in Central Oklahoma

The Association of Central Oklahoma Governments (ACOG) and OKC Beautiful are already working together to enhance the region's tree canopy, aiming to improve air quality, reduce urban heat, and increase community resilience.

ACOG Tree Canopy Assessment

ACOG led a comprehensive 536-square-mile study of the Oklahoma City Metropolitan Area's tree canopy, utilizing high-resolution satellite imagery to assess existing coverage and identify areas for potential growth. The assessment provides valuable data to guide future tree planting efforts and urban planning decisions.⁵⁸

OKC Beautiful's Tree OKC Program

Building on this foundation, OKC Beautiful's Tree OKC program has distributed over 5,000 trees and seedlings since its inception in 2022. The program focuses on planting and giving away trees to neighborhoods, schools, and community organizations, with a planting season running from October to April.⁵⁹

This partnership exemplifies how regional planning and community engagement can work hand-in-hand to create a more sustainable and resilient urban environment.





Action #16: Environment & Natural Systems

Develop a Standardized Municipal Tool for Green Infrastructure Siting, Design, and Sizing.

Create a standardized planning and design tool to support municipalities in siting, sizing, and implementing green infrastructure (GI) projects. The tool will include recommendations for best management practices (BMPs), cost estimates, template cross sections, and contract language. It will be designed to streamline project development, reduce permitting delays, and ensure consistent performance across jurisdictions. GIS integration will allow for site-specific recommendations based on land use, soil type, impervious cover, and climate risk.

Estimated Costs

Development costs will include staff time, consultant support, GIS integration, and stakeholder engagement. Additional expenses may arise from compiling BMPs, creating design templates, and testing the tool in pilot communities.

Tracking Progress

- Completion and release of the standardized GI tool
- Number of municipalities adopting or using the tool
- Number of GI projects planned or implemented using the tool
- Reduction in permitting time for GI projects
- Estimated stormwater volume managed, or pollutant load reduced

Implementation Milestones & Schedule

Milestone	Timeframe
Develop a GIS-enabled tool with modules for BMP selection, sizing calculators, and cost estimation. Include template cross sections for common GI types (e.g., bioretention, permeable pavement, green roofs)	2026-28
Provide standardized contract language for design, construction, and maintenance	2026-28
Pilot the tool in 3-5 municipalities and refine based on feedback	2028
Train municipal staff and consultants on tool use and integration with capital planning	2028-29

Authority to Implement

Municipal governments have the authority to implement green infrastructure projects and adopt planning tools. ACOG can lead tool development, coordinate regional input, and support GIS integration. State environmental agencies may provide technical guidance and funding support.



Action #17: Environment & Natural Systems

Coordinate Multi-Jurisdictional Watershed Planning for Water Quality and Flood Risk Reduction.

Advance climate resilience and environmental health by coordinating multi-jurisdictional watershed planning that improves water quality and reduces flood risk. Planning efforts will identify pollution sources, outline best management practices (BMPs), and develop a decision-support tool, similar to the Source Loading and Management Model for Windows (WinSLAMM), to measure water quality improvements. Simultaneously, the strategy will assess climate vulnerability, model future flood scenarios, and identify infrastructure risks. The process will result in a portfolio of actionable projects and policy recommendations.

Estimated Costs

Costs will vary based on watershed size and complexity. Initial investments may include staff time, consultant support, data collection, modeling tools, and stakeholder engagement. Long-term costs may involve infrastructure assessments and project development.

Tracking Progress

- Number of jurisdictions participating in watershed planning
- Development and use of decision-support tools (e.g., modeled water quality improvements)
- Number of actionable projects identified and advanced
- Integration of recommendations into local and regional plans

Implementation Milestones & Schedule

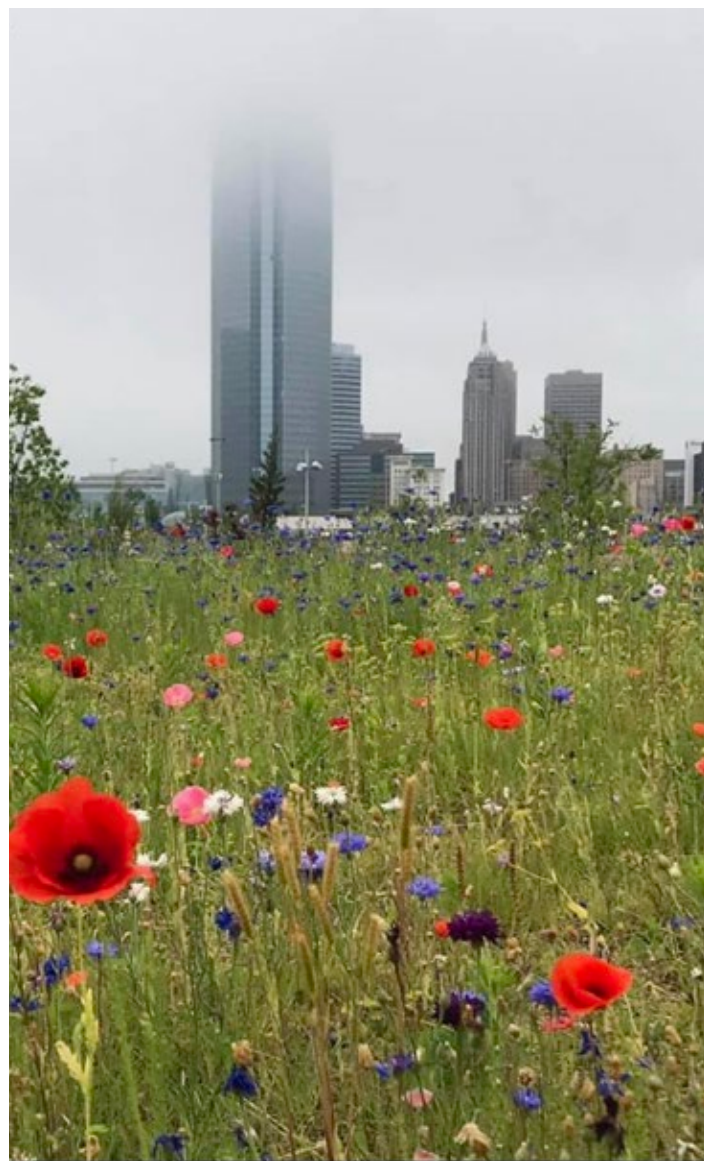
Milestone	Timeframe
Convene regional partners to align watershed goals and planning scope	2026
Conduct watershed assessments to identify pollution sources and climate vulnerabilities using shared data and field surveys	2026-27
Build a GIS-integrated modeling tool to simulate water quality improvements and flood scenarios	2026-27
Use assessment and modeling results to identify and rank green infrastructure, stormwater retrofits, and flood mitigation projects	2027-28
Create standardized BMPs and policy language for adoption across jurisdictions to support consistent implementation	2027-28
Launch pilot projects in high-risk areas	2028

Authority to Implement

Local governments and water utilities have authority over watershed planning and infrastructure decisions. ACOG can lead coordination across jurisdictions, support modeling and data analysis, and align planning with regional climate and resilience goals. State environmental and emergency management agencies may provide technical assistance and regulatory guidance.

Environment & Natural Systems Municipal/Partner Actions

- Integrate heat and equity goals into urban forestry plans
- Incorporate low-impact development design into road and drainage projects
- Convert vacant or underused land to green infrastructure
- Preserve habitat corridors, creek buffers, and slope zones
- Prioritize investments in urban heat islands and LIDAC communities
- Host conversations with a forester for the public to support investments on private property



Environment & Natural Systems Individual Actions

- Adopt climate-smart food choices (plant-based meals, reduce food waste, eat local)
- Participate in community gardens or tribal food sovereignty initiatives
- Practice regenerative landscaping at home (native plants, pollinator habitats, gardens, etc.)
- Volunteer to plant trees and restore climate-smart landscaping
- Compost at home
- Engage in rainwater harvesting





EMERGENCY MANAGEMENT

Central Oklahoma is no stranger to natural hazards and has a strong foundation in emergency management (EM), built upon decades of regional coordination and state policy. While emergency management is a state-mandated function, it remains largely unfunded, creating ongoing challenges for local jurisdictions to sustain and strengthen their programs. The state is divided into EM regions, which help structure coordination, resource sharing, and mutual aid. Within this framework, Central Oklahoma benefits from the Oklahoma Emergency Management Association (OEMA), which supports professional development, coordination, and advocacy for local EM professionals.



According to OEMA, emergency management is the foundation of public safety, encompassing efforts to prevent, mitigate, prepare, respond, and recover from disasters (see Table 4).⁶⁰ In this plan, mitigation and preparedness are key EM phases that rely on ongoing communication between agencies, local governments, utilities, and the public.

Table 4: OEMA Phases of Emergency Management⁶¹

Prevent	Prevention activities consist of actions necessary to avoid, prevent, or stop a hazard completely.
Mitigate	Mitigation activities are those designed to either prevent the occurrence of an emergency or long-term activities directed toward minimizing the potentially adverse effects of an emergency or disaster.
Prepare	Preparedness activities are those programs and systems that exist prior to an emergency and are used to support and enhance response to an emergency or disaster. Planning, training and exercising are among the activities conducted under this phase.
Response	Response activities and programs are designed to address the immediate and short term effects of an emergency or disaster. They help to reduce casualties and damage as well as speed recovery. Response activities include direction and control, warning, evacuation and other similar operations.
Recover	Recovery activities involve restoring systems to the phase that involves restoring systems to normal or a new normal. Short-term recovery operations/actions are taken to assess damage and return vital life-support systems to minimum operating standards. Long-term recovery actions may take many years based on the type of disaster.

The Federal Emergency Management Agency’s (FEMA) National Response Framework outlines 15 Emergency Support Functions (ESF), several of which also align closely with the focus areas of this plan (see Table 5). **These include Transportation, Communications, Public Works and Engineering, Information and Planning, Logistics, Energy, and Public Safety and Security.**⁶² There is an opportunity to align climate planning efforts with the ESFs to complement and reinforce local emergency management systems.



Figure 24: City of Choctaw Police

Table 5: FEMA ESFs that Align with the CCAP⁶³

Transportation	Provides support by assisting local, state, tribal, territorial, insular area, and federal governmental entities, voluntary organizations, non-governmental organizations (NGOs), and the private sector in the management of transportation systems and infrastructure during domestic threats or in response to actual or potential incidents.
Communications	Supports the restoration of communications infrastructure, coordinates communications support to response efforts, facilitates the delivery of information to emergency management decision makers, and assists in the stabilization and reestablishment of systems and applications during incidents.
Public Works and Engineering	Coordinates and organizes the resources of the government to facilitate the delivery of multiple core capabilities.
Information and Planning	Collects, analyzes, processes, and disseminates information about a potential or actual incident, and conducts deliberate and crisis action planning activities to facilitate the overall activities in providing assistance to the whole community.
Logistics	Integrates whole community logistics incident planning and support for timely and efficient delivery of supplies, equipment, services, and facilities. Facilitates comprehensive logistics planning, technical assistance, training, education, exercise, incident response, and sustainment that leverage the capability and resources of federal logistics partners, public and private stakeholders, and NGOs in support of both responders and disaster survivors.
Energy	Provides support by assisting local, state, and tribal government entities, NGOs, and the private sector by coordinating government capabilities, services, technical assistance, and engineering expertise during disasters and incidents that require a coordinated response. The term “energy” includes producing, storing, refining, transporting, generating, transmitting, conserving, building, distributing, maintaining, and controlling energy systems and system components.
Public Safety and Security	Provides public safety and security assistance to local, state, and tribal organizations overwhelmed by the results of an actual or anticipated natural/manmade disaster.

Planning Process & Gaps

Disasters are becoming more complex, and emergency managers may have to simultaneously respond to a disaster while preparing for a spinoff, or a **cascading hazard**. Climate change is accelerating the impacts of extreme heat, drought, and severe storms, placing increased strain on emergency management systems across Oklahoma. The diverse landscape of the region, which includes both dense urban centers and sparsely populated rural areas, adds complexity to response coordination, resource allocation, and risk communication.

Through this climate planning process, barriers and opportunities for the listed ESFs above were discussed by community leaders and emergency managers. These insights are detailed in Section 4 – Planning for the Future. Stakeholders emphasized that emergency managers should be engaged not only during response and recovery, but also throughout planning, zoning, and community development processes. **Building relationships in advance of an incident allows for better coordinated action, faster mobilization, and stronger resilience to climate-related hazards.**

Identified Emergency Management Needs

Emergency managers frequently identify limited resources and funding as major obstacles to readiness and resilience. This challenge highlights the importance of treating EM as a proactive investment. Including emergency managers in regional and municipal planning—such as comprehensive, hazard mitigation, and climate action plans—helps ensure priorities are aligned for long-term decisions.

There is also a growing need to improve community understanding and education around emergency management. Residents and local leaders alike benefit from knowing how preparedness, mitigation, and response systems function, and how they can contribute to collective safety before, during, and after natural hazard events.

Stakeholder Priorities

Stakeholders across Central Oklahoma emphasized that EM capacity varies significantly between communities. Differences in staff size, technical expertise, and financial resources affect the ability of jurisdictions to prepare for and respond to natural disasters. Recognizing this variation, several key community priorities have emerged.

1. Coordination of Mutual Aid and Resource-Sharing Agreements

Develop and maintain a regional master communication list of public officials, first responders, and data managers to streamline communication and promote rapid mobilization.

2. Cross-Sector Emergency Management Training

Convene Regional training opportunities that allow for flexible participation formats, acknowledging limited staff availability and financial constraints among smaller communities.

3. Leveraging Regional and National Partnerships

Build on the work of the Southern Climate Impacts Planning Program to convene cross-sector working groups around key ESFs that overlap with this plan.

By aligning climate action with emergency management priorities, Central Oklahoma can strengthen its resilience to extreme events, enhance coordination across jurisdictions, and make it so that future preparedness, mitigation, and response efforts are effective, inclusive, and future-focused.



BENEFITS, EQUITY, & RESILIENCE

Climate action strategies were crafted to address community priorities while supporting regional risk reduction, economic security, public health and safety, and environment co-benefits. Each strategy went through an iterative development process, incorporating community input, consultation with subject matter experts, and careful evaluation of potential impacts. These strategies go beyond reducing emissions or enhancing preparedness for extreme events – they provide a roadmap for fostering safer, healthier, and more prosperous communities across the region.

Risk Reductions Benefits

Oklahoma is used to living with risk. The state is a hotspot for tornadoes and severe storms that sweep up the Great Plains, and in 2013, one of the most destructive tornadoes in modern history roared through Moore in Cleveland County. The storm was an EF5 tornado, a rating that would not be seen again until 2025, in North Dakota. The 2013 Moore tornado killed 24 people and resulted in 212 injuries, making it the 9th deadliest tornado in Oklahoma history.⁶⁴ The storm was also the costliest in Oklahoma history, and the 3rd costliest in U.S. history, with an estimated 2.8 billion dollars in damages (adjusted for 2025 dollars).⁶⁵

Reliable projections indicate that Central Oklahoma will experience more severe storms, more extreme heat, and more out-of-ordinary flooding (see Figure 25) in the coming decades. The actions set forth in this plan are meant to reduce risk from these hazards by building on foundational work already happening in our communities – like the AdaptOKC climate plan, locally led projects like CNG fleets, the City of Moore’s strengthened building codes, and nonprofit organizations and collaborative networks that drive community improvement every day.

Many of the strategies highlighted in this plan support greater alignment of regional priorities and improve coordination among local governments. These essential actions lay the groundwork for both current and future initiatives aimed at tackling the region’s most pressing climate challenges. By working collaboratively to reduce emissions, protect natural resources, enhance preparedness for extreme weather, and guide key industries toward emerging technologies, Central Oklahoma can reduce risks and create benefits that reach every community.

Air Quality, Health, & Economic Co-Benefits

Central Oklahoma communities value clean air and water, jobs that sustain families, and initiatives that strengthen long-term regional prosperity. The strategies recommended in this plan emphasize opportunities to position Central Oklahoma at the forefront of innovation in clean energy and resilient development. Conversations about emissions include not only greenhouse gases, but also the local air pollutants that affect health and quality of life in neighborhoods near industrial activity and major transportation corridors. Investments in energy efficiency, renewable technologies, and modern infrastructure can help the region attract new industries and remain competitive in a changing economy. **Climate action is not a limit on growth - it is a framework for aligning regional planning with future realities so that resources are used wisely and communities thrive.**

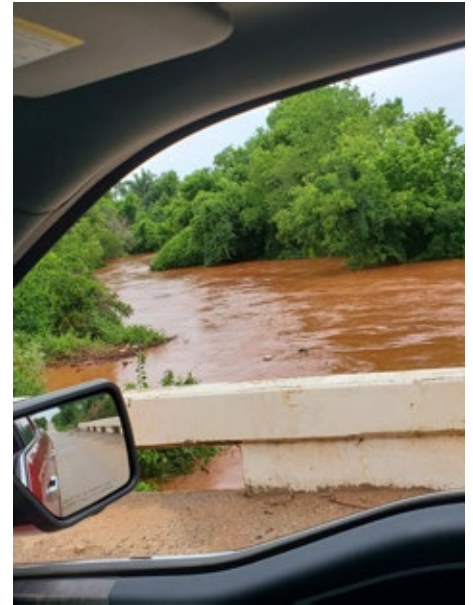


Figure 25: Flooded Creek in Central Oklahoma

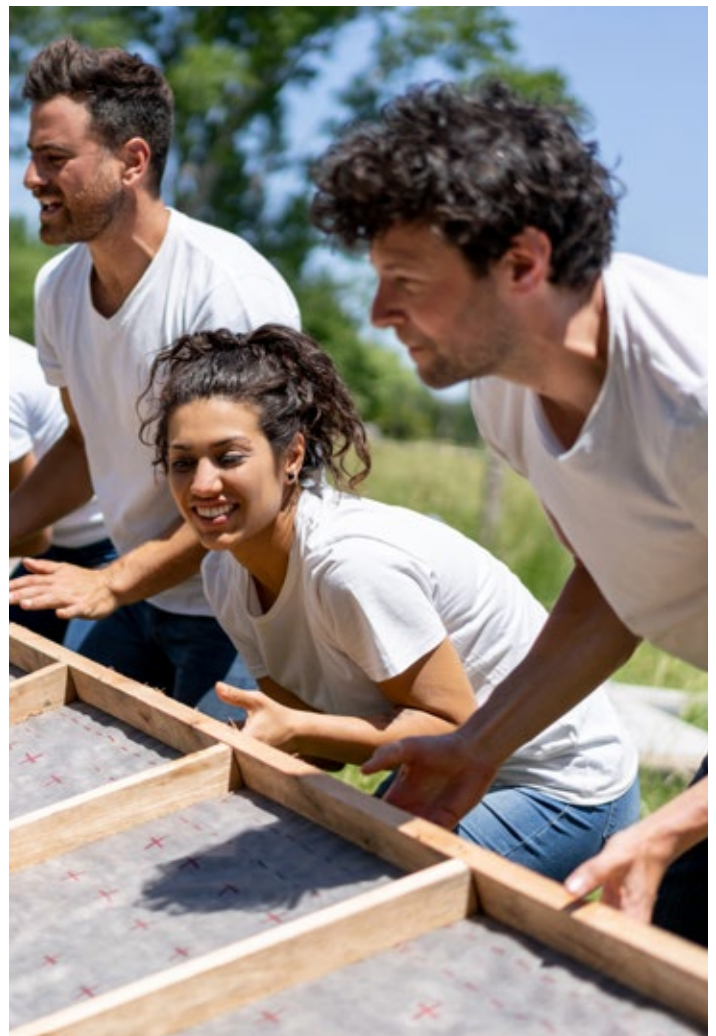
Equitable Distribution of Benefits

Throughout the planning process, deliberate attention was given to the needs and perspectives of low-income and historically disadvantaged communities. Stakeholders representing both urban neighborhoods and rural areas contributed valuable insight into the challenges faced by their residents. They informed the development of the final climate action strategies that reflect community priorities and advance shared goals like equality of opportunity and resilience.

Action strategies that will result in co-benefits for underserved communities include:

- **Health and Wellbeing:** Reducing or eliminating air and water pollution leads to cleaner environments and better respiratory, cardiovascular, and overall health - especially for neighborhoods historically burdened by industrial and traffic emissions.
- **Workforce and Economic Opportunity:** Expanding clean energy, energy efficiency, and resilient infrastructure projects create stable, family-supporting jobs in regions that have faced economic challenges.
- **Affordable Living:** Energy and housing upgrades lower monthly utility bills, improve comfort and safety, and ease financial pressure on low-income households.
- **Climate Resilience:** Flood mitigation, improved drainage, and other adaptive measures strengthen community safety and reduce risks in areas most exposed to extreme weather.
- **Equity in Investment:** Directing funding and technical assistance toward under-resourced areas helps close infrastructure gaps and promotes fair access to essential services.
- **Community Leadership:** Ongoing engagement empowers residents to shape climate solutions that reflect their needs, values, and long-term vision for their communities.

As recommended action strategies are pursued and expanded, attention to an equitable distribution of benefits will guide investments to maximize benefits for all communities. Figure 26 shows census block groups that were identified as disadvantaged by the Climate and Economic Justice Screening Tool and/or as being located within a census block group at or above the 90th percentile on any of the EPA's EJScreen Supplemental Indexes and located within tribal jurisdictions.



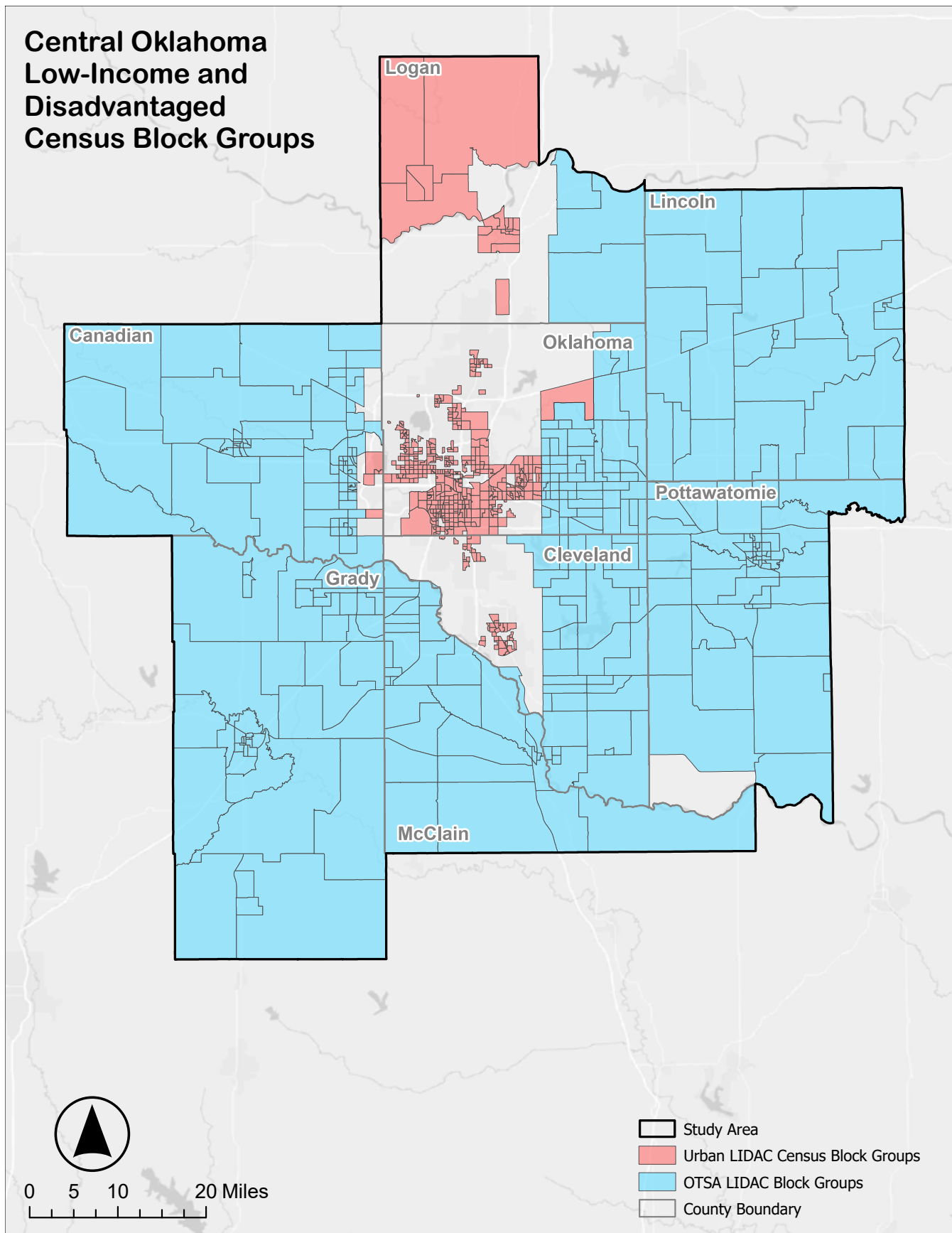


Figure 26: Central Oklahoma Low-Income and Disadvantaged Census Block Groups

ENABLING CONDITIONS & RESOURCES

Priority actions cannot be implemented without aligning effective workforce and funding capabilities. The following sections outline the current workforce landscape in Central Oklahoma, identifying major trends and themes that could evolve over time, and the current available funding opportunities that can be leveraged to implement actions.

A Changing Workforce

Central Oklahoma stands at a pivotal moment in its economic evolution. For decades, oil and gas have been the backbone of the region's economy, directly employing more than 20,000 people and creating up to 2.5 times more opportunities across construction, transportation, and manufacturing.^{66 67} While that legacy remains strong, the landscape is shifting and opening to new opportunities. For example, Oklahoma already ranks second nationally in wind energy capacity, with wind energy installations in western Oklahoma and counties just outside the Oklahoma City metro area growing rapidly (see Figure 27).

Beyond energy, the region benefits from a diversified economic base including aerospace, healthcare, and advanced manufacturing alongside a robust CareerTech system capable of accelerating workforce readiness and driving innovation.⁶⁸

Looking ahead, the region's highest-demand green jobs will emerge across energy, building, and transportation.⁶⁹ To support a healthy workforce transition that aligns with climate action and infrastructure modernization, regional leaders should focus on:

- Aligning people with training opportunities
- Removing barriers to education and training access
- Leveraging strengths in innovation, infrastructure, and collaboration to ensure no community is left behind.



Figure 27: Co-Located Wind and Petroleum Operations

Building on Momentum: Regional Workforce Planning Progress⁷⁰

The ACOG Comprehensive Economic Development Strategy (CEDS) (see Figure 28) provides a roadmap for strengthening the region's workforce through five core priorities: expanding talent pipelines, aligning training with employer needs, leveraging real-time labor data, supporting industry diversification, and ensuring equitable access for rural and underserved communities. Actions include scaling CareerTech and higher education programs, fostering employer-education partnerships, and investing in innovation hubs like the Oklahoma City Innovation District to drive growth in advanced energy and technology sectors.

As this Plan moves from planning to implementation, the CEDS framework serves as the foundation for workforce strategies guiding forecasting, transition pathways, and inclusive access to emerging green jobs.



Figure 28: ACOG 2024 Comprehensive Economic Development Strategy

Strategies for an Integrated Workforce Transition

The following strategies outline steps regional leaders, industries, and educators can take to prepare the workforce for climate action and infrastructure modernization. These recommendations leverage local strengths while improving access and alignment.

1. Scale Clean Energy Workforce Pipelines

Expand training programs for roles in renewable energy production, distribution, and energy efficiency. Include short-term credentials, stackable certifications, and hands-on experience through partnerships with wind and solar operators, utilities, and contractors. Design curricula and establish enrollment targets based on detailed forecasts for each priority climate action as they move from concept to implementation.

2. Build Green Career Pathways Through School Programs

Introduce sustainable career options early to build knowledge of alternative career paths for the next generation. Update school curricula across primary and secondary grades, CareerTech, and higher education to include renewable energy, efficiency, and resilience concepts.

3. Establish Regional Workforce Hubs with Coordinated Partnerships to Support Existing Workforce Transitions

Develop regional hubs under ACOG's leadership to deliver rotating training programs and virtual learning across Central Oklahoma, with a focus on transitioning adult workers and unemployed and under-employed people. These hubs will address access barriers by leveraging local champions such as CareerTech campuses, community colleges, and workforce boards to anchor delivery in each regional hub (see also Action #13).

4. Public-Private Partnerships

Pursue collaborative investments from utilities, energy firms, and other industry partners to build sustainable training and hiring pipelines. These partnerships can provide funding, equipment, curriculum support, and direct hiring pathways for graduates of clean energy and resilience training programs.

How Can We Do This?

See **Appendix C** for detailed current conditions analysis data, training program inventory, and workforce projections by sector.

1.

Scale Clean Energy Workforce Pipelines

Energy Transition Outlook: Jobs at Risk, Jobs on the Rise

A nationwide study by the Net-Zero American Project found that Oklahoma could lose 10,000 to 50,000 fossil fuel jobs by 2050; however, the state could gain up to 263,000 clean energy jobs, creating a far greater replacement potential (see Figure 29).⁷¹ Fossil fuel workers have strong skills alignment with renewable energy roles, but the biggest barriers to workforce transition are location and training.⁷² Central Oklahoma is uniquely positioned to overcome these challenges, as its energy workforce and infrastructure are concentrated in the same region where clean energy opportunities are growing, suggesting that targeted upskilling is one key to success.

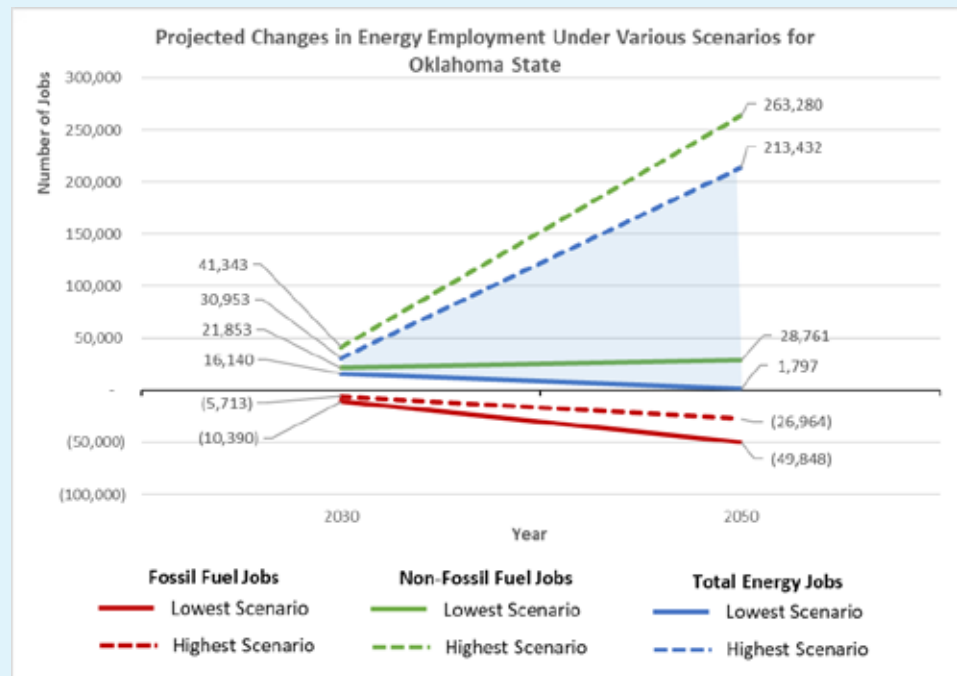


Figure 29: Projected Changes in Energy Employment Under Various Policy and Employment Scenarios for Oklahoma State

2.

Build Green Career Pathways Through School Programs

Aviation Career Training in Oklahoma City Public Schools: A Scalable Model⁷³

In 2022, Oklahoma City Public Schools, in partnership with Metro Tech, launched a dedicated aviation training center to introduce high school students to technical careers through hands-on instruction and dual enrollment. The Southeast High School Aviation Center was funded through a public bond and designed with Metro Tech and industry input. The program connects students directly to industry pathways in aerospace and aviation, offering early exposure and credential opportunities while still in high school. Upon graduation, several students pursue additional training in the field including higher education programs and military service.

This model demonstrates a model to integrate career-focused education in public schools with institutional and industrial partners. As demand increases for a workforce with infrastructure resilience and risk reduction skills, similar programs can be adapted to support green career pathways in renewable energy, energy efficiency, and environmental risk reduction.

4.

Public-Private Partnerships

ENEL Wind Energy Training Hub - Oklahoma City⁷⁴

ENEL North America, a private renewable energy developer, invested in a training facility in Oklahoma City to build local workforce capacity for its wind operations across the state through a three-week program. This initiative exemplifies how industry-led investment can:

- Fund specialized training programs
- Provide equipment and curriculum aligned with real job needs
- Create direct hiring pathways for program graduates
- Target priority populations like displaced fossil fuel workers and veterans

Funding Analysis

With the disruption of funds from the Infrastructure Investment and Jobs Act and the Inflation Reduction Act, many projects and programs are in jeopardy of cancelation in 2026. For communities that are still aiming to complete Comprehensive Climate Action Plans (CCAP) and implement them, securing funding and financing from other sources for projects has become even more important. Despite the delays, cancelation, and rescission of funds, there are still funding sources and innovative financing solutions that can be utilized for projects identified in CCAP as well as actions that local governments, individuals, and households can take.

Implementation of the CCAP needs to be supported by a multi-tiered funding framework designed to sustain both planning and implementation over a 5–7-year horizon.

First Tier

The first tier includes grants administered through federal, state, and local agencies, which can be aligned with specific action categories such as transportation, energy, or resilience.

Second Tier

The second tier focuses on funding for process improvements—supporting standardized approaches, shared services, and collaborative efficiencies that streamline implementation and reduce administrative burden.

Third Tier

The third tier leverages innovative financing strategies, including green bonds, policy and legislative tools, and cost-saving mechanisms that emerge from interagency collaboration.

There are some traditional infrastructure funding programs that remain largely unaffected, offering a stable foundation for project continuity. Some federal discretionary (competitive) and formula funding programs relevant to CCAP actions include:

- The **Recreational Trails Program (RTP)** is a federal aid program managed through the Oklahoma Tourism and Recreation Department (OTRD) in consultation with the Department of Transportation. It is a reimbursable 80/20 matching grant with a maximum grant amount of \$300,000. Current cycle is open with a deadline of January 23, 2026, by 4 pm. This program will fund recreational trails and trail-related projects.⁷⁵
- The **Land and Water Conservation Fund (LWCF)** is another federal assistance program administered by the OTRD. The next application cycle is anticipated to open in the Spring of 2026 and will fund projects that align with the State's Comprehensive Outdoor Recreation Plan.⁷⁶
- The **Better Utilizing Investments to Leverage Development (BUILD)** is a competitive discretionary grant program that will fund eligible surface transportation projects that will have a significant local or regional impact that advance the priorities of safety, equity, climate and sustainability, workforce development, job quality, and wealth creation. It can fund planning or capital construction projects up to \$25 million with a 20% non-federal match.⁷⁷

- The **Surface Transportation Block Grant (STBG)** program provides flexible federal transportation funds that are suballocated by population to large urban areas. In the Oklahoma City region, STBG funds are allocated annually to ACOG, which then distributes these funds to local projects through a competitive process. Over the past few years, the OKC metropolitan area has received roughly \$20–27 million per year in STBG-UZA (Urbanized Area) funds, supporting a wide range of transportation improvements.⁷⁸

How STBG funds flow:

- **Federal apportionment:** The Federal Highway Administration (FHWA) provides STBG funds to states through a population-based formula.
- **State allocation:** The Oklahoma Department of Transportation and Development (ODOT) sub-allocates a portion of the state's STBG funds to ACOG based on a formula.
- **Local selection:** ACOG is responsible for prioritizing and selecting projects within the xxx metropolitan area that align with regional transportation priorities, soliciting and evaluating project applications from local agencies, and selecting projects for funding.

Similarly, **Community Development Block Grants (CDBG)** are federal funds from the Department of Housing and Urban Development (HUD) that are distributed to states and entitlement entities – cities > 50,000 population and counties > 200,000 population – via formula funding. Oklahoma City is an entitlement entity and received funding directly from HUD. Over the past three years (roughly 2021–2023), Oklahoma City has received approximately \$4.8–\$4.9 million per year in CDBG funds, which has been allocated toward a mix of housing rehabilitation, neighborhood revitalization, public services, infrastructure improvements, and economic development projects, all benefiting low- and moderate-income (LMI) residents.⁷⁹

For non-entitlement communities, the state's **Small Cities CDBG** program is a flexible program that provides communities with resources to address a wide range of unique community development needs. The Oklahoma Department of Commerce administers the program and annually develops funding priorities and criteria for selecting projects.

ACOG, as a regional Council of Governments, administers a portion of Oklahoma's Small Cities CDBG program through the Community Development Block Grant – Rural Economic Action Plan (CDBG/REAP) grants. Under this program, the Oklahoma Dept. of Commerce (ODOC) matches state-funded REAP grants with HUD CDBG funds dollar-for-dollar, doubling the resources available for small-town projects. Each project can receive up to \$50,000 in state REAP and \$50,000 in CDBG, for a maximum \$100,000 total grant. Over the past three years, ACOG's region saw a significant increase in CDBG/REAP funding, which has been directed almost entirely to infrastructure and community facility projects in towns under 7,000 population.⁸⁰



U.S. Economic Development Administration recently issued an FY 2025 **Disaster Supplemental Grant** Notice of Funding Opportunity (NOFO) to support economic recovery activities in areas that received major disaster declarations because of hurricanes, wildfires, severe storms and flooding, tornadoes, and other natural disasters occurring in calendar years 2023 and 2024.⁸¹ New in 2025, the program will provide funding through three funding pathways:

1. Readiness Path – Non-construction projects to build local capacity and prepare for future implementation projects. Readiness projects include funding for recovery strategies, disaster recovery coordinators or other capacity building activities, and pre-development expenses. Grants range from \$250,000 - \$500,000 and is an open-application process.
2. Implementation Path – Standalone construction and non-construction projects that help communities recover from major disasters and advance recovery and growth, improving economic outcomes. Grants range from \$100,000 - \$20 million and is an open-application process.
3. Industry Transformation Path – Coalition-led, multi-project portfolios that transform regional economies through industry development. These grants can fund a mix of construction and non-construction projects. Grants range from \$20 - \$50 million with an application deadline of March 3, 2026.

State funding programs can be used to match federal funding programs. However, there are very few state infrastructure grant programs in Oklahoma. There are a variety of incentives for higher education, safety, and businesses and industries.

One state transit program was identified: **Oklahoma Public Transit Revolving Fund** – To establish, expand, improve and maintain public transportation services. Funds may be used for local share or matching funds to federal grants. A minimum of fifty percent (50%) of the funds must be used for services for the elderly and handicapped. The application cycle opens on July 1 and closes on July 31 of each calendar year.⁸²

Philanthropic Funding Programs

Foundational programs can also be used to match federal or state funding programs. A few of note are:

Bloomberg Philanthropies' Asphalt Art Initiative grant program funds visual art on roadways, pedestrian spaces, and public infrastructure in cities to make signature streets safer and more accessible, create dynamic new public spaces, or enact other similarly transformative roadway redesigns. The annual grant program is open to cities in Canada, Mexico, and the United States with populations of 50,000 or more, has a typical deadline of late January, and provides grants of \$100,000 per project.⁸³

The Oak Foundation offers grants for climate change initiatives, including its Global Climate Initiatives program and the Climate Justice Resilience Fund, focusing on clean energy, sustainable food, reducing emissions in cities, and empowering communities to build resilience to natural hazards. To apply, organizations should review the Foundation's strategies and guidelines and then submit a letter of inquiry. This is followed by a rigorous selection process that may include detailed discussions, financial reviews, and site visits.⁸⁴

IMPLEMENTATION & MONITORING

Implementation of the CCAP action strategies will roll out in stages. Initial efforts will emphasize regional coordination, resource sharing, and building local capacity. These foundational steps will pave the way for focused project delivery, whether carried out regionally or through voluntary action by individual municipalities. Ongoing monitoring and evaluation will help track progress, address obstacles, and refine approaches over time. Moving forward, continued collaboration with local governments, nonprofits, and community partners will be key to sustaining momentum and maximizing long-term impact.

Impact of Actions 2030 & 2050 Projections

The strategies recommended in this plan are designed to drive measurable progress toward lowering the region's climate-polluting emissions and reducing exposure to climate-related risks. Between now and 2030, ACOG and its partners will focus on foundational and enabling actions: building programs, partnerships, and policy frameworks necessary for long-term implementation. Meaningful emissions reductions will follow once these systems and investments are in place.

If all recommended strategies are fully implemented, the region is projected to achieve an estimated 22% reduction in emissions by 2050 compared to 2020 levels. **The goal for 2050 is a 25% reduction in GHG emissions compared to 2020 levels.** This goal is intentionally ambitious yet grounded in current regional capacity and anticipated funding opportunities. However, achieving this outcome will depend on action beyond the regional level. Significant progress will require complementary state and federal commitments - such as stronger regulatory frameworks, financial incentives, and infrastructure investments - that create the market conditions and return on investment necessary for transformative change. Without this broader alignment, local actions alone will not deliver the scale of reductions needed to meaningfully reduce regional climate risks.

Three Things That Need to Happen for Transformative Emissions Reductions

1. **Energy & Industry Commit to Transition:** Utilities and manufacturers set clear emission targets and invest in cleaner operations.
2. **State & Federal Support Catalyzes Action:** Incentives and funding accelerate renewable deployment and efficiency upgrades.
3. **Regional Collaboration Drives Implementation:** Cities, tribes, and private partners align strategies to scale proven solutions.

Roles & Responsibilities

ACOG's role is primarily one of convening and facilitation rather than direct project execution. The organization focuses on coordinating municipalities and nonprofit partners, creating shared resources, and assisting local entities in carrying out climate initiatives. Authority to implement individual projects rests with municipal governments, tribal authorities, and other local stakeholders, while ACOG offers technical support, guidance, and oversight throughout the region. Many action strategies have been developed to reflect these roles.

Timeline & Phasing

The planning phase culminates with the submission of the Comprehensive Climate Action Plan by December 1, 2025. Implementation grants awarded after PCAP submittals in 2024 were meant to support the phased execution of these plans through 2027, but Oklahoma was not awarded any implementation funding, and much of the funding that was awarded is at risk of being halted. Funding for implementation of action strategies must flex existing budgets, make use of state and federal resources still available, and optimize cost-efficiency through pooled resources and regional collaboration. ACOG will begin working on those action strategies for which it currently has capacity.

Annual Reporting

Participants in the CPRG program must provide annual reports outlining their progress, results, and any updates to planned strategies, followed by a comprehensive final report at the close of the grant period in mid-2027. These reports will capture information on emissions reductions, benefits for historically disadvantaged communities, workforce development achievements, and financial expenditures. Consistent reporting promotes transparency and accountability, while allowing ACOG and partner organizations to monitor regional progress toward climate goals and identify areas where additional guidance or support may be needed.

Next Steps

Transformative change will not happen overnight, but it begins with deliberate, coordinated steps taken today. The "Red Dirt Resiliency" Comprehensive Climate Action Plan lays the foundations for that transformation by aligning the region's vision, resources, and partnerships toward shared risk reduction and resilience. Through sustained commitment, adaptive learning, and continued collaboration across all levels of government, industry, and community life, Central Oklahoma can turn today's challenges into opportunities for innovation and renewal.

This Plan is more than a document; it is a starting point for lasting change. By investing in people, infrastructure, and ecosystems, the region is building the groundwork for a cleaner, safer, and more prosperous future to continue a legacy of stewardship that will benefit generations to come. Together we can make it so that Central Oklahoma not only endures in the face of change, but thrives.

References

- 1 EPA. (2025). Frequently Asked Questions About Climate Change. <https://www.epa.gov/climatechange-science/frequently-asked-questions-about-climate-change>
- 2 Association of Central Oklahoma Governments. (n.d.). About ACOG. <https://www.acogok.org/about-us/>
- 3 EPA. (2025). Frequently Asked Questions About Climate Change. <https://www.epa.gov/climatechange-science/frequently-asked-questions-about-climate-change>
- 4 EPA. (2024). Comprehensive Climate Action Plan: An Outline for States and MSAs. https://www.gnrc.org/DocumentCenter/View/3500/CCAP-Guidance-Outline-for-States-and-MSAs_FINAL
- 5 FEMA. (2010). Developing and Maintaining Emergency Operations Plans. https://www.fema.gov/sites/default/files/2020-05/CPG_101_V2_30NOV2010_FINAL_508.pdf
- 6 EPA. (2025). Sources of Greenhouse Gas Emissions. <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions>
- 7 EPA. (2024). Comprehensive Climate Action Plan: An Outline for States and MSAs. https://www.gnrc.org/DocumentCenter/View/3500/CCAP-Guidance-Outline-for-States-and-MSAs_FINAL
- 8 EPA. (2025). Overview of Greenhouse Gases. <https://www.epa.gov/ghgemissions/overview-greenhouse-gases>
- 9 EPA. (2024). Comprehensive Climate Action Plan: An Outline for States and MSAs. https://www.gnrc.org/DocumentCenter/View/3500/CCAP-Guidance-Outline-for-States-and-MSAs_FINAL
- 10 EPA. (2024). Comprehensive Climate Action Plan: An Outline for States and MSAs. https://www.gnrc.org/DocumentCenter/View/3500/CCAP-Guidance-Outline-for-States-and-MSAs_FINAL
- 11 EPA. (2025). Frequently Asked Questions About Climate Change. <https://www.epa.gov/climatechange-science/frequently-asked-questions-about-climate-change>
- 12 U.S. Census Bureau. (n.d.). Tribal designated Statistical Area. <https://www2.census.gov/geo/pdfs/partnerships/psap/G-620.pdf?>
- 13 EPA. (2024). Comprehensive Climate Action Plan: An Outline for States and MSAs. https://www.gnrc.org/DocumentCenter/View/3500/CCAP-Guidance-Outline-for-States-and-MSAs_FINAL
- 14 EPA. (2025). Communities, Resilience, and Remediation. <https://www.epa.gov/emergency-response-research/communities-resilience-remediation>
- 15 Neilsburg. (2025). Counties in Oklahoma Ranked by Native American Population. <https://www.neilsberg.com/insights/lists/counties-in-oklahoma-by-native-american-population/>
- 16 Central Oklahoma Weeklies. (2020). City Water Treatment Plant Garners Statewide Honor. <https://www.centraloklahomaweeklies.com/2020/12/03/city-water-treatment-plant-garners-statewide-honor/>
- 17 Biostar Renewables. (n.d.) City of Norman Oklahoma. <https://biostarrenewables.com/biostar-csv-project/solar-for-the-city-of-norman-oklahoma/>
- 18 OKC. (n.d.) Heat Watch Oklahoma. <https://www.arcgis.com/apps/webappviewer/index.html?id=990d955d0c834552ba1efa29236d5cd1&extent=-10916746.1006%2C4204062.6143%2C-10799338.8251%2C4258103.5933%2C102100>
- 19 Tinker Air Force Base. (n.d.) Home Page Image. <https://www.tinker.af.mil/>

- 20 Department of the Air Force. (2023). Climate Campaign Plan. https://www.af.mil/Portals/1/documents/2023SAF/DAF_Climate_Campaign_Plan.pdf
- 21 State of Oklahoma. (2024). State of Oklahoma Hazard Mitigation Plan. <https://oklahoma.gov/content/dam/ok/en/oem/documents/SHMP%202024.pdf>
- 22 IPCC. (2021). Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Delmotte, Et al.]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 2391 pp. doi:10.1017/9781009157896
- 23 USDA. (n.d.). Economically Disadvantaged Communities. USDA Climate Hubs. <https://www.climatehubs.usda.gov/hubs/northwest/topic/economically-disadvantaged-communities>
- 24 EPA. (n.d.). Climate Change and the Health of Socially Vulnerable People. Climate Change Impacts. <https://www.epa.gov/climateimpacts/climate-change-and-health-socially-vulnerable-people>
- 25 The Atlantic. (2013). Photos of Tornado Damage in Moore Oklahoma. <https://www.theatlantic.com/photo/2013/05/photos-of-tornado-damage-in-moore-oklahoma/100518/>
- 26 EPA. (n.d.). Heat Island Impacts. EPA. <https://www.epa.gov/heatislands/heat-island-impacts>
- 27 EPA. (n.d.). Climate Change and Heat Islands. Heat Islands. <https://www.epa.gov/heatislands/climate-change-and-heat-islands>
- 28 Tong, S., Prior, J., McGregor, G., Shi, X., & Kinney, P. (2021). Urban Heat: An increasing Threat to Global Health. The BMJ. <https://www.bmj.com/content/375/bmj.n2467>
- 29 Tree Equity Score. <https://www.treeequityscore.org/>
- 30 EPA. (n.d.). Heat Island Impacts. EPA. <https://www.epa.gov/heatislands/heat-island-impacts>
- 31 U.S. Climate Resilience Toolkit. (n.d.). Climate Mapping for Resilience and Adaptation Tool. <https://livingatlas.arcgis.com/assessment-tool/explore/details>
- 32 U.S. Climate Resilience Toolkit. (n.d.). Climate Mapping for Resilience and Adaptation Tool. <https://livingatlas.arcgis.com/assessment-tool/explore/details>
- 33 U.S. Climate Resilience Toolkit. (n.d.). Climate Mapping for Resilience and Adaptation Tool. <https://livingatlas.arcgis.com/assessment-tool/explore/details>
- 34 ClimateCheck, Inc. (n.d.). Top Oklahoma Climate Change Risks: Heat, Fire, Precipitation. ClimateCheck. <https://climatecheck.com/oklahoma>
- 35 ClimateCheck, Inc. (n.d.). Top Oklahoma Climate Change Risks: Heat, Fire, Precipitation. ClimateCheck. <https://climatecheck.com/oklahoma>
- 36 U.S. Climate Resilience Toolkit. (n.d.). Climate Mapping for Resilience and Adaptation Tool. <https://livingatlas.arcgis.com/assessment-tool/explore/details>
- 37 Frank, T. (2020). Flooding Disproportionately Harms Black Neighborhoods. Scientific American. <https://www.scientificamerican.com/article/flooding-disproportionately-harms-black-neighborhoods/>
- 38 Zachary Allison, ABC 7 News. (2025). Red River Flows After Recent Heavy Rainfall. <https://www.kswo.com/2025/05/01/red-river-flows-after-recent-heavy-rainfall/>
- 39 Su, W. (2023). Fifth National Climate Assessment, Chapter 2: Climate Trends. Fifth National Climate Assessment. <https://nca2023.globalchange.gov/chapter/2/#section-98>
- 40 NIDIS. (n.d.). NIDIS Partners. Drought.gov. <https://www.drought.gov/about/partners>
- 41 Su, W. (2023). Fifth National Climate Assessment, Chapter 2: Climate Trends. Fifth National Climate Assessment. <https://nca2023.globalchange.gov/chapter/2/#section-98>

- 42 Castanon, L. (2023). Droughts Increase Costs for Low-Income Households. Stanford News. <https://news.stanford.edu/2023/01/19/droughts-increase-costs-low-income-households/>
- 43 U.S. Drought Monitor. (2025). Oklahoma State <https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?OK>
- 44 National Geographic Society. (2023). Wildfires. National Geographic. <https://education.nationalgeographic.org/resource/wildfires/>
- 45 USDHS. (2022). Wildfires. Ready Kids. <https://www.ready.gov/kids/disaster-facts/wildfires>
- 46 3 Melillo, G. (2022). Why Wildfires Disproportionately Affect America's Poor The Hill. <https://thehill.com/changing-america/respect/poverty/3586289-why-wildfires-disproportionately-affect-americas-poor/>
- 47 Hutson, S. (2018, November 14). Study: People of Color and Low-Income Residents Most Vulnerable to Wildfire Impacts. KQED. <https://www.kqed.org/news/11706264/study-people-of-color-and-low-income-residents-most-vulnerable-to-wildfire-impacts>
- 48 OK Energy Today. (2025). Wildfires Present Grim Outlook for Oklahoma. <https://www.okenergytoday.com/2025/03/wildfires-present-grim-outlook-for-oklahoma/>
- 49 Oklahoma Employment Security Commission. (2023). Oklahoma City Metropolitan Statistical Area Local Briefing. <https://oklahoma.gov/content/dam/ok/en/oesc/documents/labor-market/publications/workforce-briefings/2023/okc-msa-workforce-briefing-2023.pdf>
- 50 ACOG. (2024). New Energy Workforce Industry Plan. <https://acogok.org/wp-content/uploads/2024/03/ACOG-CEDS-Workforce-Plan.pdf>
- 51 OEMA. (2024). Press Releases. <https://oemaok.org/pressrelease/>
- 52 EPA. (n.d.) Smart Growth and Climate Change. <https://www.epa.gov/smartgrowth/smart-growth-and-climate-change>
- 53 Engineering News Record. (2014). Communities Ramp Up Tornado Defenses. <https://www.enr.com/articles/531-communities-ramp-up-tornado-defenses>
- 54 OG&E. (n.d.). Efficiency Programs. https://www.oge.com/wps/portal/ord/energy-solutions/efficiency-programs/rebates/!ut/p/z1/lZFNj4JADIZ_iweO0i7DjoO3MRhG3QSMgtiLAYNIomCQXbL_fkmlyWrwq7c2z9v2bYEgBMqjnyyNqqzlo0OTr4lvDFSOsoTx4S2FjdxSC2s2MplQDFYtoGyupg66biDHOGemGHHfS0RnAPSW3pnPPhs9jmVgmgyRvabHOyHxxfn3AXrcfgXUjrg4EIGOGwecuxPLM5AZt0DHia6Bjhs822IKIB6KuH2YzGMmUqAy2SVIUurfZVPeV9XpPNRQw7qu9TjLU31bHDXsEuyLcwXhfw5OR9_3Q8wmfYp_a9n7A9JKmgc!/dz/d5/L2dBISEvZ0FBIS9nQSEh/
- 55 OEC. (n.d.) Reduce Energy Costs at Home. <https://okcoop.org/hecp/>
- 56 OMPA. (n.d.) Rebate Programs. <https://www.ompac.com/services/rebate-programs/>
- 57 Edmond Electric. (n.d.). Rebate & Programs. <https://www.edmondok.gov/1271/Rebates-Programs>
- 58 ACOG. (2024). Tree Canopy Assessment – Planting Priority. <https://acog-maps-and-data-acog.hub.arcgis.com/maps/ACOG::tree-canopy-assessment-planting-priority/about>
- 59 OKC Beautiful. (n.d.). Tree OKC. <https://www.okcbeautiful.com/treeokc>
- 60 OEMA. (n.d.) Emergency Management Phases. <https://oema.org/>
- 61 OEMA (2019). State of Oklahoma Emergency Operations Plan. <https://oklahoma.gov/content/dam/ok/en/oem/documents/state-eop-101219.pdf#:~:text=The%20plan%20directs%20State%20departments%20and%20agencies%20to,welfas>
- 62 FEMA. (2025). Emergency Support Functions. <https://www.fema.gov/emergency-managers/national-preparedness/frameworks/response>

- 63 FEMA. (2022). Emergency Support Functions Appendix. https://www.fema.gov/cbrn-tools/key-planning-factors-chemical-incident/appendix_
- 64 National Weather Service. (2025). Top Ten Deadliest Oklahoma Tornadoes (1882- Present). <https://www.weather.gov/oun/tornadodata-ok-deadliest>
- 65 National Oceanic and Atmospheric Administration. (2023). The Top 10 Costliest U.S. Tornadoes. [https://www.spc.noaa.gov/faq/tornado/damage\\$.htm](https://www.spc.noaa.gov/faq/tornado/damage$.htm)
- 66 U.S. Energy & Employment Report. (2025). 2025 USEER County Data. <https://www.energy.gov/policy/us-energy-employment-jobs-report-useer>
- 67 American Petroleum Institute. (2023). New Analysis: Oklahoma's Abundant Natural Gas and Oil Resources Provide over \$57Billion in Economic, Trade & Job Benefits.
- 68 Oklahoma CareerTech. (n.d.). Oklahoma CareerTech. <https://oklahoma.gov/careertech.html>
- 69 Bureau of Labor Statistics. (2025). Oklahoma – Economy at a Glance. <https://www.bls.gov/eag/eag.ok.htm>
- 70 ACOG. (2022). New Electric Energy Workforce Industry Plan. <https://acogok.org/wp-content/uploads/2024/03/ACOG-CEDS-Workforce-Plan.pdf>
- 71 Net Zero America (2021). Data Sheets: Summary of State Level Impacts. <https://netzeroamerica.princeton.edu/?explorer=year&state=national&table=2020&limit=200>
- 72 Lim J, Alkin M, Frank M.R. (2023). Nature Communications. Location is a major barrier for transferring U.S. fossil fuel employment to green jobs. <https://www.nature.com/articles/s41467-023-41133-9>
- 73 Greater OKC. (2025). Partnerships build pathways for OKC's future workforce. <https://www.abetterlifeokc.com/news/2025/10/07/both/partnerships-build-pathways-for-okc-s-future-workforce/>
- 74 The Journal Record. (2025). Oklahoma hub trains next wave of wind workers. <https://journalrecord.com/2025/03/31/oklahoma-hub-trains-next-wave-of-wind-workers/>
- 75 Oklahoma Tourism and Recreation. (2025). Recreational Trails Program. <https://otrd.travelok.com/recreational-trails-program/>
- 76 U.S. Department of the Interior. (2025). Land and Water Conservation Fund. <https://www.doi.gov/lwcf>
- 77 U.S. Department of Transportation. (2025). Better Utilizing Investments to Leverage Development Grant Program. <https://www.transportation.gov/BUILDgrants>
- 78 U.S. Federal Highway Administration. (2025). Surface Transportation Block Grant Program. <https://www.fhwa.dot.gov/specialfunding/stp/>
- 79 U.S. Department of Housing and Urban Development. (2025). Community Development Block Grant Program. <https://www.hud.gov/hud-partners/community-cdbg#close>
- 80 Association of Central Oklahoma Governments. (2025). Rural Economic Action Plan Grants. <https://www.acogok.org/reap/>
- 81 U.S. Economic Development Administration. (2025). FY 2025 Disaster Supplemental. <https://www.eda.gov/funding/funding-opportunities/fiscal-year-2025-disaster-supplemental>
- 82 Oklahoma Department of Transportation. (2025). Oklahoma Public Transit Revolving Fund. <https://oklahoma.gov/odot/programs-and-projects/programs/multimodal/transit-programs/public-transit-revolving-fund.html>
- 83 Bloomberg Philanthropies. (2025). Asphalt Art Initiative. <https://asphaltart.bloomberg.org/>
- 84 Oak Foundation. (2025). Programmes. <https://oakfnd.org/programmes/global-climate-initiatives-programme/>

- 85 Energy Information Administration. (2025). Annual Energy Outlook 2025. <https://www.eia.gov/outlooks/aeo/>
- 86 BLS. (n.d.) Green Jobs Definition. <https://www.bls.gov/green/home.htm>
- 87 Velocity OKC. (2025). OKC's 2025 Economic Outlook. <https://www.velocityokc.com/blog/economy/oklahoma-city-s-2025-economic-outlook/>
- 88 U.S. Census Bureau. (2024). American Community Survey 5-Year Estimates (2019-2023). <https://www.census.gov/programs-surveys/acs/technical-documentation/table-and-geography-changes/2023/5-year.html>
- 89 Greater Oklahoma City. (2025). Oklahoma Ranks Among Top States for Inbound Migration, Drawing Young Professionals and Retirees. <https://www.greateroklahomacity.com/news/2025/04/01/accolade/oklahoma-ranks-among-top-states-for-inbound-migration-drawing-young-professionals-and-retirees/>
- 90 Greater Oklahoma City. (n.d.) Key Industries: Energy. <https://www.greateroklahomacity.com/industries/energy/>
- 91 U.S. Department of Energy. (2025). Energy and Employment Report. <https://www.energy.gov/policy/us-energy-employment-jobs-report-user>
- 92 Greater Oklahoma City. (n.d.) Key Industries: Aviation and Aerospace. <https://www.greateroklahomacity.com/industries/aviation-and-aerospace/>
- 93 Greater Oklahoma City. (n.d.) Key Industries: Biotech. <https://www.greateroklahomacity.com/industries/biotech/>
- 94 Greater Oklahoma City. (n.d.) Key Industries: Energy. <https://www.greateroklahomacity.com/industries/logistics/>
- 95 Greater Oklahoma City. (n.d.) Key Industries: Energy. <https://www.greateroklahomacity.com/industries/shared-services/>
- 96 BLS. (2025). Oklahoma City Economy at a Glance. https://www.bls.gov/eag/eag.ok_oklahomacity_msa.htm
- 97 Oklahoma Employment Security Commission. (n.d.) Industry and Occupational Employment Projections. <https://oklahoma.gov/oesc/labor-market/employment-projections.html>
- 98 Oklahoma Employment Security Commission. (n.d.) Industry and Occupational Employment Projections. <https://oklahoma.gov/oesc/labor-market/employment-projections.html>
- 99 Census on the map. (2022). Inflow/Outflow Analysis for Oklahoma County. OnTheMap
- 100 ACOG. (2024) Comprehensive Economic Development Strategy. acogok.org/wp-content/uploads/2024/12/Final-CEDS-Report-2024-Double-Spread.pdf
- 101 OKC.gov.(2025). OKC Utilities addresses main breaks with stronger infrastructure plan. <https://www.okc.gov/News-articles/OKC-Utilities-addresses-main-breaks-stronger-infrastructure-plan>
- 102 The Oklahoman. (2024). Oklahoma wind farm development facing local and potential legislative opposition. <https://www.oklahoman.com/story/business/energy-resource/2024/12/03/lincoln-county-oklahoma-cedar-run-wind-project-pushback/76733165007/>
- 103 National Economic Research and Resilience Center. (2024). The Challenges and Opportunities to the Local Workforce Associated with Community Scale Energy Transitions. https://www.eda.gov/sites/default/files/2025-06/NERRC_Energy_Transitions_Research_Brief_Final.pdf
- 104 Nature. Lim J et.al. (2023). Location is a major barrier for transferring U.S. fossil fuel employment to green jobs <https://www.nature.com/articles/s41467-023-41133-9>

- 105 Oklahoma Career Tech. (2023). Economic impact of CareerTech programs nears \$1 billion for state, new study finds. <https://oklahoma.gov/careertech/media-center/press-releases/2024/economic-impact-of-careertech-programs-nears--1-billion-for-stat.html>
- 106 O*NET Resource Center. (n.d.) Green Occupations. https://www.onetcenter.org/dictionary/22.0/excel/green_occupations.html
- 107 Oklahoma Employment Security Commission. (n.d.) Industry and Occupational Employment Projections. <https://oklahoma.gov/oesc/labor-market/employment-projections.html>
- 108 Net Zero America (2021). Data Sheets: Summary of State Level Impacts. <https://netzeroamerica.princeton.edu/?explorer=year&state=national&table=2020&limit=200>
- 109 NREL. (2022). *Oklahoma's Clean Energy Jobs Potential Through 2030*. Retrieved from. <https://docs.nrel.gov/docs/fy22osti/82211.pdf>
- 110 Oklahoma.gov.(2025). Training Opportunities. <https://oklahoma.gov/workforce/job-seekers/training.html>
- 111 Oklahoma Career Tech. (n.d.). About. <https://oklahoma.gov/careertech.html>
- 112 OSU. (2023). Greater Plains Center of Excellence: About. <https://ceat.okstate.edu/det/great-plains-center/>
- 113 OREEP. (n.d.). About. <https://www.oreep.org/>
- 114 Urban League of Greater Oklahoma City. (n.d.). Workforce and Career Development. <https://urbanleagueok.org/program-category/workforce-and-career-development/>
- 115 National Urban League. (n.d.) Urban Energy Jobs Program. <https://nul.org/program/urban-energy-jobs-program>
- 116 NHSOKLA. (n.d.). About. <https://www.nhsokla.org/>
- 117 NeighborWorks in Oklahoma. (2024) FY 2024 Impact. <https://www.nnwa.us/media/jjlf5xlf/ok-ig-1-5-combined.pdf>
- 118 OKACAA. (n.d.). Oklahoma Weatherization Training Center. <https://okacaa.org/training-center/>
- 119 OEWC. (n.d.) Who We Are. <https://oklahoma.getintoenergy.com/>
- 120 Velocity OKC. (2025). Greater OKC Chamber's economic development department's growth efforts in 2024. <https://www.velocityokc.com/blog/economy/greater-okc-chamber-s-economic-development-department-s-growth-efforts-in-2024/>
- 121 SPEER. (n.d.). About Us. <https://eepartnership.org/about/mission-and-purpose/>

Appendix A:

Greenhouse Gas Methodology

Stantec prepared regional greenhouse gas (GHG) emissions inventories for the Association of Central Oklahoma Governments (ACOG) for calendar years 2020 through 2023, based on available datasets. Using this inventory data and applying national forecasting scenarios, Stantec developed emissions forecasts through 2050 to evaluate a possible range of long-term trends under varying energy, economic, and technology conditions. The GHG emissions inventory and forecasts are intended to support technical analysis and scenario planning for ACOG's Comprehensive Climate Action Plan (CCAP) work underway.

Inventory Preparation: 2020-2023

The GHG emissions inventories for 2020-2023 were prepared using sector-specific data from federal, state, and regional sources. For residential, commercial, and industrial stationary energy use, Stantec applied consumption estimates derived from the National Renewable Energy Laboratory (NREL) State and Local Planning for Energy (SLOPE) Database and regional electricity and gas utility records. Transportation emissions were estimated using 2020 National Emissions Inventory (NEI) data, with disaggregation by transportation mode to separate on-road, off-road, rail, waterborne navigation, and aviation emissions. Energy industry and industrial GHG emissions were incorporated using data from the Environmental Protection Agency (EPA) Facility Level Information on Greenhouse Gases Tool (FLIGHT) database and the NEI. Solid waste emissions were calculated using direct methane emissions data from the EPA FLIGHT database. Wastewater emissions were recalculated using the EPA Local Greenhouse Gas Inventory Tool (LGGIT), as provided by the ACOG, with updated population estimates and local treatment technology assumptions. Land use, land use change, and forestry (LULUCF) emissions and sequestration were estimated using land cover data from the National Land Cover Database (NLCD) at the state and ACOG level combined with GHG flux rates from the EPA National Inventory Report (NIR) for Oklahoma. This methodology allowed for a refined representation of the region's land cover types—including forests, wetlands, developed land, cropland, and shrub/grasslands—and their respective carbon flux behaviors based on EPA NIR-derived emission and sequestration weights. Agricultural GHG emissions were estimated by calculating the proportion of total ACOG cropland relative to statewide cropland and applying that ratio to the reported state-level agricultural GHG emissions.

Overview of 2020 & 2023 GHG Emissions Inventories

Between 2020 and 2023, total GHG emissions in the region rise from approximately 31.0 to 31.9 million metric tons of CO₂ equivalent greenhouse gases (million tCO₂e), an increase of 3.0%. This growth is shaped by variation across sectors, with buildings and transportation together accounting for the majority of emissions. In 2023, buildings are the largest overall source, contributing more than 13.7 million tCO₂e—or roughly 43% of total GHG emissions. Transportation follows closely, with combined emissions from on-road, aviation, off-road, and rail totaling approximately 12.2 million tCO₂e, or 38%.

Building-related GHG emissions remain largely stable between 2020 and 2023. Residential emissions decline by 149,247 tCO₂e (-3.3%), while commercial buildings dip before recovering, ending 93,629 tCO₂e below 2020 levels (-1.5%). Industrial building emissions increase by 618,206 tCO₂e (23.3%)—potentially reflecting shifts in output intensity and operational patterns.

Transportation GHG emissions also play a major role in the regional profile. Aviation GHG emissions increase by 504,089 tCO₂e (33%), reflecting increased flight activity. On-road transportation GHG emissions remains the largest individual source of GHG emissions in both years, holding steady just above 9.1 million tCO₂e and accounting for 28.8% of the 2023 total. Rail and off-road GHG emissions see modest gains as a result of increased trade movements.

GHG emissions from energy industries decline between 2020 and 2022, before rebounding to 3.5 million tCO₂e in 2023, down 5.9% compared to 2020. This recovery may reflect increased energy output and a shift in the generation fuel mix. GHG emissions from solid waste, wastewater, and agriculture remain largely unchanged. Land-based emissions, which function as a carbon sink, decline slightly in sequestration capacity—absorbing 62,022 tons less CO₂ in 2023 than in 2020. The following table summarizes presents the changes between 2020 and 2023 across each sector.

Table A-1: Comparison of 2020 & 2023 GHG Emissions Inventories

Sector	2020	2023	Change
Residential Buildings	4,572,084	4,422,837	-3.3%
Commercial / Institutional Buildings	6,125,858	6,032,229	-1.5%
Industrial Buildings	2,655,393	3,273,599	23.3%
Energy Industries	3,720,615	3,500,439	-5.9%
Fugitive Emissions	33,538	34,847	3.9%
On-Road Transportation	9,111,686	9,205,590	1.0%
Railways	81,146	79,303	-2.3%
Aviation	1,539,688	2,043,777	32.7%
Off-Road Transportation	772,113	874,452	13.3%
Solid Waste	565,025	456,292	-19.2%
Incineration / Burning	584,915	584,915	0.0%
Wastewater	122,361	126,369	3.3%
Industrial Emissions	294,076	405,321	37.8%
Emissions From Land	(201,018)	(138,996)	-30.9%
Agriculture	1,031,214	1,029,602	-0.2%
Total GHG Emissions (tCO ₂ e)	31,008,695	31,930,575	3.0%

Figure A-1 presents a breakdown of the 2023 GHG emissions inventory.

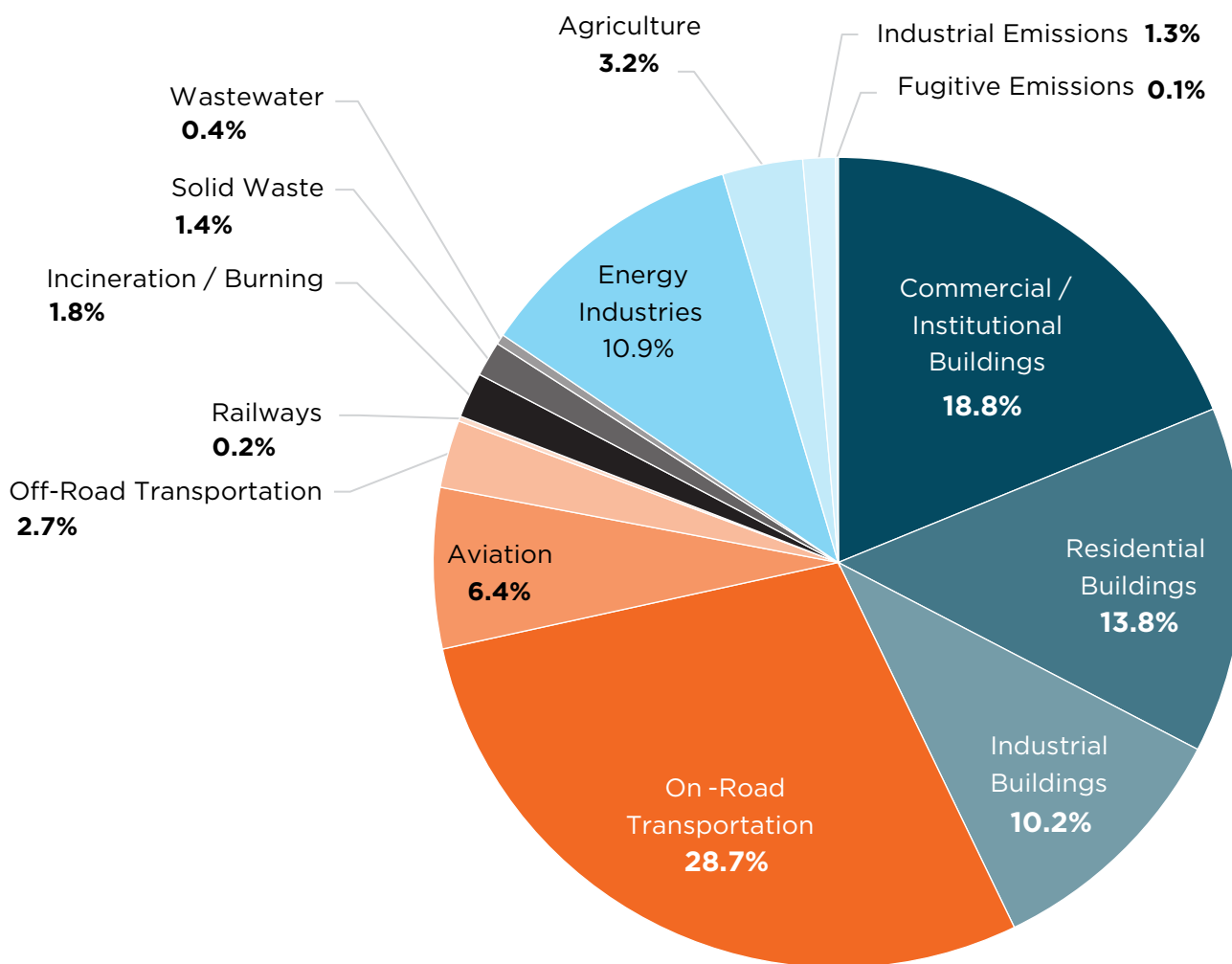


Figure A-1: Central Oklahoma's 2023 GHG Inventory

Emissions Forecast 2024-2050

Using the prepared 2020-2023 inventories as a baseline, Stantec utilized Energy Information Administration (EIA) Annual Energy Outlook (AEO) forecast data⁸⁵ and the GHG emissions inventories to inform the energy and emissions projections to 2050. Five distinct scenarios were modeled to capture a range of potential futures for GHG emissions in the region – these are as follows:

- **Reference Case:** Depicts a business-as-usual (BAU) trajectory, assuming continuation of current policies, economic trends, and energy consumption patterns without significant additional interventions.
- **High Economic Growth:** Assumes accelerated regional economic expansion, driving increased industrial activity, energy demand, and consequently, higher emissions across sectors.
- **Low Economic Growth:** Envisions slower economic development with reduced energy use and GHG emissions, reflecting subdued industrial output and population growth.
- **Aggressive Clean Energy Transition:** Projects rapid deployment of renewable energy sources, widespread electrification, and enhanced energy efficiency measures that collectively contribute to substantial GHG emissions reductions.
- **Technology Innovation:** Envisions transformative breakthroughs in low-carbon technologies, including advanced carbon capture and storage, enabling significant decoupling of emissions from economic growth.

The results of the GHG emissions forecast are presented below in **Figure A-2**.

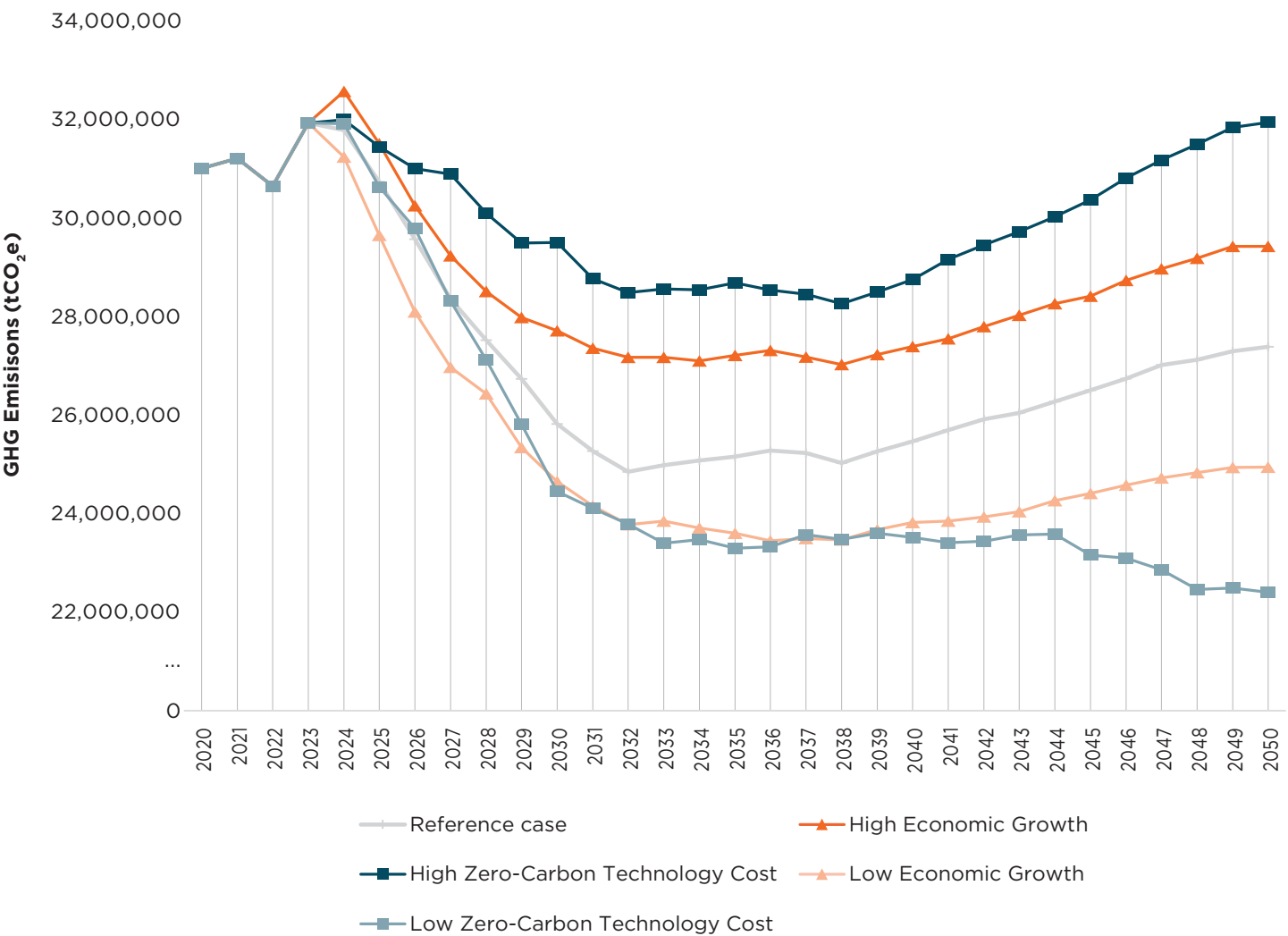


Figure A-2: Central Oklahoma’s GHG Forecast

When benchmarked against the Reference Case - which reflects relatively stable GHG emissions over time - it is evident that the region is not on a path toward significant decarbonization under current trends. While GHG emissions decline modestly from 2020 levels, the reductions plateau after 2030. Specifically, the Reference Case projects a 17% decrease below 2020 levels by 2030, but only a 12% reduction by 2050, indicating that without new policies or structural shifts, existing measures will have limited long-term impact. The limited decline observed in the Reference Case highlights the critical role of external drivers - such as economic conditions, technological advancement, and policy ambition - in shaping long-term GHG emissions reductions and outcomes. A brief evaluation of each scenario as compared to the Reference Case is noted below:

- **High Economic Growth:** GHG emissions initially decline, but rebound in later decades. By 2030, emissions are 10% lower than 2020, but by 2050 they are 7% higher than the Reference Case, reflecting increased energy demand and consumption driven by rapid economic expansion.
- **Low Economic Growth:** GHG emissions fall more sharply due to reduced energy demand. By 2030, emissions are 20% below 2020 levels and remain 9% lower than the Reference Case by 2050, indicating a sustained but moderate long-term decline.
- **High Zero-Carbon Technology Cost:** GHG emissions remain close to the Reference Case, with only modest deviations. By 2030, emissions are 8% lower than 2020, and by 2050 they are just 2% below the Reference Case, suggesting that high technology costs constrain adoption of low-carbon solutions.
- **Low Zero-Carbon Technology Cost:** GHG emissions decline more significantly, mirroring the low economic growth scenario. By 2030, emissions are 21% below 2020 levels, and by 2050 they are 18% below the Reference Case, demonstrating the potential of affordable clean technologies to accelerate decarbonization.

Taken together, these results suggest that slower economic growth and more affordable clean technologies deliver the greatest reductions in GHG emissions—up to 18% below the Reference Case by 2050. While transportation emissions are projected to rise in the Reference Case, they are not inherently inelastic. With the right policies in place at the federal, state, and local levels—such as incentives for low-carbon and electric vehicles and investments in associated infrastructure—transportation GHG emissions could decline significantly. This underscores the importance of accelerating decarbonization in sectors where meaningful reductions are achievable through coordinated policy and market transformation. **Figure A-3** depicts this for the Reference Case.

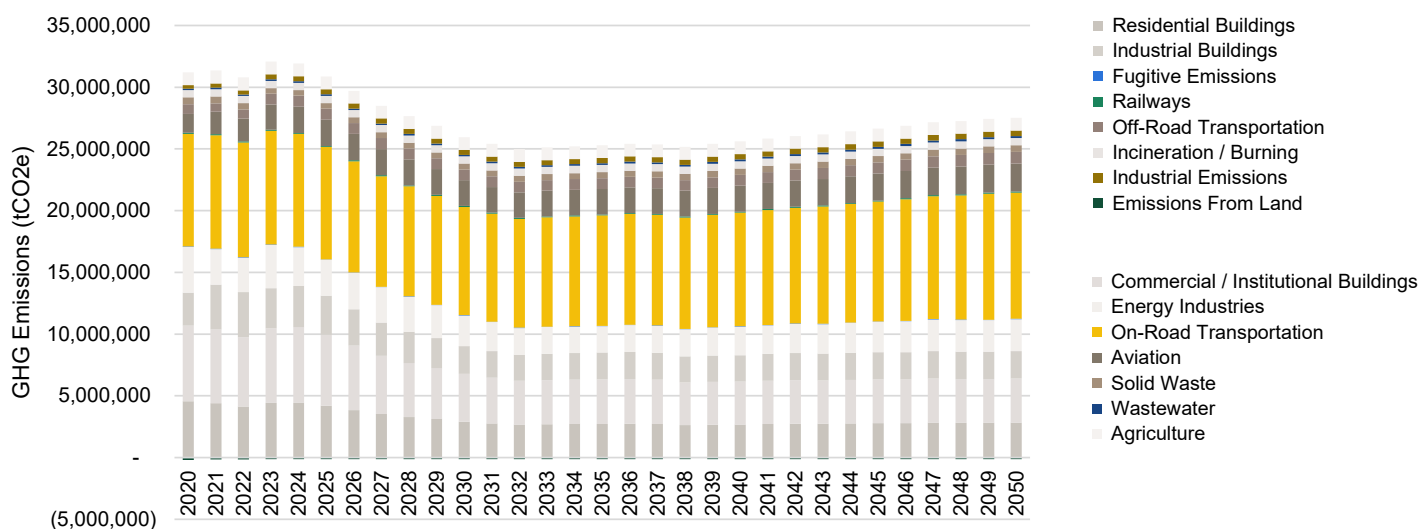


Figure A-3: Reference Case GHG Forecast - Sector Breakdown

Appendix B:

ACOG Action Prioritization Feedback

The following tables show the preliminary action strategies presented to stakeholders in the second round of outreach workshops. A comprehensive list of over 150 GHG mitigation and adaptation strategies was compiled from the sources listed below and refined after the first round of outreach workshops to reach the actions in this appendix.

- Oklahoma Office of Energy. [Oklahoma Energy Assurance Plan](#)
- U.S. Department of Energy. [Grid Modernization Initiative](#)
- U.S. Department of Energy. [Buildings Decarbonization](#)
- International Energy Agency. [Hydropower Resilience Report](#)
- Electric Power Research Institute. [Smart Grid Research](#)
- U.S. Environmental Protection Agency. [Energy Efficiency & Demand Response](#)
- Association of Central Oklahoma Governments. [Encompass 2045: Oklahoma City Regional Transportation Plan](#)
- U.S. Department of Energy. [Convenient Transportation: An Action Plan for Energy and Emissions Innovation](#)
- U.S. Department of Energy. [Efficient Transportation: An Action Plan for Energy and Emissions Innovation](#)
- U.S. Department of Energy. [An Action Plan for Rail Energy and Emissions Innovation](#)
- U.S. Department of Energy. [A Market and Technology Assessment for Off-Road Vehicle & Equipment Energy and Emissions Innovation](#)
- U.S. Department of Energy. [ERP Framework for Industrial Portfolios](#)
- ADI Analytics. [Refineries in Transition: Strategies for Decarbonization](#)
- IPIECA. [Addressing Adaptation in the Oil and Gas Industry](#)
- Urban Sustainability Directors Network. [Resilience Hubs Guide](#)
- U.S. Department of Agriculture. [Natural and Working Lands Climate-Smart Strategy](#)
- U.S. Environmental Protection Agency. [Case Studies of Zero Waste Plans](#)
- Intergovernmental Panel on Climate Change. [Waste Management](#)

Actions have been sorted based on number of total votes from all county, municipal, and general partner participants.

Table B-1: Transportation & Mobility Proposed Actions Ranked

Proposed Action Strategy	Total Stakeholder Votes
Assist cities in evaluating adaptive traffic signal technologies.	43
Create a municipal dense-development strategy to promote walkable, bikeable neighborhoods.	37
Expand compressed natural gas (CNG) usage for municipal fleet vehicles and heavy-duty trucks.	18
Develop Policy Requirements for Transportation Funding.	15
Facilitate utility partnerships to expand community-based EV charging.	12
Create a regional roadmap for EV and alternative fuel infrastructure and fleet transition.	10
Support rural and small-town EV charging co-ops.	10
Offer EV fleet planning tools, joint procurement support, and grant calendars.	8
Coordinate regional NEVI fast charger deployment and grant access.	7
Coordinate tribal and regional fleet electrification pilot projects.	7
Standardize EV site planning with feasibility templates and utility coordination guides.	1
Additional Action: Light rail for OKC	1

Table B-2: Infrastructure & Energy Sector Actions Ranked

Proposed Action Strategy	Total Stakeholder Votes
Develop a series of trainings for city planner and consultants/contractors on most up-to-date International Building Code standards and associated policy shifts.	27
Establish a resilient infrastructure framework for public facilities and services.	22
Coordinate group procurement of energy-efficient upgrades (e.g., LED lighting) and high-impact retrofits for municipal facilities.	20
Host collaborative planning between cities and utilities for grid resilience and distributed energy strategies.	17
Develop cost-benefit menu of high-impact building retrofits/efficiency measures for public housing authorities, municipalities, school facilities, and community-wide programs and identify corresponding funding opportunities.	17
Provide grant development process to identify, prioritize, and fund resilience projects (e.g., solar + backup power, microgrids).	14
Advance landfill gas capture and beneficial reuse projects across the region.	9
Promote adoption of heat pumps and geothermal systems in municipal and residential sectors.	8
Develop a shared platform to benchmark municipal energy use and track emissions.	7
Promote peak energy demand reduction programs during weather extremes.	6
Convene an Energy Assurance Coalition with local governments and utility partners.	5
Deliver project selection tools and GHG reduction calculators to help prioritize high-impact retrofits.	4
Develop and host trainings for how to conduct building energy audits.	4
Support deployment of distributed wind energy across the region.	4
Facilitate energy performance contracting (EPC) by providing legal templates and project support.	3
Conduct feasibility scans for solar + storage systems on public buildings and land.	2

Table B-3: Industry & Economic Development Proposed Actions Ranked

Proposed Action Strategy	Total Stakeholder Votes
Support post-disaster economic continuity planning.	6
Position ACOG as the regional connector for DEQ's oil and gas emissions rebate program.	6
Coordinate regional workforce development for clean energy and climate resilience.	5
Partner with DEQ to provide technical assistance for small and mid-sized businesses on emissions reduction opportunities.	5
Engage top 50% of emitters in the ACOG voluntary air quality partnership program by 2027.	3
Launch a regional clean energy workforce training partnership.	2
Assist grant applications for industrial resilience and decarbonization.	1
Designate clean-tech or green manufacturing clusters.	1
Deliver technical assistance for voluntary industrial GHG tracking and reporting.	1
Support local incentives for energy upgrades in commercial/industrial buildings.	1
Plan shared-use industrial corridors with clean energy and logistics infrastructure.	0
Provide emissions intensity and climate risk maps to inform industrial siting and zoning.	0

Table B-4: Environment & Natural Systems Proposed Actions Ranked

Proposed Action Strategy	Total Stakeholder Votes
Update regional stormwater management requirements to meet future climate and water quality needs.	32
Coordinate the development of multi-jurisdictional watershed planning and corresponding restoration projects.	25
Develop a regional parking lot design guide to reduce impervious cover and enhance green space.	25
Launch a regional urban forestry initiative with planting tools and equity targets.	19
Develop a standardized tool to guide green infrastructure design based on runoff-to-pervious ratios.	18
Align hazard mitigation plans with green infrastructure projects.	12
Develop high-resolution maps to prioritize locations of green infrastructure investments.	9
Host conservation finance roundtables to expand funding options.	7
Partner with tribal and rural stakeholders on soil health and land management incentives.	5
Estimate carbon sequestration potential from local forestry and land restoration.	3

Table B-5: Community Well-Being & Emergency Management Proposed Actions Ranked

Proposed Action Strategy	Total Stakeholder Votes
Coordinate mutual aid and resource-sharing agreements for emergency services.	26
Convene cross-sector emergency management training.	23
Run region-wide public outreach campaigns focused on heat, air quality, and storm preparation.	19
Convene cross-sector coordination with working groups around energy, resilience, land use, emergency management, and transportation.	15
Coordinate strategic partnerships with the Department of Emergency Management and others to align alerts and emergency protocols.	13
Explore shared insurance or risk pooling mechanisms for climate recovery.	13
Help school districts design and fund school-based resilience hubs.	12
Expand insurance and county-level support for community climate resilience.	10
Provide emergency management toolkits tailored to rural and under-resourced towns.	9
Deliver plug-and-play emergency operations templates and signage protocols.	8

Appendix C:

Workforce and Staffing Needs Analysis

Central Oklahoma's risk reduction and infrastructure resilience strategy is ambitious and multifaceted. Spanning transportation, energy, industry, and natural systems, each measure demands specialized skills and coordinated workforce planning. From reducing fuel consumption through engineered traffic solutions to expanding tree canopy and green infrastructure, these actions will reshape how the region builds, moves, and manages resources.

This workforce analysis looks at what it will take to deliver on those commitments. It does not simply count jobs; it examines the systems and partnerships needed to prepare people for roles in clean transportation, energy retrofits, industrial decarbonization, and environmental resilience. The review begins with a snapshot of current labor market conditions, then explores barriers and opportunities that influence readiness. It connects CCAP strategies to occupational demand, identifies gaps compared to business-as-usual projections, and highlights partners who can help scale talent pipelines.

The key objectives of this analysis are:

- Understand today's workforce and economic context.
- Identify systemic challenges that could slow progress.
- Forecast how climate measures will shift occupational demand and where gaps will likely emerge.
- Spotlight programs and coalitions that can accelerate training and recruitment.
- Recommend actionable steps to align workforce development with risk reduction goals.

Geographic Focus

The analysis focuses on the Oklahoma City Metropolitan Statistical Area (MSA), which includes six counties: Oklahoma, Canadian, Cleveland, Lincoln, Logan, and Hughes. Unless otherwise noted, all data reflect this geographic area. Data referenced include the U.S. Census Bureau, U.S. Bureau of Labor Statistics (BLS), Federal Reserve Economic Data, and regional reports from the Association of Central Oklahoma Governments (ACOG), and Central Oklahoma Workforce Innovation Board (COWIB).

Key Terminology

Standard BLS definitions are used for occupations and industries, which may differ from CCAP greenhouse gas (GHG) sector terminology. These are:

- **Occupation:** An occupation is a set of tasks or duties performed by an individual in their job. Occupations are defined using Standard Occupational Classification (SOC) codes, which group similar roles based on the nature of work performed. These codes allow consistent reporting and analysis across industries and are organized into broader **occupational sectors** that aggregate related job functions.
- **Industry:** In this analysis, **industry** refers to the classification of economic activity based on where people work, as defined by the U.S. Bureau of Labor Statistics (BLS). Industries group establishments that produce similar goods or services, such as construction, manufacturing, healthcare, or transportation into **industrial sectors**. This differs from the greenhouse gas (GHG) sectors used in the CCAP, which categorize emissions sources rather than employment patterns. For example, the BLS "Manufacturing" industry includes all manufacturing jobs, while the CCAP "Industry" sector refers specifically to emissions from industrial and manufacturing facilities.

- **Green Jobs:**⁸⁶ Green jobs are occupations that contribute directly to environmental sustainability and resource conservation. According to the U.S. Bureau of Labor Statistics (BLS), these roles fall into two categories: jobs in businesses that produce goods or provide services benefiting the environment or conserving natural resources, and jobs where workers' duties involve making production processes more environmentally friendly or reducing resource use. For the purposes of this analysis, green jobs include positions that support CCAP implementation, such as renewable energy installation, energy efficiency retrofits, water and wastewater management, climate-resilient construction, environmental restoration, and emergency preparedness.

Understanding Current Workforce Dynamics

Baseline Conditions

Oklahoma City's labor market reflects steady growth and economic diversification. As the state's primary economic engine, the metro contributes nearly 40% of Oklahoma's GDP and over one-third of its population. Job growth has been consistent, with a projected 2.5% increase in 2025, adding approximately 18,200 jobs.⁸⁷

Population and labor force trends underscore Oklahoma City's position as a growing metro with strong economic fundamentals. The population of the metro area is over 1.4 million in 2025 and reflects a steady annual growth rate of nearly 1%. Educational attainment is improving, with 36.4% of adults holding post-secondary degrees, which is above the state average. Labor force participation is robust, supported by a younger-than-average population (median age 34.9 years) and steady in-migration from other states.^{88, 89}

Economic Structure

Central Oklahoma's economy is built on a diverse mix of industries that provide stability and growth potential. These sectors not only shape the region's economic identity but also influence how effectively Oklahoma City can prepare for risk reduction and infrastructure resilience. This section outlines the contributions of these industrial clusters and provides an overview of the impacts it may have upon and face as this Plan moves into implementation:

- **Energy (Renewable and Traditional)**

While oil and gas are integral to the foundations of the region, Oklahoma City is also rapidly diversifying into renewables. Major energy firms headquartered in the city, including Devon Energy and Continental Resources, are investing in carbon reduction and grid modernization. The region's proximity to wind-rich counties positions it as a hub for clean energy workforce development, supported by CareerTech programs and industry partnerships. A distribution of jobs in the Oklahoma City is shown in **Figure C-1**. Of the over 46,000 total jobs, over three quarters of them are in the oil and gas sector. Each position in this sector is estimated to generate 2.5 additional jobs across related industries such as construction and logistics.⁹⁰ While traditional energy roles dominate today, the presence of jobs in wind, solar, and energy efficiency is growing, creating new pathways for technical training and long-term resilience.

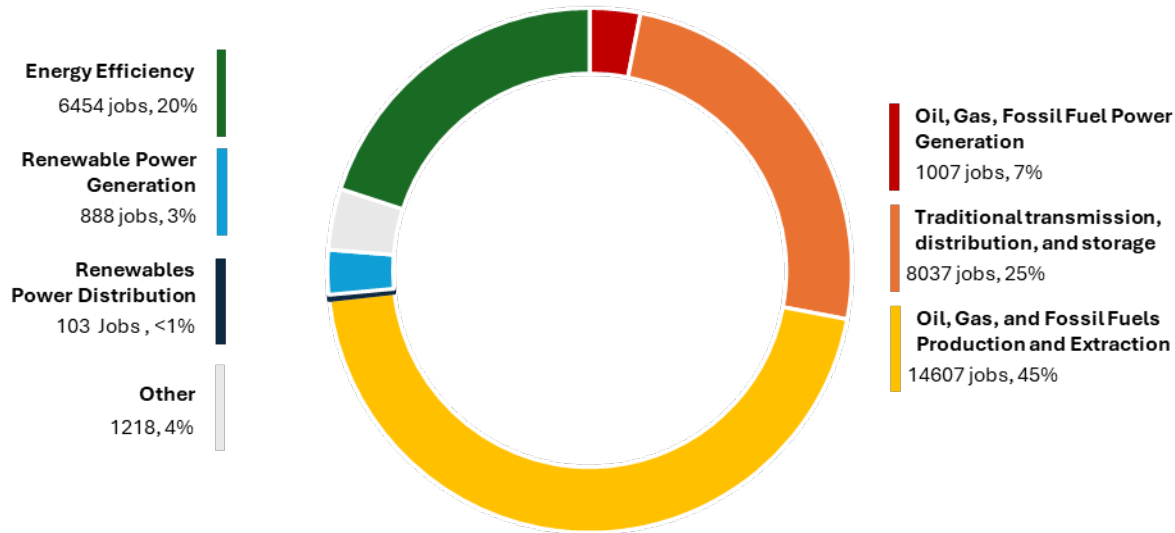


Figure C-1: Energy Jobs in the Oklahoma City MSA⁹¹

- **Aviation and Aerospace⁹²**

The aerospace industry is the region's largest economic driver, generating \$8.8 billion in goods and services and supporting 44,539 jobs. Oklahoma City hosts Tinker Air Force Base, the largest air depot maintenance facility for the U.S. Department of Defense, and the FAA's Mike Monroney Aeronautical Center, alongside a growing private sector specializing in maintenance, repair, overhaul, and unmanned aerial systems.

The aerospace sector will continue to serve as a strong economic anchor, and its role in the green job transition will be include integrating sustainable technologies, improving energy efficiency in operations, and supporting resilient infrastructure upgrades across defense and commercial facilities.

- **Biotech⁹³**

Oklahoma City's bioscience cluster supports 36,000 workers and generates \$3.1 billion in total wages, driven by research institutions, biomanufacturing facilities, and healthcare innovation hubs in the Oklahoma City Innovation District. The sector's role in the green job transition will be focused on advancing biomanufacturing processes that optimize resource and energy usage and supporting innovations in environmental health and sustainability.

- **Transportation and Logistics⁹⁴**

With over 26,000 total jobs, and \$2.6B in total wages, Oklahoma City's central location at the intersection of I-35, I-40, and I-44, combined with access to Class I railroads and Will Rogers World Airport, makes it a strategic hub for logistics and distribution. Automotive suppliers and freight operators benefit from this connectivity, supporting regional and national supply chains and e-commerce growth. The transportation and logistics sector is expected to experience workforce shifts as companies adopt fleet electrification, integrate alternative fuel technologies, and implement strategies aimed at reducing fuel consumption.

- **Shared Services⁹⁵**

Shared services and financial operations have expanded significantly, with Oklahoma City hosting major back-office operations for insurance, telecommunications, and payroll processing, employing over 48,000 people and generating \$4.3B in sector wages. Companies like Paycom and American Fidelity anchor this sector, which benefits from the region's low cost of doing business and strong talent pipeline.

- **Government Jobs⁹⁶**

Government employment accounts for approximately 130,000 jobs in the Oklahoma City MSA, making it one of the largest sectors in the region. This includes federal, state, and local positions across public administration, education, and public safety. While growth in this sector is modest, government roles remain critical for infrastructure, regulatory oversight, and emergency management functions.

Occupational and Industry Projections

Looking ahead, Central Oklahoma is expected to see a 9.6% growth in workforce across all occupations by 2032, which is much higher than the statewide average of 6.5% and the national average of 5.3%, signaling an upward trend in economic outcomes.⁹⁷ **Figure C-2** shows the top twenty fastest growing occupations in the region by percentage growth. Key occupations with relevance to the priority actions include:

- Oil and gas extraction roles dominate projected percentage growth, with occupations such as Derrick Operators, Roustabouts, and Rotary Drill Operators expected to nearly double by 2032. These trends underscore the region’s continued reliance on traditional energy, highlighting the need for transition strategies that address both established and emerging workforce needs in this sector.
- Technical and engineering roles, including Electro-Mechanical and Mechatronics Technologists and Petroleum Engineers, show strong growth, signaling demand for specialized skills in energy and industrial systems. These occupations offer transferable technical expertise that can support future climate action and clean energy initiatives.
- Skilled trades and industrial maintenance positions, such as Industrial Machinery Mechanics and CNC Tool Programmers, are projected to grow steadily, ensuring critical capacity for manufacturing, operational resilience, and adaptation to evolving technologies.

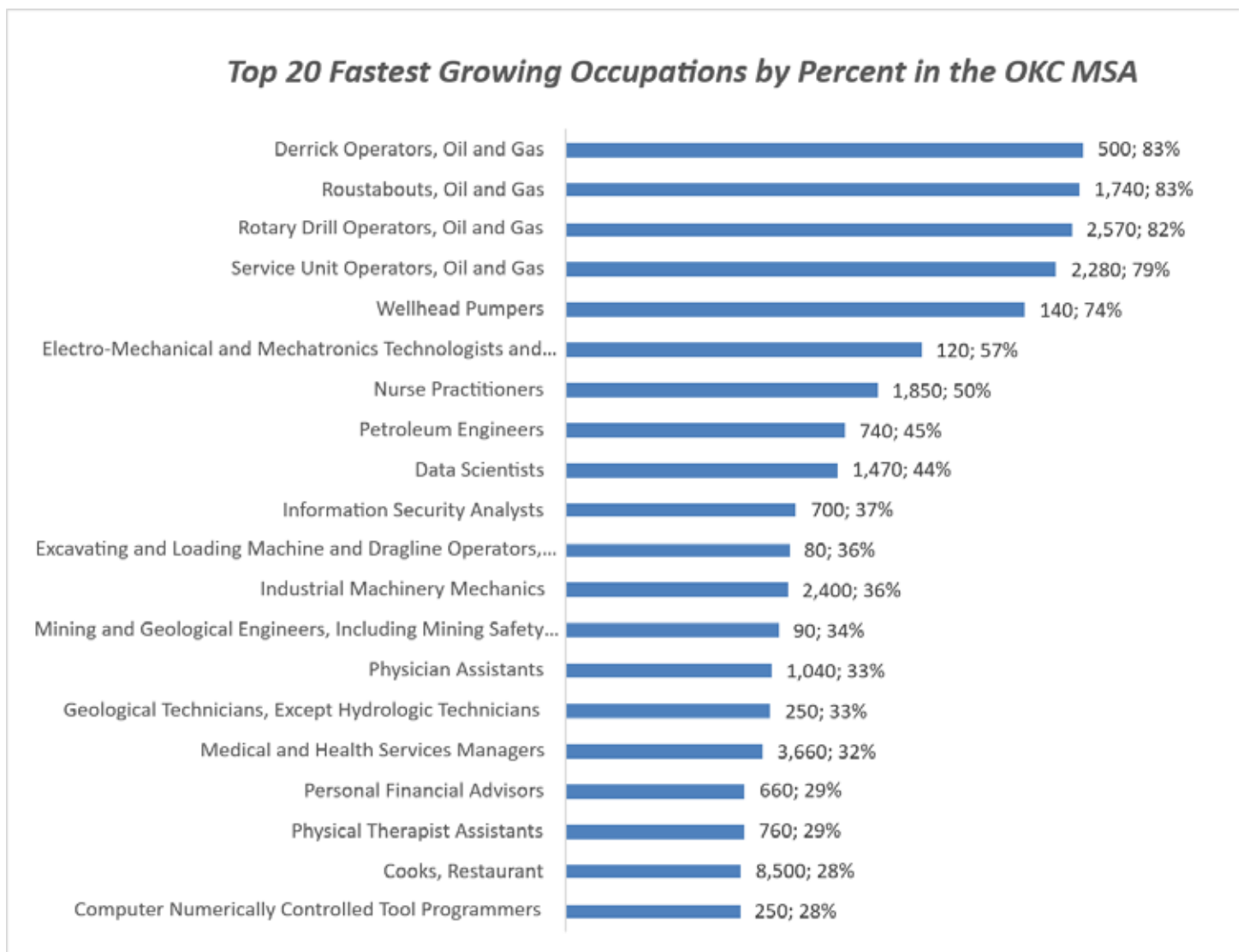


Figure C-2: Top Growing Occupations⁹⁸

Positioning Central Oklahoma for Economic Transition

Central Oklahoma's economic foundation is strong, but its future depends on how effectively the region adapts to evolving market dynamics and infrastructure needs. The following challenges and

Challenges

- **Legacy Industry Dependence**

Oklahoma City remains a hub for oil and gas operations, with thousands of jobs tied to upstream production, engineering, and legal services. Energy companies headquartered in the metro area including Devon Energy and Continental Resources anchor that has historically driven payroll and tax revenue. While this legacy provides stability, it also underscores the need for diversification to reduce economic risk and maintain long-term resilience.

- **Disconnected Rural and Tribal Communities**

Workforce mobility challenges persist across the Greater Oklahoma City Partnership region. Nearly 50% of workers commute across county lines daily, with rural and Tribal Communities often traveling 45+ minutes to access jobs concentrated in Oklahoma County.⁹⁹ Additionally, a small percentage of the population in rural counties are trailing in access to broadband which can exacerbate these challenges.¹⁰⁰

- **Aging Infrastructure and Fragmented Investments**

Oklahoma City's water system illustrates the scale of deferred maintenance. Emergency water main breaks surged to 1,101 in FY2025, nearly double the previous year, due to corrosion and soil movement affecting pipes installed before the 1970s.¹⁰¹ Similar conditions affect the region's other critical infrastructure such as roads, bridges, and grid. Similar vulnerabilities exist across other critical systems such as roads, bridges, and the electrical grid, where aging assets strain reliability. Planning stakeholders noted that repairs often occur in isolation, leaving upstream issues unresolved and causing repeated failures, underscoring the need for coordinated, system-wide investment strategies.

- **Community Resistance to Wind Development**

While Oklahoma ranks among the top three states for wind generation, projects near the Oklahoma City metro face strong local opposition. In Lincoln County, just east of Oklahoma City, residents have organized campaigns against new wind farms, citing property and noise concerns. Legislative debates over turbine setbacks and local control continue, creating uncertainty for future projects.¹⁰²

Opportunities

- **Proximity Advantage for Workforce Transition**

Energy infrastructure and workforce clusters in Oklahoma County and adjacent areas align closely with emerging wind and advanced energy projects. This geographic overlap creates rare opportunities for direct skill transfer without requiring relocation, reducing barriers for displaced workers and accelerating readiness for renewable energy roles.¹⁰³ **Figure C-3** shows the ratio of green jobs to fossil fuel workers across major energy producing areas in the Nation. As seen in the image, the Central Oklahoma region is one of the few major metro areas in the nation that has the potential for a direct replacement of displaced fossil fuel jobs with new jobs in renewables.¹⁰⁴

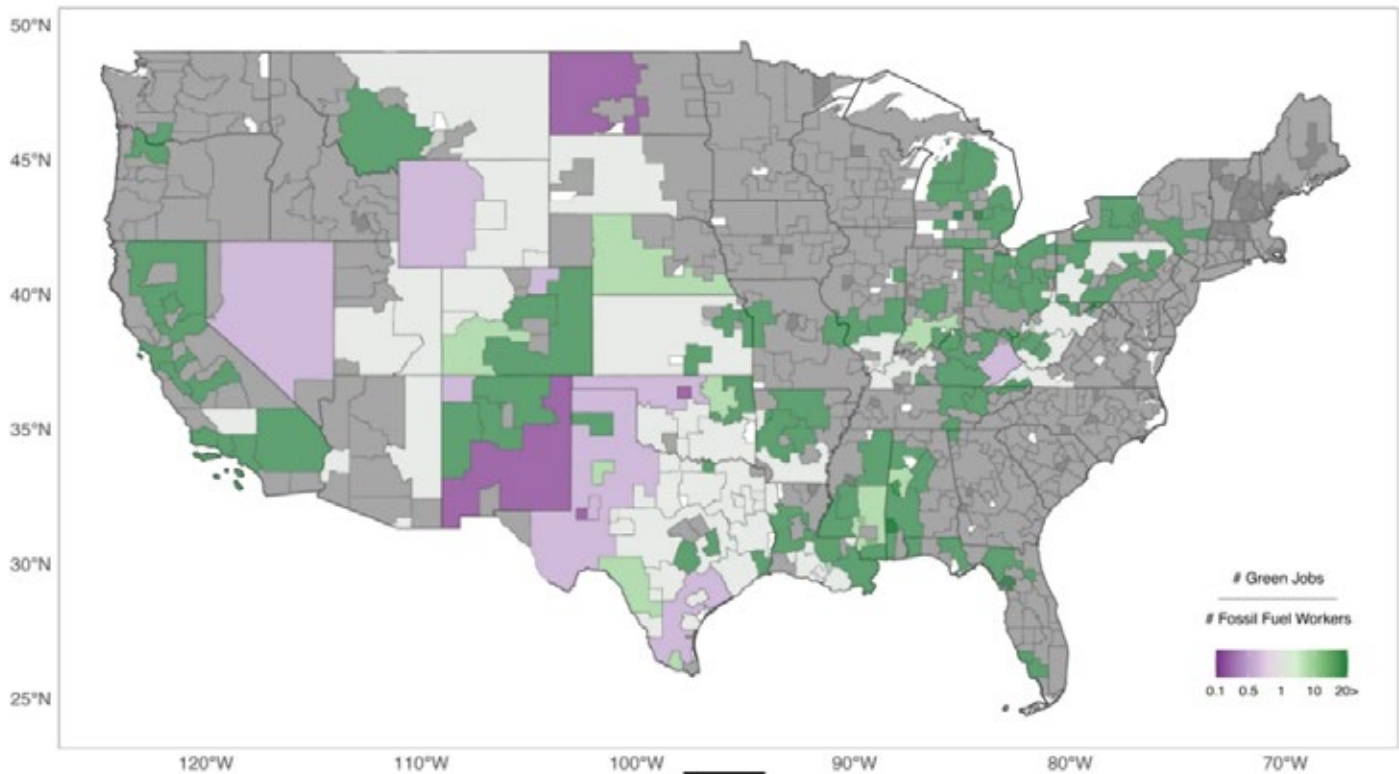


Figure C-3: The Ratio between Expected Green Jobs and Fossil Fuel Worker Employment

While wind energy installations are concentrated to the west and north of the metro, current commuting flows from outer counties into Downtown Oklahoma suggest the availability of workers closer to these installations as well.

- **CareerTech System as a Workforce Backbone**

Oklahoma City's CareerTech network drives measurable impact, contributing \$960 million to the state economy and supporting 8,654 jobs in FY2023. With 9 technology centers throughout Central Oklahoma offering stackable credentials in electrical trades, HVAC, and renewable systems, CareerTech provides scalable pathways for resilience-related careers. Every dollar invested yields \$9.39 in economic output, reinforcing its role in workforce modernization.¹⁰⁵

- **Strong Replicable History of Industry-Academic Partnerships**

Central Oklahoma has a proven record of industry-academic collaboration that can be replicated for resilience and advanced energy sectors. These partnerships demonstrate how shared investment and coordinated planning accelerate workforce readiness and innovation across emerging sectors.

- **Tinker Air Force Base and Aerospace Innovation:** As the largest single-site employer in Oklahoma, Tinker has driven decades of aerospace and defense workforce development. Through initiatives like Tinker and the Primes, the base convenes hundreds of suppliers, educators, and workforce boards annually to align training with advanced manufacturing and maintenance needs. These partnerships have resulted in expanded technical programs at Metro Tech and OSU-OKC, ensuring a steady pipeline of skilled labor for mission-critical operations.
- **BioTC:** Launched in the Oklahoma City Innovation District, BioTC represents a multi-sector investment in life sciences workforce development. The center offers hands-on training in bioprocessing and quality control, reducing onboarding time for employers and creating direct hiring pathways. This model demonstrates how targeted infrastructure and curriculum investments can rapidly scale talent for high-growth industries.

Workforce Implications of Strategic Actions

Delivering the measures outlined in this plan will require a workforce equipped for both immediate implementation and long-term system upkeep. While precise job counts for each action are not projected, this section provides a high-level view of the roles most critical to success, organized by GHG sector and timeframe:

- **Immediate Needs (1-5 years and beyond):** Positions focused on planning, design, and early implementation such as civil engineers, urban planners, and energy auditors along with operational roles to launch new systems.
- **Long-term Needs (Beyond 5 years):** Occupations that sustain and expand resilience strategies, including maintenance technicians, water system operators, and specialists in emerging technologies.

These roles represent critical functions for successful implementation but exclude general administrative positions. Individual actions may require additional specialized expertise, but this section provides a high-level view of workforce demand aligned with ACOG’s priority strategies. Occupations are classified using the Bureau of Labor Statistics’ Standard Occupational Classification (SOC) system.

Transportation & Mobility

Transportation strategies in Central Oklahoma focus on reducing fuel consumption, transitioning fleets to alternative fuels, and expanding multimodal infrastructure. These measures require planners, engineers, and technical specialists to design context-sensitive solutions and support long-term operations of alternative transportation systems.

Table C-1: List of Priority Occupations for Transportation & Mobility CCAP Measures

Occupation Title	Role in Implementation
Immediate Needs	
Urban and Regional Planners	Integrate context-sensitive planning and multimodal strategies
Civil Engineers	Design resilient infrastructure and engineered transportation systems
Misc. Computer Occupations	Spatial analysis for land use and transportation
Surveying and Mapping Technicians	Conduct site surveys for feasibility
Long-term Needs	
Heavy and Tractor-Trailer Truck Drivers	Operate alternative-fuel heavy-duty fleet
Bus Drivers, Transit and Intercity	Support expanded transit services
Electrical Engineers	Maintain EV charging infrastructure
Automotive Service Technicians	Maintain alternative-fuel vehicles

Infrastructure & Energy

Energy resilience actions emphasize efficiency upgrades, renewable energy deployment, and continuity planning for critical services. This sector needs a mix of design professionals, skilled trades, and emergency managers to implement retrofits, install advanced systems, and maintain performance over time.

Table C-2: List of Priority Occupations for Infrastructure & Energy CCAP Measures

Occupation Title	Role in Implementation
Immediate Needs	
Construction Managers	Oversee energy-efficiency retrofits
Architects	Design high-performance building upgrades
Construction Laborers	Execute retrofits and installations
Electricians	Install advanced energy systems
Solar Photovoltaic Installers	Deploy rooftop and ground-mounted solar
Emergency Management Directors	Develop continuity plans
Wind Turbine Technicians	Install and maintain wind systems
Building Inspectors	Verify compliance with updated energy codes
Long-term Needs	
Maintenance and Repair Workers	Maintain building energy systems

Environment & Natural Systems

Nature-based solutions and watershed planning are central to reducing flood risk and enhancing green space. Occupations in this sector include engineers, scientists, and conservation specialists who design and monitor projects that restore ecosystems and manage stormwater effectively.

Table C-3: List of Priority Occupations for Environment & Natural Systems CCAP Measures

Occupation Title	Role in Implementation
Immediate Needs	
Environmental Engineers	Design stormwater and resilience projects
Environmental Scientists	Monitor water quality and watershed health
Conservation Scientists	Implement green infrastructure and restoration
Forest and Conservation Workers	Maintain long-term habitat and green space
Landscape Architects	Develop planting plans and parking lot standards
Hydrologists	Support multi-jurisdictional watershed planning

Industry & Economic Development

Industrial strategies aim to reduce energy use and emissions while maintaining economic continuity. Key roles include managers and engineers who optimize processes, integrate clean technologies, and support operational resilience in manufacturing and related sectors.

Table C-4: List of Priority Occupations for Environment & Natural Systems CCAP Measures

Occupation Title	Role in Implementation
Immediate Needs	
Industrial Production Managers	Manage low-emission manufacturing processes
Industrial Engineers	Optimize resource efficiency
Industrial Machinery Mechanics	Operate and maintain equipment

To better understand workforce trends, all priority roles are grouped into three categories using the O*NET green occupations framework: ¹⁰⁶

- **Green New and Emerging:** Jobs that are appearing or growing rapidly due to clean energy technologies, resilience strategies, and sustainability initiatives. These roles often require specialized training and proactive recruitment to attract new entrants into long-term careers.
- **Green Enhanced Skills:** Existing occupations that need reskilling or upskilling as industries adopt advanced technologies and risk-reduction practices. This category emphasizes equitable transitions for workers in legacy sectors to ensure no one is left behind.
- **Green Increased Demand:** Established roles that will scale significantly to deliver resilience measures, such as skilled trades and technical positions in construction, energy efficiency, and infrastructure maintenance.

Future workforce projections for these occupations showing baseline employment levels, 10-year growth estimates, and green job categorization are summarized in **Table C-5**. While these projections provide a starting point, research suggests a critical gap: BLS data often understate the demand for resilience-related roles. Nationally, occupations essential for implementation, such as civil engineers, hydrologists, and environmental technicians, are projected to grow at or below average rates, even as federal investments in resilience surge. Within Central Oklahoma, the average projected growth rate between 2022 and 2032 for all occupations is 9.6%. As the region’s priority strategies scale, the potential for demand to outpace this average, and projected growth rates is likely.

Table C-5: Current and Future Estimates of Priority Occupations¹⁰⁷

SOC Code	Occupation Title	Green Job Category	2022 Estimate	2032 Projection	Percent Change
19-3051	Urban and Regional Planners	Enhanced Skills	270	280	3.32
47-4011	Construction and Building Inspectors	Enhanced Skills	650	680	3.83
11-9161	Emergency Management Directors	New & Emerging	70	80	4.11
53-3052	Bus Drivers, Transit and Intercity	Increased Demand	380	400	6.37
19-1031	Conservation Scientists	Enhanced Skills	80	90	7.32
17-2081	Environmental Engineers	Enhanced Skills	340	370	7.35
49-3023	Automotive Service Technicians and Mechanics	Enhanced Skills	4600	4970	7.99
17-1012	Landscape Architects	Increased Demand	70	80	8.82
17-2051	Civil Engineers	Enhanced Skills	900	1000	11.43
17-1011	Architects, Except Landscape and Naval	Enhanced Skills	610	680	11.49
49-9071	Maintenance and Repair Workers, General	Enhanced Skills	5970	6660	11.49
53-3032	Heavy and Tractor-Trailer Truck Drivers	Increased Demand	10220	11510	12.62
19-2041	Environmental Scientists and Specialists, Including Health	Enhanced Skills	200	230	12.94
11-3051	Industrial Production Managers	Enhanced Skills	430	500	15.7
47-2061	Construction Laborers	Increased Demand	5270	6120	16.26
17-2071	Electrical Engineers	Enhanced Skills	720	840	16.92
11-9021	Construction Managers	Enhanced Skills	1210	1420	17.58
47-2111	Electricians	Increased Demand	2970	3500	18.11
15-1299	Computer Occupations, All Other	Enhanced Skills	1530	1820	18.98
17-2112	Industrial Engineers	Enhanced Skills	660	820	23.19
17-3031	Surveying and Mapping Technicians	Enhanced Skills	420	520	23.58
49-9041	Industrial Machinery Mechanics	Enhanced Skills	1770	2400	35.75
49-9081	Wind Turbine Service Technicians	New & Emerging	244	388	59.1
47-2231	Solar Photovoltaic Installers	New & Emerging	Data Unavailable		
45-4011	Forest and Conservation Workers	Increased Demand	Data Unavailable		
19-2043	Hydrologists	Enhanced Skills	Data Unavailable		

*Wind turbine service technicians did not contain projections at the OK City MSA level and was supplemented with statewide data. Since the region accounts for nearly 40% of the statewide population, a 40% proportion was applied for these roles.

Considering that the energy industry will serve as a key player in Central Oklahoma’s workforce transition, additional data was reviewed to understand workforce needs in that area. **Figure C-4** provides state-level job projections for Oklahoma in clean energy sectors based on national deployment scenario and proportional job capture produced by the National Energy Resources Laboratory. Based on these projections, the state is expected to see a rise in demand between 12,000 and 17,000 new jobs in these sectors by 2030. Considering approximately 40% of these jobs will live in Central Oklahoma, the data indicates the need to prepare a workforce in the size of 5,000-6,800 additional energy jobs by 2030.

Research from other institutions suggest similar optimism for energy job growth in the State. A nationwide study by the Net-Zero American Project found that Oklahoma could gain up to 263,000 clean energy jobs by 2050.¹⁰⁸

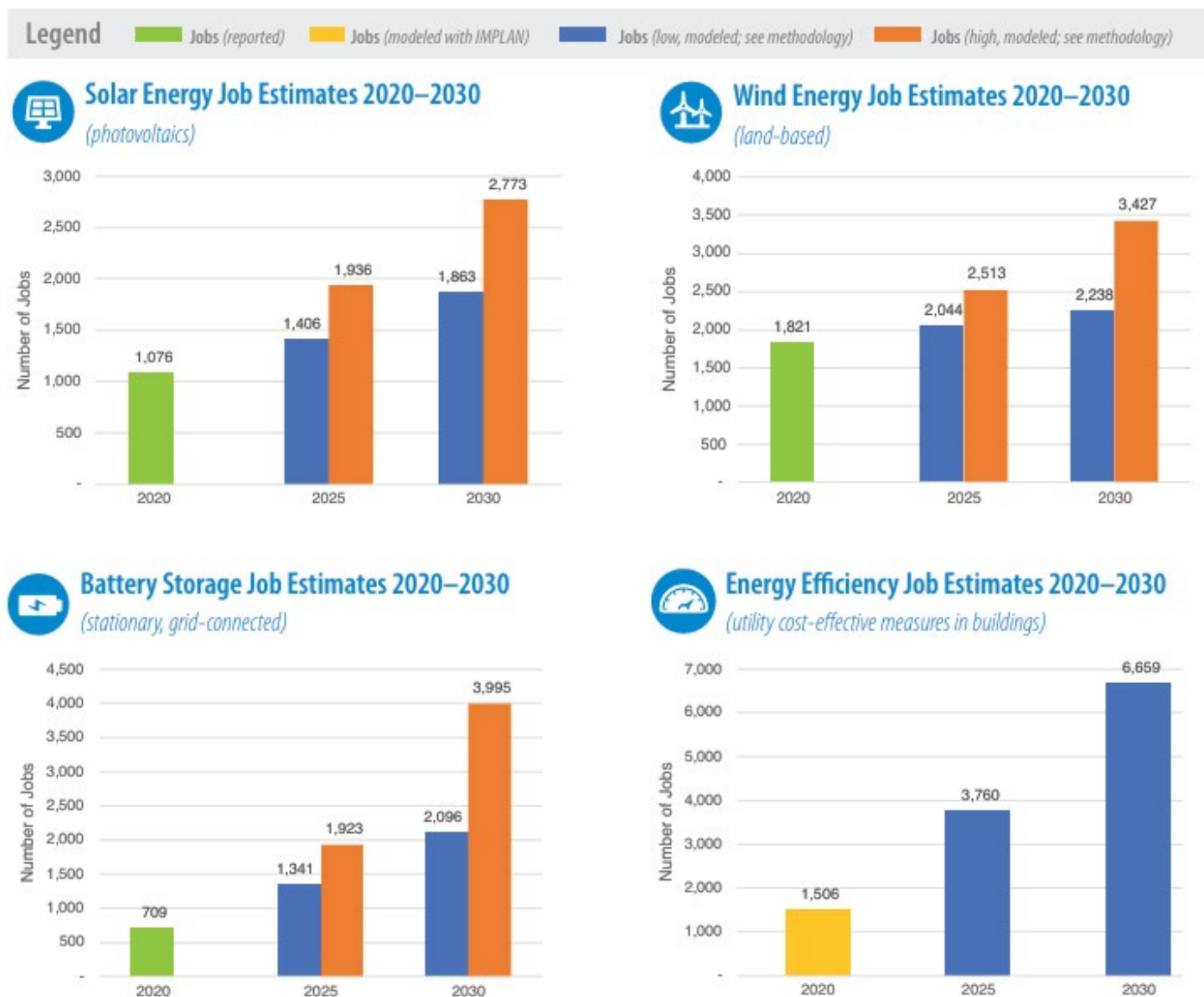


Figure C-4: Oklahoma State Energy Workforce Projections¹⁰⁹

Key Partners and Programs

Building workforce capacity for climate-aligned careers in Central Oklahoma requires collaboration among state agencies, educational institutions, community-based organizations, and regional coalitions. The Oklahoma City MSA benefits from a strong foundation in energy expertise and emerging clean energy initiatives, supported by state programs, technical education systems, and multi-sector partnerships. These efforts provide a starting point for scaling talent pipelines to meet the demands of the CCAP.

This section highlights selected programs and partnerships with potential to advance CCAP implementation. While not exhaustive, it illustrates opportunities for coordination and expansion.

State and Regional Agencies

Statewide agencies and regional bodies provide the backbone for workforce development through funding, data systems, and program delivery under federal and state mandates.

- **Oklahoma Works (Oklahoma Employment Security Commission):**¹¹⁰ Administers Workforce Innovation and Opportunity Act (WIOA) programs, including job matching, training vouchers, and registered apprenticeships. Maintains labor market data and projections critical for CCAP-aligned workforce planning. Programs include HiRE for job matching and customized training for energy and construction sectors.
- **Oklahoma Department of Career and Technology Education (CareerTech):**¹¹¹ Oklahoma CareerTech is the state's backbone for technical education and apprenticeships, operating 29 technology centers and multiple workforce programs. Through Apprenticeship Oklahoma, CareerTech offers both U.S. Department of Labor Registered Apprenticeships and state-certified models in high-demand fields, including HVAC, electrical trades, and renewable energy systems. In 2024, CareerTech received \$500,000 in federal funding to expand apprenticeship programs, enabling students to earn wages, gain hands-on experience, and obtain industry-recognized credentials. These programs are critical for building Oklahoma's clean energy workforce and supporting employers in advanced manufacturing and energy efficiency sectors.

Educational Institutions and Programs

Educational institutions including community colleges, high schools, universities, and technical schools play a central role in preparing the workforce for climate-aligned careers. They provide foundational education, technical training, certifications, and research that support emerging sectors such as clean energy, and environmental resilience. These institutions also serve as innovation hubs and talent pipelines, offering opportunities for early career exposure, internships, and applied learning. Some examples of key programs from local institutions are noted below:

- **Oklahoma State University (OSU):**¹¹² In 2023, OSU received a \$7 million U.S. Department of Energy grant to establish the Great Plains Center of Excellence, a federally designated Industrial Assessment Center. Several local, state, and regional institutions and coalitions serve as partners in this effort. This center trains engineers and technicians from across the Great Plains and Midwest region for careers in energy efficiency, industrial decarbonization, and advanced manufacturing. Students gain hands-on experience conducting energy audits for manufacturers, learning skills in carbon reduction, and productivity improvement.
- **Oklahoma Renewable Energy Education Program (OREEP):**¹¹³ Launched as a statewide initiative, OREEP aims to close gaps in energy education and build early STEM pathways for clean energy careers. Delivers K-12 and teacher training focused on solar, wind, and sustainability concepts, building early awareness and STEM pathways for future green careers. The initiative targets rural and underserved schools to ensure inclusive access to clean energy education.

Community-Based Organizations and Nonprofits

Community-based organizations (CBOs) are nonprofit or grassroots institutions deeply embedded in the neighborhoods they serve. In workforce development, CBOs play a vital role by offering training, mentorship, and support services that go beyond job placement focusing instead on long-term economic mobility, equity, and community resilience. The models listed below represent viable partners for CCAP implementation, as well as replicable and scalable models for broader regional implementation.

- **Urban League of Greater Oklahoma City:**¹¹⁴¹¹⁵ Urban League is a leading equity-focused organization providing workforce development, wraparound services, and career fairs. Urban League affiliates participate in the National Urban Energy Jobs Program, funded by the U.S. Department of Labor's Apprenticeship Building America initiative, creating equitable pathways to Registered Apprenticeships in clean energy sectors such as solar installation, line work, and HVAC efficiency.
- **Neighborhood Housing Services Oklahoma:**¹¹⁶ NHSOKLA is a housing agency that integrates workforce development into green housing projects. Through its partnership with NeighborWorks America, local contractors, and municipal agencies to incorporate green building practices into new construction and rehabilitation projects, their initiatives provide hands-on training for local builders and contractors in sustainable construction techniques, creating a pipeline for green jobs in Oklahoma City. In FY2023, NHSOKLA leveraged \$447,000 in NeighborWorks grants and \$19.1 million in total investment, resulting in 107 jobs created or maintained while improving housing quality and energy performance for low-income families.¹¹⁷
- **Oklahoma Association of Community Action Agencies (OKACAA):**¹¹⁸ The OKACAA operated the Oklahoma Weatherization Training Center, a specialized facility that prepares workers for careers in energy efficiency. The center offers hands-on training for nationally recognized certifications such as Energy Auditor and Retrofit Installer Technician. The center is aligned with the U.S. Department of Energy's Weatherization Assistance Program and support the mission of reducing household energy costs while creating skilled green job.

Regional Coalitions

Multi-sector partnerships in Central Oklahoma are driving innovation, resilience, and workforce development to position the region as a leader in clean energy and climate adaptation. These coalitions unite public agencies, private industry, educational institutions, and community organizations to align resources, scale training programs, and attract major federal investments. Their efforts are critical for building talent pipelines in renewable energy, advanced manufacturing, and resilient infrastructure.

- **Oklahoma Energy Workforce Consortium (OEW):**¹¹⁹ The consortium works closely with Oklahoma CareerTech and industry partners to integrate energy career clusters into technical education programs and expand apprenticeships for high-demand roles such as electrical lineworkers and electronics technicians. OEW also operates the Troops to Energy Jobs initiative, helping military veterans transition into energy careers through structured training and placement. These efforts ensure Oklahoma's workforce remains competitive as the energy sector evolves toward cleaner technologies.
- **OKC Federation for Advanced Manufacturing Education:**¹²⁰ OKC FAME is Oklahoma's first chapter of the Federation for Advanced Manufacturing Education, launched by the Greater Oklahoma City Chamber in partnership with OSU-OKC and local employers. The program combines classroom instruction with paid, hands-on training, enabling students to earn a two-year degree while gaining experience in energy-efficient systems and automation. Supported by a \$1.4 million investment in OSU-OKC's Advanced Manufacturing Lab, OKC FAME is building a pipeline of skilled technicians for advanced manufacturing and clean energy sectors.
- **SPEER:**¹²¹ SPEER (South-central Partnership for Energy Efficiency as a Resource) works across Texas and Oklahoma to accelerate energy efficiency adoption through policy advocacy, technical training, and workforce development. In Oklahoma City, SPEER partners with utilities, contractors, and local governments to promote building performance standards and expand training for HVAC optimization, energy auditing, and advanced building controls skills essential for climate resilience and clean energy transitions.

Strategic Priorities for an Integrated Workforce Transition

The following strategies outline steps regional leaders, industries, and educators can take to prepare the workforce for climate action and infrastructure modernization. These recommendations leverage local strengths while improving access and alignment.

1. Scale Clean Energy Workforce Pipelines

Central Oklahoma is poised to lead in renewable energy development, and scaling talent pipelines will be key to meeting this tremendous demand. By expanding training programs and creating clear pathways into wind, solar, and energy efficiency careers, the region can ensure readiness for upcoming investments. This approach positions Oklahoma as a hub for innovation and skilled labor in the clean energy economy.

Key Steps

- Scale apprenticeship and certification programs through CareerTech and OEWC.
- Partner with utilities and renewable energy firms for hands-on internships.
- Align enrollment targets with regional energy project timelines as established through the CCAP implementation process to ensure timely workforce availability.

2. Build Green Career Pathways Through School Programs

Introducing renewable energy and resilience concepts early helps dispel misconceptions and frames these fields as sustainable, respected career options. By embedding clean energy education into K-12 and CareerTech curricula, Oklahoma can inspire the next generation to pursue careers that strengthen both its economy and the environment.

Key Steps

- Invite renewable energy industry partners to showcase opportunities at schools.
- Expand teacher training through initiatives like OREEP to ensure consistent, high-quality instruction.
- Integrate renewable energy modules into STEM programs.

3. Establish Regional Workforce Hubs with Coordinated Partnerships to Support Existing Workforce Transitions

Supporting access to training across the region's broad footprint ensures that opportunity reaches every community: urban, rural, and tribal. Regional hubs can deliver rotating programs and virtual learning, making it easier for residents to gain skills without leaving their communities. This approach strengthens local economies and fosters inclusive growth.

Key Steps

- Create hubs anchored by CareerTech campuses and community colleges.
- Deploy mobile training units and virtual platforms for remote access.
- Coordinate programming under ACOG's leadership to align with climate action timelines.

4. Leverage Public-Private Partnerships

Central Oklahoma's legacy of successful collaboration between industry, education, and government such as in the Tinker Air Force Base and the BioTC initiative demonstrates how shared investment can transform regional workforce capacity. Building on this legacy, the region can scale similar solutions to meet emerging workforce needs in clean energy, advanced manufacturing, and resilience sectors. These partnerships will not only accelerate innovation but also ensure that prosperity is shared across communities.

- Expand joint investment models for training equipment and curriculum development.
- Formalize hiring agreements with utilities, energy firms, and advanced manufacturing employers.
- Replicate proven partnership models to create pipelines for renewable energy and resilience careers.
- Engage organizations like OKC FAME and SPEER to integrate cutting-edge technologies into workforce programs.

Conclusion

Forecasting the exact trajectory of national and regional investments is challenging, and the pace of workforce shifts will depend on how risk reduction and infrastructure resilience measures scale over time. What matters most is maintaining a workforce strategy that is flexible and forward-thinking. Preparing people for roles that may not yet exist requires agility and a commitment to continuous learning.

As Central Oklahoma moves from planning to implementation, it will be essential to draw on the ideas and resources outlined in this document when funding and projects become concrete. Aligning training programs, talent pipelines, and partnerships with real opportunities will ensure that investments deliver measurable results. Workforce development is not a one-time initiative; it is an ongoing cycle of monitoring, updating, and adapting. This includes upskilling and reskilling current workers, engaging new entrants, and revisiting projections regularly to reflect evolving technologies and market conditions. By sustaining this iterative approach, Oklahoma City can build a workforce that strengthens regional resilience and supports long-term economic vitality.

Appendix D:

Related Plans

The Oklahoma City MSA is already doing good work when it comes to acting on air quality, climate adaptation, economic development, and transportation planning. The following plans and their listed goals represent the most current landscape for regional planning in Oklahoma City and the surrounding region. These documents helped inform local priorities and long-range planning goals during the development of this plan.

ACOG Regional Air Quality Plan (2025)

The 2025 Central Oklahoma Regional Air Quality Plan (RAQP), developed by the ACOG, outlines a proactive strategy to prevent the region from falling into ozone Nonattainment status – a designation by the EPA that would trigger severe economic and regulatory consequences. Recent data shows ozone levels nearing the EPA threshold of 70 ppb, placing the region at risk. If Nonattainment occurs, Central Oklahoma could lose up to \$10 million annually in federal transportation funding, face delayed infrastructure projects, and encounter stricter permitting and regulatory burdens that could stifle business growth and competitiveness. The plan emphasizes regional collaboration, data-driven action, and public engagement to safeguard health, support sustainable development, and maintain compliance with federal air quality standards. The plan's main goals are outlined below.

- Reduce transportation-related Nox and VOC emissions by 5-15% through cleaner fleets, active transportation, and reduced VMT.
- Enhance public awareness of ozone season and clean air action, increasing regional participation in voluntary programs by 50%.
- Support clean energy and low-emissions technologies across industrial, commercial, and municipal sectors.
- Promote local ordinances and policies that align land use, transportation, and air quality goals.
- Build capacity for long-term monitoring, accountability, and adaptive planning through an annual evaluation framework.

AdaptOKC (2020)

The 2020 AdaptOKC Plan is Oklahoma City's first comprehensive sustainability framework, as adopted as an implementation element of the city's broader Plan OKC. It outlines strategies to enhance climate resilience, reduce greenhouse gas emissions, and improve environmental quality across sectors like transportation, energy, land use, and public health. The plan emphasizes an equitable distribution of benefits, data-driven decision-making, and long-term economic vitality, recognizing that climate adaptation and sustainability are essential to protecting vulnerable populations and ensuring livability for future generations. By integrating sustainability into city operations and community planning, AdaptOKC positions Oklahoma City to proactively address climate risks while fostering inclusive growth. The plan's main goals are outlined below.

- Reduce emissions associated with energy consumption.
- Diversify local and state energy economies.
- Reduce cost of municipal operations.
- Protect water quality.
- Prevent damage caused by flooding.
- Mitigate effects of extreme heat.
- Ensure residents have access to healthy food.

- Safeguard Oklahoma City’s attainment designation.
- Secure funding for transportation infrastructure.
- Recycle or reuse recoverable material.
- Increase demand for products made with recycled content.
- Prevent exposure to hazardous waste

ACOG CEDS Report (2024)

The 2024 Comprehensive Economic Development Strategy (CEDS) from ACOG outlines a regional roadmap to strengthen economic resilience and guide sustainable growth across Central Oklahoma’s Capital Area Economic Development District. Building on previous plans and pandemic-era updates, it identifies priority sectors, workforce needs, and infrastructure investments to support long-term prosperity and competitiveness. Some priority goals from this plan are summarized below.

- Affordable Living & Quality of Life: Address cost-of-living challenges, improve housing affordability, increase housing supply, explore building code reform, and support placemaking initiatives.
- Workforce Development: Encourage collaboration and coordination of resources, align education and training programs with industry needs to build a skilled, equitable workforce, and leverage a diverse pool of funding, including private, nonprofit, and public sectors.
- Economic Diversification: Leverage partnerships for technology and innovation, increase key investments, strengthen key industries, promote entrepreneurship, and advance rural development projects.

Oklahoma Energy Assurance Plan (2021)

The 2021 Oklahoma Energy Assurance Plan, prepared by the Oklahoma Department of Commerce and the Office of the Secretary of Energy & Environment, outlines a statewide framework to strengthen energy reliability, enhance emergency preparedness, and coordinate responses to energy disruptions. The plan focuses on safeguarding Oklahoma’s extensive energy infrastructure and ensuring stable supply across electricity, natural gas, petroleum, propane, and emerging renewable sectors. The plan serves as a comprehensive guide for state, local, and industry stakeholders to prepare for, mitigate, and recover from energy emergencies. Some priority themes from this plan are summarized below.

- Establish a coordinated system to detect, prevent, and manage energy disruptions from severe weather, infrastructure failure, or cyber incidents.
- Identify and assess the strengths, weaknesses, and interdependencies of Oklahoma’s major energy systems to reduce risks and improve recovery capacity.
- Strengthen cybersecurity protocols and information-sharing to safeguard critical energy assets and maintain operational continuity.
- Advance utility and state programs that promote efficiency, demand reduction, and smart grid technologies to support system reliability.
- Prepare for emerging challenges such as renewable integration, energy storage, electric vehicles, and global supply chain disruptions.

Encompass 2045 (2021)

Encompass 2045 is Central Oklahoma's long-range Metropolitan Transportation Plan, developed by ACOG to guide regional transportation investments through the year 2045. It identifies priority projects, policy recommendations, and infrastructure needs to support mobility, safety, and sustainability across the region's growing communities. The plan integrates land use scenarios, population and employment forecasts, and multimodal strategies – including transit, biking, and freight – so that transportation decisions align with economic development and environmental goals. The main goals from this plan are outlined below.

- Promote economic vitality through enhanced mobility.
- Provide a safe and secure transportation system for all users.
- Provide transportation options and access for the movement of all people and goods.
- Improve the connection between land use and transportation to enable residents to live healthier lives and reduce environmental impacts from vehicle travel.
- Develop connections among all types and modes of transportation.
- Increase efficiency and reliability of the transportation system.
- Maintain and improve the quality of the transportation system.

Each of the above plans represents an important aspect of long-range planning: environmental considerations, economic growth and development, and transportation planning. These foundational documents outlining Central Oklahoma's priorities for the future were heavily referenced when outlining action strategies for inclusion in this plan.

Appendix E:

LIDAC List of Census Block Groups

Communities with residents that have low incomes, limited access to resources, and disproportionate exposure to environmental or climate burdens are commonly referred to as Low-Income and Disadvantaged Communities (LIDACs). Although the Inflation Reduction Act does not formally define LIDACs, the EPA had published publicly available datasets that identify them using vulnerability indices such as the Climate and Economic Justice Screening Tool and the Environmental Justice Screening and Mapping Tool. These tools assessed indicators across categories including air quality, climate change, energy, environmental hazards, health, housing, legacy pollution, transportation, water and wastewater, and workforce development. These definitions and tools were developed prior to the establishment of the Trump administration, and several have since been archived in accordance with their guidance. However, the project team referenced the last available public version to ensure consistency and transparency. The inclusion of a census tract list in the report was necessary to demonstrate how climate action planning efforts are targeting and benefiting LIDACs, in alignment with CPRG program requirements. The following census block groups were identified as disadvantaged by the Climate and Economic Justice Screening Tool and/or as being located within a census block group at or above the 90th percentile on any of the EPA's EJScreen Supplemental Indexes and located within tribal jurisdictions.

LIDAC List of Census Block Groups for Urban Subgroup

400173009041	400272007001	400272016023	400836002001
400173009042	400272008002	400272016034	400836002002
400173009043	400272009002	400272016042	400836002003
400173010012	400272010003	400272019043	400836003001
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LIDAC List of Census Block Groups for OTSA Subgroup

400173001001	400173005001	400173008041	400173010142
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401255005002	401255009012	401255010053	401255011052
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401255006003	401255010031	401255011012	401255013002
401255006004	401255010032	401255011013	401255013003
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Appendix F:

GHG and Co-Pollutant Reduction Methodology

Methodology for Quantifying GHG & Co-Pollutant Reductions

The Comprehensive Climate Action Plan (CCAP) quantified greenhouse gas (GHG) and co-pollutant emission reductions using a consistent and transparent analytical framework that was applied across all actions and sectors. The objective of the assessment was to estimate how implementation of the CCAP's measures reduced GHG emissions and air pollutants relative to a business-as-usual trajectory, using established GHG emission and pollution factors and activity data that reflected local and regional conditions.

At the core of the analysis, GHG emission reductions and co-benefits were estimated by combining measurable changes in activity with appropriate emission factors. Avoided fuel consumption, or reduced energy use were multiplied by the corresponding mass of emissions typically produced per unit of that activity. This relationship allowed each action, regardless of sector, to be translated into common units of avoided carbon dioxide equivalent (CO₂e). All GHGs (including carbon dioxide, methane, and nitrous oxide) were expressed as metric tons of CO₂e using standard global warming potentials to ensure comparability.

Activity data was based on implementation levels achieved or expected for each action and reflected projected savings in energy and fuel use over time. The analysis covered the period from 2026 through 2050. The baseline scenario represented conditions under which current trends continued without the addition of any new policies or programs at the regional, state or federal level as described in the CCAP. The CCAP scenario incorporated the actions identified in the CCAP and the difference between these two scenarios represented the avoided GHG emissions attributed to the CCAP. Cumulative reductions were calculated from 2026 through 2050, with results presented for 2030, 2050, and the cumulative 2030–2050 period to illustrate long-term mitigation potential.

GHG emission and pollution factors for fuels and electricity were drawn from established and authoritative datasets, including the U.S. Environmental Protection Agency's (EPA) Emissions & Generation Resource Integrated Database (eGRID) for electricity emission rates, the EPA Greenhouse Gas Emission Factors Hub for combustion fuels, and the California Air Resources Board (CARB) EMFAC2021 model for transportation-related fuels. Stationary combustion emission factors for natural gas, diesel, and gasoline were expressed as metric tons of CO₂ per unit of fuel based on lower heating value and carbon content as specified in the EPA factors. Where multiple fuels or energy sources were displaced, weighted average factors were used based on relative consumption shares. Co-pollutant factors for nitrogen oxides (NO_x), sulfur dioxide (SO₂), particulate matter (PM_{2.5}), and carbon monoxide (CO) were derived from EPA's AP-42 emission factor compilation and other similar databases.

Energy, fuel, and financial savings were quantified as co-benefits of the CCAP actions. Avoided fuel use was calculated directly from the reduction in gallons of gasoline, diesel, or natural gas consumption associated with each action. Energy savings were estimated in kilowatt-hours or gigajoules for electricity and thermal energy efficiency measures. Monetary savings were then derived by multiplying avoided fuel or electricity consumption by the 2024 regional average energy price for each fuel and energy type. For electricity, avoided costs were based on the average retail price per kilowatt-hour by sector (residential, commercial, and industrial). For fuels, savings were calculated from the retail cost per gallon of gasoline, diesel, or natural gas converted to energy-equivalent units where necessary. Because inflation and price escalation were not modeled explicitly, total savings were expressed in constant 2024 dollars. Additional financial benefits were included where relevant, such as avoided vehicle maintenance from reduced operation, lower building system maintenance costs, and deferred infrastructure investments associated with efficiency and demand management measures. Cumulative totals were calculated through 2050 to align with the emission reduction horizon and to illustrate the broader economic value of the CCAP implementation.

The analytical approach was applied across all sectors, with adjustments to reflect the unique drivers of GHG and air pollutant emissions in each.

In the transportation sector, GHG reductions were estimated from decreased fuel consumption and reduced vehicle activity, as well as from improvements in energy efficiency and the substitution of conventional fuels with lower-carbon energy sources. The analysis relied on projected changes in fuel use for on-road and off-road applications, combined with fuel-specific carbon intensities and emission factors for gasoline, diesel, natural gas, and electricity. These factors represented both direct combustion and upstream energy-related emissions. Co-pollutant reductions were quantified using the same underlying activity data and emission factors applied in the GHG analysis, ensuring internal consistency across pollutants and fuels.

In the infrastructure and buildings sector, GHG reductions were estimated from reductions in electricity and natural gas consumption associated with CCAP actions. The calculations used regional emission factors for electricity generation and direct combustion factors for natural gas and other building fuels. Reductions were quantified separately for each energy source to prevent overlap and ensure accurate aggregation. Co-pollutant reductions were derived using corresponding stationary combustion emission factors applied to the same changes in energy use.

In the industry sector, GHG reductions were estimated from decreased energy use and fuel consumption associated with improved process efficiency and energy management measures identified in the CCAP. The analysis paired reductions in energy use with corresponding emission factors for combustion fuels and process-related emissions. In cases where reductions also influenced upstream feedstock or production inputs, these effects were included when quantifiable. Co-pollutant reductions were calculated using the same combustion and process emission factors used in the GHG analysis.

In the environmental and natural systems sector, GHG reductions were quantified from carbon sequestration associated with trees included in the CCAP analysis. The calculation applied a standard carbon sequestration rate per tree, expressed in metric tons of CO₂e per year, to the total number of trees identified in the dataset. Annual and cumulative sequestration were calculated by multiplying the per-tree rate by the number of trees planted or maintained for each analysis year, with cumulative totals reported through 2050. Co-pollutant effects were not quantified directly but were acknowledged qualitatively for their contribution to air quality and ecosystem function.

Annual and cumulative reductions were reported through 2050. Cumulative results provided a long-term indication of mitigation potential, while annual values supported interim progress assessment. Uncertainty was recognized in both activity projections and emission factors, which varied by technology performance, adoption rates, and regional energy characteristics. Ranges of uncertainty were incorporated qualitatively in the interpretation of results.

Program Cost Estimation Methodology

Where possible, CCAP action implementation cost estimates were developed to provide an order-of-magnitude understanding of the financial resources required to implement the CCAP actions. Because each action varies significantly in scale, scope, and delivery mechanism, a uniform costing model was not applied. Instead, cost estimation relied on a comparative reference approach using data from similar programs already implemented across the United States. These references included state and local climate action programs, federal and utility incentive programs, and published cost studies for comparable measures. When no direct analogs were available, costs were inferred from unit-based estimates such as cost per vehicle converted, cost per ton of CO₂e reduced, or cost per facility retrofitted, using publicly available benchmarks. All costs were expressed in constant 2024 dollars, and no escalation or discounting was applied to future-year totals. The resulting estimates were designed to represent approximate implementation-level costs sufficient for planning and prioritization but not detailed engineering or budget projections.

Limitations & Interpretation

The quantification methods used for the CCAP represented best available practice but included several inherent limitations. GHG emission factors were derived from established national or regional datasets that may not have fully captured local conditions, fuel blends, or technology changes over time. Activity data were projected based on the expected or actual implementation of policies and programs, which depended on funding, market readiness, and community participation. Some actions produced indirect or behavioral effects that were difficult to quantify precisely and may have led to under- or over-estimation of reductions. Co-pollutant estimates were constrained by available emission rates and should be viewed as indicative of directional change rather than exact quantities. The analysis was designed for consistency across all actions and sectors and can be updated as improved data become available, new modeling tools are released, or baseline inventories are refined.

RED DIRT RESILIENCY: A PLAN FOR STRONGER INFRASTRUCTURE & RISK REDUCTION

A Comprehensive Climate Action Plan For Central Oklahoma



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