



WHAT'S NEXT, CENTRAL IOWA?

Central Iowa Priority Climate Action Plan

Updated March 18, 2024

Acknowledgments

This planning process was like no other in my professional history – six months, seven counties, 800,000 people, and one priority climate action plan. While only just the beginning of “What’s Next, Central Iowa?”, this document—plus its creation process, opened doors, filled tables, and authentic dialogues—is a strong indication that Central Iowans are up to the challenge of coming together to seek solutions that make sense.

This Priority Climate Action Plan would not have been possible without:

- Polk County leadership's willingness to take a chance on leading positive change and accepting this EPA award that extends beyond their jurisdictional boundaries. Without their openness for collaboration with neighbors, this effort would not have gotten off the ground or be soaring towards new heights as we enter the next phase.
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- And finally, all the Central Iowans who participated in the planning process already.

Teamwork truly does make the dream work, and this plan is evidence of that. My team and I look forward to working with you all and many, many more Central Iowans as we continue into the Comprehensive portion of our regional climate action planning process.

In partnership,

Allison van Pelt

Polk County Sustainability Planner & CPRG Project Lead

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Acronyms and Abbreviations

Acronym or Abbreviation	Definition
ALICE	Asset Limited, Income Constrained, Employed
AMI	Area Median Income
CAAs	Community Action Agencies
CCAP	Comprehensive Climate Action Plan
CIRTPA	Central Iowa Regional Transportation Planning Alliance
CH ₄	Methane
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
CPRG	Climate Pollution Reduction Grant
DMAMPO	Des Moines Area Metropolitan Planning Organization
DOE	Department of Energy
EPA	United States Environmental Protection Agency
F-gases	Fluorinated Gases
FLIGHT	EPA Facility Level Information on Greenhouse Gases tool
FPL	Federal Poverty Limit
GHG	Greenhouse Gas
GHGI	Greenhouse Gas Emissions Inventory
GPC	Global Protocol for Community Greenhouse Gas Inventories
GWP	Global Warming Potential
HAP	Hazardous Air Pollutant

HFC	Hydrofluorocarbon
HMP	Hazard Mitigation Plan
HVACs	Heating, Ventilation, and Air Conditioning systems
LGGIT	EPA Local GHG Inventory Tool
LGO	Local Government Operations
LHTF	Local Housing Trust Fund
LIDACs	Low-Income and Disadvantaged Communities
LIHEAP	Low-Income Home Energy Assistance Program
MSA	Metropolitan Statistical Area
mt CO ₂ e	Metric tons of carbon dioxide equivalents
NF ₃	Nitrogen Trifluoride
N ₂ O	Nitrous Oxide
NO _x	Nitrogen Oxides
O ₃	Ozone
PCAP	Priority Climate Action Plan
PFC	Perfluorocarbon
PM _{2.5}	Fine Particulate Matter
RLF	Revolving Loan Fund
SF ₆	Sulfur Hexafluoride
SO ₂	Sulfur Dioxide
SLOPE	DOE State and Local Planning for Energy Platform
TREC	Training for Residential Energy Contractors
VOC	Volatile Organic Compounds

Introduction

The Polk County Public Works Department (hereinafter “Polk County”) prepared this priority climate action plan (PCAP) to support investment in policies, practices, and technologies that reduce pollutant emissions, create high-quality jobs, spur economic growth, and enhance the quality of life in Central Iowa. This project has been funded wholly or in part by the United States Environmental Protection Agency (EPA) under assistance agreement 96704601 to Polk County. The contents of this document do not necessarily reflect the views and policies of the EPA, nor does the EPA endorse trade names or recommend the use of commercial products mentioned in this document.

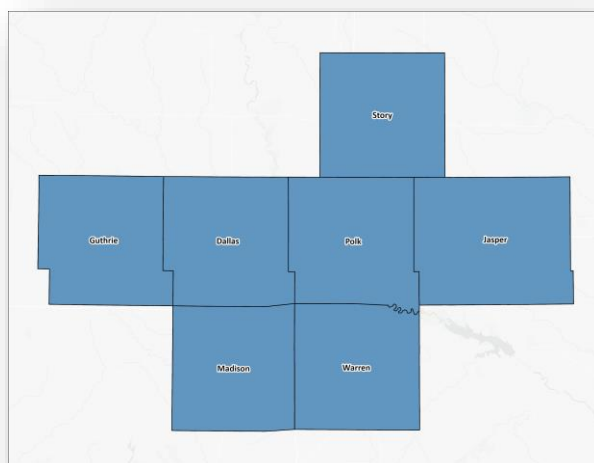
The measures contained herein should be construed as broadly available to any entity within the geographic scope of this PCAP that is eligible to receive funding under the EPA’s Climate Pollution Reduction Implementation Grants (CPRG) and other funding streams, as applicable.

PLANNING AREA

The EPA Phase I guidance defines the CPRG planning area for our region using 2020 U.S. Census data for metropolitan statistical areas (MSAs) to identify metropolitan areas eligible for funding. The Des Moines-West Des Moines MSA includes Guthrie, Dallas, Polk, Jasper, Madison, and Warren Counties.

However, due to the nature of our region and its interconnected economics, transportation, workforce, and more, Story County was invited to join Central Iowa’s CPRG effort. From the outset of this planning process, Polk County staff met with Story County staff and leadership to discuss the inclusion of their county in the CPRG process. After a productive dialogue between the representatives, Story County accepted the invitation. Therefore, our regional CPRG planning area extends beyond the EPA prescribed MSA boundaries and has expanded to seven counties instead of the original six. Figure 1, below, depicts the region this plan will refer to as “Central Iowa.”

Figure 1. Map of Counties in Central Iowa Planning Area



CLIMATE IMPACTS

What is Climate Change?

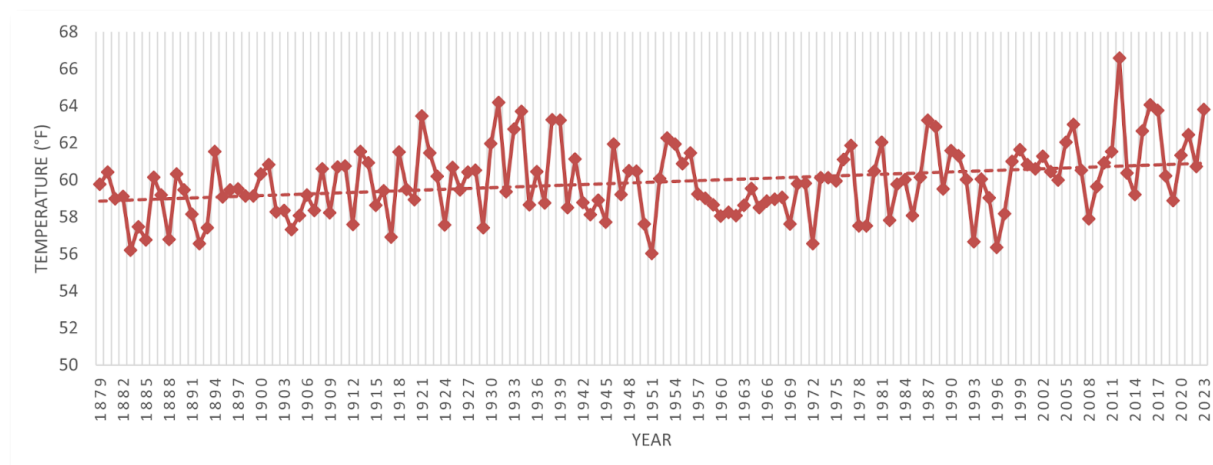
Climate change is any significant change in precipitation, wind patterns, temperature, and/or other patterns that continues over several decades. Overwhelmingly, human-driven activities have led to increased greenhouse gases (GHGs) in the atmosphere. This in turn has raised Earth's average surface temperature. Climate change has already led to severe weather events globally and in Iowa, impacting food systems, infrastructure, ecosystems, homes, and more.

Adverse Weather Impacts

The negative impacts of climate change on Iowa and its people are already apparent and will only grow in severity with time. A 2020 derecho killed four people, caused over \$11 billion of damage to infrastructure and canopy cover, and did an estimated \$500 million of damage to crops. In 2019, Mississippi and Missouri River floods led to a federal disaster declaration in 67 Iowa counties, killing at least three people, impacting 14 million people, and causing almost \$3 billion of damage. Droughts followed by major rain events reduce corn yields, and Central Iowa has experienced both in recent years. Average spring precipitation in the last decade (2010-2019) was 27% higher than the 20th century average.¹

Major weather events are the most apparent impacts of climate change in Iowa, but the daily changes are critical as well. Temperatures in Central Iowa have been steadily rising for over a century,² as shown in Figure 2.

Figure 2. Annual Average Daily High Temperature in the Des Moines Area³



¹ Iowa Natural Heritage Foundation. (n.d.). *Iowa Climate Assessment*. <https://www.inhf.org/iowa-climate-assessment/>.

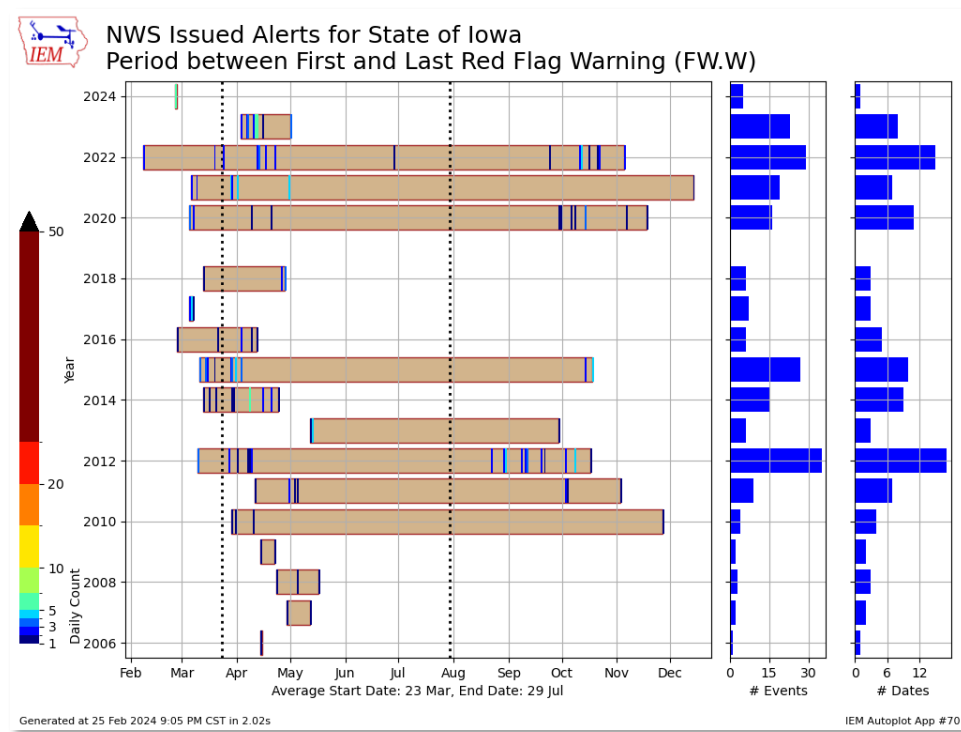
² Iowa State University. (2024). *IEM "Climodat" Reports*. <https://mesonet.agron.iastate.edu/climodat/index.phtml?network=IACLIMATE&station=IATDSM&report=14>.

³ Iowa State University. (2024). *IEM "Climodat" Reports*. <https://mesonet.agron.iastate.edu/climodat/index.phtml?network=IACLIMATE&station=IATDSM&report=14>.

Higher temperatures pose many risks to Iowans, including health complications like heat stroke in the summer, red flag days & wildland fires, crop shortages caused by false springs, and financial stress from higher energy, grocery, and other bills. Figure 3 depicts the period between the first and last red flag warning for the years 2006 through 2024 and the number of red flag days, highlighting recent years when fire danger has been elevated. Air conditioning will run more often, raising bills and ultimately increasing emissions.

Mitigation strategies like natural shading and home weatherization can reduce costs and slow the effects of climate change.

Figure 3. Period Between First and Last Red Flag Warning, 2006-2024⁴



Adverse Health Impacts

As documented by the EPA, climate change has many adverse health impacts. Heart and lung problems caused by ozone (O₃) and fine particulate matter (PM_{2.5}) pollution are exacerbated by higher temperatures. These impacts have led to the increased prevalence of asthma as higher temperatures increase the production of ground-level ozone. In rural Iowa, ozone levels are high enough that they have already reduced soybean yields. Climate change has also led to increased allergies for many as the pollen season is longer during warmer periods: the ragweed season in the Upper Midwest can now be anywhere from 10 to 21 days longer than it was in 1995.⁵ Higher

⁴ Iowa State University. (2024). IEM "Climodat" Reports.

<https://mesonet.agron.iastate.edu/climodat/index.phtml?network=IACLIMATE&station=IATDSM&report=14>

⁵ U.S. Environmental Protection Agency. (2016, August). *What Climate Change Means for Iowa*.

<https://19january2017snapshot.epa.gov/sites/production/files/2016-09/documents/climate-change-ia.pdf>.

temperatures can negatively impact human health as prolonged exposure to high temperatures puts individuals at risk of heat stroke and dehydration.⁶ Because many houses and apartments lack air conditioning and protective weather infrastructure, many lowans are at risk of heat stress, which has caused the deaths of hundreds across the Midwest over the last decade. Climate change can also cause increases in the transmission of diseases carried by insects that thrive in warmer climates.

Inequality of Climate Impacts

Globally, all communities are adversely impacted by climate change. However, there is evidence that climate change disproportionately affects certain communities. Low-income groups, children, the elderly, communities of color, and Indigenous peoples are particularly vulnerable. By targeting support towards those with the greatest need, this plan aims to build a resilient future for all communities.

Disadvantaged communities in Iowa have been identified using the EPA EJ Screen Tool. These communities are determined based on multiple data sets that consider aspects including, but not limited to, socioeconomic indicators, health disparities, climate change, critical service gaps, people of color, etc.⁷ Approximately 49% of the census block groups in Central Iowa were identified as IRA disadvantaged communities, with the majority share located within Polk County. More details about the proportion of disadvantaged tracts in each Central Iowa county can be viewed in Table 1. A map of low-income and disadvantaged census block groups in Central Iowa can be found in Figure 6.

Table 1. Proportion of IRA Disadvantaged Census Tracts by County in Central Iowa⁸

County	Total Number of Census Block Groups (based off Census data from 2020)	Number of IRA Disadvantaged Community Census Block Groups	Proportion of Census Block Groups that are IRA Disadvantaged Community
<i>Dallas County</i>	42	4	10%
<i>Guthrie County</i>	8	0	0%
<i>Jasper County</i>	37	11	30%
<i>Madison County</i>	12	2	17%
<i>Polk County</i>	336	230	68%
<i>Story County</i>	75	20	27%
<i>Warren County</i>	33	1	3%
Total	543	268	49%

⁶ Center for Disease Control and Prevention. (2023, September 12). *Natural Disasters and Severe Weather About Extreme Heat*. https://www.cdc.gov/disasters/extremeheat/heat_guide.html.

⁷ U. S. Environmental Protection Agency. 2023 version. EJScreen. Retrieved: February 1, 2024, from <https://ejscreen.epa.gov/mapper/>

⁸ U.S. Environmental Protection Agency. 2023 version. EJScreen. Retrieved: February 1, 2024, from <https://ejscreen.epa.gov/mapper/>

EXISTING PLANS

Hazard Mitigation Plans

All counties in Iowa are required to have a hazard mitigation plan (HMP) in place and updated every five years to maintain validity, per state requirements. Among the potential hazards identified in each county's current HMPs were drought, extreme temperatures, floods, severe winter storms, and severe thunderstorms. These hazards are worsened by rising average temperatures and rainfall totals.

In a recent survey during the 2024 updated of Polk County's HMP, Emergency Management found 53% of respondents are at least somewhat concerned about their community facing a natural disaster, including floods and drought. More than half reported being at least somewhat concerned about natural hazard impacts from climate change.

When respondents were asked to select the top five hazards facing their community, 21% reported extreme temperatures, 22% reported climate change, 28% reported drought, 30% reported flash flooding, 41% reported winter storm, 52% reported severe thunderstorms, and 55% reported windstorm/derecho. When asked what programs they would like to see offered, 60% of respondents reported a desire for property tax breaks for homeowners who make their home more resilient to disasters, and 35% reported a desire for either loans or subsidies for homeowners who implement property retrofits. Community concern and homeowner interest in mitigation programs align with the measures included in this PCAP and help enlighten future community outreach within the climate action space in Central Iowa.

Local Community-wide Climate Action Plans

There are few existing climate action plans in Central Iowa. In most cases, the CPRG endeavor will be the first time that many communities discuss the topic. Nevertheless, Polk County reviewed the two climate action plans that exist in the region—for the cities of Des Moines and Ames—and worked with city staff to ensure the plans are incorporated into the CPRG and PCAP processes. Polk County will continue engaging with these plans throughout the Comprehensive Climate Action Plan (CCAP) process.

CITY OF DES MOINES

Adopted in December 2023, ADAPT DSM is the City of Des Moines's guide to decision-making, policy, and program development to address the impacts of climate change.⁹ The four primary goals outlined by this plan include:

- 28% reduction in emissions from 2008 levels by 2025,
- 45% reduction in emissions from 2010 levels by 2030,
- 100% 24/7 carbon-free electricity citywide by 2025, and
- net-zero greenhouse gas emissions by 2050.

⁹ City of Des Moines. (2023, December). *Climate Action & Adaptation Plan*.

https://cms2.revize.com/revize/desmoines/document_center/City%20Manager/Sustainability/ADAPT%20DSM/ADAPT%20DSM%20Final%20v2.pdf?pdf=Review%20the%20approved%20plan&t=1709236279704&pdf=Review%20the%20approved%20plan&t=1709236279704

All efforts to achieve these goals will consider the input of community members and partners. The four focus areas of the plan include equity, innovation, green economy, and health. These climate solutions align with the focus areas by improving energy use and resources, buildings and infrastructure, transportation and land use, food systems and security, waste management and reduction, climate preparedness and resilience, and natural systems and water resources.

CITY OF AMES

The City of Ames released its climate action plan in 2023, with a primary goal to transition to clean energy while benefiting the economy and improving quality of life.¹⁰ The plan's target is aligned with the international goal of limiting warming to 1.5°C, resulting in a municipal model that will reduce GHG emissions by 71% by 2030 and reach net-zero emissions by 2050. The plan models potential investments that reduce energy use per capita, improve energy used versus lost, and switch to zero-carbon fuel sources. Opportunities listed include heat pumps, building retrofits, renewable energy technologies, energy storage, electric vehicles, and energy controls, with other possibilities in mind. The Ames plan could serve as an example for other municipalities in Central Iowa to implement their own climate action plans.

¹⁰ City of Ames. (2023, April 18). *Climate Action Plan*.
<https://www.cityofames.org/home/showpublisheddocument/72522/638219262478230000>.

Coordination and Outreach

Polk County conducted extensive intergovernmental coordination, outreach, and engagement with governmental entities and other stakeholders during the development of the PCAP. This section describes the framework Polk County used to support robust and meaningful engagement strategies to ensure comprehensive stakeholder representation and overcome obstacles to engagement.

IDENTIFICATION OF STAKEHOLDERS

Polk County identified stakeholders who are representative of the entities, groups, and individuals who may assist in furthering or be impacted by the implementation of this PCAP. Stakeholders include but are not limited to:

- State agencies;
- Metropolitan planning organizations;
- Cities;
- Counties;
- Local elected officials and staff;
- Economic development organizations;
- Utilities;
- Consumer advocates;
- Community-based organizations;
- Chambers of commerce;
- Other interested organizations; and
- Residents of Central Iowa.

Stakeholders engaged throughout the process are listed below and in Appendix A.

INTERAGENCY AND INTERGOVERNMENTAL COORDINATION

The Polk County planning team coordinated with state, regional, and local governmental agencies throughout the PCAP process, including other Polk County departments (e.g., Public Works, Public Health, Emergency Management, etc.), elected officials and staff from the seven-county region, regional planning entities, and state agencies. Intergovernmental coordination included:

- Providing information about CPRG and the PCAP process to government agency representatives via email, presentations, and meetings;
- Providing multiple opportunities to submit ideas and provide feedback on PCAP priorities and measures via online forms, large & small group meetings, and one-on-one conversations; and
- Notifying eligible government entities about their eligibility to apply for CPRG implementation grants and the applicability of the PCAP to any potential CPRG implementation grant application.

A summary of governmental and regional coalition stakeholders engaged during the PCAP process is listed below; see Appendix A for a detailed log of outreach and coordination with all stakeholders.

- Dallas County Board of Supervisors
- Guthrie County Board of Supervisors
- Jasper County Board of Supervisors
- Madison County Board of Supervisors
- Polk County Board of Supervisors
- Story County Board of Supervisors
- Warren County Board of Supervisors
- City of Altoona
- City of Ames
- City of Ankeny
- City of Bondurant
- City of Clive
- City of Colfax
- City of Des Moines
- City of Indianola
- City of Johnston
- City of Norwalk
- City of Perry
- City of Pleasant Hill
- City of Polk City
- City of Urbandale
- City of Waukee
- City of West Des Moines
- City of Windsor Heights
- City of Winterset
- Central Iowa Regional Transportation Planning Alliance (CIRTPA)
- Des Moines Area Metropolitan Planning Organization (DMAMPO)
- Des Moines Area Regional Transit Authority
- East Central Iowa Council of Governments
- Mid-Iowa Planning Alliance for Community Development
- Metro Advisory Council
- Mid-Iowa Association of Local Governments
- Iowa Economic Development Authority
- Iowa Finance Authority (IFA)
- Iowa Department of Health and Human Services
- Iowa Department of Natural Resources
- Iowa Homeland Security & Emergency Management
- Region XII Council of Governments
- Polk County Public Health

- Polk County Public Works
- Polk County Emergency Management
- Polk County Conservation
- Story County Conservation
- Madison County Conservation

The planning team also reviewed relevant existing city, county, and regional plans while developing the PCAP, including the City of Des Moines Climate Action & Adaptation Plan (ADAPT DSM), the City of Ames Climate Action Plan, and each of the county hazard mitigation plans.

Additionally, prior to the CPRG award in August 2023, Polk County has participated in the development of or reviewed numerous other plans and initiatives including, but not limited to, the following:

- Capital Crossroads Strategic Plan Update¹¹
- CIRTPA Long-Range Transportation Plan¹²
- Here We Grow!¹³
- Mobilizing Tomorrow ¹⁴
- State of Iowa Drought Plan¹⁵
- United Way of Central Iowa's OpportUNITY Plan¹⁶
- United Way of Iowa's 2023 ALICE (Asset-Limited, Income Restrained, Employed) Report¹⁷

This PCAP has been aligned with the above plans and initiatives wherever possible.

OUTREACH SUMMARY

The Polk County planning team engaged with a wide variety of stakeholders during the PCAP process. Due to the short timeline, engagement focused on connecting with “grasstop” stakeholders. In this effort, Polk County met with staff and leadership from many organizations and sectors that will be involved in the CPRG process, as well as the Board of Supervisors from each of the seven participating Central Iowa counties. Once the CPRG Phase II guidance was

¹¹ Capital Crossroads. (2024). *Capital Crossroads Roadmap*.

<https://www.capitalcrossroadsvision.com/capitalcrossroadsroadmap/>

¹² Central Iowa Regional Transportation Planning Alliance. (2020, May). *Horizon Year 2040 Long-Range Transportation Plan*. <https://cirtpadotorg.files.wordpress.com/2020/09/final-hy-2040-lrtp-cirtpa.pdf>

¹³ *Here We Grow!* (n.d.). <https://www.herewegrow.city/>

¹⁴ Des Moines Area Metropolitan Planning Organization. (2019, November). *Mobilizing Tomorrow 2020-2050: A Transportation Plan for a Greener Greater Des Moines*. <https://dmampo.org/plan/mobilizing-tomorrow/>

¹⁵ Iowa Department of Natural Resources, Iowa Department of Agriculture and Land Stewardship, & Iowa Department of Homeland Security and Emergency Management. (2023, January). *Iowa Drought Plan*. <https://www.iowadnr.gov/Portals/idnr/uploads/files/2023-iowa-drought-plan.pdf>

¹⁶ United Way of Central Iowa. (2018, June 5). *OpportUNITY Plan*.

<https://www.unitedwaydm.org/hubfs/Opportunity%20Plan%206.7.18%20lower%20res.pdf>

¹⁷ United Ways of Iowa & United for ALICE. (2023). *ALICE in the Crosscurrents: COVID and Financial Hardship in Iowa*. https://www.uwiowa.org/sites/uwiowa/files/ALICE/23UFA_Report_Iowa_4.11.23_FINAL.pdf

released, Polk County built connections with all organizations involved in pursuing a CPRG implementation grant.

Polk County also conducted a survey of city staff and leadership priorities for each community in Central Iowa and released a public survey to garner feedback on initial wants and needs, as well as interest in climate action and other sustainability issues. These surveys led to the establishment of the “What’s Next, Central Iowa?” title for Central Iowa’s CPRG efforts, as there were many differing viewpoints and lots of ideas, but little concerted effort towards one priority over another. As such, the initial PCAP outreach will provide the basis for meaningful sustained engagement during the CCAP and beyond.

Polk County educated stakeholders about CPRG and the PCAP process and asked for feedback and ideas through:

- Virtual large & small group stakeholder meetings;
- One-on-one, large, and small group meetings;
- An online form to submit potential PCAP measures;
- A community-wide survey;
- A survey of local government officials; and
- A survey of programs that administer owner-occupied housing upgrade programs.

A summary of non-governmental stakeholders engaged during the PCAP process is listed below in alphabetical order; see Appendix A for a detailed log of outreach and coordination with all stakeholders.

- 1000 Friends of Iowa
- AARP
- BlueGreen Alliance
- Center for Rural Affairs
- Central Iowa Housing Trust Fund
- Community Foundation of Greater Des Moines
- Des Moines Film
- Des Moines Area Community College
- Drake University
- Environmental Law & Policy Center
- Fourmile Creek Watershed Management Authority
- Greater Des Moines Habitat for Humanity
- Greater Des Moines Partnership
- Green Iowa AmeriCorps
- Grow Solar Polk County
- IMPACT Community Action Partnership
- Iowa Association for Energy Efficiency
- Iowa Business for Clean Energy
- Iowa Environmental Council
- Iowa Clean Cities Coalition
- Iowa Labor Center

- Iowa Natural Heritage Foundation
- Iowa State University
- Iowa Waste Reduction Center
- Midwest Climate Collaborative
- Midwest Renewable Energy Association
- MidAmerican Energy
- Mud Camp Spring Creek Watershed Management Authority
- Neighborhood Finance Corporation
- New Opportunities, Inc.
- Polk County Clean Energy District
- Polk County Housing Trust Fund
- Story County Housing Trust Fund
- Transportation for America
- Trees Forever
- The Nature Conservancy
- United Way
- Urban Land Institute
- Urban Sustainability Directors Network
- Walnut Creek Watershed Management Authority
- Wells Fargo Foundation

Online Measure Submission Form

Polk County sent an online measure submission form to governmental and non-governmental stakeholders in January 2024. It provided an opportunity for respondents to submit ideas for measures to be included in the PCAP and asked for a description of the idea, GHG sector, geographic scope, and implementation recommendations. Twenty-eight measure ideas were submitted and considered for inclusion in the PCAP. Some elements were incorporated into the PCAP. Other ideas will be saved for the CCAP planning process, during which the planning team will have ample time for analysis and decision-making.

Community-Wide Survey

Polk County sent a survey to relevant partners (listed in the stakeholders list above and the Outreach Log in Appendix A) across the planning area to gauge community interest in different sustainability topics for CPRG. The survey was open from December 13 through December 31, 2023 and received 105 responses from Polk County, 16 responses from Story County, three responses from Dallas County, and three responses from Warren County.

Respondents were asked what sustainability-related items interested them personally. Answers and the number of times they were selected are listed below, starting with the item that was most frequently selected:

1. Lower energy bills - 83
2. Cleaner water - 83

3. More renewable energy in my community - 69
4. Solar panels on my roof - 64
5. Less smoke in the summer skies - 62
6. More local and sustainable options when shopping - 54
7. More trees in my yard/neighborhood - 46
8. An electric vehicle and charging station – 31
9. New windows - 31

Local Government Survey

Polk County sent a survey to city managers, mayors, and clerks from municipalities across the planning area to gauge interest in preliminary measure ideas. The survey was open from November 10 to December 15, 2023.

The top six climate planning topics of interest were:

1. Transportation
2. Utilities (water, electric, natural gas, etc.)
3. Residential buildings
4. Commercial buildings
5. Community engagement
6. Waste management

While transportation and utilities were the top topics of interest for governmental staff, these two areas were not chosen as priorities in the PCAP. Discussions with utilities have begun; however, due to the short PCAP development timeline, there was not sufficient time for the discussions needed to find solutions with energy utilities. There are numerous individual and collective agreements in place between cities and their utilities that would need to be worked out. This topic area will be discussed during the CCAP process.

Additionally, transportation was not selected as a priority for this plan due to the large amount of transportation-related funding and training opportunities already available to the region. Furthermore, when reviewing DMAMPO and CIRTPA's long-range transportation plans, it is apparent that political leadership as well as the public are not ready to make major moves in transportation climate action. Transit, active transportation, electric vehicle infrastructure, etc. are only minor pieces of each plan, and therefore will need much more discussion and outreach to ensure these become significant elements of the agencies' work.

Respondents were also asked about an example measure focused on increasing tree canopy. Respondents generally felt that increasing canopy cover is a multi-beneficial method of addressing GHG emissions that could have relatively easy buy-in from non-traditional partners. Benefits like air quality improvement, stormwater retention, reduced cooling costs for buildings, and neighborhood beautification are attractive to groups that might not otherwise be involved in sustainability.

Appendix B is a summary of feedback on GHG reduction pathways received from partners during the PCAP process. Because the PCAP cannot address everything in its six-month timeline, the planning team created a matrix to document and score each of the proposed pathways using FEMA's STAPLEE evaluation criteria.¹⁸ The proposed GHG reduction pathways in Appendix B are still priorities, but they require more discussion and/or do not fit the criteria of the CPRG Implementation Grant. Therefore, they will be continued into the CCAP process rather than this PCAP.

Additional Feedback

Polk County hosted two large virtual meetings on January 22 and February 8, 2024 that provided 1.) an overview of CPRG and the PCAP process and 2.) time for in-depth group discussions about the measure included in this PCAP. Attendees included local governments, CAP agencies, housing trust funds, and other potential implementers and partner organizations. High-level feedback included:

- There is a high need for energy auditors and contractors to do residential energy efficiency upgrades.
- Existing weatherization programs typically serve households up to 80% area median income (AMI), but funding is needed to serve households that are 80-100% AMI.
- Residential efficiency and electrification programming should be aligned with existing programs so that households experience a streamlined "one-stop shop".

Future Outreach Plan

Polk County is committed to deepening its engagement with local governments, community-based organizations, stakeholders, LIDAC residents, and residents of Central Iowa as the county drafts a comprehensive climate action plan (CCAP) to be delivered in 2025 and a status update on implementation of this PCAP and the CCAP in 2027.

Potential strategies for engagement with LIDACs and other communities during the PCAP process are summarized below:

- Online resources:
 - Web page
 - Email list
 - Social media
 - Portal for submitting ideas
 - Community survey
- Community meetings across the state with options for in-person, livestream, and video conference participation;
- Targeted outreach to known community-based organizations;
- Working with trusted messengers (e.g., community-based organizations) to reach residents who don't typically participate in government-sponsored events;

¹⁸ FEMA. (2004, August). *Using HAZUS-MH for Risk Assessment: How-To Guide*, 144-145.
<https://www.fema.gov/pdf/plan/prevent/hazus/fema433.pdf>

- Push cards and flyers;
- Attendance at established community events to disseminate information about climate change/action and help community members provide input about individual sectors or sustainability as a whole; and
- Public comment period on the draft plan.

Strategies to Overcome Linguistic, Cultural, Institutional, Geographic, and Other Barriers to Participation

During the PCAP process, large group virtual stakeholder meetings were held on Zoom to overcome geographical barriers to participation and ensure that people from across the seven-county region could participate. Closed captioning was available to Zoom meeting participants.

As described above, the bulk of Polk County's engagement with members of LIDACs and other residents will occur during the CCAP development process. During that process, the planning team will provide ample opportunities to overcome barriers to participation, including, but not limited to, hosting events and meetings in each of the seven counties, providing virtual options for participation, providing interpretation and translation services when requested, and sharing online and print resources developed with accessibility in mind.

Outreach and Coordination Documentation

Appendix A provides a log of interagency and intergovernmental coordination and stakeholder and public engagement efforts associated with developing this PCAP.

Greenhouse Gas Emissions Inventory

A greenhouse gas emissions inventory (GHGI) accounts for all emissions within a defined boundary throughout a calendar year. This GHGI uses data for the calendar year 2020 in Central Iowa.

EMISSIONS SECTORS

Emissions are calculated by sector. Definitions for each sector are below.

- **Mobile combustion:** The combustion of fuels to power a moving vehicle, such as gasoline or diesel fuel in a car or truck.
- **Electricity generation** from fossil fuels such as coal, oil, and natural gas releases CO₂ and other GHGs.
- **Urban forestry** involves the assessment of carbon sequestration and emissions associated with trees and vegetation in urban areas. Trees absorb CO₂ through photosynthesis, helping to offset emissions from other sources. (This sector is called “land use, land-use change, and forestry” under international inventory protocols.¹⁹)
- **Agriculture and land management** activities include an assessment of emissions from the use of synthetic fertilizers. Additional land management practices such as livestock production, deforestation, land use changes, and soil management can release substantial amounts of CO₂ and other GHGs, but those practices were not included in this PCAP inventory.
- **Stationary combustion:** The on-site combustion of fuels to produce electricity, heat, or motor power using equipment in a fixed location.
- **Solid waste** emissions refer to greenhouse gases released during the decomposition of organic waste in landfills, as well as emissions from waste treatment and disposal processes.
- **Wastewater treatment** involves the management and treatment of domestic and industrial wastewater. The treatment process can release CH₄ and N₂O, both potent GHGs.

EMISSIONS BY SECTOR

Calculations for this GHGI are based on community-wide data from 2020, the most recent year for which sufficient data was available. To provide consistency across jurisdictions, data was obtained from high-confidence data sets from government sources and supplemented with data obtained directly from emitting agencies. Additional data sources, details, and methodology are provided in Appendices C and D.

92% of Central Iowa GHG emissions come from Electricity Use, Mobile Combustion, and Stationary Combustion

For a quick view of GHG emissions by sector for Central Iowa, see Table 2 below.

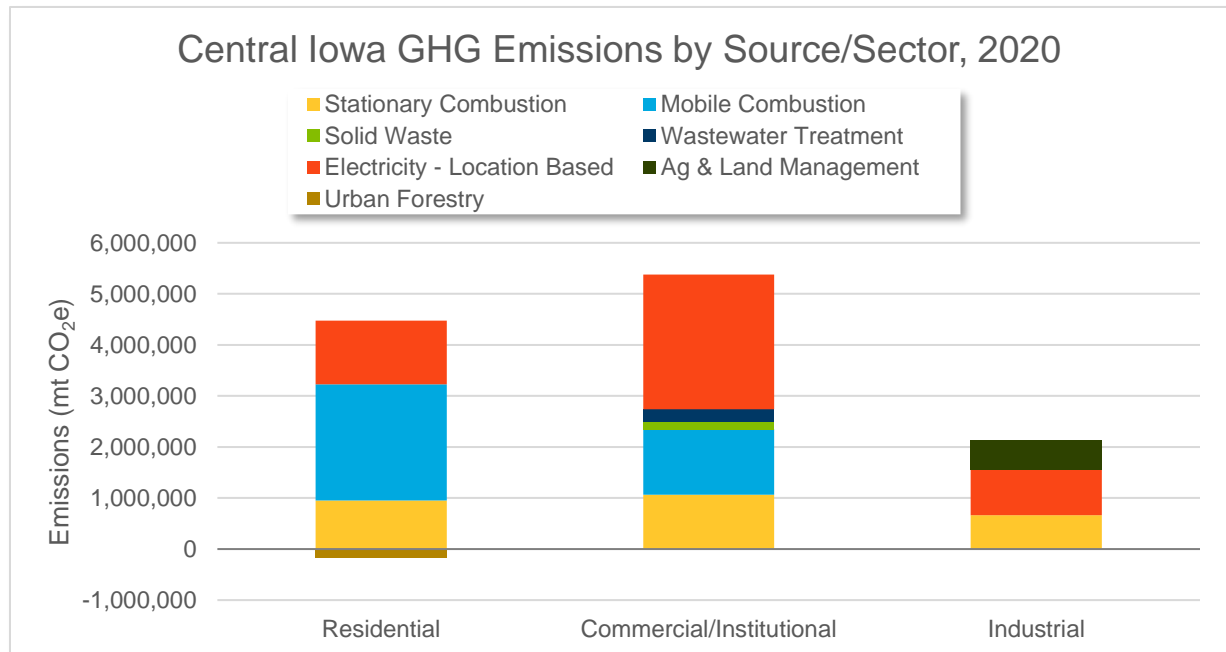
¹⁹ United Nations Climate Change. (n.d.) *Land Use, Land-Use Change and Forestry (LULUCF)*
<https://unfccc.int/topics/land-use/workstreams/land-use--land-use-change-and-forestry-lulucf>

Table 2. Central Iowa GHG Emissions by Source/Sector, 2020 (mt CO₂e)

Source/Sector	Residential	Commercial /Institutional	Industrial	GHG emissions (mt CO ₂ e)	Percent of Total
Stationary Combustion	951,624	1,063,521	663,407	2,678,552	22%
Mobile Combustion	2,277,031	2,129,655		3,564,470	30%
Solid Waste		137,821		137,821	1%
Wastewater		250,507		250,507	2%
Electricity Use	1,245,917	2,636,739	888,705	4,771,361	40%
Ag & Land Management			569,335	569,335	5%
Urban Forestry	-172,095			-172,095	-1%
Total (Gross Emissions)	4,474,573	5,376,027	2,121,447	11,972,047	100%
Total (Net Emissions)	4,302,478	5,376,027	2,121,447	11,799,952	100%

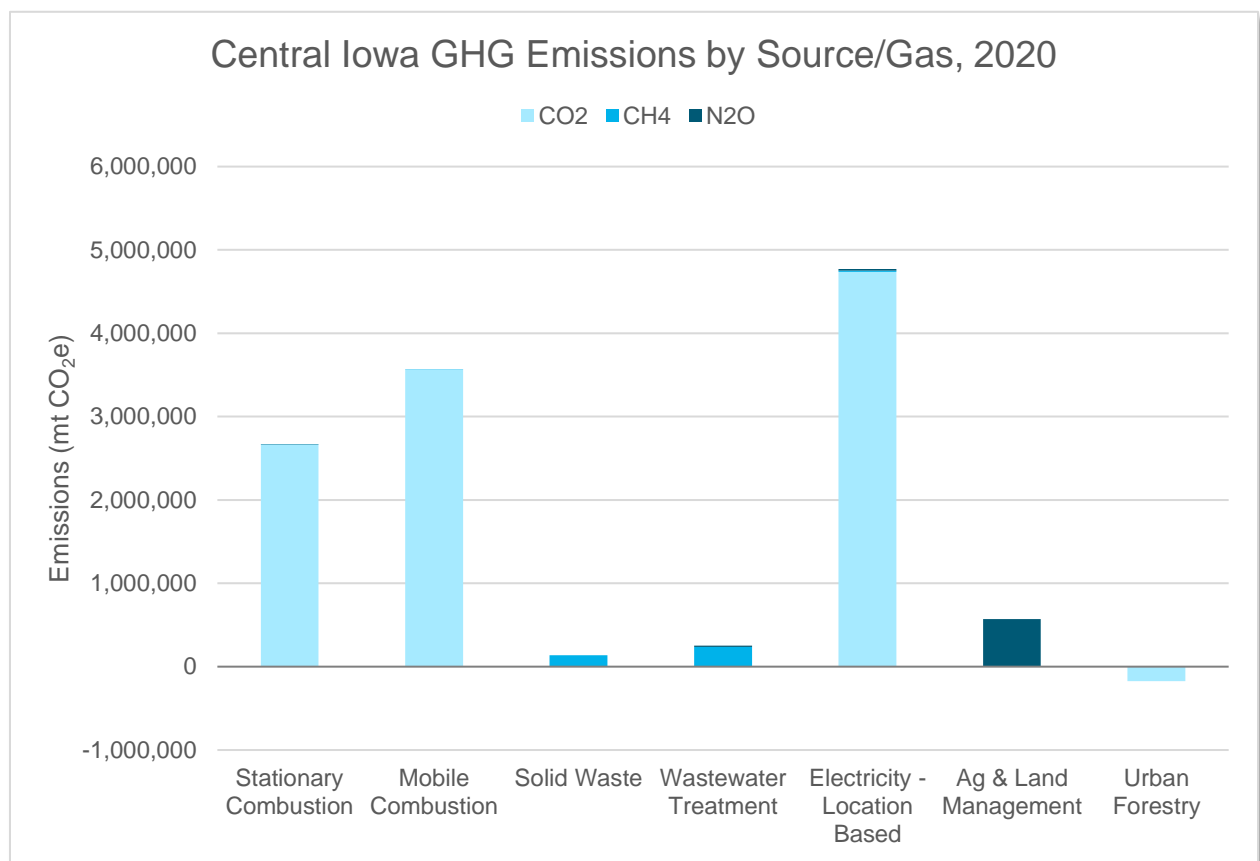
Data from Table 2 is presented in chart format in Figure 4 below.

Figure 4. Central Iowa GHG Emissions by Source/Sector, 2020



Though CO₂ is not the most potent greenhouse gas, it is the most prolific. Figure 5, below, shows Central Iowa emissions by source gas, with CO₂ emissions far exceeding the proportion of emissions from CH₄ or N₂O.

Figure 5. Central Iowa GHG Emissions by Source/Gas, 2020



Priority Measure and Implementation Strategies

As described in the outreach and coordination section of this plan, Polk County conducted extensive outreach and received many ideas to reduce GHGs as part of the “What’s Next, Central Iowa?” planning process. This section details a measure that pulls together a suite of these ideas that collectively reduce residential home energy use for low-income Central Iowans. This measure is not exhaustive of Central Iowa’s priorities. Instead, the measure included in this PCAP was selected because it met the following criteria:

- The measure is implementation-ready, meaning that the design work for the policy, program, or project is complete enough that a full scope of work and budget can be included in a CPRG implementation grant application.
- The measure can be completed in the near term, meaning that all funds will be expended and the project completed within the five-year performance period for the CPRG implementation grants.

Polk County will continue to engage with governmental entities, community-based organizations, and other stakeholders to expand upon and collect additional ideas for measures to include in its CCAP.

MEASURE SUMMARY

Measure

Reduce home fossil energy use and increase carbon sequestration through residential efficiency and ecosystem services for low-income households.

Implementation Strategies

- Expand upon existing energy audit and weatherization programs to increase low-income households served and provide additional incentives for energy efficiency, electrification, renewable energy, and ecosystem services offerings.
- Fund energy auditor and contractor training and certification programs, including outreach to recruit prospective contractors.
- Conduct neighborhood assessments of LIDACs and plant diverse native trees and shrubs to sequester carbon and reduce heat island effects.
- Partner with workforce organizations and institutions of higher learning on training programs for energy audits and follow-up services.
- Partner on as much as 400 MW of utility, municipal, & community solar farms that direct energy credits to low-income persons to reduce the energy cost burden.

Cumulative GHG Emissions Reductions

See Appendices E and F for the methodology, assumptions used, and other details about the GHG emission reduction calculations.

2025 – 2030: 268,007 mt CO₂e

2025 – 2050: 1,388,053 mt CO₂e

MEASURE DETAILS

As noted in the introduction, Central Iowa is already experiencing increasingly extreme temperatures, severe and intense wind and storm events, and long-lasting drought conditions. As Central Iowans weather extreme temperatures, heating, ventilation, and air conditioning systems (HVACs) within homes are under major stress as they try to keep up with the need for interior climate controls. Extended HVAC use increases cost and consumption of energy in nearly every household. Additionally, wind, hail, and intense storms have made a significant physical and fiscal impact on Central Iowa in recent years, leaving behind damaged property and an influx of insurance claims to homes and automobiles.²⁰

Due to this increase in extreme events and associated costs, Central Iowa will build off existing weatherization and energy efficiency work conducted by city, county, and regional organizations. Polk County will establish further funding and incentives for energy efficiency, electrification, renewable energy, and ecosystem service offerings that specifically focus on low-income households and LIDAC census block groups. At present, there are programs available to low-income Central Iowans that require a home energy audit as a pre-requisite. However, the existing programs are woefully underfunded and unable to keep up with the increasingly large demand for assistance. Implementing this measure will increase the number of homes that can be audited and retrofitted, thereby reducing energy consumption and costs in low-income households.

Furthermore, this measure includes neighborhood assessments in LIDACs to inform delivery of ecosystem services in the urban setting, such as planting of native trees and shrubs to replace trees lost to recent storm events, like the August 2020 derecho. As benefit multipliers, these neighborhood-wide tree and shrub plantings will provide shade for homes and streets, thereby reducing urban heat island stresses and creating more walkable spaces, increasing biodiversity and habitat, and increasing carbon sequestration capacity year over year.

This measure's implementation will aim to increase the number of homes with electrical capacity such that low-income households could add electric vehicle charging, electrified appliances, and/or rooftop solar as those technologies become more accessible and economically feasible. Finally, this measure includes working towards community-scale solar installations to break down barriers to adopting low- and no-carbon practices where possible for low-income households.

To ensure success of this measure, Central Iowa will expand energy auditor, planning, and contractor capacity by directly providing training opportunities through CPRG efforts and connecting into training and professional development programs that the State of Iowa or other partners are currently developing.

Sectors associated with this measure include residential electricity use and natural and working lands. The measure will be implemented in all Central Iowa counties covered in this PCAP (Dallas, Guthrie, Jasper, Madison, Polk, Story, and Warren).

²⁰ National Oceanic and Atmospheric Administration. (n.d.). *Iowa Summary*.
<https://www.ncei.noaa.gov/access/billions/state-summary/IA>.

MAJOR FEATURES

This measure has been developed and will be implemented as a partnership between a centralized coordinating agency, Polk County, and regional and local government housing and community development agencies.

Centralized Marketing and Outreach with Localized Administration

Polk County is aware that what works in urban areas of Central Iowa may not be advantageous in rural areas. Therefore, Polk County will develop centralized marketing materials through the CCAP process and make those available to all participating agencies for their use and localization. As Polk County seeks to ensure relevant material is available throughout the region and process, they anticipate regularly convening administrators and working with coordinating agencies to localize program offerings and administrative processes and bring any needs to partners for discussion and action.

Home Energy Audits and Services Selection

The program will expand existing home energy efficiency audit programs to include additional electrical and ecosystem service capacity checks at no cost to participants. To qualify for an audit and services, households must be approved for the Low-Income Home Energy Assistance Program (LIHEAP) or earn at or below 200% of the federal poverty level, which is consistent with state protocols and many of the local programs within this sector. When complete, auditors will submit their findings to the program administrators. The program administrator will use audit results to produce a curated list of additional reduced-cost service offerings, including expectations for service delivery timing and participant costs. Polk County continues to explore opportunities to ensure this program has navigators that will help participants receive a smooth process and delivery from start to finish.

Program service offerings may include, but are not limited to:

- **Energy efficiency upgrades**
 - Energy-efficient appliances
 - Insulation
 - Windows
 - Smart thermostats
 - Heating, ventilation, and air-conditioning
 - Smart irrigation
- **Renewables and Electrification**
 - Electric panel upgrades
 - Residential electric vehicle infrastructure
 - Solar tubes & other passive lighting
 - Utility, municipal, & community-scale solar & other renewables
- **Ecosystem Services**
 - Native tree & shrub planting

The administrator will coordinate the delivery of service offerings selected by audit participants. Delivery methods will prioritize full-cost coverage for participants but will continue to seek

pathways to incorporate available rebates, cost-share programs, and batch-and-build methods to deliver energy efficiency and capacity benefits to as many households as possible.

Furthermore, Polk County and partners will continue to monitor the release of details on additional grants and public-private partnerships for LIDAC residents and tap into those resources where possible to maximize funding efficiencies. Polk County anticipates service delivery will be aligned and coordinated with existing programs, including weatherization and home rehabilitation, and will work to form public-private partnerships to increase reach and impact.

Neighborhood Native Trees and Shrubs Assessment and Plantings

The program administrator will coordinate assessments of LIDAC neighborhoods to determine whether such communities would benefit from plantings of native trees and plants. The administrator will obtain consent from residents to plant native trees and shrubs to reduce home energy needs and mitigate urban heat island effects. Native trees and shrubs will be planted and maintained in cooperation with local partners and technical experts, and where possible, in accordance with local urban forest master plans.

Utility, Municipal, & Community Solar Installations

The program will partner with utilities (public & private) and communities to develop solar farms with as much as 400 MW of capacity with the specific intent of directing energy credits to low-income households – including both renter- and owner-occupied. Whenever possible, these farms will utilize existing built infrastructure, including buildings, parking lots, and other structures.

Workforce Development

Throughout this PCAP process and measure development, workforce has been the number one discussion topic, specifically in regards to qualified contractors and energy auditors. Polk County has worked with Des Moines Area Community College (DMACC), Iowa Labor Center, labor unions, and other agencies to determine how to rectify this need. That work includes, but is not limited to, determining what competencies and courses are already available through DMACC that might need retooling to meet the needs of this proposed measure.

Additionally, Polk County has identified funding sources—including the Training for Residential Energy Contractors, or TREC program— which may soon be available to develop trainings at the state-level. The county will continue to explore options and collaborate with partners to determine which agency will lead collective workforce development efforts, as well as where new energy positions stemming from this program could be employed. Again, Polk County will work to develop public-private partnerships to ensure cohesive action throughout the region.

Polk County will continue to partner with local, regional, and state government organizations and institutions of higher learning to create and provide energy auditor and contractor training, certification, and professional development programs. Furthermore, all agencies involved in this measure are willing to be involved in outreach to recruit prospective contractors and auditors to the varying degrees their agencies have capacity and connection.

MEASURE EVALUATION & MAINTENANCE

Polk County anticipates convening the partner administering organizations at least once a year to evaluate whether any changes to implementation guidance, coordination mechanisms, or the audit addendum form are needed and to incorporate lessons learned and best practices from implementation.

TASKS AND MILESTONES

Table 3. Tasks and Milestones

Task #	Task Description	Anticipated Milestones
1	Pursue and receive implementation funding.	Spring - Fall 2024
2	Enter funding agreements with local and regional implementers.	Fall 2024
3	Community engagement around measure implementation administration specifics	Fall 2024
4	Produce implementation guidance and an energy audit addendum form that assesses the feasibility of the additional service offerings available under this measure.	Winter 2024
5	Coordinate with volunteer organizations and institutions of higher learning to establish training and apprenticeship programs.	Winter 2024
6	Measure implementation (audits, services, and workforce training)	January 2025 – December 2029 or beyond if additional funding is secured

EXPECTED OUTPUTS AND OUTCOMES

Expected outputs include:

- Approximately 1674 low-income households audited and weatherized, with at least 49% of serviced homes located in LIDACs
- New auditors trained and certified
- New contractors trained
- Energy savings in therms, gallons, and MWh in low-income households
 - See the GHG calculation spreadsheet for savings estimates
- More than 35,000 native trees and shrubs planted in LIDACs

Expected outcomes include:

- Cumulative GHG emissions reduced or sequestered:
 - 2025 – 2030: 268,007 mt CO₂e
 - 2025 – 2050: 1,388,053 mt CO₂e
- Reduced air pollutant emissions
- Reduced energy cost burdens
- Reduced urban heat island effects
- Increased LIDAC access to energy efficiency & technology
- Increased energy auditing and efficiency workforce capacity

RISKS

Table 4. Measure Risks & Mitigation Strategies

Risk	Effect on GHG Emission Reductions	Mitigation Strategies
<p>Insufficient energy auditor and contractor capacity for additional home audits and service offerings. Existing weatherization and retrofit programs have expressed a need for additional auditor and contractor capacity.</p>	<p>Insufficient capacity could create delays in delivering program offerings. Any delay could reduce near-term cumulative GHG emission reductions.</p>	<p>Provide funding for energy contractor training and certification programs, including outreach to recruit prospective contractors. If such funding is unnecessary due to other available programs, like TREC, any implementation funding allocated to this area will be reallocated pro-rata to weatherization and ecosystem services projects.</p> <p>Partner with Green Iowa AmeriCorps and University of Northern Iowa students on energy audits, neighborhood assessments, and follow-up services</p>
<p>Participant costs not covered by program incentives may present a barrier to uptake of the full suite of offerings that could reduce household energy use.</p> <p>Some households will be interested in additional upgrades and services that would be above the cap per household.</p>	<p>Limited uptake could reduce the ability of the program to capture all potential near- and long-term cumulative GHG emission reductions.</p>	<p>Partner with community development financial institutions to provide low-interest financing for participant costs not covered by the program.</p> <p>Partner with municipal utilities to provide opportunities for “pay as you save” financing on utility bills.</p>

TRANSFORMATIVE IMPACT

Implementing this measure will create transformative impacts that lead to significant additional GHG emission reductions for low-income households and neighborhoods. The implementation strategy described above would increase energy auditor and contractor capacity to reach more homes than are currently served by existing programs. “Make-ready” offerings like the electric panel upgrade and residential electric vehicle charging infrastructure will enable households to more easily invest in electric vehicles, electrified appliances, and residential solar in the future—choices that can reduce their carbon footprint beyond what can be achieved under this measure.

Further, administrators would also connect participants with other existing financing and grant programs for home energy services that can boost uptake and GHG reduction beyond the initial implementation goals of this measure. The measure is scalable and can be replicated by communities across the United States.

Need for Funding and Intersection with Other Funding Availability

Cities, counties, regional agencies, and other organizations across Central Iowa receive state and federal funding to administer various programs that fund weatherization, energy efficiency, and/or home rehabilitation upgrades for owner-occupied single-family homes. (See Appendix G for a summary of programs that relate to this measure.) However, these programs do not meet the existing need. For example, the Polk County weatherization program has a waitlist of more than 9,000 households; the New Opportunities, Inc. weatherization program has a waitlist of more than 3,000 households; and the IMPACT Community Action Partnership weatherization program has a waitlist of hundreds of households. Statewide, the Low-Income Weatherization Assistance Program approves approximately 80,000 applications, but only 2,000 of these can be served each year based on current funding levels.²¹

Agencies carrying out these programs in Central Iowa were asked to participate in the development of this measure. In addition to in-depth discussions about measure delivery, they were surveyed regarding their offerings, barriers, and needs. More than 12,500 homes are currently waitlisted in the region, and less than 600 are completed each year at current funding and staffing levels. Polk County and all coordinating agencies acknowledge additional funding and capacity is needed to reduce low-income household energy burdens, increase staffing levels, and reduce emissions in Central Iowa. This measure aims to ensure all three.

Table 5, below, describes the funding sources that cities, counties, regional agencies, and the State of Iowa have secured or are pursuing that would complement this measure and associated workforce development.

²¹ Iowa Health & Human Services. (2024, February 9). *Weatherization Assistance FAQ*. <https://hhs.iowa.gov/programs/programs-and-services/weatherization/faq>.

Table 5. Existing Funding Sources

Funding Program	Funding Entity	Description	Gaps
Existing Funding Sources			
Weatherization Assistance Program (WAP)	U.S. Department of Energy	State of Iowa (hereafter, "State") passes WAP funding through to local Community Action Agencies (CAAs).	<ul style="list-style-type: none"> WAP funds can only be used for cost-effective upgrades, which wouldn't fund the electric panel upgrades, EV chargers, and other provisions. CAAs have long waitlists for current weatherization services. The programs have a 200% FPL income cap.
LIHEAP²²	U.S. Department of Health & Human Services	Provides energy bill assistance to low-income households. State passes funding through to CAAs. LIHEAP applications inform weatherization program lists and indicate the high level of need.	<ul style="list-style-type: none"> Cannot be used to implement projects. CAP agencies have long waitlists. The programs have a 200% FPL income cap.
Community Development Block Grant Program²³	U.S. Department of Housing and Urban Development	Provides formula funding to states and local governments to provide decent housing and support low-moderate-income households. Eligible activities can include rehabilitation of residential and non-residential structures and energy conservation and renewable energy resources.	<ul style="list-style-type: none"> Not typically used for extensive energy efficiency or electrification upgrades Not available to cities under 50,000 or counties under 200,000 residents

²² U.S. Department of Health & Human Services. (n.d.). *Low Income Home Energy Assistance Program (LIHEAP)*. <https://www.acf.hhs.gov/ocs/programs/liheap>.

²³ U.S. Department of Housing and Urban Development. (n.d.). *Community Development Block Grant Program*. https://www.hud.gov/program_offices/comm_planning/cdbg.

USDA Housing Preservation Grants²⁴	U.S. Department of Agriculture	Region XII Council of Governments used this to fund repair/rehabilitation of housing owned or occupied by low-income rural citizens in Dallas and Guthrie counties. Can be used to replace insulation, electrical wiring, and heating systems.	<ul style="list-style-type: none"> • Can only be used for areas considered rural by USDA. • Out of the counties included in the planning area, this has only been used in Dallas and Guthrie County.
National Housing Trust Fund²⁵ & State Housing Trust Fund²⁶	U.S. Department of Housing and Urban Development State of Iowa	Local Housing Trust Funds (LHTF) receive funding from the IFA to develop or preserve affordable housing. Services include rental assistance, home repair, and homelessness assistance.	<ul style="list-style-type: none"> • Most LHTFs focus their spending on critical household rehabilitation needs, rather than energy efficiency, renewable energy, or electrification services. • Some LHTFs have a spending cap per household (e.g., Story County limited owner-occupied rehab costs up to \$15,000 per household). • In most cases, households must be at or below 80% AMI.
Pending Funding Sources			
Inflation Reduction Act Home Energy Rebates²⁷	U.S. Department of Energy	Funded by the IRA, the Home Efficiency Rebates and Home Electrification and Appliance Rebates will be administered by the State and fund efficiency and electrification upgrades for single- and multi-family households.	<ul style="list-style-type: none"> • The State is still in the process of designing these rebates. Historically, rebates have been less accessible to low-income and ALICE populations because they cannot afford the due to upfront costs of the product/action/measure.²⁸

²⁴ U.S. Department of Agriculture Rural Development. (n.d.). *Housing Preservation Grants*. <https://www.rd.usda.gov/programs-services/single-family-housing-programs/housing-preservation-grants>.

²⁵ Iowa Finance Authority. (n.d.). *National Housing Trust Fund*. <https://www.iowafinance.com/programs-for-property-developers/national-housing-trust-fund/>.

²⁶ Iowa Finance Authority. (n.d.). *State Housing Trust Fund*. <https://www.iowafinance.com/state-housing-trust-fund/>.

²⁷ Department of Energy Office of State and Community Energy Program. (n.d.). *Home Energy Rebates Program*. <https://www.energy.gov/scep/home-energy-rebates-programs>.

²⁸ United Ways of Iowa & United for ALICE. (2023). *ALICE in the Crosscurrents: COVID and Financial Hardship in Iowa*. https://www.uwiowa.org/sites/uwiowa/files/ALICE/23UFA_Report_Iowa_4.11.23_FINAL.pdf

State-Based Home Energy Efficiency Contractor Training Grants (alt. title: TREC)²⁹	U.S. Department of Energy	The Iowa Economic Development Authority will provide contractor training on energy auditing and the proper installation of high energy efficient equipment and energy-saving practices.	<ul style="list-style-type: none"> • The State of Iowa will receive \$2.19 million for statewide work through TREC formula funding. • The need for auditors and contractors in Central Iowa is high.
Energy Efficiency Revolving Loan Fund Capitalization Grant Program³⁰	U.S. Department of Energy	Program will provide a capitalization grant to the State to establish a revolving loan fund (RLF) to provide loans and grants for energy efficiency audits, upgrades, and retrofits. Awards anticipated spring 2024.	<ul style="list-style-type: none"> • The State of Iowa is planning to use the funding for energy efficiency upgrades and retrofits for commercial buildings and multifamily housing, so this will not provide funding for the residential upgrades.
Energy Efficiency and Conservation Block Grants³¹	U.S. Department of Energy	Several cities in Central Iowa and the State of Iowa received EECBG formula funding. The State is using its funds for two competitive grant programs. The Community Fund focuses on energy efficiency retrofits in communities that are not eligible to receive a direct EECBG allocation, while the Innovation Fund allows innovative projects with either an energy efficiency or renewable energy focus at local governments, nonprofits, and for-profit entities.	<ul style="list-style-type: none"> • It is not yet known what specific projects will be funded through the state grant programs.

²⁹ Department of Energy Office of State and Community Energy Program. (n.d.). *State-Based Home Energy Efficiency Contractor Training Grants*.
<https://www.energy.gov/scep/state-based-home-energy-efficiency-contractor-training-grants>.

³⁰ Department of Energy Office of State and Community Energy Program. (n.d.). *Energy Efficiency Revolving Loan Fund Capitalization Grant Program*.
<https://www.energy.gov/scep/energy-efficiency-revolving-loan-fund-capitalization-grant-program>.

³¹ Department of Energy Office of State and Community Energy Program. (n.d.). *Energy Efficiency and Conservation Block Grants*.
<https://www.energy.gov/scep/energy-efficiency-and-conservation-block-grant-program>.

Review of Authority to Implement

County, city, and regional government agencies in Central Iowa have existing authority to implement the strategies outlined in this measure.

Low-Income and Disadvantaged Community Analysis

Implementing this PCAP will significantly benefit low-income and disadvantaged communities (LIDACs). This section identifies each LIDAC within the jurisdiction covered by this PCAP, how Polk County and its partners meaningfully engaged with LIDACs in developing this PCAP, and how Polk County and its partners will continue to engage with LIDACs in the future.

IDENTIFICATION OF AND ENGAGEMENT WITH LIDACS

Climate change impacts will affect all communities in Central Iowa. Polk County recognizes the disproportionate impacts that climate change has had and will have on its low-income and disadvantaged community members. Polk County has utilized the following resources to identify and analyze the anticipated benefits and potential disbenefits of each priority measure on its LIDACs:

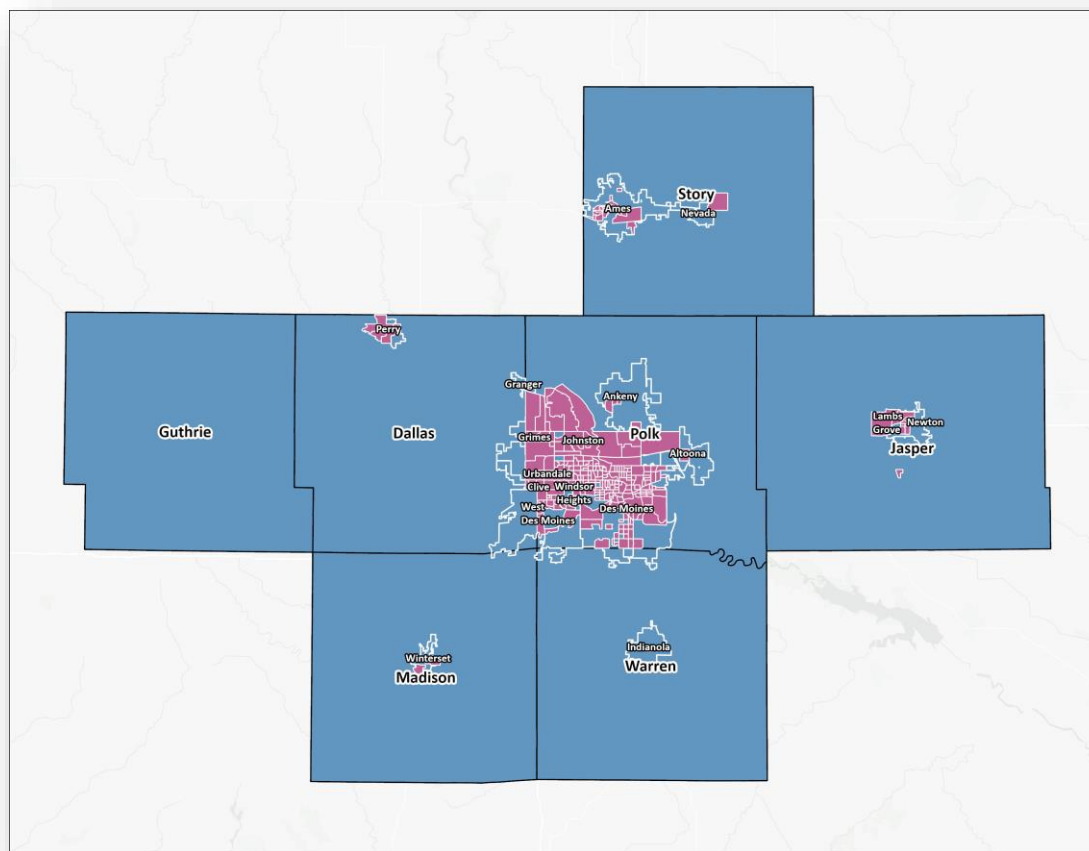
- EPA's **Environmental Justice Screening and Mapping Tool (EJScreen Version 2.2)**³²: a mapping database that utilizes both environmental impacts and socio-economic impacts to identify the highest intersection of low-income populations, people of color, and a given environmental indicator. EJScreen provides thirteen environmental indicators, including air pollutants, water pollutants, toxic elements and chemicals, and hazardous waste.
 - The EJScreen tool also features an **EPA IRA Disadvantaged Communities** map layer that allows for a combined view of both datasets. Specifically, the purpose of the EPA IRA Disadvantaged Communities map is to allow potential funding applicants to determine whether a community is disadvantaged for the purposes of implementing programs under the IRA.
- The **Climate and Economic Justice Screening Tool (CEJST)**³³: another mapping tool that identifies environmental, health, and social-economic burdens by census tract. The CEJST allowed Polk County to supplement its LIDAC identification and analysis to ensure broad consideration of how the priority measures will affect LIDACs' resilience and response to unprecedented environmental effects.

Figure 6, below, is a map of Central Iowa census block groups that are designated as disadvantaged according to the EPA IRA Disadvantaged Communities map.

³² U. S. Environmental Protection Agency. 2023 version. EJScreen. Retrieved: February 1, 2024, from <https://ejscreen.epa.gov/mapper/>

³³ Council on Environmental Quality. (2022, November). *Climate and Economic Justice Screening Tool*. <https://screeningtool.geoplatform.gov/en/#3/33.47/-97.5>.

Figure 6. IRA Disadvantaged Communities in Central Iowa³⁴



Note. IRA disadvantaged census block groups are designated in pink.

This PCAP and the measure recommended within are wholly centered around climate equity. The measures focus on serving low-income Central Iowans to reduce their energy burdens and achieve a greater quality of life. Throughout this PCAP process, Polk County engaged with many community-based organizations representing LIDAC residents throughout Central Iowa. A full list of those organizations can be found in the Outreach and Coordination Section.

Polk County will continue to deepen its community conversations and engagement as it moves toward planning for a CCAP to be delivered in 2025 and a status update on implementation of this PCAP and the CCAP in 2027. See the Outreach and Coordination section and Appendix A for a record of outreach activities, a summary of input received during the PCAP engagement process, and a plan for deeper engagement with LIDACs during the CCAP process.

³⁴ U. S. Environmental Protection Agency. 2023 version. EJScreen. Retrieved: February 1, 2024, from <https://ejscreen.epa.gov/mapper/>

IMPACT OF PCAP IMPLEMENTATION ON LIDACS

Appendix H lists the LIDAC census block groups in Central Iowa anticipated to be affected by each priority measure included in this PCAP. Anticipated benefits or potential disbenefits associated with measure implementation are summarized in this section.

Anticipated Benefits and Disbenefits of PCAP Implementation

Implementing strategies outlined in this PCAP will provide residential energy efficiency, electrification, and ecosystem services that will reduce home energy bills, improve resiliency, and mitigate heat island effects in Central Iowa for low-income households and neighborhoods. The services provided will fill a significant gap that Central Iowa's weatherization service providers and energy efficiency rebate programs cannot currently meet due to limited resources and capacity.

The offerings will be stackable and allow residents with lower incomes to identify and pursue the services that best fit their needs, with expert guidance from home energy auditors. Given that household heating, cooling, and powering account for around 20% of the country's energy-related GHG emissions, implementation of this PCAP will produce significant benefits both at the individual and community level for thousands of Iowans whose needs have not yet been met through existing programs.³⁵

Most notably, implementation will help low-income residents reduce their energy consumption and save money. For example, services such as insulation upgrades, air leakage reduction, and window upgrades will directly reduce the amount of energy that can escape homes due to old or original infrastructure. In turn, such services will also reduce residents' energy bills and increase comfort because they will no longer need to overheat or overcool their home in response to air leaks. Furthermore, a decrease in individual residential energy use will reduce the grid's overall energy demand. Throughout the year, energy demand peaks in response to extreme weather conditions; peaks are further exacerbated by inefficient residential energy use, whether intentional or not. Providing energy efficiency services to residential homes will support a more reliable and resilient grid, even during extreme weather conditions.

Electrification of household appliances will result in healthier homes for Iowans. Gas stoves and ovens, water heaters, furnaces, and dryers that rely on fossil fuel combustion have all been known to emit air pollutants such as nitrogen oxides (NOx), carbon monoxide (CO), PM_{2.5}, and formaldehyde, which can cause and exacerbate health issues like respiratory diseases, neurological disabilities, and cardiovascular complications.³⁶ Replacing these appliances with fully electrified versions will reduce indoor air pollution and improve household health.

³⁵ Goldstein, B., Gounaridis, D., & Newell, J. P. (2020). The carbon footprint of household energy use in the United States. *Proceedings of the National Academy of Sciences*, 117(32). 19122–19130. <https://doi.org/10.1073/pnas.1922205117>.

³⁶ Tan Y.A. & Jung, B. (2021). Decarbonizing Homes Improving Health in Low-Income Communities through Beneficial Electrification. *RMI*. 15-16. https://passivehousenetwork.org/wp-content/uploads/2022/11/RMI_Decarbonizing_Homes_Report-_2021.pdf.

In addition to household benefits, PCAP implementation will also promote community health and economic sustainability. Notably, ecosystem services such as planting native trees and shrubs will enhance green spaces within the community, which has a proven benefit on individual mental health and overall well-being.³⁷ Furthermore, trees within neighborhoods provide shade for cooling bodies and homes, create more walkable streets which can further enhance GHG reductions as alternative transportation options become more viable and appealing, and decrease the amount of stormwater runoff during weather events which, increasing community resilience as storms continue to intensify.

Furthermore, to ensure the renewable portfolio of Central Iowa continues to grow, PCAP implementation will seek out utility, community, and small-scale solar farm options. Like each other portion of this measure, Central Iowa will seek to partner developing solar farm locations that direct energy credits to low-income households to ensure that not only are LIDACs efficient and resilient, but, benefiting directly from clean energy produced right here.

Additionally, implementation of the PCAP will directly incentivize the creation of new, well-paying clean energy jobs through increased demand for energy auditors, engineers, appliance installers, etc. Overall, the services allow residents to make clean energy decisions that meet their needs. By providing these services, Polk County will be able to promote GHG emissions reductions, efficient energy usage, individual and community health, local economic sustainability, and more, all while providing experiential education around clean energy and household energy efficiency for the benefit of the community and generations to come.

³⁷ Lee, A. C., Jordan, H. C., & Horsley, J. (2015). Value of urban green spaces in promoting healthy living and wellbeing: prospects for planning. *Risk management and healthcare policy*. (8). 131–137. <https://doi.org/10.2147/RMHP.S61654>.

Conclusion

This PCAP is the first deliverable under the CPRG planning grant awarded to Polk County. Polk County and its partners will continue planning, engagement, and action to reduce emissions; invest in sustainable infrastructure, technologies, and practices; build our economy; and enhance the quality of life in Central Iowa. In 2025, Polk County will publish a CCAP that establishes equitable and sustainable economic development strategies that reduce emissions across all sectors. The CCAP will include near- and long-term emissions projections, a suite of emission reduction measures, a robust analysis of measure benefits, plans to leverage federal funding, and a workforce planning analysis. In 2027, Polk County will publish a status report that details implementation progress for measures included in the PCAP and CCAP, any relevant updates to PCAP and CCAP analyses, and next steps and future budget and staffing needs to continue implementation of CCAP measures.

If you have questions about this PCAP or suggestions for the upcoming CCAP and status report, contact Polk County's Sustainability Planner and CPRG Project Lead, Allison van Pelt, at sustainability@polkcountyiowa.gov.