

## Overview

Kentucky ranks #6 overall out of 51 states and districts in the [U.S. Climate Vulnerability Index](#) (CVI). The index is a measure of environmental, social, economic, and infrastructure impacts affecting a community's ability to respond and adapt to climate change.

What is "climate vulnerability"? The evolving climate is exacerbating both infectious and chronic illnesses, heightening societal and economic pressures, and amplifying the intensity of extreme weather occurrences. While certain communities in the United States possess access to resources that aid in their preparation for, endurance of, and recovery from these impacts, many others do not. These communities are disproportionately vulnerable to climate-related effects due to a legacy of racially biased housing and infrastructure development, unequal application of environmental regulations, discriminatory practices in the labor market, and other systemic injustices.

The Lexington-Fayette MSA is located in the heart of Kentucky. It encompasses the six-county area of Bourbon, Clark, Fayette, Jessamine, Scott, and Woodford Counties. As the largest municipality in the MSA, the Lexington-Fayette Urban County Government (LFUCG) is designated as the lead agency to oversee and maintain responsibility for the management of the grant funds, activities, and deliverables.

Five "implementation ready" measures were included in the Lexington-Fayette MSA Priority Climate Action Plan. These measures, comprised of increasing urban tree canopy, residential solar, weatherization, an electric bus canopy shelter, and an electric vehicle charging need study, are not just primed for implementation but are also widely supported by the community. The Lexington-Fayette MSA's strategy involves expanding tried-and-true programs within Lexington to the surrounding counties. These priority measures are designed 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 Kentucky.

The table below summarizes the priority measures included in this grant application:

GHG Reduction Measure	Increasing Urban Tree Canopy	Residential Solar	Weatherization	Lextran Electric Vehicle Shelter & Charging Infrastructure	EV Charging Need Study	Personnel/ Fringe Benefits	TOTAL
<b>Funding Request</b>	\$15,289,000	\$15,000,000	\$8,000,000	\$11,000,000	\$500,000	\$126,500	<b>\$49,915,500</b>
<b>Emission Reductions Through 2030</b>	107 MT CO <sub>2</sub> e	17,732 MT CO <sub>2</sub> e	1,400 MT CO <sub>2</sub> e	2,707 MT CO <sub>2</sub> e	125,814 MT CO <sub>2</sub> e	-	<b>147,634 MT CO<sub>2</sub>e</b>
<b>Emission Reductions Through 2050</b>	9,512 MT CO <sub>2</sub> e	119,060 MT CO <sub>2</sub> e	9,400 MT CO <sub>2</sub> e	13,533 MT CO <sub>2</sub> e	377,442 MT CO <sub>2</sub> e	-	<b>528,947 MT CO<sub>2</sub>e</b>
<b>Cost Effectiveness Through 2030</b>	\$142,887.85 / MT CO <sub>2</sub> e	\$845.93 / MT CO <sub>2</sub> e	\$5,714.29 / MT CO <sub>2</sub> e	\$4,063.54 / MT CO <sub>2</sub> e	\$3.97 / MT CO <sub>2</sub> e	-	<b>\$337.81 / MT CO<sub>2</sub>e</b>
<b>Cost Effectiveness Through 2050</b>	\$1,607.34 / MT CO <sub>2</sub> e	\$125.99 / MT CO <sub>2</sub> e	\$851.06 / MT CO <sub>2</sub> e	\$812.83 / MT CO <sub>2</sub> e	\$1.32 / MT CO <sub>2</sub> e	-	<b>\$94.37 / MT CO<sub>2</sub>e</b>



## Increasing Urban Tree Canopy

### 1. Overall Project Summary and Approach

#### A. Description of GHG Reduction Measures

##### Major Features/Tasks

This measure focuses on increasing tree canopy within urban areas of the Lexington-Fayette MSA that have a Tree Equity Score of less than 60. The [Tree Equity Score](#) was developed by [American Forests](#) to address inequities in urban tree canopy distribution. It considers existing tree canopy, baseline tree canopy targets according to biome classification, building density, and a priority multiplier based on income, employment, health, race, language, age, and heat severity of a community. Detailed information on how the Tree Equity Score for a community is calculated is included in the Technical Appendix. **Table 1-1** below contains the number of Census block groups in each urban area of the MSA that have a Tree Equity Score of less than 60 and their corresponding populations, the approximate number of trees required to achieve this score, and the approximate cost of the trees.

**Table 1-1 – Census Block Groups with Tree Equity Scores <60**

Municipality	Block Groups w/ Tree Equity Scores <60	Population in Block Groups	Trees Required to Achieve Score of 60	Cost
Paris	2 of 14	1,004	896	\$448,000
Winchester	4 of 18	6,288	1,361	\$680,500
Lexington-Fayette	2 of 210	1,145	2,899	\$1,449,500
Nicholasville	13 of 21	21,333	16,297	\$8,148,500
Wilmore	1 of 6	2,123	1,191	\$595,500
Georgetown	2 of 30	2,002	2,205	\$1,102,500
Versailles	6 of 13	6,019	5,729	\$2,864,500
<b>TOTAL</b>	<b>30 of 312</b>	<b>39,914</b>	<b>30,578</b>	<b>\$15,289,000</b>

The framework to distribute and maintain trees has already been developed and piloted by the LFUCG Division of Environmental Services. [Reforest the Bluegrass](#) is an annual tree planting event that has been held since 1999. Over 215,000 trees have been planted. Sites are maintained by LFUCG over time to ensure the longevity of the plantings. Reforest at Home started as a by-product of the COVID-19 pandemic, but has continued due to its large success. Reforest at Home provides free tree seedlings for Fayette County residents to plant in their own yards. While these previous events have largely involved the planting of seedlings, this measure focuses on the installation of ball and burlap trees to reap as many benefits as early as possible and illustrate the transformative change trees bring to an urban/suburban environment.

LFUCG has also developed a public education program to maintain and preserve their investments in the urban tree canopy including a list of trees acceptable for planting in various locations and a [quiz](#) that residents may take to select the appropriate tree for their particular site and circumstances. In addition, a [Go See Trees](#) event is hosted annually to showcase the importance of planting the right tree in the right place.

##### Key Implementing Agencies

LFUCG will be the lead agency. Subawards will be made to the Cities of Paris, Winchester, Nicholasville, Wilmore, Georgetown, and Versailles. LFUCG will execute Memoranda of Agreements (MOAs) with each partnering agency outlining the specific scope and responsibilities. These agencies have



existing authority to enact this measure. Budget authority and dedicated funds may need to be respectively increased or created through statute. If a memorandum is not in place with any of the communities listed in Table 1-1 after one year of grant award, the funding will be reallocated first to communities with additional demand and then based on the percentages of LIDAC populations in each community.

#### Success of Measure

The success of existing tree planting programs in Lexington will facilitate an easy translation to the other counties in the Lexington-Fayette MSA. These communities will be able to organize volunteer events for plantings on public property modeled after the Reforest the Bluegrass program and also provide trees to residents for planting on private properties. In addition, Lexington can share the public education resources they have developed to ensure the longevity of trees planted.

#### Potential Risks/Considerations

The primary risks involved for this measure are associated with the ability to plant the target number of trees and their longevity. LFUCG completed an [Urban Tree Canopy Assessment](#) in 2022 that identified 17,668 acres available for possible tree planting in the Urban Service Area. However, the other five counties in the MSA have not completed such a study. There is a risk that there could be insufficient suitable planting areas or insufficient demand/participation in tree planting campaigns. In both of these instances, funding would be reallocated to other partnering municipalities as described in earlier sections.

In addition, trees are living organisms influenced by dynamic factors. If poor growing conditions occur in any of the planting years, an increased mortality rate may result. In both cases, fewer trees would produce fewer GHG reductions. The loss in benefit through 2030 is minimal since it will take some years for the trees to reach maturity, but it will be evident through 2050 since the trees will not be providing annual benefits. LFUCG will address these potential risks through comprehensive education, assistance with promotional programs, and targeted follow-up to ensure trees are cared for after planting.

#### Meeting the Goals of the CPRG Program

This priority measure was included in the Lexington-Fayette MSA Priority Climate Action Plan. Lexington has a long history of taking measures to preserve its natural lands and native biota, and citizens have repeatedly protested tree removal projects. This measure supports EPA's Goal 1, Objective 1.1 in the FY 2022-2026 Strategic Plan to "aggressively reduce the emissions of greenhouse gases from all sectors while increasing energy and resource efficiency and the use of renewable energy." Urban afforestation is considered a carbon removal measure, or "sink." This measure provides the benefit of sequestering carbon emitted from all sectors, even those with challenging emissions to abate. Afforestation is a GHG reduction measure that is available now and has public buy-in due to the host of other benefits it provides.

## B. Demonstration of Funding Need

#### Existing Funding

Lexington has committed to improving its urban tree canopy. In February 2022, \$1.5 million in city funds were allocated for tree planting, tree maintenance, tree education, and the development and support of tree advocates and stewards. Furthermore, Lexington received a \$1,000,000 Urban and Community Forestry Grant from the USDA for Town Branch Park to increase access to nature for BIPOC neighborhoods, reduce urban heat, and expand urban tree canopy. While these funding sources are strong steps toward meeting Lexington's goal, only 2 block groups of the 30 with Tree Equity Scores less than 60 in the MSA are in Lexington. Without a CPRG Implementation Grant, securing the funding to plant



27,679 trees in the other five counties of the MSA is a challenging task in trying to coordinate multiple grant applications and securing funding matches. In addition, the smaller communities surrounding Lexington may not have sufficient technical and planning staff to successfully pursue tree canopy support funding opportunities on their own.

#### Other Funding Sources

LFUCG applied for an Environmental Justice Government-to-Government (EJG2G) Grant in 2023 featuring urban tree canopy as one of the included components. This grant proposal was not funded. LFUCG also applied for a USDA Urban and Community Forestry Grant in 2023 that was not funded.

If this priority measure is not funded by a CPRG Implementation Grant, municipalities in the MSA may pursue an EJG2G or USDA Urban and Community Forestry Grant. This measure is eligible under these grants; however, there are challenges associated with these funding sources. The EJG2G Grant is limited to \$1 million per award and requires partnership with a community-based nonprofit organization. The USDA Urban and Community Forestry Grant is also limited to \$1 million per award and requires an equal funding match.

#### C. Transformative Impact

The Lexington-Fayette MSA understands that afforestation alone is not sufficient to remedy the climate crisis. However, it is our opinion that the best way to tackle it is two-pronged. We must reduce GHG pollution sources and increase carbon sinks. While the GHG emissions reductions benefits of urban trees are undeniable, this measure is focused on planting trees in the areas with the greatest need. Addressing these inequities will further the missions of the Justice40 initiative and Executive Order 14096: Revitalizing Our Nation's Commitment to Environmental Justice for All.

#### 2. Impact of GHG Reduction Measures

See the Technical Appendix for information on assumptions, methodology, and reasonableness of the GHG reductions presented below. These reduction totals assume that 100% of the measure is funded by a CPRG Implementation Grant.

**Table 1-2 – Impact of GHG Reduction Measures Summary**

<b>Pollutant</b>	<b>A. Magnitude of Reduction 2025-2030</b>	<b>B. Magnitude of Reduction 2025-2050</b>	<b>C.1. Cost Effectiveness of Reductions Through 2025</b>	<b>C.2. Cost Effectiveness of Reductions Through 2050</b>
GHG	107 MT CO <sub>2</sub> e	9,512 MT CO <sub>2</sub> e	\$142,887.85 per MT CO <sub>2</sub> e	\$1,607.34 per MT CO <sub>2</sub> e
PM <sub>2.5</sub>	170 lbs	15,006 lbs	-	-
PM <sub>10</sub>	648 lbs	57,380 lbs	-	-
NO <sub>2</sub>	382 lbs	33,844 lbs	-	-
SO <sub>2</sub>	245 lbs	21,656 lbs	-	-
Ozone	3,627 lbs	320,972 lbs	-	-

Reductions not provided in individual GHG quantities as it is unknown what sources will be sequestered.

#### D. Documentation of GHG Reduction Assumptions

See Technical Appendix.



### 3. Environmental Results – Outputs, Outcomes, and Performance Measures

#### A. Expected Outputs and Outcomes

##### Outputs

- Approximately 30,578 trees planted across the six county MSA
  - Progress reports
  - Final report

##### Outcomes

- Reduction in cumulative metric tons of GHG emissions:
  - 107 MT CO<sub>2</sub>e from 2025 through 2030
  - 9,512 MT CO<sub>2</sub>e from 2025 through 2050
- Reduction in annual amount of CAP and HAP emissions through 2030
- Reduction in annual amount of CAP and HAP emissions through 2050
- Lower energy demand and residential/commercial energy expenditures
- Reduced energy bills for residents in LIDACs
- Enhanced level of community engagement, as measured by an increased number of ongoing actions to engage with organizations and residents of disadvantaged communities, and other interested parties
- Creation of jobs

#### B. Performance Measures and Plan

##### Tracking, Measuring, & Reporting Progress for Implementing Measure

The Lexington-Fayette MSA will track the number of trees planted as part of this priority measure. A community dashboard will be created where residents and partnering agencies can add trees planted to the map. The MSA will form a committee that will meet monthly to review progress to date, discuss potential issues, and share ideas.

##### Tracking, Measuring, & Reporting Progress for Outputs and Outcomes

The dashboard will show how many trees remain to meet the target and what benefits are being provided by the trees already installed. Long-term, LFUCG hopes to be able to measure the impacts of tree plantings on energy usage and urban heat islands in neighborhoods by collecting utility and surface temperature data.

#### C. Authorities, Implementation Timeline, and Milestones

##### Key Implementing Agency and Authority

LFUCG will be the lead agency. Subawards will be made to the Cities of Paris, Winchester, Nicholasville, Wilmore, Georgetown, and Versailles. LFUCG will execute Memoranda of Agreements with each partnering agency outlining the specific scope and responsibilities. These agencies have existing authority to enact this measure. Budget authority and dedicated funds may need to be respectively increased or created through statute. If a memorandum is not in place with any of the communities listed in Table 1-1 after one year of grant award, the funding will be reallocated first to communities with additional demand and then based on the percentages of LIDAC populations in each community.

##### Milestones/Timeline

- Progress reports and the final report will be submitted in accordance with EPA requirements.
- October 2024 – Award of CPRG Implementation Grant funding



- December 2024 – Completion of MOAs with partnering municipalities
- March 2025 – Finalization of planting and maintenance programs
- Spring 2025 – Inaugural planting campaigns
- April 2025 – Semi-annual Progress Report
- Fall 2025 – Planting campaign
- October 2025 – Reallocation of funds, if necessary
- Spring/Fall 2026-Spring/Fall 2029 – Ongoing planting campaigns until target number of trees is achieved
- January 2030 – Final Report

#### 4. Low-Income and Disadvantaged Communities

##### A. Community Benefits

An article from NPR<sup>1</sup> analyzed the correlation between surface temperature and income in Census tracts. Fayette County was shown to display a strong correlation, meaning Census tracts in our urban core face hotter temperatures as a result of the heat island effect. This leads to increased energy usage and higher electric bills. The urban tree canopy works to lower the heat island effect and energy usage in a multifaceted approach. Trees provide shade, which cools the surrounding environment by blocking sunlight and reducing direct exposure to solar radiation. Trees also absorb less heat from the sun compared to built surfaces like concrete and asphalt, aiding in the reduction of surface temperatures. Furthermore, trees release water vapor into the air through a process known as evapotranspiration which also works to lower surface temperatures. By reducing the need for artificial cooling systems such as air conditioners, trees help curtail energy consumption and consequently diminish the heat generated by these appliances, which perpetuates the urban heat island effect. The combined cooling effect of these mechanisms results in lower electric bills.

LIDAC Census tracts generally have higher rates of mental health issues, poorer overall health, and lower life expectancies<sup>2</sup> due to reduced access to health care and economic limitations that affect access to goods and services. Through a literature review, the [Chicago Region Trees Initiative](#) found that research indicates that the presence of trees and greenspace on people can:

- Increase attention, memory, and focus;
- Reduce stress or increase ability to recover from stress;
- Increase life satisfaction and positive thoughts or emotions;
- Increase physical activity; and
- Reduce diastolic blood pressure.

Trees also have a therapeutic effect on communities. Many studies show that a healthy tree canopy can result in lower crime rates. Trees encourage residents to spend time outdoors, fostering a stronger sense of community. Focusing on areas with low Tree Equity Scores will create synergies by providing these aspects to the communities who will benefit most.

##### B. Community Engagement

A summary of community engagement efforts for the Lexington-Fayette MSA PCAP and Implementation Grant to date is located at the end of this Workplan, after the descriptions of individual measures. Going forward, each partnering agency will initiate an outreach program to engage residents in

<sup>1</sup> [NPR Investigation: Low-Income Urban Areas Are Often Hotter Than Wealthy Ones : NPR](#)

<sup>2</sup> [Economically Disadvantaged Communities | USDA Climate Hubs](#)



the block groups identified for tree planting. Activities will include sharing information on the benefits of trees, the appropriate trees for the Lexington-Fayette MSA, planting events on public properties, tree giveaways for private properties, and workshops on tree maintenance.

## 5. Job Quality

The Tree Equity Score website estimates that 219 jobs will be created as a result of this investment. This estimate is based on research conducted by American Forests that used the U.S. Bureau of Economic Analysis' Regional Input-Output Modeling System II (RIMS). Jobs estimated include full-time, part-time, and seasonal jobs. To get the average number of jobs supported each year, the number of jobs is divided by the number of years over which the investment occurs. For a five-year grant period, this is approximately 44 jobs per year. Since this measure involves the planting of ball and burlap trees, contractor support will be necessary. Each partner will select a consultant via their procurement process to execute the program. Proposals will require that respondents explain their approach to ensure job quality, strong labor standards, and a diverse, highly skilled workforce and be scored accordingly.

## Residential Solar

### 1. Overall Project Summary and Approach

#### A. Description of GHG Reduction Measures

##### Major Features/Tasks

This measure focuses on providing a program to give low- to moderate-income homeowners, non-profits, small businesses, and places of worship in the Lexington-Fayette MSA the opportunity to install solar panels through a vetted solar installer and reduce their reliance on fossil fuel generated electricity.

The framework for this measure has already been developed and piloted by the LFUCG Division of Environmental Services. LFUCG has partnered with the Kentucky Solar Energy Society (KYES) to launch Solarize Lexington, a program to give homeowners in Lexington-Fayette County the opportunity to install solar panels and reduce their reliance on the electric grid. KYSES's mission is to promote the use of renewable energy, energy efficiency, and conservation in Kentucky through education, advocacy, networking, and demonstration of practical applications. This program makes investing in solar easy by connecting participants with a vetted solar installer, providing a step-by-step walk-through of the solar installation process, and giving households bulk-purchasing power to obtain discounted wholesale rates for solar photovoltaics (PV) installation.

This priority measure will only be available to low- to moderate-income homeowners. Anyone who owns and occupies their house and whose household income, according to family size, does not exceed the eighty percent (80%) Area Median Income (AMI) as defined by the U.S. Department of Housing and Urban Development (HUD), will be eligible to apply for grant funds. LFUCG will provide the totals listed in **Table 2-1** as subawards to the partnering municipalities for execution of this measure in their communities. Memoranda of Agreements will be executed at the time of subaward. If a memorandum is not in place with any of the communities after one year of grant award, the funding will be reallocated to communities with additional demand.



**Table 2-1 – Residential Solar Funding Distribution**

County	LIDAC Population	% of Total LIDAC Population in MSA
Bourbon	14,681	9%
Clark	10,261	6%
Fayette	108,334	64%
Jessamine	23,964	14%
Scott	8,882	5%
Woodford	3,558	2%
<b>TOTAL</b>	<b>169,680</b>	<b>100%</b>

**Key Implementing Agency**

LFUCG will be the lead agency. Subawards will be made to Bourbon County, Clark County, Jessamine County, Scott County, and Woodford County. LFUCG will execute Memoranda of Agreements with each partnering agency outlining the specific scope and responsibilities. These agencies have existing authority to enact this measure. Budget authority and dedicated funds may need to be respectively increased or created through statute. Each county will select a consultant via their procurement process to execute the program.

**Success of Measure**

KYSES has also partnered with Boyle County and surrounding counties of Garrard, Lincoln, Casey, Marion, Washington, and Mercer, Frankfort-Franklin County and surrounding counties of Anderson, Henry, Owen, and Scott; as well as Louisville-Jefferson County and surrounding counties of Oldham, Spencer, Shelby, and Bullitt. As a result, they have a deep understanding of the region, many lessons learned, and a tried-and-true process that will facilitate a seamless expansion to counties within the Lexington-Fayette MSA that are not already participating. The participating counties will form a committee that will meet monthly to review progress to date, discuss potential issues, and share ideas.

**Potential Risks/Considerations**

The primary risks involved for this measure are associated with the ability to install panels on the target number of homes and the ability of the panels to produce electricity. The Solarize Lexington campaign has been successful to date. During the program's first campaign, 634 interest forms were submitted, 76 contracts were signed (42 grant, 34 non-grant), and 560 kW were installed. [Google's Project Sunroof](#) estimates that there is 134 million square feet of roof space in Fayette County and 90% of the area is viable for solar panel installation (Source: Project Sunroof data explorer (June 2019)). Data is unavailable for the other counties in the MSA. If sufficient demand is not present to meet the target number of installations for a county, funding will be reallocated as described in earlier sections.

**GHG Emissions Reductions**

This priority measure was included in the Lexington-Fayette MSA Priority Climate Action Plan. Electricity usage is the largest source of GHG emissions in the MSA. This measure supports EPA's Goal 1, Objective 1.1 in the FY 2022-2026 Strategic Plan to "aggressively reduce the emissions of greenhouse gases from all sectors while increasing energy and resource efficiency and the use of renewable energy." GHG emissions reductions associated with solar installations are related to the





replacement of electricity generated by fossil fuels with a renewable energy source. The emissions reductions associated with this measure may vary if Kentucky's climate and the maximum annual sun available change and vary from the assumptions used in the reduction calculations.

#### B. Demonstration of Funding Need

##### Existing Funding

In 2022, Lexington provided \$1 million in city funds to cover 100% of the solar panel installation for qualified low- and moderate-income homeowners. This was repeated in 2024. These allocations have not been sufficient to meet the demand for the program. A waitlist has been formed for both campaigns.

##### Other Funding Sources

If this priority measure is not funded by a CPRG Implementation Grant, municipalities in the MSA may pursue an EJG2G Grant. This measure is eligible under these grants; however, there are challenges associated with this funding source. The EJG2G Grant is limited to \$1 million per award and requires partnership with a community-based nonprofit organization. If an additional Solar for All campaign becomes available, this may also be a possible funding source.

#### C. Transformative Impact

GHG emissions reductions associated with solar installations are related to the replacement of electricity generated by fossil fuels with a renewable energy source. It also helps to conserve natural resources and ecosystems by reducing the need for land-intensive energy extraction processes like mining and drilling.

## 2. Impact of GHG Reduction Measures

See the Technical Appendix for information on assumptions, methodology, and reasonableness of the GHG reductions presented below. These reduction totals assume that 100% of the measure is funded by a CPRG Implementation Grant.

**Table 2-2 – Impact of GHG Reduction Measures Summary**

Pollutant	A. Magnitude of Reduction 2025-2030	B. Magnitude of Reduction 2025-2050	C.1. Cost Effectiveness of Reductions Through 2025	C.2. Cost Effectiveness of Reductions Through 2050
CO2	17,606 MT CO2e	118,214 MT CO2e	-	-
CH4	53 MT CO2e	356 MT CO2e	-	-
N2O	73 MT CO2e	490 MT CO2e	-	-
<b>TOTAL</b>	<b>17,732 MT CO2e</b>	<b>119,060 MT CO2e</b>	<b>\$845.93 per MT CO2e</b>	<b>\$125.99 per MT CO2e</b>

#### D. Documentation of GHG Reduction Assumptions

See Technical Appendix.



### 3. Environmental Results – Outputs, Outcomes, and Performance Measures

#### A. Expected Outputs and Outcomes

##### Outputs

- Solar panels installed on approximately 691 homes
  - Progress reports
  - Final report

##### Outcomes

- Reduction in cumulative metric tons of GHG emissions:
  - 17,732 MT CO<sub>2</sub>e from 2025 through 2030
  - 119,060 MT CO<sub>2</sub>e from 2025 through 2050
- Reduction in annual amount of CAP and HAP emissions through 2030
- Reduction in annual amount of CAP and HAP emissions through 2050
- Reduced energy bills for low- to moderate-income residents
- Enhanced level of community engagement, as measured by an increased number of ongoing actions to engage with organizations and residents of disadvantaged communities, and other interested parties
- Creation of jobs

#### B. Performance Measures and Plan

##### Tracking, Measuring, & Reporting Progress for Implementing Measure

Each partnering agency will schedule monthly progress meetings with the contractor(s) selected to execute the solar program in their area. The contractor will update the agency on the status of the program and discuss potential issues with executing the measure at each meeting. The participating counties will meet monthly with LFUCG to review progress to date, discuss potential issues, and share ideas.

The Lexington-Fayette MSA will track the number of homes with installations as part of this priority measure. A community dashboard will be created where residents and partnering agencies can add installations to the map. The map will show how many homes remain to meet our goal and what benefits are being provided by the panels installed.

##### Tracking, Measuring, & Reporting Progress for Outputs and Outcomes

The contractor will provide monthly progress reports on the status of the campaign at each monthly meeting. The dashboard will show how many solar installations remain to meet our goal and what benefits are being provided by the solar panels already installed. Long-term, LFUCG hopes to collect utility data for the homes with installations to analyze cost savings.

#### C. Authorities, Implementation Timeline, and Milestones

##### Key Implementing Agencies and Authority

LFUCG will be the lead agency. Subawards will be made to Bourbon County, Clark County, Jessamine County, Scott County, and Woodford County. LFUCG will execute Memoranda of Agreements with each partnering agency outlining the specific scope and responsibilities. These agencies have existing authority to enact this measure. Budget authority and dedicated funds may need to be respectively increased or created through statute. Each county will select a contractor via their procurement process to execute the program.



Timeline/Milestones

Solar campaigns will be held until the target number of homes have been completed. Progress reports and the final report will be submitted in accordance with EPA requirements.

A typical campaign timeline is show below:

- October 2024 – Award of CPRG Implementation Grant funding
- December 2024 – Completion of MOAs with partnering municipalities
- December 2024 – RFP Released
- Early January – Notice of Intent Due
- Mid-January – RFP Question & Answer Session, Written Questions Due in Ionwave
- Late January 2025 – Deadline to Submit RFP Proposal
- Early February – Interviews (if needed)
- Mid-February 2025 – Selected Contractor(s) Announced
- Late February/Early March 2025 – Council Approval & Selected Contractor(s) Onboarding
- Mid-March 2025 – Enrollment & Contracts Begin
- April 2025 – Semi-annual report due
- October 2025 – Reallocation of funds, if necessary

#### 4. Low-Income and Disadvantaged Communities

##### A. Community Benefits

Every unit of solar electricity produced is one less unit required to be purchased from an electric utility. [SolarReviews.com](https://www.solarreviews.com) estimates that the average payback period for a solar installation in Kentucky is between five and six years, resulting in an overall 25-year savings of almost \$50,000. Leveraging grant funding for initial installation costs will result in even more dollars saved for residents.

The addition of solar panels to homes will also increase property values and stimulate the local economy by creating jobs associated with solar installations.

Coal and natural gas comprise approximately 93% of Kentucky's electricity generation resource mix. The combustion of these materials produces carbon dioxide, sulfur dioxide, nitrogen oxides, and particulate matter. These substances contribute to air pollution and at certain levels can cause shortness of breath, aggravate asthma and other respiratory conditions, and increase the chances of heart attack and stroke.<sup>3</sup>

Particulate matter, specifically small molecules termed "PM2.5" are of particular concern. Prolonged exposure to even low concentrations of PM2.5 has been linked to reduced lung function, particularly in vulnerable populations such as children and the elderly.<sup>4</sup> Additionally, studies have shown that long-term exposure to high levels of PM2.5 can lead to increased mortality rates,<sup>5</sup> underscoring the serious health implications of this air pollutant.

According to EJScreen, all six counties in the MSA have average PM2.5 concentrations above the national average, with several individual tracts in Fayette County being listed above the 95<sup>th</sup> percentile. See Appendix E for the full EJScreen report for each county. The more we are able to

<sup>3</sup> [KY Department for Public Health - Air Quality](https://www.ky.gov/ky-department-for-public-health-air-quality)

<sup>4</sup> [NIH National Library of Medicine](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8303514/)

<sup>5</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8303514/>



transition to cleaner energy and decrease our reliance on fossil fuels, the more we can reduce the generation of these pollutants.

#### B. Community Engagement

A summary of community engagement efforts for the Lexington-Fayette MSA PCAP and Implementation Grant to date is located at the end of this Workplan after the descriptions of individual measures. Going forward, each partnering agency will initiate an outreach program to engage eligible residents for solar installations.

#### 5. Job Quality

An analysis of the number of MW of solar installed vs. the number of jobs reported by the 2022 [Solar Foundation National Solar Job Census](#) found that 7.3 installation & project development jobs, 0.97 manufacturing jobs, 0.68 wholesale trade and distribution, 0.96 operations & maintenance jobs were created in Kentucky per MW of solar installed. This measure proposed to install 4,146 kW, or 4.136 MW. This would produce 30.3 manufacturing jobs, 4.0 manufacturing jobs, 2.8 wholesale trade and distribution jobs, and 4.0 operations & maintenance jobs. Each partner will select a consultant via their procurement process to execute the program. Proposals will require that respondents explain their approach to ensure job quality, strong labor standards, and a diverse, highly skilled workforce and be scored accordingly.

## Weatherization

#### 1. Overall Project Summary and Approach

##### A. Description of GHG Reduction Measures

###### Major Features/Tasks

This measure focuses on providing a program for low- to moderate-income homeowners and renters to install various weatherization measures such as adding insulation to walls, floors, and attics; sealing air leaks around windows, doors, and ductwork; installing energy efficient lighting and appliances; and improving heating, ventilation, and air conditioning systems with the ultimate goal of reducing energy consumption, lowering utility bills, and enhancing comfort for occupants.

Once a homeowner qualifies to participate in the program, partnering agencies will work with the homeowner to schedule the initial assessment. The audit company will provide information regarding the energy audit results. The audits will include industry standard evaluation protocol to look for air leakage, drafts, assessing HVAC systems, and evaluating the home's insulation. Tests/surveys such as blower door tests, combustion safety tests, and insulation surveys will likely be included in the audit and any quantitative/measurable data will be recorded and provided to the homeowner in an Energy Audit Summary Report. In addition, the report will have a prioritized list of recommendations that the homeowner will use to contract services to fix/remediate/weatherize, etc. This list will serve as a menu of options for the homeowner to choose from that will be direct and easy to understand.

Each homeowner that finishes the assessment process will have an established and maximum budget to spend on improvement projects. After each homeowner has a chance to review the findings of their audit summary report, partnering agencies and KAEE will work with each homeowner to review the recommendations and discuss the types of projects that the homeowner feels they would like to use grant funding to accomplish. It is critical that the homeowner be invested in this



process and select those focus areas that they feel are the best for their home at that time. Homeowners will be provided a list of vetted contractors to obtain quotes for their home.

After completing chosen improvement projects, the audit company will collect post-mitigation data as appropriate. These post-mitigation assessments will provide the measurements needed to track progress and improvement in air quality and energy efficiency for each home. After projects have been completed, homeowners would be responsible for turning in receipts/invoices and proof of completed work in order to obtain reimbursement (up to the allocated budget per household).

#### Key Implementing Agencies

LFUCG will be the lead agency. Subawards will be made to Bourbon County, Clark County, Jessamine County, Scott County, and Woodford County. LFUCG will execute Memoranda of Agreements with each partnering agency outlining the specific scope and responsibilities. These agencies have existing authority to enact this measure. Budget authority and dedicated funds may need to be respectively increased or created through statute. Each county will select a contractor via their procurement process to execute the program.

#### Success of Measure

The participating counties will form a committee that will meet monthly to review progress to date, discuss potential issues, and share ideas.

#### Potential Risks/Considerations

The primary risks involved for this measure are associated with the ability to weatherize the target number of homes. The project will address this risk through comprehensive outreach and aggressive promotion of the savings involved in weatherizing homes and businesses. If sufficient demand is not present to meet the target number of installations for a county, funding will be reallocated as described in earlier sections.

#### GHG Emissions Reductions

This priority measure was included in the Lexington-Fayette MSA Priority Climate Action Plan. Electricity consumption is the largest source of GHG emissions in the MSA. This measure supports EPA's Goal 1, Objective 1.1 in the FY 2022-2026 Strategic Plan to "aggressively reduce the emissions of greenhouse gases from all sectors while increasing energy and resource efficiency and the use of renewable energy." GHG emissions reductions associated with weatherization are related to a reduction in electricity usage. The emissions reductions associated with this measure may vary if Kentucky's climate changes and typical energy consumption deviates from the assumptions used.

### B. Demonstration of Funding Need

#### Existing Funding

This is a new program that funding has not been allocated for at this time.

#### Other Funding Sources

LFUCG applied for an Environmental Justice Government-to-Government (EJG2G) Grant in 2023 featuring weatherization as one of the included components. This grant proposal was not funded.

If this priority measure is not funded by a CPRG Implementation Grant, municipalities in the MSA may pursue an EJG2G or U.S. DOE Weatherization Assistance Program Grant. This measure is eligible under these grants; however, there are challenges associated with these funding sources. The EJG2G Grant is limited to \$1 million per award and requires partnership with a community-based nonprofit organization. U.S. DOE weatherization grants are typically administered at the state level.



## C. Transformative Impact

The goal of weatherization is to reduce energy usage. This helps to conserve natural resources and ecosystems by reducing the need for land-intensive energy extraction processes like mining and drilling.

## 2. Impact of GHG Reduction Measures

See the Technical Appendix for information on assumptions, methodology, and reasonableness of the GHG reductions presented below. These reduction totals assume that 100% of the measure is funded by a CPRG Implementation Grant.

**Table 3-1 – Impact of GHG Reduction Measures Summary**

Pollutant	A. Magnitude of Reduction 2025-2030	B. Magnitude of Reduction 2025-2050	C.1. Cost Effectiveness of Reductions Through 2025	C.2. Cost Effectiveness of Reductions Through 2050
<b>TOTAL</b>	<b>1,400 MT CO<sub>2</sub>e</b>	<b>9,400 MT CO<sub>2</sub>e</b>	<b>\$5,714.29 per MT CO<sub>2</sub>e</b>	<b>\$851.06 per MT CO<sub>2</sub>e</b>

Reductions not provided in individual GHG quantities as the basis for this estimate is a reduction of 1 MT CO<sub>2</sub> per home as provided by the U.S. DOE.

## 3. Environmental Results – Outputs, Outcomes, and Performance Measures

## A. Expected Outputs and Outcomes

Outputs

- Weatherization of approximately 400 homes
  - Progress reports
  - Final report

Outcomes

- Reduction in cumulative metric tons of GHG emissions:
  - 1,400 MT CO<sub>2</sub>e from 2025 through 2030
  - 9,400 MT CO<sub>2</sub>e from 2025 through 2050
- Reduction in annual amount of CAP and HAP emissions through 2030
- Reduction in annual amount of CAP and HAP emissions through 2050
- Lower energy demand and residential energy expenditures
- Reduced energy bills for residents in LIDACs
- Enhanced level of community engagement, as measured by an increased number of ongoing actions to engage with organizations and residents of disadvantaged communities, and other interested parties
- Creation of jobs

## B. Performance Measures and Plan

Tracking, Measuring, & Reporting Progress for Implementing Measure

Each partnering agency will schedule monthly progress meetings with the contractor(s) selected to execute the weatherization program in its area. The contractor will update the agency on the status of the program and discuss potential issues with executing the measure at each meeting. The participating counties will meet monthly with LFUCG to review progress to date, discuss potential issues, and share ideas.



The Lexington-Fayette MSA will track the number of homes that have been weatherized as part of this priority measure. A community dashboard will be created where residents and partnering agencies can add homes weatherized to the map. The map will show how many homes remain to meet our goal and what benefits are being provided by the improvements.

*Tracking, Measuring, & Reporting Progress for Outputs and Outcomes*

The contractor will provide monthly progress reports on the status of the campaign at each monthly meeting. The dashboard will show how many homes remain to meet our goal and what benefits are being provided by the homes already weatherized. Long-term, LFUCG hopes to collect utility data for the homes weatherized to analyze cost savings.

C. Authorities, Implementation Timeline, and Milestones

*Key Implementing Agencies and Authority*

LFUCG will be the lead agency. Subawards will be made to Bourbon County, Clark County, Jessamine County, Scott County, and Woodford County. LFUCG will execute Memoranda of Agreements with each partnering agency outlining the specific scope and responsibilities. These agencies have existing authority to enact this measure. Budget authority and dedicated funds may need to be respectively increased or created through statute. Each county will select a contractor via their procurement process to execute the program.

*Timeline/Milestones*

Weatherization campaigns will be held until the target number of homes have been completed. Progress reports and the final report will be submitted in accordance with EPA requirements.

A typical campaign timeline is show below:

- October 2024 – Award of CPRG Implementation Grant funding
- December 2024 – RFP Released
- Early January – Notice of Intent Due
- Mid-January – RFP Question & Answer Session, Written Questions Due in Ionwave
- Late January 2025 – Deadline to Submit RFP Proposal
- Early February – Interviews (if needed)
- Mid-February 2025 – Selected Contractor(s) Announced
- Late February/Early March 2025 – Council Approval & Selected Contractor(s) Onboarding
- Mid-March 2025 – Enrollment & Contracts Begin
- April 2025 – Semi-annual report due

4. Low-Income and Disadvantaged Communities

A. Community Benefits

Low-income households typically spend 17% of their total annual income on residential energy costs, compared with 4% for other households. Weatherization helps to alleviate some of this burden. The U.S. Department of Energy (DOE) has found that weatherization creates an annual average energy savings of \$350.

Weatherization often involves comprehensive tests to assess the safety and functionality of heating units and household appliances. These tests evaluate combustion safety, identify potential gas leaks, and inspect for moisture damage to safeguard against health hazards such as mold growth.



Additionally, weatherization efforts entail ensuring the safety of electrical systems within homes to prevent electrical hazards. Part of this process involves the installation of essential safety devices like smoke detectors and carbon monoxide detectors to provide early warnings of potential threats to occupants.

The U.S. DOE indicates that for every \$1 invested, weatherization returns \$2.73 in energy and non-energy related benefits.

#### B. Community Engagement

A summary of community engagement efforts for the Lexington-Fayette MSA PCAP and Implementation Grant to date is located at the end of this Workplan after the descriptions of individual measures. Going forward, each partnering agency will initiate an outreach program to engage eligible residents for weatherization.

#### 5. Job Quality

Weatherization creates livable-wage, high-skills jobs and grows our economy. Each partner will select a consultant via their procurement process to execute the program. Proposals will require that respondents explain their approach to ensure job quality, strong labor standards, and a diverse, highly skilled workforce and be scored accordingly.

### Lextran Electric Vehicle Shelter & Charging Infrastructure

#### 1. Overall Project Summary and Approach

##### A. Description of GHG Reduction Measures

###### Major Features/Tasks

This measure involves construction of a canopy that will provide shelter and charging infrastructure, allowing Lextran to further expand their fleet of electric vehicles. Lextran is Lexington's public transportation system. It employs over two hundred people and operates a dynamic fleet of over sixty-five vehicles. This fleet includes compressed natural gas, battery-electric, hybrid-electric, and diesel buses.

The canopy will be constructed at Lextran's current maintenance facility at 220 West Loudon Avenue in Lexington, Kentucky. The canopy will incorporate the appropriate conduit and concrete work to create space to install electric bus charging equipment. To ensure that the electric vehicles can charge during a power outage or other utility disruption, the canopy site work will include the appropriate infrastructure to add a new generator as well.

The canopy furthers Lextran's commitment to providing environmentally-friendly transit service with green elements such as a rainwater collection system and LED lighting. The canopy will also be designed to support solar panels that will generate electricity to offset usage by the buildings on the property.

###### Key Implementing Agency

Lextran will be the key implementing agency and has existing authority to enact this measure. They will select a contractor via the Lextran procurement process to construct the project. No subawards are anticipated.





Success of Measure

Facilitation by Lextran will ensure the success of the project. Lextran has successfully constructed numerous projects of this scale.

Potential Risks/Considerations

The primary risks involved for this measure are associated with construction costs. Since the COVID-19 pandemic disrupted supply chains, the industry has continued to see inflated material costs and delays in obtaining materials. U.S. construction costs saw an average increase of 4% in 2023 and are estimated to increase between 3.5-6% in 2024.<sup>6</sup> GHG emission reductions may be delayed if construction is significantly delayed.

GHG Emissions Reductions

This priority measure was included in the Lexington-Fayette MSA Priority Climate Action Plan. Transportation is the second largest source of GHG emissions in the MSA. This measure supports EPA's Goal 1, Objective 1.1 in the FY 2022-2026 Strategic Plan to "aggressively reduce the emissions of greenhouse gases from all sectors while increasing energy and resource efficiency and the use of renewable energy." This project features solar panels to offset energy usage of Lextran's offices and a canopy structure that provides charging infrastructure and shelter for electric buses.

## B. Demonstration of Funding Need

Existing Funding

Lextran has secured \$2.2 million from the Low or No Emission Grant Program and \$800,000 from the Surface Transportation Block Grant (STBG) Program. The project still needs an additional \$11 million in funding.

Other Funding Sources

If this priority measure is not funded by a CPRG Implementation Grant, Lextran may pursue additional Low or No Emission Grant funding or a RAISE Grant. This would extend the project timeline and the period to electrify Lextran's fleet until sufficient funding is secured.

## C. Transformative Impact

This project will allow Lextran to expedite its plan to transition its fleet. While this project is located in Fayette County, the entire region will reap the benefits of reduced transportation emissions.

## 2. Impact of GHG Reduction Measures

See the Technical Appendix for information on assumptions, methodology, and reasonableness of the GHG reductions presented below. These reduction totals assume that 78.6% of the measure is funded by a CPRG Implementation Grant.

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<sup>6</sup> Construction Costs Expected to Increase as Much as 6% This Year



**Table 4-1 – Impact of GHG Reduction Measures Summary**

Pollutant	A. Magnitude of Reduction 2025-2030	B. Magnitude of Reduction 2025-2050	C.1. Cost Effectiveness of Reductions Through 2025	C.2. Cost Effectiveness of Reductions Through 2050
Solar Panels				
CO2	573 MT CO2e	2,862 MT CO2e	-	-
CH4	2 MT CO2e	9 MT CO2e	-	-
N2O	2 MT CO2e	12 MT CO2e	-	-
SUBTOTAL	577 MT CO2e	2,883 MT CO2e		
Electric Buses				
CO2e	2,130 MT	10,649		
TOTAL	2,707 MT CO2e	13,533 MT CO2e	\$4,063.54 per MT CO2e	\$812.83 per MT CO2e

## D. Documentation of GHG Reduction Assumptions

See Technical Appendix.

## 3. Environmental Results – Outputs, Outcomes, and Performance Measures

## A. Expected Outputs and Outcomes

Outputs

- Canopy shelter capable of housing and providing charging infrastructure for 29 buses
  - Progress reports
  - Final report

Outcomes

- Reduction in cumulative metric tons of GHG emissions:
  - 2,707 MT CO2e from 2025 through 2030
  - 13,533 MT CO2e from 2025 through 2050
- Reduction in annual amount of CAP and HAP emissions through 2030
- Reduction in annual amount of CAP and HAP emissions through 2050
- Reduction in noise pollution
- Creation of jobs

## B. Performance Measures and Plan

Tracking, Measuring, & Reporting Progress for Implementing Measure

Lextran will schedule monthly progress meetings with the contractor selected to construct the project. The contractor will update Lextran on the status of the project and potential issues identified at each meeting.

Tracking, Measuring, & Reporting Progress for Outputs and Outcomes

The contractor will provide progress reports on the status of the project at each monthly meeting.



## C. Authorities, Implementation Timeline, and Milestones

Key Implementing Agency and Authority

Lextran will be the key implementing agency and has existing authority to enact this measure. They will select a contractor via the Lextran procurement process to construct the project. No subawards are anticipated.

Timeline/Milestones

October 2024 – Award of CPRG Implementation Grant funding

December 2024 – Complete Design

March 2025 – Project Out for Bid

April 2025 – Semi-annual report due, Project kickoff

July 2025 – Contract Award

October 2025 – Semi-annual report due

October 2028 – Construction complete

Progress reports and the final report will be submitted in accordance with EPA requirements.

## 4. Low-Income and Disadvantaged Communities

## A. Community Benefits

The canopy construction, and operation after construction, will not negatively impact the surrounding community. The canopy will not require Lextran to acquire new property. It will be constructed at Lextran's current maintenance facility. There will be no relocation of homes, businesses, farms, or other resources for the construction or operation of the canopy.

The canopy will generate positive impacts to the surrounding community, and Fayette County as a whole. By installing the canopy, Lextran will be able to deploy more electric buses in their fleet in place of aging diesel vehicles, therefore improving air quality in the community. The surrounding community will also benefit from less noise during Lextran's maintenance functions, as electric buses produce much less noise than combustion engine buses.

There will be no additional pollution, noise, or other nuisance generated by the canopy that would affect surrounding low-income or minority populations.

## B. Community Engagement

A summary of community engagement efforts for the Lexington-Fayette MSA PCAP and Implementation Grant to date is located at the end of this Workplan after the descriptions of individual measures.

## 5. Job Quality

As required by section 314 of the Clean Air Act, grants for construction activities will be subject to prevailing wage requirements as determined by the U.S. Department of Labor under the Davis-Bacon Related Acts (42 USC §7614) authority. EPA will provide terms and conditions on Davis-Bacon compliance requirements in agreements that fund Construction as that term is defined at 40 CFR 33.103. Lextran will also require that the selected contractor explain their approach to ensure job quality, strong labor standards, and a diverse, highly skilled workforce.



## Electric Vehicle Charging Need Study

### 1. Overall Project Summary and Approach

#### A. Description of GHG Reduction Measures

##### Major Features/Tasks

This measure involves conducting a study to identify the need for public electric charging infrastructure to ensure reliable access and increase consumer confidence. The Biden-Harris administration has set a target for electric vehicles (EVs) to comprise 50% of vehicle sales by 2030.<sup>7</sup> The National Electric Vehicle Infrastructure (NEVI) Program was created under the Bipartisan Infrastructure Law of 2021. The NEVI Program is intended to facilitate the buildout of a national EV charging network with EV chargers located no more than 50 miles apart on designated Alternative Fuel Corridors. These corridors generally track with the U.S. interstate highway system and will ensure long-distance drivers have reliable access to EV charging stations.

While this is a momentous move in the right direction, there will still be gaps to fill to ensure reliable access to EV chargers. This measure involves conducting a study to identify the remaining need in the Lexington-Fayette MSA. The study will have three primary goals: support long-distance travel by EVs, identify areas where the private sector is less likely to provide recharging infrastructure with a focus on LIDACs, and identify the feasibility of hydrogen refueling to support freight logistics and heavy construction vehicles.

##### Key Implementing Agency

The Lexington Area Metropolitan Planning Organization (MPO) will be the key implementing agency. The MPO has existing authority to enact this measure. They will select a consultant via the LFUCG procurement process to complete the study for the entire six county area of the MSA. No subawards are anticipated.

##### Success of Measure

Facilitation by the Lexington Area MPO will ensure the success of the study. This will eliminate the need for coordinating studies for each county in the MSA. The Lexington Area MPO frequently conducts studies for Fayette and Jessamine Counties and is qualified to facilitate a study of this scale.

##### Potential Risks/Considerations

Delay in contract award will delay timeline of study completion, but will not impact GHG emissions reductions.

##### GHG Emissions Reductions

This priority measure was included in the Lexington-Fayette MSA Priority Climate Action Plan. Transportation is the second largest source of GHG emissions in the MSA. This measure supports EPA's Goal 1, Objective 1.1 in the FY 2022-2026 Strategic Plan to "aggressively reduce the emissions of greenhouse gases from all sectors while increasing energy and resource efficiency and the use of renewable energy." Ernst & Young's Mobility Consumer Index 2022 Study<sup>8</sup> showed that the main barrier preventing consumers from switching to EVs was the lack of public charging stations in their city, followed by range anxiety, or the fear of running out of battery power before reaching their destination.

<sup>7</sup>[The Biden-Harris Administration EV Charging Action Plan](#)

<sup>8</sup>[Ernst & Young's Mobility Consumer Index 2022 Study](#)



Identifying coverage gaps in public charging infrastructure availability within the Lexington-Fayette MSA will allow for investments to remove these barriers for consumer buy-in, resulting in fewer vehicles powered by fossil fuels on our roadways. While there is still much work to be done in greening our electricity resource mix, electric vehicles in Kentucky produce at least 50% fewer emissions than gasoline vehicles (based on data from the U.S. DOE [Alternative Fuels Data Center](#) and [Beyond Tailpipe Emissions Calculator](#)).

B. Demonstration of Funding Need

Existing Funding

This is a new study that funding has not been allocated for at this time.

Other Funding Sources

If this priority measure is not funded by a CPRG Implementation Grant, the Lexington Area MPO may pursue STBG funds. This measure is eligible under this program; however, there are competing priorities with this funding source and the STBG Program requires a cost share.

C. Transformative Impact

The implementation of this measure will create transformative opportunities. GHG emissions associated with on-road transportation are two-fold. Vehicles emit pollutants directly into the air through combustion engines. Completing this study and eliminating gaps in public EV charging locations will accelerate the transition from fossil fuel powered vehicles to EVs. Long before this stage in the lifecycle, the upstream processes of producing, refining, and transporting the fossil fuels generate significant GHG emissions. The Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2021 estimated that petroleum systems were responsible for 74.9 MMT CO<sub>2</sub>e. This measure will produce ripple effects, reducing GHG emissions at several points in the supply chain.

2. Impact of GHG Reduction Measures

See the Technical Appendix for information on assumptions, methodology, and reasonableness of the GHG reductions presented below. These reduction totals assume that 100% of the measure is funded by a CPRG Implementation Grant.

**Table 5-1 – Impact of GHG Reduction Measures Summary**

Pollutant	A. Magnitude of Reduction 2025-2030	B. Magnitude of Reduction 2025-2050	C.1. Cost Effectiveness of Reductions Through 2025	C.2. Cost Effectiveness of Reductions Through 2050
CO <sub>2</sub>	120,678 MT CO <sub>2</sub> e	362,033 MT CO <sub>2</sub> e	-	-
CH <sub>4</sub>	1,483 MT CO <sub>2</sub> e	4,450 MT CO <sub>2</sub> e	-	-
N <sub>2</sub> O	3,653 MT CO <sub>2</sub> e	10,959 MT CO <sub>2</sub> e	-	-
<b>TOTAL</b>	<b>125,814 MT CO<sub>2</sub>e</b>	<b>377,442 MT CO<sub>2</sub>e</b>	<b>\$3.97 per MT CO<sub>2</sub>e</b>	<b>\$1.32 per MT CO<sub>2</sub>e</b>

3. Environmental Results – Outputs, Outcomes, and Performance Measures

A. Expected Outputs and Outcomes

Outputs

- Electric Vehicle Charging Need Study for the Lexington-Fayette MSA including:



- Progress reports
- Final report

#### Outcomes

- Reduction in cumulative metric tons of GHG emissions:
  - 125,814 MT CO<sub>2</sub>e from 2025 through 2030
  - 377,442 MT CO<sub>2</sub>e from 2025 through 2050
- Reduction in annual amount of CAP and HAP emissions through 2030
- Reduction in annual amount of CAP and HAP emissions through 2050
- Creation of jobs

#### B. Performance Measures and Plan

##### Tracking, Measuring, & Reporting Progress for Implementing Measure

The Lexington Area MPO will schedule monthly progress meetings with the consultant selected to complete the study. The consultant will update the Lexington Area MPO on the status of the study, findings to date, and potential issues identified with or limitations of the study at each meeting.

##### Tracking, Measuring, & Reporting Progress for Outputs and Outcomes

The consultant will provide progress reports on the status of the study and accompanying final report including at each monthly meeting. Upon completion of the study, the consultant will estimate the potential increase in EV ownership and associated GHG emissions reductions, CAP and HAP emissions reductions, noise pollution reduction, and potential cost savings if all gaps are filled. The Lexington Area MPO will monitor the status of EV ownership as charging stations are installed.

#### C. Authorities, Implementation Timeline, and Milestones

##### Key Implementing Agency and Authority

The Lexington Area Metropolitan Planning Organization (MPO) will be the key implementing agency. The MPO has existing authority to enact this measure. They will select a consultant via the LFUCG procurement process to complete the study for the entire six county area of the MSA. No subawards are anticipated.

##### Milestones/Timeline

- October 2024 – Award of CPRG Implementation Grant funding
- January 2025 – Issuance of RFP
- March 2025 – Selection of consultant
- April 2025 – Semi-annual report due, Project kickoff
- May 2025 – Draft QAPP Due
- June 2025 – QAPP Approved
- July 2025 – Study begins
- October 2025 – Semi-annual report due
- January 2026 – Study completion
- March 2026 – Final report submitted to Lexington Area MPO
- March 2027 – Final report submitted to EPA



#### 4. Low-Income and Disadvantaged Communities

##### A. Community Benefits

This study will focus on identifying EV charging station deserts to ensure equitable access in all communities.

In rural regions of the MSA, EVs present a particularly appealing alternative to traditional vehicles. Rural residents tend to drive more than their urban counterparts, incur higher expenses on vehicle fuel and maintenance, and frequently have limited alternatives to driving for fulfilling their transportation requirements. Embracing EVs in these areas offers the potential for residents to diminish such costs over time while also mitigating the environmental footprint of transportation within their communities.

##### B. Community Engagement

A summary of community engagement efforts for the Lexington-Fayette MSA PCAP and Implementation Grant to date is located at the end of this Workplan after the descriptions for individual measures.

#### 5. Job Quality

The Lexington Area MPO will require that the selected consultant explain their approach to ensure job quality, strong labor standards, and a diverse, highly skilled workforce and be scored accordingly.

#### 6. Programmatic Capability and Past Performance

##### A. Past Performance

For the fiscal year ending June 30, 2022, LFUCG expended \$77,804,949 in federal funds. Included in this amount were direct federal awards from the U.S. Department of Housing and Urban Development in the amount of \$4,752,465, U.S. Department of Justice in the amount of \$1,019,294, and the Department of Homeland Security in the amount of \$1,845,055. LFUCG also currently manages federally funded projects awarded from the US Environmental Protection Agency passed through the Commonwealth of Kentucky Clean Water Act in the amount of \$11,868,095. In Fiscal Year 2022, LFUCG expended over \$14 million in federal funds for transportation projects, including funds received from the Kentucky Transportation Cabinet under Congestion Mitigation & Air Quality, Transportation Enhancement, and the Surface Transportation Program. As a recipient of federal funds in excess of \$750,000 per year, LFUCG complies with OMB Circular A-133, "Audits of States, Local Governments, and Non-Profit Organizations."

##### B. Reporting Requirements

LFUCG has a history of successfully managing and completing grant-funded activities. LFUCG's staff will administer the grant and will have responsibility for the financial management, contracting, consultant/contractor selection and oversight, and all reporting functions, with the Division of Environmental Services having overall management responsibility. LFUCG uses fund accounting for financial management of all federal funds in accordance with OMB Circular A-102, "Grants and Cooperative Agreements with State and Local Governments." Established procedures are in place to provide separate financial records for each grant project for the purpose of identifying the source and use of grant funds. All expenses are fully supported by source documentation. LFUCG has three divisions that interact to ensure compliance with regulations. The Division of Grants and Special Programs serves as the centralized grants management unit for all federal and state grants for purposes of monitoring allowable costs and to ensure timely programmatic and financial reporting.



The Division of Accounting maintains the general accounting system and is responsible for paying all invoices. This Division also has the responsibility of reviewing and approving financial reports prepared by the Division of Grants and Special Programs. The Division of Central Purchasing is responsible for all major purchases for the Urban County Government. This Division has responsibility for ensuring that the procurement regulations are met, as well as the federal procurement provisions contained in 40 CFR Part 31.

LFUCG has an Office of Internal Audit whose purpose is to determine whether the Urban County Government's procedures of risk management, internal control, and governance, as designed and represented by management, are adequate and functioning in a manner to ensure that risks are appropriately identified and managed; that significant financial, managerial, and operating information is accurate, reliable, and timely; and that employees' actions are in compliance with policies, standards, procedures, and applicable laws and regulations.

C. Staff Expertise

LFUCG has assembled a powerhouse team to oversee the implementation of these measures. The team is comprised of the following individuals:

Jada Walker Griggs, LFUCG Division of Environmental Services

Chrissie Balding, LFUCG Division of Environmental Services

Heather Wilson, LFUCG Division of Environmental Services.

Christopher Evilia, Lexington Area Metropolitan Planning Organization

Kenzie Gleason, Lexington Area Metropolitan Planning Organization

Fred Combs, Lextran

Chris Withrow, Lextran

Emily Elliott, Lextran

See their resumes for a summary of their experience and expertise.

7. Budget and Timely Expenditure of Grant Funds

See the Budget Narrative attachment.





**(4b.) Community Engagement**

The Lexington-Fayette MSA did not receive CPRG funding until December 2023. Therefore, the timeline for public outreach and coordination activities specific to the PCAP was condensed. To reach the maximum number of community members, a hybrid in-person/virtual meeting was planned. Lexington provided materials for the meeting to each participating community including a draft press release and social media posts that could be modified, as well as a facilitator guide. Attendees were provided the option to attend the presentation virtually on Zoom or in-person at the following locations:

- Lexington (Fayette County) – Senior Center, 195 Life Lane
- Paris (Bourbon County) – Library, 701 High Street
- Winchester (Clark County) – City Hall Commission Chambers, 32 Wall Street
- Nicholasville (Jessamine County) – Police Station, 717 North Main Street

After the presentation, each hub engaged in discussion regarding the proposed priority measures including concerns and questions, community perceptions, and the logistics of each measure. Participants were also given the opportunity to identify additional projects and stakeholders not currently identified who should be considered as work on the CCAP moves forward.

For the CCAP, the Lexington-Fayette MSA will organize a group of interested stakeholders including organizations such as the local chamber of commerce, utilities, extension offices, libraries, community action, government officials (elected as well as staff), neighborhood groups, rotary clubs, school officials, churches, and special interest groups. Meetings will be held in person and virtually to ensure equal access. In addition to organizing stakeholder meetings, the Lexington-Fayette MSA will meet members of the community where they are by attending existing meetings of local organizations such as rotary, school board, houses of worship, etc. to make presentations and solicit ideas. Campaigns advertising the public meetings in addition to a general information campaign about the CCAP through local newspapers, radio shows, and social media will be instrumental to gaining public support for the plan.

