

## WORKPLAN NARRATIVE

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### OVERALL PROJECT SUMMARY AND APPROACH

The Indiana Department of Environmental Management (IDEM) proposes to undertake the greenhouse gas (GHG) reduction efforts described in this workplan if awarded funding under the Climate Pollution Reduction Grant (CPRG) implementation grants general competition. Indiana has many areas of opportunity for good GHG emission reductions by 2030 and beyond. The projects for meeting the measures identified in the Indiana Priority Climate Action Plan (PCAP) were identified during a project intake process hosted by IDEM. Many of the projects submitted are from the same public entities that IDEM engaged with throughout the planning process. Through these proposed projects, Indiana will be able to further the goals of 8 out of 10 priority climate action measures; distributed solar, energy efficiency, electric vehicle adoption, reduction of vehicle miles traveled, industrial electrification, waste reduction, expansion of green space and adoption of agricultural best practices. These have been identified as priority measures through IDEM’s extensive community engagement sessions for the PCAP and through quantification of potential GHG emissions reductions.

#### *IDEM Community Engagement*

To provide background to the following measures, how they were chosen, and how the public informed these choices, please refer to the Indiana Priority Action Plan (PCAP) located on the Indiana CPRG webpage (<https://www.in.gov/idem/airquality/climate-pollution-reduction-grant-cprg-program/>). The Indiana PCAP had extensive community engagement that informed the decision for the measures as well as increased outreach for project submission. During development of the measures contained in this proposal, IDEM focused on gathering community priorities from the most vulnerable cities and low-income and disadvantaged communities (LIDAC) areas. Indiana identified LIDACs using U.S. EPA’s Climate and Economic Justice Screening Tool (CEJST). IDEM used the following strategies for engagement with LIDACs to seek their input on creation of the measures included in this proposal:

- Online resources:
  - Indiana PCAP: [https://www.in.gov/idem/airquality/files/cprg\\_20240301\\_final\\_pcap.pdf](https://www.in.gov/idem/airquality/files/cprg_20240301_final_pcap.pdf)
  - Indiana CPRG webpage: <https://www.in.gov/idem/airquality/climate-pollution-reduction-grant-cprg-program/>
  - Interested parties email account: [cprg@idem.in.gov](mailto:cprg@idem.in.gov)
  - Social media: Indiana Department of Environmental Management
  - Community Survey: posted on webpage for month of November
  - Project intake: posted on Indiana CPRG webpage from Dec. 15 – Feb. 15
- Six community meetings across the state with options for in-person, livestream, and video conference participation. Locations included Indianapolis, Fort Wayne, Portage, Ferdinand, Gary, and Evansville. These locations were picked because they have the highest concentration of LIDAC areas throughout the state or were a halfway point between cities with large concentrations of LIDAC areas (such as Portage and Ferdinand);
- Targeted outreach to known community-based organizations;
- 30-plus meetings with community leaders, environmental groups, and interested parties; and
- Public comment period on the draft plan.

IDEM will continue meaningful engagement to inform the public on the CPRG progress through the Indiana CPRG website, the IDEM CPRG interested parties email account, and by keeping in touch with community leaders, environmental groups, and interested parties.

#### *IDEM Project Intake Process*

IDEM conducted a project intake process from December 15, 2023, to February 15, 2024. This was to collect projects from across the state of Indiana that aligned with measures in the Indiana PCAP. IDEM received over 130 project ideas with a total funding request of greater than \$1.4 billion. IDEM heavily vetted projects in terms of eligibility and relevance to the Indiana PCAP, ability to partner with IDEM, implementation readiness, cost effectiveness, GHG reductions, and most importantly, impact to low-income and disadvantaged communities (LIDAC). IDEM was thrilled to see the enthusiasm for projects statewide and has worked to choose the most competitive projects that meet the goals of the Indiana PCAP and reached all corners of the state of Indiana. Many of the projects can be replicated by other cities across the state as additional funding becomes available.

#### *Collaboration*

IDEM has worked and communicated with the three other metropolitan statistical areas (MSAs) that received CPRG Planning grants that include Indiana counties (Indianapolis, Cincinnati, and Louisville), to ensure there will be no overlap of the same project in the same location.

## **I. Expand Community and Distributed Solar Generation**

Indiana has historically been heavily reliant on coal-fired power plants for the majority of its electricity generation. Over the years, Indiana has seen a transition to natural gas, similar to national trends, with coal plants across the state being converted to natural gas or being decommissioned altogether. While natural gas has lower carbon emissions compared to coal, continued increase in zero-carbon renewable energy is needed as Indiana transitions away from coal-fired electricity generation. IDEM anticipates implementing community and distributed solar in Indiana through the proposed projects in Table 1. Distributed solar refers to solar plants installed on a residential, commercial, or industrial customer's property behind the meter. This includes solar installations on rooftops, which stakeholders popularly requested throughout the public engagement process. Priority actions, described on page 38 of the Indiana PCAP, include providing incentives, increasing community accessibility and affordability of distributed solar through municipals and non-profit groups, and increasing solar on community buildings such as municipal buildings, schools, and community centers. This will help to reach CPRG's overall goals by providing good jobs, lowering energy cost, and empowering community-driven solutions in local communities as this was one of the most highly sought after measures/actions from the public engagement sessions hosted by IDEM. With recent changes to net metering rules in Indiana, continued implementation of solar projects will benefit from using CPRG money to install solar panels that might not otherwise be installed without this money.

Indiana is asking for **\$118,705,500** in funding to implement the community and distributed solar generation measure to fund solar projects at schools, municipalities, non-profits, academic universities, and two local businesses. This will help fund the projects listed in Table 1 that have been vetted and selected through a project intake process hosted by IDEM. These projects propose to install solar array systems on building roofs, campuses, and municipal properties with many programs proposed especially targeting low-income and disadvantaged areas. These are committed entities that have "shovel ready" projects and are willing and able to partner with IDEM to accomplish the goals of this measure. These projects combined would increase solar in Indiana by **67 MW** and have the potential to reduce **283,522 metrics tons** of GHG emissions by 2030. The increase in distributed solar will help meet **13%** of this

measure’s Target 1 goal in the Indiana PCAP (page 40) and up to **35%** of the quantified GHG emissions reduction for distributed solar in the Indiana PCAP (page 42).

*Table 1: Solar and Solar Plus Battery Project Partners*

Entity Type	Number of Projects
Schools	8
Hospitals	1
Municipal	4
Private Entities	2
Public Water Utility	1
Regional Non-profits / Community-oriented Projects	4
Universities	2

### **a. Demonstration of Funding Need**

CPRG implementation funding is necessary to fully implement the proposed measures. Other entities in Indiana have applied for related grants; however, these grants are not sufficient to fully implement the proposed measures. The Indiana PCAP lists federal and non-federal funding sources on page 44. From the six public meetings hosted by IDEM for the CPRG PCAP and the statewide survey to gauge public opinion on draft PCAP measures, there is overwhelming support for community and distributed solar. These are referenced in the Indiana PCAP on pages 39 and 40. From public opinion and other funding sources, a gap still remains for increased distributed solar and increasing energy resilience for all Indiana communities, but especially LIDACs in Indiana. Indiana was ranked one of the worst states, in a recent IndyStar newspaper article, in the U.S. for rooftop solar, which demonstrates an increased need for projects that prove the viability of distributed solar to smaller communities. With increased limitations from Indiana net metering restrictions, project sponsors have seen a decrease in incentive for local solar projects without grant funding due to decreased cost-benefit. Direct pay incentive is not enough for entities to start solar projects, especially in LIDAC areas where funding to begin a project may be difficult to acquire. This will also help to increase the energy resilience for Hoosiers across the state. IDEM is requesting a large percentage of the overall funding request go to distributed solar as there is a need not only identified from the public through Indiana PCAP engagement sessions, but also to help close the gap on solar energy capacity in Indiana.

### **b. Transformative Impact**

As one of the worst ranked states for rooftop solar incentives, these projects have the potential to increase Indiana’s renewable energy standing and to lead to an increased community opinion of rooftop and distributed solar. These projects are scalable and replicable. This helps ease Indiana’s reliance on coal-fired generation and increase energy independence throughout the state. The proposed projects reach multiple regions in Indiana and are implementation ready. This funding will provide a more holistic approach for distributed solar as it ensures structural and pre-weatherization for buildings that need the prerequisite before continuing forward with solar. The impact of these projects will go further with funding from the Climate Pollution Reduction Grant.

### **c. Impact of GHG Reduction Measures and Cost Effectiveness**

Table 2 provides estimates of the cumulative emission reductions in metric tons of carbon dioxide equivalent (mtCO<sub>2</sub>e) anticipated from the proposed projects listed in Table 1. Further details on quantification methods, relevant assumptions, annual emission reduction estimates, and any uncertainties associated with the estimates are provided in the Technical Appendix to this application.

Table 2: GHG Emission Reductions Anticipated from Implementation of Proposed Solar Projects

Cumulative GHG Emission Reductions			
	2025–2030 (mt CO <sub>2</sub> e)	2025–2050 (mt CO <sub>2</sub> e)	Cost Effectiveness (\$/(mt CO <sub>2</sub> e))
<b>Sum of Proposed Projects</b>	283,522	1,276,873	---
	<b>Average Cost Effectiveness</b>		419

Implementation of the proposal will result in durable GHG emission reductions. Solar arrays are projected to have a lifespan of up to 35 years, according to the U.S. Department of Energy (U.S. DOE), which promote long-lasting emissions reductions. From Table 2, the total amount of GHG emissions reduced from near-term to long-term shows continued and sustained reductions across Indiana. These projects will also contribute to co-pollutant reductions such as NO<sub>x</sub>, SO<sub>2</sub>, PM<sub>2.5</sub>, VOCs, CO and Hg as quantified in the PCAP (page 42) and in Table 19.

#### Qualitative Cost Effectiveness of GHG Reduction

Implementation of this measure is highly cost-effective. The cost-effectiveness, inclusive of all proposed projects for this measure, is \$419 per ton of CO<sub>2</sub>e reduced. This is also assuming full implementation of these solar projects across the timeframe 2025-2030. To note, a small number of IDEM’s solar partners do include training costs for their program/project and pre-weatherization infrastructure that is reflected in the cost effectiveness. The cost effectiveness is based solely on CPRG dollars and does not reflect other funding sources that partners are planning to pursue.

#### Calculation Assumptions

The solar projects have used a combination of the U.S. EPA Greenhouse Gas Equivalencies Calculator, U.S. EPA Avoided Emissions and Generation Tool, and other tools. A broader breakdown and description of methodology is provided in the Technical Appendix.

### a. Low-Income and Disadvantaged Communities

#### Community benefits

These projects were selected with a high inclination to LIDAC areas. With this funding IDEM is committed to ensuring the maximum amount of benefits directed to LIDAC areas from the projects received through the project intake process. Table 3 shows the location of the projects. The LIDAC census tracts expected to be impacted can be found in attachment (Areas\_IDEM.xlsx). The statewide programs have stated their intent to focus mainly on LIDAC tracts identified by U.S. EPA’s CEJST tool.

Table 3: Location and Impacted LIDAC Tracts for Proposed Distributed Solar Projects

Proj#	Entity	Location
1	Citizens Energy Group (Indianapolis Public Utility)	Indianapolis
2	IU Health (public hospital)	Marion and Hamilton Counties
3	Project 46 Regional Climate Alliance	Bloomington, Columbus, and Nashville
4	Project 46 Regional Climate Alliance	Bloomington, Columbus, and Nashville
5	Energy Matters Community Coalition, Inc. on behalf of the City of Columbus	Columbus
6	City of Evansville	Evansville
7	City of Fort Wayne	Fort Wayne
8	City of La Porte	La Porte
9	City of Muncie	Muncie
10	Center for Sustainable Living	Statewide

11	Purdue University	West Lafayette
12	Rose-Hulman Institute of Technology	Terre Haute
13	Lawrenceburg Community School Corporation	Dearborn County
14	Prince of Peace Catholic High Schools	Jefferson County
15	North Spencer County School Corporation	Spencer County
16	White River Valley School District	Greene County
17	Metropolitan School District of North Posey	Posey County
18	Greater Jasper Consolidated Schools	Dubois County
19	North Gibson School Corporation	Gibson County
20	East Gibson School Corporation	Gibson County
21	Two (2) Local Businesses	Indianapolis

These solar projects will reach a great geographic distribution throughout the state of Indiana and provide significant benefits to LIDAC areas. These areas will see reductions in both GHG emissions and in co-pollutant emissions from NO<sub>x</sub>, SO<sub>2</sub>, PM<sub>2.5</sub>, VOCs, CO and Hg. Other community benefits have the potential to include reduced climate impacts and risks, reduced air pollution, improved public health outcomes, job creation, reduced energy cost burden, and improved climate resilience as referenced on page 40 of the Indiana PCAP. From the Indiana PCAP, page 42 discusses the impact of GHG emissions and co-pollutants on stakeholders in Indiana by saying that under the current model used, developing community and distributed solar has the potential to yield benefits in overall emission reductions. There are no disbenefits identified from increased use of distributed solar electricity generation.

*Community Engagement*

IDEM had extensive community engagement throughout the PCAP process that has informed the decision for the measures included as well as to enhance communication for project submission. Page 39 of the Indiana PCAP reviews the stakeholder comments from community engagement. Through the community survey, 43% of respondents and 38% of respondents from priority LIDAC zip codes (identified through IDEM using the U.S. EPA CEJST tool) chose distributed solar as top measure. Other municipal climate action plans throughout the state, including Lafayette, Gary, and Evansville, included distributed and community solar as important measure for tackling climate pollution in their communities. Throughout the six public engagement meetings, there were many comments and feedback that supported distributed solar generation. From the first round of draft measures to the final climate measures, IDEM included a measure specifically for community and distributed solar generation in order to capture the priorities and needs of the public.

**b. Job Quality**

These projects will increase job creation and workforce development. The Indiana PCAP qualitatively expands on workforce development for distributed solar generation on pages 42 and 43. A diverse skill set is needed to implement solar projects including, but not limited to, project managers, construction professionals, solar technicians for installation and maintenance, and many other skill sets. These projects will create high quality jobs in Indiana. Projects such as Fort Wayne have also included workforce development training in their project description from Ivy Tech to explore bringing solar certification courses/classes to help train new professionals in installation and execution of solar projects. IDEM will require its sub-awardees to commit to strong standards and labor agreements when possible. IDEM will also ensure grant agreements include any applicable standards from the Davis-Bacon and related acts and the Build America Buy America Act.

## II. Increase Residential, Municipal, and Commercial Building Energy Efficiency

Increasing residential, municipal, and commercial building energy efficiency involves a range of measures that can reduce greenhouse gas (GHG) emissions by minimizing the reliance on fossil fuels, gases, and electricity. These initiatives encompass enhancements such as improved insulation and building envelope upgrades (thermal barriers such as walls and windows), the installation of more energy-efficient heating, cooling, ventilation, and refrigeration systems, the adoption of efficient LED lighting, the integration of passive heating and lighting strategies to leverage natural sunlight, the procurement of energy-efficient appliances and electronics, and more. Enhancing the energy efficiency of residential and commercial buildings in Indiana can substantially reduce GHG emissions, given the significant contribution of this sector to Indiana’s overall emissions profile. Adopting energy-efficient practices reduces energy costs for individuals and businesses, fostering economic savings. Simultaneously, these initiatives contribute to improved air quality and generate job opportunities. These also assist achievement of CPRG’s overall program goal to create good jobs and lower energy costs for families as well as help alleviate climate burdens on various Indiana communities.

Indiana is asking for **\$48,466,945** in funding to implement the Increase Residential, Municipal, and Commercial Building Energy Efficiency measure. This will help fund the projects listed in Table 4 that have been vetted and selected through a project intake process hosted by IDEM. These are committed projects that are shovel ready projects and entities are ready to partner with IDEM to accomplish the goals of this measure. Combined, these projects are looking at weatherizing or increasing energy efficiency of **1,823 buildings** across Indiana with the estimated reduction of **188,726 metric tons of CO<sub>2</sub>e by 2030**. This will help meet **63%** of the quantified GHG reductions of **Target 1** of the energy efficiency measure (page 49 of Indiana’s PCAP).

Table 4: Energy Efficiency Proposed Projects

Proj#	Entity	Project Name	Project Description
1	City of South Bend	Energy Assistance Solar Savings Initiative (EASSI)	This initiative proposes to work with non-profits and business in the City of South Bend to help access solar and improve energy efficiency through subsidized energy assessments, subgrants, and low-interest loans.
2	City of Evansville, Evansville Climate Collaborative	Electrify Evansville Water Heaters	This program proposes to incentivize conversion of older water heaters to electric heat pump water heaters. This program seeks to install between 600-1000 water heaters.
3	Western Wayne Schools	Western Wayne Schools Roof Replacement	This project proposes to replace the existing roofing in both school buildings within Western Wayne Schools to increase energy efficiency with added insulation.
4	Metropolitan School District of Warren Township	District-wide greenhouse gas and energy efficiency program	This project proposes to implement energy-focused measures across the school district, specifically battery storage, HVAC equipment replacements, and boiler replacements.
5	Franklin Township Community Schools	Local Distributed Generation with Solar for Franklin Township Community Schools	This project proposes to install a combined heat and power (CHP) generator, which will operate on-site, and a solar photovoltaic (PV) field at a intermediate school. The majority of the project will be CHP.
6	Purdue University	Purdue West Lafayette Campus Energy Conservation Program	This project seeks energy efficiency and demand-side reduction management to reduce campus-wide energy consumption. This will be achieved through

			controls system updates, distribution system enhancement and other measures.
7	Faith in Place	Solar & Energy Efficiency Regranting Program for Houses of Worship in EJ communities	This program proposes to subaward funds to implement energy cost savings initiatives and energy efficiency initiatives at 10 houses of worship in low-income and disadvantaged community census tracts.
8	The Children's Museum of Indianapolis	Energy Efficiency	This project proposes to replace steam boiler, cooling towers, and chillers with new, energy efficient systems to reduce carbon footprint.
9	Project 46 Regional Climate Alliance	Project 46 Municipal Weatherization and Decarbonization Program	This program seeks to cover costs to weatherize and decarbonize up to nineteen municipal properties in the Bloomington, Columbus, and Nashville area.
10	Project 46 Regional Climate Alliance	Project 46 Weatherization and Pre-Weatherization Program	This program seeks to cover partial or total cost of weatherization and energy efficiency for homeowners, businesses, and non-profits in the Bloomington, Columbus, and Nashville area.
11	Indiana Department of Administration (IDOA)	Geothermal Installation in Municipal Buildings	This project proposes to install geothermal loops as the heat source of The Indiana School for the Deaf and the Indiana School for the Blind. This pilot project will be used to increase building energy efficiency, reduce GHGs, and increase cost-savings.

**a. Demonstration of Funding Need**

CPRG implementation funding is necessary to fully implement the proposed measure through the listed projects. Indiana currently offers some financial incentives to promote energy efficiency, including the Indiana Finance Authority’s Green Project Reserve Revolving Loan fund and the Indiana Department of Local Government and Finance’s Guaranteed Energy Savings Contract, but as these are loans, more funding is needed as a grant to increase energy efficiency in municipal and school buildings. Especially as weather extremes are increasing throughout the state of Indiana, according to a 2021 IndyStar article, more funding is needed to increase the resilience of Indiana community centers. Other entities in Indiana have applied for related grants and have used part of annual budgets; however, these grants and fund allocations have not been sufficient to fully implement the proposed projects. To highlight the project from IDOA on geothermal energy retrofits, this project is requesting a third of the overall cost for using geothermal energy instead of traditional natural gas fired boilers for the school campuses. This will assist IDOA in remaining within the allocated budget for the overall project while also supporting a clean and renewable source of energy. Without CPRG funding, these projects will have a more difficult time for budgeting and timely deliverables of important energy retrofits. The Indiana PCAP, page 51, lists federal and non-federal funding sources. From the six public meetings hosted by IDEM for the CPRG PCAP and the statewide survey to gauge public opinion on draft PCAP measures, there is consistent support for building energy efficiency. These are referenced in the Indiana PCAP on pages 23, 24, and 46. IDEM’s school project partners have also indicated that other funding explored has yet to align with eligibility and allowable expenditures. From public opinion and other funding sources, a gap still remains for increasing energy efficiency for all Indiana communities, but especially in LIDACs in Indiana.

**b. Transformative Impact**

Increasing building energy efficiency will increase local cost savings and reduce taxpayer costs. This could lead to increased community spending in other areas, as well as increased building resilience for community need. Because Indiana has one of the highest energy burdens in the Midwest, as referenced

in the Indiana PCAP (page 45), reductions in energy costs will go further in Indiana. Although the total proportion of emissions from this sector is smaller than the electric generation, industrial, and transportation sectors, energy efficiency brings myriad benefits for both commercial and residential end users. These benefits include reducing air pollution at the source, reducing energy burden, improving building reliance, improving air quality, and the creation of new jobs. The projects have been vetted also through the lens of how far these impacts can reach. Projects like IDOA’s geothermal energy retrofits for the Indiana School for the Deaf and the Indiana School for the Blind is the first use of geothermal energy at a state facility and serve as a pilot project that could lead to additional investment in clean and renewable energy by the State. Other programs such as Faith in Place’s regrant program will be able to help community centers-of-worship lower energy costs and improve air pollution in LIDAC areas.

**c. Impact of GHG Reduction Measures and Cost Effectiveness**

Table 5 provides estimates of the cumulative emission reductions in metric tons of carbon dioxide equivalent (mtCO<sub>2</sub>e) anticipated from the proposed projects listed in Table 4. Further details on quantification methods, relevant assumptions, annual emission reduction estimates, and any uncertainties associated with the estimates are provided in the Technical Appendix to this application.

*Table 5: Cumulative GHG Emission Reductions Anticipated from Implementation of Energy Efficiency Projects*

<b>Cumulative GHG Emission Reductions</b>			
	<b>2025–2030 (mt CO<sub>2</sub>e)</b>	<b>2025–2050 (mt CO<sub>2</sub>e)</b>	<b>Cost Effectiveness (\$/(mt CO<sub>2</sub>e))</b>
<b><i>Sum of Proposed Projects</i></b>	188,726	719,586	---
	<b><i>Average Cost Effectiveness</i></b>		257

Implementation of the proposal will result in durable GHG emission reductions. Weatherization, pre-weatherization, and general energy efficiency actions will last for the life of the buildings and can increase the lifespan of the building. From the total amount of GHG emissions reduced from near-term to long-term on Table 5, there are continued and sustained reductions associated with this measure.

*Qualitative Cost Effectiveness of GHG Reduction*

Implementation of the proposal is highly cost-effective. The cost-effectiveness of the proposal, inclusive of all measures in this application, is \$257 per metric ton of CO<sub>2</sub>e reduced. A small number of the energy efficiency partners do include training costs for their program/project that is reflected in the cost effectiveness. The cost effectiveness is based solely on CPRG dollars and does not reflect other funding sources that project partners are planning to pursue, such as IRS direct pay, IRS tax credits, private funding, and annual budgeting.

*Calculation Assumptions*

Emissions calculations for building energy efficiency have used the U.S. Energy Information Administration’s (EIA) Commercial Buildings Energy Consumption Survey to calculate annual electricity consumption of buildings in the Midwest region. Other methods included emissions-to-MWh/MMBtu standards from Green-e certification standards for Indianapolis and using energy usage data and industry-standard projections for common energy efficiency measures in commercial buildings from sources including Energy Star, the U.S. Department of Energy, and the U.S. Environmental Protection Agency. Greater breakdown and description of methodology is shown in the Technical Appendix.

**d. Low-Income and Disadvantaged Communities**

*Community benefits*



These projects were selected with a high proclivity to LIDAC areas. With this funding IDEM is committed to ensuring the maximum amount of benefits directed to LIDAC areas from the projects received through the project intake process. Table 6 shows the location of the projects. The LIDAC census tracts expected to be impacted can be found in the attachment (Areas\_IDEM.xlsx). The statewide programs have stated their intent to focus mainly on LIDAC tracts identified by U.S. EPA’s CEJST tool.

*Table 6: Location and Impacted LIDAC Tracts for Proposed Energy Efficiency Projects*

<b>Proj#</b>	<b>Entity</b>	<b>Location</b>
1	City of South Bend	South Bend
2	City of Evansville, Evansville Climate Collaborative	Evansville
3	Western Wayne Schools	Cambridge City
4	Metropolitan School District of Warren Township	Indianapolis
5	Franklin Township Community Schools	Indianapolis
6	Purdue University	West Lafayette
7	Faith in Place	Statewide
8	The Children's Museum of Indianapolis	Indianapolis
9	Project 46 Regional Climate Alliance	Bloomington, Columbus, Nashville
10	Project 46 Regional Climate Alliance	Bloomington, Columbus Nashville
11	IDOA	Indianapolis

The implementation of energy efficiency projects is anticipated to provide significant benefits to LIDACs. Potential community benefits from this measure include reduced climate impacts and risk, reduced energy cost burden, enhanced resilience of buildings and communities, improved housing quality, safety, and comfort, and job creation as referenced on page 46 of the Indiana PCAP. Implementation disbenefits are due to increased SO<sub>2</sub> emissions from increased electricity consumption for electric heat pumps replacing gas water heaters as shown in Table 19. This can be mitigated through increased renewable energy generation projects included in this application, such as the geothermal energy retrofit at the Indiana schools for the Blind and Deaf. School and university energy retrofit projects have the potential to make a significant impact on student health, comfort in the building, and through cost savings. Community benefits that are significant to the community come from energy savings which these projects would help to direct to Indiana residents, especially LIDAC areas.

*Community engagement*

IDEM had extensive community engagement throughout the PCAP process that has informed the decision for the measures included as well as to enhance communication for project submission. Increasing building energy efficiency was a measure identified in the first round of draft climate measures through research into job creation potential, pollution reduction potential, benefits to communities, and cost availability. Throughout the six public meetings and the statewide survey, building energy efficiency was consistently identified as a priority to include.

**e. Job Quality**

The Indiana PCAP quantifies workforce development for building energy efficiency on pages 49 and 50. Indiana has significant demand for skilled trades such as carpenters, electricians, plumbers, and HVAC technicians to implement energy-efficient systems. This measure also increases the need for professional experience with Leadership in Energy and Environmental Design (LEED) certifications, project management, architects, and engineers. These projects will ensure increased job creation and workforce development with quality jobs. IDEM will require the sub-awardees to commit to strong

standards and labor agreements when possible. IDEM will also ensure grant agreements include any applicable standards from the Davis-Bacon and related acts and the Build America Buy America Act.

### III. Electrify Light-Duty Vehicles and Reduce Vehicle Miles Traveled

Electrifying light-duty vehicles captures efforts to encourage the adoption of light-duty electric vehicles, which displace traditional fossil-fuel counterparts. This measure also includes expanding Indiana’s charging infrastructure to incentivize electrification. There are currently over six million registered light-duty vehicles in Indiana. Of these, electric vehicles make up less than 2% of total vehicles as of 2021, showing significant room for increased penetration of electric vehicles. Encouraging additional growth in the light-duty electric vehicle market can result in significant benefits such as improved air quality and job access. Indiana aims to reduce total vehicle miles traveled (VMT) throughout the state by expanding public transit, enhancing high-occupant vehicle travel, and developing pedestrian and bike pathways. Measures that reduce the number of vehicle miles traveled directly correlate to reducing vehicle tailpipe emissions. VMT reduction can occur by transitioning from single-occupancy vehicle rides to high-occupancy rides, opting for active transportation modes (walking, biking, transit), and improving traffic patterns. Strategies may include zoning and development code updates to diversify and improve land use; creation of bicycle and pedestrian infrastructure, including sidewalks, trails, signalized crossing amenities, curb ramps, separated lands, and overpasses; expanding public transit services; and an examination of traffic patterns and congestion mitigation strategies intended to make vehicle travel more efficient. These will help to further CPRG’s goals by reducing air pollution where people live, work, play and go to school, and help bring benefits and opportunities directly to LIDAC areas.

Indiana is asking for **\$19,977,355** in funding to implement the electrification of light-duty vehicles, municipal fleets, and the reduction of vehicle miles traveled. This will help fund the projects listed in Table 7 that have been vetted and selected through a project intake process hosted by IDEM. These are committed partners that have shovel ready projects and are willing and able to partner with IDEM to accomplish the goals of this measure. These transportation projects combined would increase electric vehicle adoption in Indiana by approximately **170 vehicles** with additional charging infrastructure. These projects also add **multiple new routes or expand existing public transit routes** to reduce vehicle miles traveled. Combined, there is the potential to reduce **91,573 metric tons** of GHG emissions by 2030. These projects will help meet **0.3%** of Target 1 quantified GHG reductions (page 57) of the measure Electrify Light-Duty Vehicles and **7%** of Target 1 quantified GHG reductions (page 62) of the measure to Reduce Vehicle Miles Traveled.

*Table 7: Proposed Transportation Measure Projects*

Proj#	Entity	Project Name	Project Description
1	City of Terre Haute	Terre Haute electric vehicle pilot program	This project proposes to replace six city-owned internal combustion vehicles with six electric vehicles and three charging stations.
2	Michiana Area of Council of Governments (MACOG)	MACOG electric vehicle catalyst project for local governments	This project proposes to increase electric vehicle adoption by local governments by administering a sub-award program to convert up to 64 vehicles to electric in 35 cities and towns in Northeast Indiana. This would include electric chargers.
3	City of Evansville	EV for Evansville	This project proposes to transition up to 100 of Evansville municipal fleets to electric systems and install charging stations for those vehicles.

4	Project 46 Regional Climate Alliance	Project 46 Community Micromobility Hub Program	This project proposes to fund the installation of micromobility hubs, charging and storage stations for small, personal electric transportation devices such as e-bikes and e-scooters at key community locations.
5	Northwest Indiana Planning Commission (NIRPC)	NWI Vanpool Pilot	This project proposes to conduct a regional vanpool program in Northwest Indiana that would result in up to 46 vanpool operations by year 4 and 70 by year 5
6	Gary Public Transport Corporation (GPTC)	Sustainable Transit Expansion	This project proposes to expand public transit through route expansion and on-route charging infrastructure expansions.

**a. Demonstration of Funding Need**

CPRG implementation funding is necessary to fully implement the proposed measures. Other entities in Indiana have applied for related grants; however, these grants are not sufficient to fully implement the proposed measures. The Indiana PCAP, page 58 for electric vehicles and page 64 for reduction of vehicle miles traveled, lists federal and non-federal funding sources. From the six public meetings hosted by IDEM and their contractor for the CPRG PCAP and the statewide survey to gauge public opinion on draft PCAP measures, there is overwhelming support for increasing use of electric vehicles and reducing vehicle miles traveled. These are referenced in the Indiana PCAP on page 54 for electric vehicles and page 60 for reduction of vehicle miles traveled. In the IDEM statewide survey, transportation measures were among the top five most important actions, and reducing vehicle miles traveled received the second most votes of any measure category. From public opinion and other funding sources, a gap remains to increase electric vehicles and electric vehicle adoption and to increase public transportation, which this grant could bolster. Projects in this section such as MACOG have applied for and received additional state funding from the Indiana Office of Energy Development which will be able to be stacked with CPRG funding to provide a greater program. The City of Evansville was also awarded a U.S. DOE Energy Efficiency and Conservation Block Grant in 2023 to help with energy conservation strategies community-wide and are working to accomplish far reaching programs in Evansville. Federal Transit Administration funds are used by NIRPC and GPTC, but these have been identified as not substantial enough to meet all residents’ needs.

**b. Transformative Impact**

As previously stated, the amount of electric vehicles only accounts for 2% of all registered vehicles in Indiana. Funding for the proposed projects would allow for increased vehicle adoption and could also increase public opinion on the benefits of electric vehicle use. Transportation is an important part of Indiana, though, not just in an electric vehicle sense, but also in terms of communities being able to travel, get to work, and get to school. Projects in reducing vehicle miles traveled are important for communities, particularly LIDAC areas. Funding for these projects could help to relieve the transportation burden on these communities, and at the same time, reduce harmful air pollutants.

**c. Impact of GHG Reduction Measures and Cost Effectiveness**

Table 8 provides estimates of the cumulative emission reductions in metric tons of carbon dioxide equivalent (mtCO<sub>2</sub>e) anticipated from the proposed projects listed in Table 7. Further details on quantification methods, relevant assumptions, annual emission reduction estimates, and any uncertainties associated with the estimates are provided in the Technical Appendix to this application.

*Table 8: GHG Emission Reductions Anticipated from Implementation of Proposed Transportation Project*

Cumulative GHG Emission Reductions			
	2025–2030 (mt CO <sub>2</sub> e)	2025–2050 (mt CO <sub>2</sub> e)	Cost Effectiveness (\$/(mt CO <sub>2</sub> e))

<b>Sum of Proposed Projects</b>	91,573	458,927	---
	<b>Average Cost Effectiveness</b>		218

Implementation of the proposal will result in durable GHG emission reductions. Electric vehicles and the reduction of vehicle miles traveled have a long and sustained impact as shown from the total GHG emissions reduced from the near-term (2025) to 2050. There is also potential for high reductions in co-pollutants like NO<sub>x</sub>, VOCs, and CO as identified in the Indiana PCAP on page 57 for electric vehicles and page 62 for reduction of vehicle miles traveled. One of the disbenefits for electric vehicles is the increase in co-pollutants SO<sub>2</sub> and PM<sub>2.5</sub> identified on page 57 of Indiana PCAP. See Table 19 for co-pollutant emission changes for this application. These quantified co-pollutants increased due to increased usage of electricity for the operation of these vehicles. This can be mitigated through means such as increased renewable energy generation.

*Qualitative Cost Effectiveness of GHG Reduction*

Implementation of the proposal is highly cost-effective. The cost-effectiveness of the proposal, inclusive of all measures in this application, is \$218 per metric ton of CO<sub>2</sub>e reduced. A small number of transportation partners do include allocation of costs to operation and maintenance, which may impact overall cost effectiveness. The cost effectiveness is based solely on CPRG dollars and does not reflect other funding sources that project partners are planning to pursue, such as IRS direct pay, IRS tax credits, private funding, and annual budgeting.

*Calculation Assumptions*

These transportation projects have used tools such as U.S. EPA Greenhouse Gas Equivalencies Calculator and U.S. EPA Diesel Emission Quantifier. These also assume fair market penetration. Greater breakdown and description of methodology is shown in the Technical Appendix.

**d. Low-Income and Disadvantaged Communities**

*Community benefits*

These projects were selected with a high inclination to LIDAC areas. With this funding IDEM is committed to ensuring the maximum amount of benefits directed to LIDAC areas from the projects received through the project intake process. Table 9 shows the location of the projects. The LIDAC census tracts expected to be positively impacted are listed in the attachment (Areas\_LIDAC.xlsx).

*Table 9: Location and Impacted LIDAC Tracts for Proposed Transportation Projects*

<b>Proj#</b>	<b>Entity</b>	<b>Location</b>
1	City of Terre Haute	Terre Haute
2	MACOG	Elkhart, Kosciusko, Marshall, and St. Joseph
3	City of Evansville	Evansville
4	Project 46	Bloomington, Columbus, and Nashville
5	NIRPC	Counties: Lake, Porter, and La Porte
6	GPTC	Gary

These transportation projects will reach a great distribution throughout the state of Indiana and are expected to provide significant benefits to LIDACs. Public engagement also showed that there was interest from the public for these projects. From the community survey, 42% of respondents from priority LIDAC zip codes selected the measure to increase the availability, accessibility, and reliability of public transportation. Survey respondents also chose vehicle electrification and charging as part of the top five priority actions they would like to see implemented and was also identified as a priority from

15% of LIDAC zip codes. The proposed transportation measures will help accomplish what Hoosiers have identified as concerns and needs.

*Community engagement*

IDEM had extensive community engagement throughout the PCAP process that has informed the decision for the measures included as well as to enhance communication for project submission. Please refer to the Indiana PCAP for in-depth information on the public engagement process and outcomes. Increasing the accessibility of electric vehicles and reducing VMT were measures identified in the first round of draft climate measures through research into job creation potential, pollution reduction potential, benefits to communities, and cost availability. Throughout the six public meetings and the statewide survey, it was consistently identified as being a priority to include.

**e. Job Quality**

These projects will increase job creation and workforce development. The Indiana PCAP quantifies workforce development on page 57 for electric vehicles page 63 for vehicle miles traveled reductions. A skilled workforce is needed for implementation of these projects, such as electricians, civil engineers, construction workers, bus operators, and transportation planners. Moreover, this initiative has the potential to generate jobs across various sectors, including transportation, construction, and design, contributing to economic development and sustainable mobility solutions in Indiana. IDEM will require sub-awardees to commit to strong standards and labor agreements when possible. IDEM will also ensure grant agreements include any applicable standards from the Davis-Bacon and related acts and the Build America Buy America Act.

**IV. Expand the Use of Electric Industrial Processes and Technologies**

Expanding the use of electric industrial processes and technologies involves electrifying industrial processes, especially low- and medium-heat processes. Within the industrial landscape, various equipment types such as furnaces, boilers, and gas-fired heaters possess the potential for electrification. Industrial sources are the second largest emitter of GHG emissions, according to the Indiana GHG Inventory on page 10 of the PCAP. Page 65 includes more details on the measure itself. More work is needed to continue the effort to decarbonize industry by electrifying industrial processes. Projects implemented through this measure will meet public input on industry given through the community engagement process while also aligning with CPRG’s objective to reduce harmful air pollution.

Indiana is asking for **\$1,288,749** in funding to implement the measure on expanding the use of electric industrial processes and technologies. This will help fund the project listed in Table 10 that has been vetted and selected through a project intake process hosted by IDEM. It is a “shovel ready” project and Project 46 is willing to partner with IDEM to accomplish the goal of this measure. Total GHG reductions from 2025-2030 are **3,912 metric tons** of GHG emissions reductions. This project will help to meet **1.3%** of Target 1’s quantified GHG emissions in the Indiana PCAP (page 69) for this measure.

*Table 10: Industrial Electrification Projects*

<b>Proj#</b>	<b>Entity</b>	<b>Project Name</b>	<b>Project Description</b>
1	Project 46 Regional Climate Alliance (Project 46)	Project 46 Commercial and industrial equipment electrification	This project proposes to fund up to 12 hydraulic presses (one per business) throughout the Bloomington, Columbus, and Nashville area over a two year period.

**a. Demonstration of Funding Need**

CPRG implementation funding is necessary to fully implement the proposed measures. Other entities in Indiana have applied for related grants; however, these grants are not sufficient to fully implement the proposed measures. The Indiana PCAP, page 71, lists federal non-federal funding sources. From the six public meetings hosted by IDEM and their contractor for the CPRG PCAP and the statewide survey to gauge public opinion on draft PCAP measures, there is support for electrification of industrial processes. These are referenced in the Indiana PCAP on pages 66. This industrial electrification program will be administered by Project 46 Regional Climate Alliance, a collaboration between the Indiana cities of Bloomington, Columbus, and Nashville. They are funded through annual donations from the cities themselves but lack other funding resources to draw from to fully execute this project. From public opinion and lack of other viable funding sources, a gap still remains for increasing the electrification of industrial processes.

### **b. Transformative Impact**

Electrifying industrial processes has the potential to increase a skilled and diverse workforce in one of Indiana’s top economic sectors, industries. By including these types of projects, the momentum for industrial electrification can increase and inspire other industrial businesses to transition equipment and processes. This helps to meet one of Hoosiers’ main concerns, pollution impact from industrial sources.

### **c. Impact of GHG Reduction Measures and Cost Effectiveness**

Table 11 provides estimates of the cumulative emission reductions in metric tons of carbon dioxide equivalent (mtCO<sub>2</sub>e) anticipated from the proposed project listed in Table 10. Further details on quantification methods, relevant assumptions, annual emission reduction estimates, and any uncertainties associated with the estimates are provided in the Technical Appendix to this application.

*Table 11: GHG Emission Reductions Anticipated from Implementation of Proposed Industrial Electrification Project*

<b>Cumulative GHG Emission Reductions</b>			
	<b>2025–2030 (mt CO<sub>2</sub>e)</b>	<b>2025–2050 (mt CO<sub>2</sub>e)</b>	<b>Cost Effectiveness (\$/(mt CO<sub>2</sub>e))</b>
<b><i>Sum of Proposed Projects</i></b>	3,912	16,951	---
	<b><i>Average Cost Effectiveness</i></b>		329

Implementation of the proposal will result in durable GHG emission reductions. Industrial electrification has long and sustained impacts as shown from the total GHG emissions reduced from the near-term (2025) to 2050. This also has the potential for further electrification of other processes, as this can lead to lower operational costs from overall reduced energy use from more efficient equipment.

#### *Qualitative Cost Effectiveness of GHG Reduction*

Implementation of the proposal is highly cost-effective. The cost-effectiveness of the proposal, inclusive of all measures in this application, is \$329 per ton of CO<sub>2</sub>e reduced. This project does include capital cost of equipment which may impact overall cost-effectiveness. The cost effectiveness is based solely on CPRG dollars and does not reflect other funding sources that project partners are planning to pursue, such as IRS direct pay, IRS tax credits, private funding, and annual budgeting.

#### *Calculation Assumptions*

Calculations were completed using the model of hydraulic press’ known size and average kWh usage. Greater breakdown and description of methodology is shown in the Technical Appendix.

### **d. Low-Income and Disadvantaged Communities**



### *Community benefits*

This project was selected with a high inclination to LIDAC areas. With this funding IDEM is committed to ensuring the maximum amount of benefits directed to LIDAC areas from the projects received through the project intake process. Table 12 shows the location of the projects and the LIDAC census tracts expected to be impacted.

*Table 12: Location and Impacted LIDAC Tracts for Proposed Industrial Electrification Projects*

<b>Proj#</b>	<b>Entity</b>	<b>Project Name</b>	<b>Location(s)</b>
1	Project 46	Equipment electrification	Bloomington, Nashville, and Columbus

Industrial electrification has an impact on LIDAC areas and stakeholders throughout the state by reducing GHG emissions close to communities and potentially increasing workforce development. This is a regional wide project across Bloomington, Nashville, and Columbus. This project includes outreach to businesses, particularly in LIDAC areas. This will help LIDAC area businesses save money and reduce air pollution. Potential disbenefits include the increase of co-pollutants such as SO<sub>2</sub> and PM<sub>2.5</sub> from the increase of electrification in industrial processes (page 69 in PCAP). See Table 19 for co-pollutant emission changes for this application. These can be mitigated by increasing renewables which this application also applies for.

### *Community engagement*

IDEM had extensive community engagement throughout the PCAP process that has informed the decision for the measures included as well as to enhance communication for project submission. Page 66 of the Indiana PCAP refers to the stakeholder comments that were analyzed when selecting the measure of industrial electrification. 40% of total respondents, and 42% of those from priority LIDAC zip codes, selected this measure as one of their top five actions on the community survey. In public meetings, stakeholders also emphasized the need to reduce industrial air pollution to improve community air quality and health.

### **e. Job Quality**

Expanding the electrification of industrial processes in Indiana represents a significant transformation that requires a skilled and diverse workforce. Electrical engineers and industrial automation specialists will be instrumental in designing and implementing electrified systems within manufacturing facilities. Skilled electricians and technicians will play a crucial role in installing and maintaining advanced machinery and electrical equipment. This information and more are referenced from the Indiana PCAP on page 69. IDEM will require the sub-awardees to commit to strong standards and labor agreements when possible. We will also ensure grant agreements include any applicable standards from the Davis-Bacon and related acts and the Build America Buy America Act.

## **V. Increased Diversion Rate of Organic Waste from Landfills**

Increasing the diversion of organic waste from landfills involves directing more organic waste into its designated waste stream to avoid it being commingled with municipal solid waste (MSW) destined for landfills. This necessitates that residents and businesses segregate organic waste, similar to the separation process for recyclables. Implementing these changes will also require communities to establish new systems for collecting and processing organic waste. Diverted organic waste can serve as a valuable feedstock for anaerobic digestion, generating renewable energy, or can be converted into compost for fertilizing crops. When organic waste decomposes in landfills, it emits greenhouse gases. Diverting it for alternative uses mitigates emissions resulting from landfill decomposition. The act of

diverting waste from landfills also facilitates the creation of new jobs while minimizing air and water pollution sources.

Indiana is asking for **\$1,532,075** in funding to implement the measure on increased diversion of organic waste from landfills. This will help fund the project listed in Table 13 that has been vetted and selected through a project intake process hosted by IDEM. This is a “shovel ready” project and the City of Fort Wayne is willing to partner with IDEM to accomplish the goals of this measure. Total GHG reductions from 2025-2030 are **58,592 metric tons**. This project will help to meet **15%** of the Target 1’s quantified GHG emissions reductions in the Indiana PCAP (page 76) for this measure.

Table 13: Waste Reduction Projects

Proj#	Entity	Project Name	Project Description
1	City of Fort Wayne	Digester Enhancement – Landfill Diversion Solid Organic Waste Recycling Program	This project proposes to increase capacity and efficiency of an existing anaerobic digester to expand diversion rate of organic waste. This would be accomplished by through infrastructure expansion.

### a. Demonstration of Funding Need

CPRG implementation funding is necessary to fully implement the proposed measure. Other entities in Indiana have applied for related grants; however, these grants are not sufficient to fully implement the proposed measures. The Indiana PCAP, page 75, lists federal and non-federal funding sources. From the six public meetings hosted by IDEM and their contractor for the CPRG PCAP and the statewide survey to gauge public opinion on draft PCAP measures, there is support for organic waste diversion from landfills. These are referenced in the Indiana PCAP on pages 73. This project has also applied to EPA’s Supporting Anaerobic Digestion in Communities grant but was not awarded. They have received funding from a U.S. DOE’s Energy Efficiency Conservation Block Grant to cover a portion of the design cost, but more funding is needed to implement the project. From public opinion and lack of other viable funding sources for the project, a gap still remains for this measure.

### b. Transformative Impact

This project is implementation ready and will achieve short term reduction in the super pollutant methane through pulling organics from the landfill disposal route. Longer term effects include using the resulting compost to build healthier soils to increase resilience against weather events like drought and flooding. Nearly 80% of municipal waste incinerators and landfills are in LIDAC areas. Methane and other landfill pollutants are particularly impactful to the communities living and working near landfills (lost productivity, higher medical costs, greater pressure on health systems). By redirecting food waste and reducing methane emissions at these landfills, the surrounding disadvantaged communities should experience better outcomes. Jobs and infrastructure benefit communities that have historically dealt with the negative economic, health and environmental impacts from incinerators and landfills.

### c. Impact of GHG Reduction Measures and Cost Effectiveness

Table 14 provides estimates of the cumulative emission reductions in metric tons of carbon dioxide equivalent (mtCO<sub>2e</sub>) anticipated from the proposed project listed in Table 13. Further details on quantification methods, relevant assumptions, annual emission reduction estimates, and any uncertainties associated with the estimates are provided in the Technical Appendix to this application.

Table 14: GHG Emission Reductions Anticipated from Implementation of Proposed Waste Reduction Projects

Cumulative GHG Emission Reductions
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	2025–2030 (mt CO <sub>2</sub> e)	2025–2050 (mt CO <sub>2</sub> e)	Cost Effectiveness (\$/(mt CO <sub>2</sub> e))
<i>Sum of proposed projects</i>	58,592	373,521	---
	<i>Average Cost Effectiveness</i>		26

Implementation of the proposal will result in durable GHG emission reductions. As seen from the 2025-2030 reductions to the continued and sustained reductions to 2050, this project will help to make substantiated progress for this measure.

*Qualitative Cost Effectiveness of GHG Reduction*

Implementation of the proposal is highly cost-effective. The cost-effectiveness of the proposal, inclusive of all measures in this application, is \$26 per ton of CO<sub>2</sub>e reduced. The cost effectiveness does not include capital costs of equipment. The cost effectiveness is based solely on CPRG dollars and does not reflect other funding sources that project partners are planning to pursue, such as IRS direct pay, IRS tax credits, private funding, and annual budgeting.

*Calculation Assumptions*

Calculations from U.S. EPA’s WARM model were used to estimate waste reductions. Greater breakdown and description of methodology is shown in the Technical Appendix.

**d. Low-Income and Disadvantaged Communities**

*Community benefits*

This project was selected with a high inclination to LIDAC areas. With this funding IDEM is committed to ensuring the maximum amount of benefits directed to LIDAC areas from the projects received through the project intake process. Table 15 shows the location of the projects. The LIDAC census tracts expected to be impacted are shown in the attachment (Areas\_IDEM.xlsx).

*Table 15: Location and Impacted LIDAC Tracts for Proposed Waste Reduction Projects*

Proj#	Entity	Project Name	Location(s)
1	City of Fort Wayne	Digester Enhancement	Fort Wayne

This landfill waste diversion project has an impact on LIDAC areas and stakeholders throughout the state by reducing GHG emissions close to communities and potentially increasing workforce development. Municipal waste incinerators and landfills are often in close proximity to LIDAC areas, where decreasing co-pollutants could have quick and effective benefits for surrounding communities. Increased organic waste diversion is shown to decrease co-pollutants (page 76 of PCAP) and Table 19, especially carbon monoxide, CO. Also decreased waste to landfills could reduce the direct release of methane, and the potential for landfills fires and the corresponding air pollutants and dangerous smoke.

*Community engagement*

IDEM had extensive community engagement throughout the PCAP process that has informed the decision for the measures included as well as to enhance communication for project submission. Page 73 of the Indiana PCAP refers to the stakeholder comments that were analyzed when selecting the measure of increased organic waste diversion from landfill. 20% of respondents that selected this measure as a part of their top five actions were from priority LIDAC zip codes. Multiple local climate action plans from Indiana included this action as a part of their portfolio of efforts to increase diversion rates. Potential community benefits from this measure include reduced climate risks and improved waste management.

**e. Job Quality**

Increasing the diversion rate of organic waste from landfills in Indiana requires a workforce with expertise in waste management, environmental science, and sustainable practices. For example, waste management professionals, including waste diversion coordinators, will be essential for designing and implementing effective organic waste diversion programs. Compost facility operators and technicians skilled in composting will play a pivotal role in managing organic waste to produce nutrient-rich compost for agricultural use. Additionally, outreach and education specialists will be needed to raise awareness among businesses, communities, and individuals about the benefits of diverting organic waste and how to properly participate in composting programs. Transport and logistics professionals specializing in organic waste collection and transportation would ensure the efficient flow of materials from generators to composting facilities. Environmental scientists and researchers will contribute to ongoing efforts to optimize composting methods and explore innovative technologies for organic waste management. This information is from the Indiana PCAP on page 76 and 77. This specific project partner has indicated they will require contracted labor for the period of time to finish the project, and additional staff to be trained to operate, monitor and maintain the equipment in perpetuity. IDEM will require its sub-awardees to commit to strong standards and labor agreements when possible. We will also ensure grant agreements include any applicable standards from the Davis-Bacon and related acts and the Build America Buy America Act.

## **VI. Expand Green Spaces and Urban Tree Canopy and Implement Agricultural Best Practices**

Increasing the amount of green space and urban tree canopy can result in many environmental and human health benefits. A robust tree canopy and green space provide carbon sequestration and improved air quality via pollutant absorption, as referenced in the PCAP. Indiana has made strides in recent years to expand green spaces and urban tree canopies, but public input and funding gaps point to more work to be done. In addition, these spaces play a crucial role in climate adaptation by reducing the urban heat island effect and improving stormwater management as referenced in PCAP. Indiana's agricultural sector contributed 8% of the state's total direct GHG emissions in 2021, as outlined in Section 1.2 Indiana's Emissions. These emissions arise from certain farming practices, such as burning crop residues, converting cropland, and managing livestock and manure. Indiana is the eighth-largest farming state in the nation and the sixth-largest crop producer. The increased adoption of conservation practices for cropland management can help sequester a portion of the 8.8 million metric tons of CO<sub>2</sub>e emissions associated with the state's agricultural soil management (U.S. EPA Inventory of U.S. Greenhouse Gas Emissions and Sinks by State: 1990-2021). Cover crops can contribute to carbon sequestration in agricultural soils by increasing annual plant growth and protecting soil carbon without displacing cash crops. Reduced and no-till practices can also sequester soil organic carbon (SOC) by reducing soil disturbance. These actions lead to numerous ecosystem services and on-farm co-benefits, including improved soil health, erosion control, water quality regulation, soil moisture retention, and nutrient management reference on page 90 of the Indiana PCAP. This will help meet CPRG's goal to tackle damaging climate pollution by sequestering air pollution through added green spaces and increased agricultural best practices.

Indiana is requesting **\$4,784,750** in funding to implement the measures on expanding green spaces and implementing agricultural best practices. This will help fund the projects listed in Table 16 that have been vetted and selected through a project intake process hosted by IDEM. These are committed sponsors that have "shovel ready" projects and are willing and able to partner with IDEM to accomplish the goals of this measure. The green space projects would reduce **1,005 metric tons** of GHG emissions and reach **10%** of Target 1's quantified GHG emissions reductions for Measure 9 in Indiana's PCAP (page 88). An estimated **6,000 trees** will be planted through the combined projects. The agricultural project

would reduce **92,618 metric tons** of GHG emissions and reach **12%** of Target 1’s quantified GHG emission reductions for Measure 10 in Indiana’s PCAP (page 94) by increasing cover crop adoption by a potential of **205,000 acres**.

*Table 16: Green Space and Agricultural Best Practices Projects*

Proj#	Entity	Project Name	Project Description
1	Indiana Department of Natural Resources	Neighborhood Canopy Project	This project would implement a competitive subgrant award program that will fund communities/non-profits for tree plantings on private property in LIDAC areas. It will include outreach and education.
2	Northwest Indiana Regional Planning Commission	Increasing carbon sequestration capacity and tree cover in Northwest Indiana	This project will increase tree canopy cover by establishing 2,000 native trees in Northwest Indiana. This will be distributed through NIPRC’s established CommuniTree pass-through grants program.
3	IN-CLIMATE	Achieving scale adoption of cover crops	This project will evaluate technologies to scale up cover crops in corn-soybean rotations of commercialized production agriculture systems in Indiana. The project will use digital tools and modeling to quantify reductions and changes.
4	The Nature Conservancy in Indiana	Expanding Regenerative Agriculture Practices	This project will initiate a program to provide eligible participants a \$5/acre premium discount on the following year’s crop insurance invoice for every acre of cover crop enrolled and verified in the program.

### **a. Demonstration of Funding Need**

CPRG implementation funding is necessary to fully implement the proposed measures. Other entities in Indiana have applied for related grants; however, these grants are not sufficient to fully implement the proposed measures. The Indiana PCAP, page 89 for expanded green spaces and page 95 for agricultural best practices, lists federal and non-federal funding sources. From the six public meetings hosted by IDEM and their contractor for the CPRG PCAP and the statewide survey to gauge public opinion on draft PCAP measures, there is overwhelming support for these measures. These are referenced in the Indiana PCAP on pages page 5 for expanded green spaces and page 91 for agricultural best practices. The applicants are stacking this fund with other funding. NIPRC also has applied to U.S. Forest Service Great Lake Restoration, but that funding was limited to Lake Michigan watershed locations. DNR was awarded \$4.125 million from the USDA U.S. Forest Service and is seeking to stack funds with the CPRG program to service a larger area. The Nature Conservancy is also looking to stack funds as they are supported by Clean Water Indiana and private foundation funding. From public opinion and other funding sources, a gap still remains for expanded green spaces and urban tree canopy, and the implementation of agricultural best practices for all Indiana communities, but especially LIDACs in Indiana.

### **b. Transformative Impact**

Increasing the amount of green space and urban tree canopy can result in many environmental and human health benefits. A robust tree canopy and green space provide carbon sequestration and improved air quality via pollutant absorption, as demonstrated in the Indiana PCAP. A 2022 survey prepared for Indiana University’s Environmental Resilience Institute found that across nine of the state’s major cities and counties, there is an existing tree canopy rate of 24%. The study accounted for available tree planting acreage and asserted that attainable tree canopy coverage could be as high as 49% if a concerted effort to reforest is made. Increased outreach on agricultural best practices can also help bolster communications with local farmers and contribute to soil health. These actions lead to numerous ecosystem services and on-farm co-benefits, including improved soil health, erosion control,

water quality regulation, soil moisture retention, and nutrient management (2021 Combatting Climate Change on U.S. Cropland). The project has the potential to benefit Hoosiers across the state with improved air and water quality. Many LIDAC areas are in rural portions of the state, and those citizens could benefit from improved drinking water resources with the adoption of additional conservation practices in agricultural settings, which is the predominant land use in Indiana.

### c. Impact of GHG Reduction Measures and Cost Effectiveness

Table 17 provides estimates of the cumulative emission reductions in metric tons of carbon dioxide equivalent (mtCO<sub>2</sub>e) anticipated from the proposed projects listed in Table 16. Further details on quantification methods, relevant assumptions, annual emission reduction estimates, and any uncertainties associated with the estimates are provided in the Technical Appendix to this application.

Table 17: GHG Emission Reductions from Implementation of Proposed Green Space and Agriculture Projects

Cumulative GHG Emission Reductions			
	2025–2030 (mt CO <sub>2</sub> e)	2025–2050 (mt CO <sub>2</sub> e)	Cost Effectiveness (\$/(mt CO <sub>2</sub> e))
<b>Sum of Proposed Projects</b>	93,623	107,551	---
	<b>Average Cost Effectiveness</b>		51

Implementation of the proposal will result in durable GHG emission reductions. Green space expansion and agricultural best practices will have sustained impacts as shown in the increase of total GHG emissions reduced from 2025 to 2030. Year 2050 cumulative reductions should also consider assumptions on how much crop cover adoption will increase once the program is no longer funded through the CPRG. The proposed projects expect these GHG emissions to continue well into the future because of increased outreach. For agricultural best practice projects, there is expected to be further demonstration of cover crops and peer-to-peer information sharing and result sharing to encourage widespread adoption of best practices. For expansion of green spaces, greater benefits occur and maximize when trees mature.

#### Qualitative Cost Effectiveness of GHG Reduction

Implementation of the proposal is highly cost-effective. The cost-effectiveness of the proposal, inclusive of all measures in this application, is \$51 per metric ton of CO<sub>2</sub>e reduced. The cost effectiveness is based solely on CPRG dollars and does not reflect other funding sources that project partners are planning to pursue, such as IRS direct pay, IRS tax credits, private funding, and annual budgeting. This cost-effectiveness number does include program and outreach costs.

#### Calculation Assumptions

These projects used both online modeling tools and previous sequestration assumptions vetted by the entity. Overarching assumptions are that green space projects combine both sequestered and avoided CO<sub>2</sub> and agricultural best practices projects assume 100% market penetration for crop acres statewide. Greater detail and methodology of calculations are explained in the Technical Appendix.

### d. Low-Income and Disadvantaged Communities

#### Community benefits

These projects were selected with a high inclination to LIDAC areas. With this funding IDEM is committed to ensuring the maximum amount of benefits directed to LIDAC areas from the projects received through the project intake process. Table 18 shows the location of the projects. The LIDAC census tracts expected to be impacted are shown in the attachment (Areas\_IDEM.xlsx). The majority of

these projects are statewide, with the exception of a multi-county wide project, and all projects/programs have stated their intent to focus on LIDAC tracts identified by U.S. EPA’s CEJST tool.

*Table 18: Location and Impacted LIDAC Tracts for Proposed Green Space and Agriculture Projects*

<b>Proj#</b>	<b>Entity</b>	<b>Location</b>
1	Indiana Department of Natural Resources	Statewide
2	Northwest Indiana Regional Planning Commission	Lake, Porter, and LaPorte
3	IN-CLIMATE	Statewide
4	The Nature Conservancy in Indiana	Statewide

The implementation of the green space and agriculture measures are anticipated to provide benefits to LIDAC areas throughout the state. These potential benefits include reduced climate risks, improved air quality, reduced energy cost burden, improved soil health and water quality, and improved climate resilience as listed on page 86 and 91 of the Indiana PCAP. Any corresponding co-pollutant reductions are shown on page 88 of PCAP and Table 19. These reductions will also impact water quality, as there will be a reduction in nutrient runoff from implementation of agricultural best practices, and flood control from both expanded green space and agricultural best practices. Crop cover projects help reduce dust formation from agricultural operations and therefore benefit particulate levels.

*Community engagement*

IDEM had extensive community engagement throughout the PCAP process that has informed the decision for the measures included as well as to enhance communication for project submission. Page 85 for expanding green spaces and page 91 for agricultural best practices reviews the comments from the stakeholder process that helped inform these measures. Through surveys and public meetings, these measures were supported by Indiana residents to increase Indiana’s climate resiliency.

**e. Job Quality**

The Indiana PCAP quantifies workforce development for building energy efficiency on page 88 and 89 for green spaces and 94 for agricultural practices. Expanding green spaces requires expertise in landscape, ecosystems, urban planning, and environmental conservation. Agricultural best practices increase job creation in crop management, soil health, nutrient utilization, and many more areas of the agricultural industry. These projects will require multiple new positions to be filled to implement green space and agricultural best practice outreach. IDEM will require the sub-awardees to commit to strong standards and labor agreements when possible. IDEM will also ensure grant agreements include any applicable standards from the Davis-Bacon and related acts and the Build America Buy America Act.

**VII. Environmental Results – Outputs, Outcomes, and Performance Measures of all Measures**

*Expected Outputs and Outcomes*

This proposal will meet and support EPA’s strategic plan Goal 1, “Tackle the Climate Crisis”; Objective 1.1 “Reduce Emissions that cause Climate Change” through the implementation of eight different measures that align with Indiana’s priorities.

Outputs from this proposal that would be implemented across Indiana include:

- 67 MW of solar installed
- Energy efficiency retrofits on up to 1,823 buildings
- Adoption of at least 170 electric vehicles for municipals

- Multiple new public transit routes added in Northwest Indiana
- Electrification of up to 12 industrial equipment pieces
- 50% increased capacity of anaerobic digester for food waste
- 6,000 trees planted by 2030
- Increased crop cover adoption by up to 205,000 acres
- Multiple new positions, training opportunities, and workforce development statewide and in projected associated LIDAC areas (census tracts listed in attachment Areas\_IDEM.xlsx).
- Semi-annual progress reports
- Detailed final report

Outcomes from this proposal include:

- Reduction in cumulative metric tons of GHG emissions:
  - 2025 – 2035: **719,948 metric tons CO<sub>2</sub>e**
  - 2025 – 2050: **2,953,408 metric tons CO<sub>2</sub>e**

Reduction in co-pollutants for each measure are quantitatively described and presented below in Table 19. Co-pollutants were quantified in the Indiana PCAP for each measure. To note, there is still uncertainty between the specific activities included in the model used by the Indiana PCAP and the activities presented in the measures. But it still can be reasonably assumed that percentage reductions in GHG emissions would equate to similar reductions in the co-pollutants. NO<sub>x</sub> and CO have the largest reductions, but it is important to note that these measures will increase SO<sub>2</sub> co-pollutants due to the increase in energy usage from electrification.

**Solar** – the solar projects combined would reach **35%** of the quantified GHG emissions for Target 1 (page 42) and would therefore reduce co-pollutant emissions by the same percentage.

**Energy efficiency (EE)** – these projects combined are **63%** of the estimated GHG emissions reduced from Target 1 (page 49).

**Electric vehicles (EV)** – these projects combined are **0.3%** of the quantified GHG emissions reduced from Target 1 (page 57).

**Reduce vehicle miles traveled (VMT)** – these projects combined are **7%** of the quantified GHG emissions reduced from Target 1 (page 62).

**Industrial electrification (IE)** – the project will meet **1.3%** of Target 1’s quantified emissions reduction (page 69).

**Reduce Waste** – the project will meet **15%** of Target 1’s quantified emissions reduction (page 76).

**Expand Green Spaces (green spaces)** – the combined projects will meet **10%** of Target 1’s quantified emissions reduction (page 88).

**Agricultural Best Practices (Crop Cover)** – the combined projects will meet **12%** of Target 1’s quantified emissions reduction (page 94).

Table 19: Estimated reductions of co-pollutant per measure

	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>2.5</sub>	VOCs	CO
<b>Solar - PCAP</b>	<b>578</b>	<b>574</b>	<b>85</b>	<b>8</b>	<b>49</b>
Solar - Grant	202.30	200.90	29.75	2.80	17.15
<b>EE - PCAP</b>	<b>3,042</b>	<b>(594)*</b>	<b>3</b>	<b>56</b>	<b>977</b>
EE - Grant	1,916.46	(374.22)*	1.89	35.28	615.51
<b>EV – PCAP</b>	<b>2,474</b>	<b>(2,438)*</b>	<b>(213)*</b>	<b>8,390</b>	<b>114,689</b>
EV – Grant	7.42	(7.31)*	(0.64)*	25.17	344.07
<b>VMT – PCAP</b>	<b>503</b>	<b>35</b>	<b>27</b>	<b>924</b>	<b>606</b>
VMT – Grant	35.21	2.45	1.89	64.68	42.42

<b>IE – PCAP</b>	<b>16,493</b>	<b>(8,933)*</b>	<b>(114)*</b>	<b>324</b>	<b>5,783</b>
IE – Grant	214.41	(116.13)*	(1.48)*	4.21	75.18
<b>Reduce Waste – PCAP</b>	<b>9</b>	<b>4</b>	<b>3</b>	<b>7</b>	<b>33</b>
Reduce Waste – Grant	1.35	0.6	0.45	1.05	4.95
<b>Green Spaces – PCAP</b>	<b>6</b>	<b>38</b>	<b>2</b>	<b>0.2</b>	<b>N/A</b>
Green Spaces – Grant	0.60	3.80	0.20	0.02	N/A
<b>Crop Cover – PCAP</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
Crop Cover – Grant	N/A	N/A	N/A	N/A	N/A
<b>TOTALS (short tons)</b>	<b>2,377.75</b>	<b>(289.91)*</b>	<b>32.06</b>	<b>133.21</b>	<b>1,099.28</b>

\*Indicates increase of pollutant

### Performance Measures and Plan

Each project will follow the general timeline of performance in the period of October 2024 through September 2029. IDEM will have a grant agreement with each sub-awardee that will include reporting requirements that show ongoing performance. Awards will be distributed in a timely manner.

IDEM has established the following performance measures to track progress concerning successful processes and output and outcome strategies.

- Tracking, measuring, and reporting accomplishments on proposed timelines and milestones
- Tracking of outputs as appropriate for each measure
- Actual GHG emission reductions and associated co-pollutant changes
- Actual GHG emission reductions and associated co-pollutant changes in LIDAC census tracts

IDEM and project partners will track progress for each performance measure through reporting forms. IDEM will provide a status update with respect to each performance measure to EPA in the semi-annual reports and final report.

### Milestones, Implementation Timeline, Authorities to Implement, and Risks

The implementation timeline of key milestones is described in Table 20. This applies to each measure and the application as a whole. This will follow the general timeline of Fall 2024, after any awards are received, to 2029.

Table 20: Implementation Timeline of Key Tasks and Milestones

<b>Task #</b>	<b>Task Description</b>	<b>Anticipated Milestone Dates</b>
1	Solidify scope of projects and funding agreements	Fall 2024
2	Enter into agreements with project sponsors/subrecipients	Fall 2024 – Winter 2024*
3	Ongoing community engagement	Ongoing
4	Project sponsors begin work on projects	Winter 2024 – Spring 2025
5	Status update	Summer 2025
6	Completion of all projects and money disbursements	Fall 2029 – Winter 2029

\* Note that milestones recognize that some projects may need additional board or city council approval.

Project partners currently have the authority to carry out these measures. None of the measures described are policy related or require legislative action. Project partners have submitted projects that were already part of anticipated actions (i.e., local climate action plans) at the local level. Through IDEM’s project intake process, steps were taken to ensure the projects submitted would not require extensive legal, regulatory, or board review in order to quickly implement. IDEM as the recipient of the grant will have the responsibility for ensuring completion of the projects, which will be done through grant agreements with sub-awardees. The sub-awardees will be responsible for implementing the GHG reduction measures and are listed in Table 21.



Table 21: Implementing Entities

Measure	Implementing Entities
Solar	Citizens Energy Group (Indianapolis Public Utility), IU Health (public hospital), Project 46 Regional Climate Alliance, Energy Matters Community Coalition, Inc. on behalf of the City of Columbus, City of Evansville, City of Fort Wayne, City of La Porte, City of Muncie, Center for Sustainable Living, Purdue University, Rose-Hulman Institute of Technology, Lawrenceburg Community School Corporation, Prince of Peace Catholic High Schools, North Spencer County School Corporation, White River Valley School District, Metropolitan School District of North Posey, Greater Jasper Consolidated Schools, North Gibson School Corporation, East Gibson School Corporation, Two (2) local businesses
Energy Efficiency	City of South Bend, City of Evansville, Evansville Climate Collaborative, Western Wayne Schools, Metropolitan School District of Warren Township, Franklin Township Community Schools, Purdue University, Faith in Place, The Children's Museum of Indianapolis, Project 46 Regional Climate Alliance
Transportation	City of Terre Haute, Michiana Area of Council of Governments, City of Evansville, Project 46 Regional Climate Alliance, Northwest Indiana Planning Commission, Gary Public Transport Corporation
Industrial Electrification	Project 46 Regional Climate Alliance
Reduction of Organic Waste	City of Fort Wayne
Green Space and Agriculture	Indiana Department of Natural Resources, Northwest Indiana Regional Planning Commission, IN-CLIMATE, The Nature Conservancy in Indiana

### Anticipated risks

There are fewer risks with pre-identified partners and implementation ready projects. IDEM has worked to thoroughly scope and vet the many projects received in the condensed timeline. The proposed projects come from reputable businesses, organizations, and municipalities which will greatly reduce implementation risks. Table 22 list potential risks, effects on emissions, and mitigation strategy. These apply to all measures listed in the application.

Table 22: Anticipated Risks for Application

Risk	Effect on GHG emission reductions	Mitigation Strategy
Delays in program administrator procurement process	Delays may reduce cumulative GHG emission reductions in the near-term	Develop request for proposals documentation between announcements of awardees and receipt of assistance agreement to build in more time
Program undersubscribed in certain areas	GHG emission reductions and criteria co-benefits may not occur over the same geographic scope as anticipated	Tracking of applicant locations and targeted outreach to undersubscribed areas where the program is not receiving applications
Supply chain	Delays may reduce cumulative GHG emission reductions in the near-term	Coordinate with project partners to keep updated on logistics
Compliance with Build America Buy America	Delays may reduce cumulative GHG emission reductions in the near-term	Coordinate with project partners to keep updated on logistics
Cash flow for project partners	Delays may reduce cumulative GHG emission reductions in the near-term	Coordinate with project partners to identify any financing options
Delay in direct pay money	Delays may reduce cumulative GHG emission reductions in the near-term	Coordinate with project partners to identify any financing options
Projects may need board or city council approval to be completed	Delays may reduce cumulative GHG emission reductions in the near-term	Coordinate with project partners to keep updated on logistics
Net metering regulations in Indiana	Lower incentive for rooftop and local solar projects	Coordinate with project partners to ensure outreach and education on net metering issues



## VIII. IDEM Programmatic Capability and Performance

### *IDEM Programmatic Capability*

IDEM will be acting as a pass-through entity for the proposed projects and programs. IDEM has successfully implemented other federal grants within Indiana as listed in Table 23.

- Funding Agency: U.S. EPA Region 5, 77 W. Jackson Blvd., Chicago, IL 60604-3507
- Funding Agency Contact: Carter Cranberg, 312-353-0605, [Cranberg.Carter@epa.gov](mailto:Cranberg.Carter@epa.gov)
- Reporting History: IDEM submitted reports periodically to U.S. EPA Region 5

*Table 23: IDEM Past Performance Grants*

<b>Grant</b>	<b>Description</b>	<b>Status</b>
<i>Assistance agreement:</i> 5A-00E03420 <i>Assistance Listing:</i> 66.034	The IRA Grant provides funding to upgrade several areas of monitoring and field inspections with new equipment, supplies, and personnel costs.	Completion date is 6/30/2025. All equipment planned for the first year of the grant has been purchased. Implementation and installation of this equipment is currently under way. The second year's equipment will be procured after July 1, 2024.
<i>Assistance agreement:</i> DS-00E66707 <i>Assistance Listing:</i> 66.040	The DERA State Grant provides funding to reduce diesel emissions.	Completion date is 9/30/2025. All funds from this Grant will be included in an RFP to be posted in the Spring of 2024 with completion by September 30, 2025. Historically, these have been diesel vehicle and equipment replacements.

### *Reporting Requirements*

IDEM will have a grant agreement with each sub-awardee that will include reporting requirements that show ongoing performance. Subawards will be distributed in a timely manner.

### *Staff Expertise*

IDEM houses a wealth of staff expertise in the Offices of Air Quality, Land Quality, and Water Quality. As these projects to meet climate action measures will be implemented through different entities, IDEM included staff expertise and programmatic capability criteria when selecting viable projects through its project intake process. The project partners included in this application have previous project experience, subject expertise, and project management. Examples of project partner capabilities for solar include The Center for Sustainable Living's program titled Indiana Solar for All began in 2018 and have completed over 40 projects with 12 installations completed in the most recent year, 2023. Examples of project experience in energy efficiency and cost savings is Faith in Place who has regranted considerable funds to houses of worship and other nonprofit organizations since 2020 and has seen successful project completed with more than half located in LIDAC census tracts. In green space and agriculture, the Indiana Department of Natural Resources, who has received and successfully implemented federal grants as well as administers an annual subgrant award program for communities and non-profits in Indiana. Some projects will also be relying on programs to be expanded such as the City of South Bend who has been part of initiatives of successful energy assistance programs. IDEM will ensure the coordination and partnership of sub-awardees and have ample experience to implement this application to its fullest.

### *IDEM Budget*

The full budget is presented and described in the budget narrative.