

# Build Kansas Fund | Fiscal Year 2024 Application Package | Memo



To: Senator Ty Masterson, Chair, Build Kansas Advisory Committee  
Murl Riedel, Kansas Legislative Research Department  
Shauna Wake, Office of the Kansas State Treasurer

From: Matthew Volz, Executive Director, Kansas Infrastructure Hub

RE: Build Kansas Fund Application #2024-035-40101d-Heartland

Date: April 12, 2024

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Attached, please find an application made to the Build Kansas Fund by Heartland Rural Electric Cooperative, Inc. The application packet includes the following items:

- Coversheet – provides a high-level overview of the application including a unique identification number, page 1 of 26 in the Build Kansas Fund Application Package.
- Build Kansas Fund Application – includes information submitted with the Build Kansas Fund Application, pages 2-9. Page 9 provides the table of funding sources.
- Attachments – copy of BIL application, pages 10-26.

## **Project Overview**

Under the Preventing Outages and Enhancing the Resilience of the Electric Grid - Section 40101(d), the U.S. Department of Energy (DOE) provides grants to States to improve the resilience of their electric grid against disruptive events. The Kansas Corporation Commission (KCC) received more than \$13.3M from the DOE for fiscal years 2022 and 2023. During the application period, KCC received 31 submissions, with more than \$40.1M in project funding requests. Ultimately, the agency selected 11 applicants across Kansas with Build Kansas Fund requests totaling \$5.84M, unlocking \$12.08M in federal funding.

Heartland Electric seeks funding from the Kansas Corporation Commission (KCC) through the 40101d program. Project RESTORE: Resiliency Enhancements to Strategically Transfer Optimized Reliable Energy will leverage strategically placed Supervisory Control and Data Acquisition (SCADA)-controlled reclosers to enhance electric service reliability in Linn County.

This opportunity is a pass-through discretionary BIL program with a local match requirement of 48.33%. The entity is requesting \$200,403.02 from the Build Kansas Fund. This request has the potential to unlock \$414,626.98 in federal funds.

The State's internal deadline for 40101d applications to Kansas Corporation Commission was December 29, 2023. This is an ongoing Federal program; however, it would be advantageous for the State to submit its application package as soon as possible. This Build Kansas Fund application was received on January 2, 2024, and held until award selections were made by KCC. Upon selection, applications underwent a completeness check and subsequently deemed acceptable for this program on March 8, 2024.

## **Build Kansas Fund Steering Committee Recommendation**

The Build Kansas Fund Steering Committee reviewed this application on April 3, 2024, following a successful completeness check. The Steering Committee **RECOMMENDS APPROVAL** of Build Kansas Funding to the Build Kansas Advisory Committee for final advice.

# Build Kansas Fund | Fiscal Year 2024 Application Package | Coversheet



Build Kansas Fund Application Number	2024-035-40101d-Heartland
Project Name	Project RESTORE: Resiliency Enhancements to Strategically Transfer Optimized Reliable Energy
Entity Type	Non-Profit
Economic Development District (EDD) Planning Commission	Southeast Kansas Regional Planning Commission
Infrastructure Sector(s)	Energy
BIL Program	Preventing Outages and Enhancing the Resilience of the Electric Grid – 40101(d)
BIL Program Type	Discretionary (State Pass-Through)
BIL Application Deadline	12/29/2023
Build Kansas Fund Request	\$200,403.02
Technical Assistance Received	General No
	BIL Application No
	Build Kansas Fund Application Yes
	Other (Brief Description): Support on application and budget submission
Application Notes	Build Kansas Fund contribution of \$200,403.02 will unlock \$414,626.98 in federal BIL funding. <i>The application for BIL funding was submitted to KCC for review and approval and received DOE support prior to submitting for BKF.</i>

<b>Steering Committee Funding Recommendation</b>	<b>4/3/2024   Recommend</b>
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<b>Advisory Committee Target Review</b>	<b>DATE   Recommend or Deny</b>
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<b>Advisory Committee Funding Recommendation</b>	<b>DATE   Approve or Deny</b>
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## Completeness Review Data

Date Build Kansas Application Received:	1/02/2024
Date Of Completeness Check:	3/08/2024; 3/21/2024
Date Forwarded to Steering Committee:	4/02/2024

Title **Heartland Rural Electric Cooperative, Inc.** 01/02/2024  
 id. 45079774  
 by **Douglas Graham** in **Build Kansas Fund Fiscal Year 2024 Application**  
 110 N Enterprise Drive  
 Girard, Kansas  
 66743  
 United States  
 6207245526  
 dougg@heartland-rec.com

**Original Submission** 03/21/2024

Score n/a

Part 1: Applicant Information

The name of the entity applying for the Build Kansas Fund: Heartland Rural Electric Cooperative, Inc.

Project Name: Project RESTORE: Resiliency Enhancements to Strategically Transfer Optimized Reliable Energy

Entity type: Non-Profit

Applicant Contact Name: Doug Graham

Applicant Contact Position/Title: Communication Specialist

Applicant Contact Telephone Number: +16207245526

Applicant Contact Email Address: dougg@heartland-rec.com

Applicant Contact Address: 110 N Enterprise Drive

Applicant Contact Address Line 2 (optional):

Applicant Contact City: Girard

Applicant Contact State: Kansas

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Applicant Contact Zip Code: 66743

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Is the Project Contact the same as the Applicant Contact? No

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Project Contact Name: Louie Weimer

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Project Contact Position/Title: Technology and Integration Manager

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Project Contact Telephone Number: +16207245518

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Project Contact Email Address: louiew@heartland-rec.com

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Project Contact Address: 110 N Enterprise Drive

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Project Contact Address Line 2 (optional):

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Project Contact City: Girard

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Project Contact State: Kansas

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Project Contact Zip Code: 66743

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Part 2: Build Kansas Fund - Eligibility Criteria

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Certify that you are pursuing a viable Bipartisan Infrastructure Law (BIL) funding opportunity for which your entity is eligible: Yes

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Certify that the Bipartisan Infrastructure Law (BIL) funding opportunity you are pursuing has a required non-federal match component:

Yes

What is the primary county that the project will occur in?

Linn County

The Build Kansas Fund is intended to support Kansas-based infrastructure projects. Please provide a list of all the zip codes this project will be located in, along with an estimated percent [%] of the project located in that zip code. For example, if seeking funding for road infrastructure, provide a rough percent of the roads expected in each zip code:

[Zip Code Percentage.xlsx](#)

Part 3: Bipartisan Infrastructure Law (BIL) - Grant Application Information  
Please Note: This information is related to the federal Bipartisan Infrastructure Law (BIL) funding opportunity to which you will apply. This is NOT information for the Build Kansas Match Fund.

Please enter the Bipartisan Infrastructure Law (BIL) funding opportunity title that the entity is applying for:

PREVENTING OUTAGES AND ENHANCING THE RESILIENCE OF THE ELECTRIC GRID

What is the funding agency for this Bipartisan Infrastructure Law (BIL) funding opportunity?

Kansas State Agency

Enter the Kansas State Agency in which you are applying for funding.

Kansas Corporation Commission

What is the Assistance Listing Number (ALN) for this Bipartisan Infrastructure Law (BIL) funding opportunity?

81.254 - Section 40101(d): Preventing Outages and Enhancing The Resilience of the Electric Grid

What is the application due date for this Bipartisan Infrastructure Law (BIL) funding opportunity? 12/29/2023

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What is the federal fiscal year for this Bipartisan Infrastructure Law (BIL) funding opportunity? 2024

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Enter the amount of funding being applied for, from the Bipartisan Infrastructure Law (BIL) funding opportunity: \$414,626.98

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Enter the required non-federal match percentage: 48.3333

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#### Part 4: Build Kansas Fund - Match Application Information

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Enter the non-federal match amount being requested from the Build Kansas Fund: \$200,403.02

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Is the project able to move forward with a lesser match amount than requested? No

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If you are awarded less match than the amount requested, at what amount would your project NOT be able to move forward? 0.0

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Expected breakdown of funding sources to support the project: Enter the funding source and projected amount from each source to support this project:

[Kansas+DOT+table.xlsx](#)

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#### Part 5: Build Kansas Fund - Means Test

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Confirm that there are no available funding sources currently planned to go unused by your entity that could be leveraged for this project:

Yes

Confirm there are no available American Rescue Plan Act (ARPA) or Coronavirus State & Local Fiscal Recovery Fund monies that could be used for this match:

Yes

Confirm that you have explored other readily available funding sources (federal or non-federal) to be used for this match:

Yes

Briefly describe your efforts to find other available funding sources for this project:

We have not been able to find alternative sources of funding based on our own research and our discussions with peer electric cooperatives, our statewide organization, and our national organization. No existing funding sources are currently planned to go unused, and no ARPA or Coronavirus Recovery Fund monies are available for this purpose to our knowledge. Without this funding, we would need to dramatically scale back our efforts to improve restoration times in Linn County. The work would still be done, but over a much longer timeframe so as to minimize the cost impact on our members.

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### Part 6: Additional Information

Please upload a copy of the Bipartisan Infrastructure Law (BIL) program application associated with this request OR a 2-page executive summary providing an overview of the project:

[Submissions.pdf](#)

Provide any additional information about this project (optional):

Please note that we have already submitted our application for 40101(d) funding; within that application, we referenced our intent to submit this Build Kansas Fund application for matching funds.

We are excited about the opportunity to dramatically reduce outage durations for our Linn County members. Thank you for your time and consideration!

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### Part 7: Terms and Conditions

Understanding of Fund Release Requirements: checked

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Understanding of Use of Funds: checked

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Understanding of Reporting Requirements: checked

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Authority to Make Grant Application: checked

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Persons and Titles: Doug Graham  
The following persons are responsible for making this Build Kansas Fund application.

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Position/Title: Communication Specialist

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Additional: Louie Weimer

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Position/Title: Technology and Integration Manager

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Additional:

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Position/Title:

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Additional:

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Position/Title:

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## Internal Form

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Score n/a

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Pre-Award Information:

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Eligible for Build Kansas Fund? YES

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EDD / Region: Southeast

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Project Primary Zip Code: 66056.0

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Sector: Energy

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Application ID: 2024-035-40101d-Heartland

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BKF pre-obligated  
amount:

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Post-Award Information:

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Awarded BIL Grant?

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Deviation Report:

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Source	Amount	Zip Code	% of project in zip code		
BIL Federal Funds (applied for)	414627	66056	19.29		
Build Kansas Funds (non-federal match)	200403	66701	12.72		
Additional Project Contribution (if applicable)		66040	7.25		
		66071	7.07		
		66072	6.63		
		66749	4.61		
		66010	4.41		
		66064	4.34		
		66755	4.21		
		<b>TOTAL PROJECT COST</b>	<b>615030</b>		
				Project includes 30 ZIP codes total; top 9 listed here	70.53%

# SECTION 40101(d): Preventing Outages & Enhancing the Resilience of the Electric Grid

## Section 1: Applicant Information

**Entity Name:**

Heartland Rural Electric Cooperative, Inc.

**Entity Type:**

Distribution Provider

**Entity Address:**

110 N Enterprise Drive  
Girard, KS 66743  
US


**Employer Identification Number (EIN):**

74-2805422

**Unique Entity Identifier (UEI):**

TXP2E2W19LA3

**Please Upload Verification Of Eligible Entity Size And Documentation Of Annual Sales Per Year:**

2022\_EIA\_REPORT.pdf 



**EIA Table**



	A	B	C	D	
1	Entity	State	Ownership	Customers (Count)	Sale (meg )
2	Alfalpa Electric Coop, Inc	KS	Cooperative	910	1666
3	CMS Electric Coop Inc	KS	Cooperative	5863	1980
4	City of Chanute	KS	Municipal	5599	2737
5	City of Coffeyville - (KS)	KS	Municipal	5898	7751
6	City of Garden City	KS	Municipal	11762	3041
7	City of Kansas City - (KS)	KS	Municipal	66775	2091
8	City of	KS	Municipal	2222	1221

**Project Manager Name:**

Louie Weimer

**Project Manager Phone Number:**

+16207245518

**Project Manager E-Mail Address:**

[louiew@heartland-rec.com \(mailto:louiew@heartland-rec.com\)](mailto:louiew@heartland-rec.com)

**IRS Form W-9:**

HREC\_W9.pdf



**Latest Financial Statement And Financial Statement Audit:**

Financial\_statement\_and\_audit.pdf



**Please Acknowledge Whether Your Entity Has Ever Submitted An Application, Similar In Nature, To The DOE Under BIL Section 40101c, DE-FOA-002740, Grid Resilience And Innovation Partnerships (GRIP):**

No

## Section 2: Project Description and Scope

**Project Name:**

Project RESTORE: Resiliency Enhancements to Strategically Transfer Optimized Reliable Energy

**Project Type:**

Monitoring and control technologies

**Project Description And Scope:**

Heartland Rural Electric Cooperative, Inc. is an electric distribution provider with more than 3,800 miles of overhead power lines that serve approximately 11,400 meters spread throughout 12 counties in eastern Kansas. Despite operating in one of the most economically disadvantaged areas of the state, Heartland REC has successfully implemented a number of large-scale reliability improvement initiatives in recent years, including a \$3.5 million Automated Metering Infrastructure (AMI) deployment, the installation of a Supervisory Control and Data Acquisition (SCADA) solution providing remote monitoring and some control capabilities for all 18 substations and all 44 feeders, and a \$16 million hazard mitigation project. Heartland has also collaborated with Today's Power, Inc. to install three utility-scale solar farms.

By remotely rerouting power using SCADA-controlled reclosers, electric distribution utilities can dramatically reduce the duration of outages caused by transmission line issues affecting one or more distribution substations. However, SCADA-controlled reclosers are rarely deployed in rural areas due to the high cost of equipment, the need for appropriate network infrastructure, and the need for staff members with the expertise to implement and operate the equipment. Through Project RESTORE (Resiliency Enhancements to Strategically Transfer Optimized Reliable Energy), Heartland Rural Electric Cooperative, Inc. proposes to leverage strategically placed, SCADA-controlled reclosers to enhance electric service reliability in Linn County, a highly disadvantaged community in southeast Kansas (see Section 3).

Heartland REC serves approximately 4,600 members in Linn County. The power distributed to their homes and businesses is typically delivered by the cooperative's Linn, Parker, Prescott, and Weber substations. These members experience substantially longer and more frequent outages than our system average (see Section 7). While some of these outages are caused by typical maintenance issues such as tree limbs on the lines – and, in fact, Heartland REC has significantly increased vegetation management efforts in the area over the last year – many outages are caused by issues with an aging sub-transmission line serving the distribution substations in the area. Transmission issues are largely out of Heartland REC's control, but the cooperative can often restore power before the transmission issues are resolved by rerouting it from other substations unaffected by transmission outages. However, rerouting power in this way is this currently a time- and labor-intensive process.

At the core of Project RESTORE is the installation of 10 SCADA-controlled, triple-single reclosers to allow for speedy rerouting of power along existing lines in order to bring our Linn County members back online within minutes rather than hours. Three of the new reclosers, to be installed at our Miami, Parker and Prescott substations, will serve as bypasses, creating new routes between two feeders coming off the same substation and providing options for rerouting power that have never before been available. The remaining seven reclosers will replace non-SCADA reclosers along existing paths. This will allow for remote rerouting of power between a total of 10 substations, greatly increasing our ability to restore power to Linn County members in a timely manner. While the project has been designed to benefit Linn County, members in adjoining counties served by the affected substations will also benefit from these grid enhancements.

The connections to be created are as follows: M21100 Miami to M22100 Miami (substation bypass); M21100 Miami to M44100 Parker; M44100 Parker to M42100 Parker (substation bypass); M13100 Linn to M54100 Prescott; M54100 Prescott to M52100 Prescott (substation bypass); M14100 Linn to M33100 Weber; M74100 Devon to I92100 Conger; I93100 Conger to I11100 Elsmore; G42100 Greenbush to G23100 Hiattville; and G21100 Hiattville to M72100 Devon.

Heartland REC recently completed a 10-year technology roadmap in conjunction with

National Rural Telecommunications Cooperative (NRTC). Among the initiatives in early development as a result of that collaboration was a long-term plan for replacing all reclosers on the system with SCADA-controlled models. NRTC suggested Heartland replace 16 reclosers per year; however, due to cost constraints, that goal was lowered to five per year. Project RESTORE would allow the cooperative to turbocharge those efforts. Heartland staff estimate the lead time on reclosers to be one year, during which time all preparatory work will be completed, including engineering work conducted by KEPCo Services, Inc. In year two, one recloser per month will be installed by Heartland crews, with the project drawing to a close by the end of the year.

The total budget for Project RESTORE is \$615,030. The bulk of project funds (\$381,500, or 62%) are allocated for the purchase of the reclosers. The remainder is requested for communications equipment, installation materials, labor, and other costs required to ensure the new reclosers are properly programmed, installed, and integrated with Heartland REC's system. Heartland staff will conduct all work to the highest standards of safety; the cooperative recently participated in the Commitment to Zero Contacts Phase 2 initiative from the National Rural Electric Cooperative Association (NRECA), which included a thorough assessment of operational and safety practices.

Project RESTORE addresses all four objectives found within KCC's Grid Resilience Formula Grant proposal: It improves the reliability and resiliency of the electric grid in an area with higher-than-system-average outages; it promotes grid equity by making these improvements in a disadvantaged area; it advances work that would otherwise be deferred due to cost constraints; and it will provide an opportunity for staff members to build their skills by learning about advanced technologies.

Few electric distribution utilities serving rural areas would consider this type of project because of the cost and the technical knowledge required to make it work. It is more often adopted in densely populated, urban areas. As a result, already underserved areas miss out on technology that could substantially reduce outages. Project RESTORE can serve as a model for other rural providers to follow as they work toward improving grid resilience.

## Section 3: Need for Funding

### **Project Funding Need:**

As mentioned in the project description and scope section, the installation of SCADA-controlled reclosers to facilitate quicker outage restoration in Linn County is a high priority for Heartland Rural Electric Cooperative. A recent technology planning session resulted in a recommendation to upgrade 16 reclosers per year. For budgetary reasons, however, the cooperative would have to roll out these equipment upgrades over a much slower pace without 40101(d) funding.

When developing an annual budget, future expected total capital budget costs are included in a 10-year financial forecast to ensure that the proposed spend will not negatively impact the financial position of the cooperative. The budget developed for 2024 and approved by the Heartland REC Board of Directors included the purchase and installation of five new reclosers.

Project RESTORE would result in significant cost savings for the membership that go beyond simply saving on the cost of the equipment. Currently, rerouting power is a manual process which requires linemen to travel long distances to the site of the reclosers. What's more, the outages typically occur outside of the normal work day, meaning the linemen must be paid overtime. The estimated cost to restore the ~60 power supply outages that occurred in the project area between 2018 and 2022 was \$72,000 in overtime labor. Installing these devices will virtually eliminate this sort of labor cost.

Heartland is especially sensitive to cost overruns because the communities served by the cooperative are largely economically disadvantaged. Nowhere is this more true than Linn County.

According to the Climate and Economic Justice Screening Tool:

- The north Linn County tract is considered disadvantaged because it meets more than one burden threshold and the associated socioeconomic threshold. The energy cost is in the 92nd percentile nationally (calculated by dividing average annual energy costs by household income) and the portion of residents considered low income is in the 65th percentile. Transportation barriers are also apparent, with a score in the 97th percentile. Due to these issues, Linn County has two risk factors within the Justice-40 framework.

According to the Equity Tool for Underserved Communities:

- 11.8% of people in Linn County had income below the poverty level within the last 12 months.
- 20.6% of the Linn County population has 3+ risk factors
- All of Linn County is considered "Completely Rural"
- 38.4% of Linn County households have someone with a disability
- 14.2% of households in Linn County belong to someone age 65 or older who is living alone

Linn County is also considered an energy community by the U.S. Department of Energy due to a coal mine closure.

While Linn County is the primary focus of Project RESTORE and the project has been designed to benefit Linn County residents first and foremost, it is worth noting that many of the surrounding communities that will experience tangential benefits from Project RESTORE are also economically disadvantaged. The project area of Bourbon County has



five Justice-40 Risk Factors (Climate Change, Energy, Housing, Legacy Pollution, & Transportation). Meanwhile, Allen County also has a significant number of residents living in poverty per the Equity Tool for Underserved Communities (15.5%).

**Provide Historical And Post Project Estimated Interruption Frequency And Duration Data, If Known.**

Project RESTORE is focused on improving the cooperative's ability to quickly restore power in the event of outages, particularly outages caused by issues with transmission lines. As such, it will have little impact on interruption frequency. However, it will have a dramatic impact on the duration of outages within the project area. Seven of the 10 substations to be linked by remotely controlled reclosers have a five-year average System Average Interruption Duration Index (SAIDI) score higher than our system average for power supply outages of 96.8 minutes. Two of the substations (Miami and Parker) have five-year average SAIDI scores of nearly 200 minutes for power supply outages. Through Project RESTORE we anticipate reducing these SAIDI scores to 30 minutes or less.

**Provide Pro Rata Customer Impact Of Total Project Cost.**

Project RESTORE will enhance reliability for 4,522 total electric services. At a total project cost of \$615,030, the cost-per-service comes to approximately \$136. This one-time investment will pay dividends for many years to come as savings from reductions in staff time and expense will contribute to rate stability for members.

**Provide Number Of Customers To Be Impacted By The Project And Percentage Of Impacted Customers To Total Customers In The Disadvantaged Or Underserved Community.**

A total of 4,522 electric services will be impacted by Project RESTORE. Of these, 1,978 (43.7%) are located in a disadvantaged community per the Climate and Economic Justice Screening Tool. Map data showing these services is available upon request.

## Section 4: Complete Budget and Narrative

**Award Amount Requested:**

\$317766.00 USD

**Matching Funds To Be Provided:**

\$297265.00 USD

**Budget (Total Costs):**



	A	B	C
1	<b>CATEGORY</b>	<b>Federal (\$)</b>	<b>Non-Federal (\$)</b>
2	a. Personnel	36911	34529
3	b. Fringe Benefits	13919	13021
4	c. Travel	0	0
5	d. Equipment	250454	234296
6	e. Supplies	0	0
7	f. Contractual	2325	2175
8	g. Construction	0	0
9	h. Other Direct Costs	14157	13243
10	i. Indirect Charges	0	0

**Project Budget Upload (Optional):**

n/a

**Project Budget Narrative:**

Important note: For each budget item discussed in this section, the total cost is the sum of three components: 1) federal funding requested through this grant opportunity, 2) a one-third cost match which will be applied for through the Build Kansas Fund within one week of submission of this KCC proposal, and 3) a 15% match contributed by Heartland Rural Electric Cooperative, Inc. Upon receipt, federal and matching funds will be placed in a special account designated for Project RESTORE.

PERSONNEL: \$71,440

- A total of \$2,680 is allocated to Heartland's Engineering Manager to pay for 40 hours of salaried time at \$67 per hour. The Engineering Manager will provide oversight of the project, solicit bids and select suppliers for project components, manage the stakers who draw up plans for equipment installation, and work with KEPCo Services, Inc. on engineering and programming.

- A total of \$66,000 is allocated to Journeyman Linemen. These will be the boots-on-the-ground workers installing the equipment purchased for the project. A total of 1,200 hours at \$55 per hour is allocated to provide time for the extensive work required to prepare sites for installation and install equipment. The sites requiring substation bypasses will be especially time consuming, with each requiring around 240 hours of labor.

- A total of \$1,480 is allocated to Heartland's Staking Technicians for 40 hours of work at \$37 per hour.

- Lastly, a total of \$1,280 is allocated to Heartland's Technology and Integration Manager to cover 20 hours of work at \$64 per hour. The Technology and Integration Manager will ensure seamless integration of the new components with Heartland's SCADA system as well as the cooperative's outage management software.

FRINGE: \$26,940

- Fringe benefit costs are calculated at \$39 per hour for the Engineering Manager; \$20 per hour for the Journeyman Linemen; \$16 per hour for the Staking Technicians; and \$37 per hour for the Technology and Integration Manager. Hourly fringe benefit rates were calculated based on the actual cost of providing benefits to these employees.

TRAVEL: \$0

EQUIPMENT: \$484,750

- \$381,150 is allocated for 10 SCADA-controlled, triple-single reclosers. These are the key components that will allow for dramatically reduced outage durations for Linn County cooperative members.

- \$7,500 is allocated for 10 cellular modems to connect the new reclosers to Heartland's secure SCADA network.

- \$26,500 is allocated for utility poles, cross arms and other hardware required to set the 10 new reclosers in place and connect them to Heartland's system. Building these structures using all-new equipment and swapping out the lines after the new structures are in the air will allow the work to be completed as safely and efficiently as possible.

- \$49,500 is allocated for recloser bypass switches and associated hardware. These

bypass switches will provide a manual option to bypass reclosers in the event of failure.

- \$9,250 is allocated for distribution transformers, which are required to provide 120-volt power to the controls needed to operate the reclosers.

- \$10,500 is allocated for the additional equipment (poles, crossarms and installation hardware) needed to build the three substation bypasses.

SUPPLIES: \$0

CONTRACTUAL: \$4,500

- \$4,500 is allocated for a subcontract with KEPCO Services, Inc. (KSI), a subsidiary of Kansas Electric Cooperatives, Inc. (KEC) providing engineering services to KEC member cooperatives. KSI will assist Heartland in analyzing voltage requirements and performing advanced engineering work required to ensure safe delivery of power over each of the new routes that will be created through Project RESTORE.

CONSTRUCTION: \$0

OTHER: \$27,400

- Costs in the “Other” category are all related to the cost of operating Heartland REC vehicles for required tasks such as digging and setting poles and installing new equipment. Heartland has calculated an estimated hourly cost of operating each vehicle.

- \$13,440 is allocated for the operation of bucket trucks (384 hours x \$35 per hour).

- \$12,760 is allocated for the operation of a digger derrick truck (232 hours at \$55 per hour).

- \$1,200 is allocated for the operation of a pickup truck to haul testing and programming equipment (80 hours at \$15 per hour).

INDIRECT: \$0

**Cost Match Commitment Letter:**

[Cost\\_share\\_commitment\\_letter\\_for\\_BIL\\_proposal.pdf](#) 

## Section 5: Project Timeline

## Project Timeline:

Timeline starts immediately upon notice of award from KCC.

### Month 1:

- Heartland solicits quotes for all equipment.
- Heartland schedules staking (construction planning) work.
- Heartland staff work with KSI on engineering and programming.

### Month 2:

- Heartland places orders for equipment. (Approximate 42-week lead time on reclosers)
- Heartland stakers plan work for M21100 Miami to M22100 Miami substation bypass connection.
- Heartland staff work with KSI on engineering and programming.

### Month 3:

- Heartland stakers plan work for M21100 Miami to M44100 Parker connection.
- Heartland staff work with KSI on engineering and programming.

### Month 4:

- Heartland stakers plan work for M44100 Parker to M42100 Parker substation bypass connection.
- Heartland staff work with KSI on engineering and programming.

### Month 5:

- Heartland stakers plan work for M13100 Linn to M54100 Prescott connection.
- Heartland staff work with KSI on engineering and programming.

### Month 6:

- Heartland stakers plan work for M54100 Prescott to M52100 Prescott substation bypass connection.
- KSI completes engineering and programming work.

### Month 7:

- Heartland stakers plan work for M14100 Linn to M33100 Weber connection.

### Month 8:

- Heartland stakers plan work for M74100 Devon to I92100 Conger connection.

### Month 9:

- Heartland stakers plan work for I93100 Conger to I11100 Elsmore connection.
- Heartland linemen build structures for Miami substation bypass connection.

### Month 10:

- Heartland stakers plan work for G42100 Greenbush to G23100 Hiattville connection.

- Heartland linemen build structures for Parker substation bypass connection.

Month 11:

- Heartland stakers plan work for G21100 Hiattville to M72100 Devon connection.
- Heartland linemen build structures for Prescott substation bypass connection.

Month 12:

- Supplier delivers reclosers and other necessary equipment.
- Heartland staff program reclosers.

Month 13:

- Heartland crews complete M21100 Miami to M22100 Miami substation bypass connection.
- Heartland staff ensure proper recloser programming and SCADA operation.

Month 14:

- Heartland crews complete M21100 Miami to M44100 Parker connection.
- Heartland staff ensure proper recloser programming and SCADA operation.

Month 15:

- Heartland crews complete M44100 Parker to M42100 Parker substation bypass connection.
- Heartland staff ensure proper recloser programming and SCADA operation.

Month 16:

- Heartland crews complete M13100 Linn to M54100 Prescott connection.
- Heartland staff ensure proper recloser programming and SCADA operation.

Month 17:

- Heartland crews complete M54100 Prescott to M52100 Prescott substation bypass connection.
- Heartland staff ensure proper recloser programming and SCADA operation.

Month 18:

- Heartland crews complete M14100 Linn to M33100 Weber connection.
- Heartland staff ensure proper recloser programming and SCADA operation.

Month 19:

- Heartland crews complete M74100 Devon to I92100 Conger connection.
- Heartland staff ensure proper recloser programming and SCADA operation.

Month 20:

- Heartland crews complete I93100 Conger to I11100 Elsmore connection.
- Heartland staff ensure proper recloser programming and SCADA operation.

Month 21:

- Heartland crews complete G42100 Greenbush to G23100 Hiattville connection.
- Heartland staff ensure proper recloser programming and SCADA operation.

Month 22:

- Heartland crews complete G21100 Hiattville to M72100 Devon connection.
- Heartland staff ensure proper recloser programming and SCADA operation.

Month 23:

- Heartland crews complete G21100 Hiattville to M72100 Devon connection.
- Heartland staff ensure proper recloser programming and SCADA operation.

Month 24:

- Project complete

## Section 6: Bids and Estimates

### Bids And Estimates:

**Bids\_and\_estimates.pdf**



**Project\_Map.pdf**



## Section 7: Community Benefit

### Community Benefit Narrative:

Project RESTORE presents numerous community benefits, including the following: 1. Enhanced Reliability and Reduced Outages: Much of the northern end of Heartland REC's service territory, including large portions of Linn County, is fed from an aging 34.5 kV sub-transmission line that has a history of reliability problems. The power supplier has some remote switching capabilities on this sub-transmission line, which helps isolate problem areas, but does not restore power to all of Heartland's substations. It is during these times when power is available at one Heartland substation but not another that crews perform the time- and labor-intensive work of manually rerouting power using the currently installed, non-SCADA reclosers. This lets the cooperative bring at least some members

back into power while crews wait for the cause of the outage on the sub-transmission line to be resolved. By strategically placing 10 SCADA-controlled reclosers, the project will significantly reduce outage durations for 4,600 electric services, benefiting 43.7% of Heartland's total services. Targeting areas with higher-than-average outages, Project RESTORE aims to cut System Average Interruption Duration Index (SAIDI) scores by more than 50%, from 96.8 minutes to 30 minutes or less.

2. Cost Savings and Financial Impact: The project anticipates substantial cost savings for members by eliminating manual processes and overtime labor costs associated with power rerouting, contributing to rate stability. With a total budget of \$615,030, the cost-per-service is approximately \$136, but will provide benefits for many years to come and help keep electric rates stable by reducing overtime costs.

3. Community Equity and Justice: Linn County, a designated disadvantaged area, will be the primary beneficiary, with two school districts, water districts, and a growing population experiencing improved electric reliability. The project aligns with the Justice-40 framework, addressing energy communities and benefiting economically disadvantaged areas, as reflected in the Climate and Economic Justice Screening Tool.

4. Technological Skill Development: Project RESTORE contributes to workforce development by offering opportunities for existing staff to enhance their skills in advanced technologies, crucial for the evolving electric distribution landscape.

5. Tangential Benefits to Surrounding Communities: While Linn County is the focal point, surrounding economically disadvantaged communities in Bourbon and Allen counties will also experience tangential benefits, promoting overall grid resilience in the region.

6. Improved Member Satisfaction: Positive member sentiment is expected as outage durations decrease, enhancing overall satisfaction with Heartland Rural Electric Cooperative's services.

7. Economic Development Stimulus: By improving electric reliability in an economically vulnerable community, Project RESTORE aims to stimulate economic development, attracting businesses and residents seeking a reliable power supply. In summary, Project RESTORE aligns with the Kansas Corporation Commission's Grid Resilience Formula Grant objectives, providing resiliency enhancements, promoting equity, addressing economic disadvantages, and fostering skill development. This transformative project serves as a model for rural providers, demonstrating the potential to substantially reduce outages and enhance grid resilience in underserved areas.

### **Provide Historical Measurements Of Resilience And Reliability For The Targeted Areas Of Each Proposed Project.**

From 2018 to 2022, the Heartland distribution system experienced 100 outages due to loss of power supply. Sixty percent of those outages occurred in the areas addressed by Project RESTORE. The power supply outages that occurred in the Project RESTORE area were much longer than the system average in duration. In total, 5,429,062 consumer-minutes of outages – 75% of the total consumer-minutes caused by power supply outages on the Heartland system – occurred in the Project RESTORE focus area. Heartland saw 840 non-planned outages across its entire electric distribution system in 2022. While 345 of those occurred in the Project RESTORE target area, those that did made up 61.8% of the consumer-minutes of outages for the entire year, again showing the extended duration of outages experienced by these members. Members in this area also saw, on average, 4.29 outages for the year compared to our system average of 2.72. The



average restoration time for outages in this area was 167.36 minutes. Power supply-related outages were a major driver of this high average restoration time. In 2022, Heartland experienced 19 power supply outages in the Project area. Four of those 19 outages took longer than four hours for the cooperative's power supplier to restore, with one taking approximately 13 hours.

**Provide Expected Changes To The Historical Data As A Result Of Each Proposed Project.**

By enhancing our SCADA system with electronic reclosers that can be operated remotely from the office to back feed power, Heartland expects to be able to reduce the duration of power supply outages by more than 50%. As an example, if all power supply outages in the Project RESTORE area were restored within 30 minutes from 2018-2022, Heartland's System Average Interruption Duration Index (SAIDI) score would have been cut from 96.78 minutes to 41.27 minutes.

**Provide Historical Measurements Of Resilience And Reliability For The Entire System To Determine Whether The Project Is In An Area That Has, On Average, More Frequent Or Longer Duration Outages.**

Looking only at outages caused by power supply issues, seven of the 10 substations included in Project RESTORE have a SAIDI value that is greater than Heartland's five-year system average. Three of the substations – Miami, Parker, and Prescott – have SAIDI values that are more than double the system average. Heartland has chosen to target this area for Project RESTORE in order to help these members who are experiencing outages at a higher frequency and of a longer duration than system average.

**Provide Age Of System Or Line Segments To Be Replaced Or Repaired, Type Of Equipment That Failed, And The Number Of Annual Outages For The Project Area.**

Most of the conductor and equipment in the project area has been upgraded in the last 20 years. By having this infrastructure in place already, Heartland's feeders can handle the load required to reroute power to another substation. These tie lines are crucial in restoring power quickly in rural Kansas. By replacing hydraulic reclosers with remotely operated electronic reclosers, Heartland staff will be able to complete switching and backfeeds much more quickly, greatly reducing the time consumer-members are out of power due to an unreliable power supply. In 2022 alone, we experienced 19 power supply outages within the designated project territory. To be clear, the increased frequency of outages in the project area is not due solely to power supply issues. However, Heartland has already initiated large-scale efforts to address the other issues in the area (namely, vegetation overgrowth), and Project RESTORE will allow the cooperative to work around a problem that is otherwise out of its control.

**Provide A Number Of Protective Devices (Fuses Or Breakers) That Have Operated More Than Once In A Rolling 12-Month Period.**

Heartland has a total of 44 feeders across its electric distribution system. Of those, 17 feeders will be impacted by Project RESTORE. Each of the 17 feeders affected has protective devices that have operated more than once in a rolling 12-month period.

**Provide A Number Of Customers Impacted By Project And The Percentage To Total Customers Served In Kansas.**

Project RESTORE will impact approximately 4,600 electric services, which accounts for about 40% of Heartland's total services. The area affected includes two school districts (USD 362 Prairie View and USD 346 Jayhawk-Linn) with a combined enrollment of over 700 students. Also impacted are two water districts, Public Wholesale Water Supply District #13 and the Marais Des Cygnes Water Utility, which together supply a vital resource to most the population in Linn and Miami counties. It is worth noting that the area targeted for improvements through Project RESTORE is also the area with the most growth on the Heartland system. It is vital to provide these residents with reliable power as more of them move south from the city seeking a rural lifestyle.

**Description Of Efforts To Attract, Train, And Retrain A Skilled Workforce For This Project.**

Heartland Rural Electric Cooperative is fortunate in that it has team members on staff who have the skills and knowledge necessary to implement advanced technologies such as SCADA. However, this project will provide opportunities for more staff members to become familiar with SCADA-controlled equipment. It is critical for southeast Kansas to have a workforce that is well-trained on the technologies that will carry the electric distribution system further into the 21st century. Heartland is focused on adopting technologies to ensure crews have the tools they need to increase reliability, decrease outage time, and decrease the impact of outages on the members.

**Provide An Estimate Of Job Creation Due To This Project.**

Heartland does not anticipate direct job creation as a result of Project RESTORE. However, by bolstering electric reliability in an economically vulnerable community, Heartland hopes to encourage further economic development in the area. Improved electric reliability for the two school districts affected by the project will also contribute, even if indirectly, to a highly trained workforce in the area. Within Heartland, the project will provide an opportunity to increase the skills of the existing workforce and help them learn the technical skills that will become increasingly important as more aspects of the distribution system become computerized and networked.

**Identify Any Plans To Partner With Training Providers To Support Workforce Development.**

The supplier of the SCADA-controlled reclosers will likely provide training on how to properly configure and integrate the new equipment. No other training collaborations are planned at this time.

**Provide Any Other Metric(S) That Indicates Potential Community Benefit.**

While not an objective measure of project success, Heartland continually monitors member sentiment on social media. Positive feedback from members is expected after the cooperative has executed Project RESTORE and considerably reduced outage durations.

**Confirmation That The Applicant Will Comply With All Davis-Bacon Act Requirements.**

Yes

**Confirmation That The Applicant Will Comply With All Buy America Requirements.**

Yes

**Confirmation That The Applicant Will Submit An Environmental Questionnaire (NETL Form 451.1-1-3), If Required, For Each Work Area Proposed In The Application.**

Yes