

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 A. Volz, PE, Executive Director, Kansas Infrastructure Hub

RE: Build Kansas Fund Application #2024-042-FHRC

Date: May 20, 2024

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

- Coversheet – provides a high-level overview of the application including a unique identification number, page 1 of 11 of the Build Kansas Fund Application Package.
- Build Kansas Fund Application – includes information submitted with the Build Kansas Fund Application, pages 2-8. Page 8 provides the table of funding sources.
- Attachments – Executive Summary, pages 9-11.

Project Overview

Under the Grid Resilience and Innovative Partnerships (GRIP) Program, the U.S. Department of Energy (DOE) will provide funding to modernize the electric grid and to maximize the benefits of the clean energy transition as the nation works to curb the climate crisis, empower workers, and advance environmental justice. The Community Infrastructure Upgrade Project and Portable Substation Project will consist of replacing 60 miles of existing 80+ year old copper weld wire and poles that do not meet Flint Hills REC's current construction standards for span distance, pole, and wire strength and purchase a portable substation. The upgrade will enhance energy efficiency by reducing line loss and create more capacity.

This opportunity is a discretionary BIL program with a local match requirement of 33% of the Federal Share. The entity is requesting \$2,264,410.00 from the Build Kansas Fund. This request has the potential to unlock \$6,793,230.00 in federal funds.

The federal deadline was April 17, 2024, and this Build Kansas Fund application was received on April 17, 2024.

Build Kansas Fund Steering Committee Recommendation

The Build Kansas Fund Steering Committee reviewed this application on May 1, 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	2024-042-FHRC
Project Name	Flint Rural Electric Cooperative - Community Infrastructure Upgrade and Portable Substation Project
Entity Type	Non-Profit
Economic Development District (EDD) Planning Commission	FHRC – Flint Hills Regional Council
Infrastructure Sector(s)	Energy
BIL Program	Grid Resilience and Innovation Partnerships (GRIP)
BIL Program Type	Discretionary
BIL Application Deadline	4/17/2024
Build Kansas Fund Request	\$2,264,410.00
Technical Assistance Received	General Yes
	BIL Application No
	Build Kansas Fund Application Yes
	Other (Brief Description): Provide general and application support to applicant
Application Notes	Build Kansas Fund contribution of \$2,264,410 will unlock \$6,793,230 in federal BIL funding.

Steering Committee Funding Recommendation	5/1/2024 Recommend
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Advisory Committee Target Review	DATE Recommend or Decline
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Advisory Committee Funding Recommendation	DATE Approve or Decline
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Completeness Review Data

Date Build Kansas Application Received:	4/17/2024
Date Of Completeness Check:	4/25/2024
Date Forwarded to Steering Committee:	4/29/2024

Title **Flint Hills Rural Electric Cooperative** 04/17/2024
 id. 46263239
 by **Travis Griffin** in **Build Kansas Fund Fiscal Year 2024 Application**
 tgriffin@flinthillsrec.com

Original Submission 04/29/2024

Score n/a

Part 1: Applicant Information

The name of the entity applying for the Build Kansas Fund: Flint Hills Rural Electric Cooperative

Project Name: Community Infrastructure Upgrade Project and Portable Substation Project

Entity type: Non-Profit

Applicant Contact Name: Travis Griffin

Applicant Contact Position/Title: Member Services Manager

Applicant Contact Telephone Number: +16207675144

Applicant Contact Email Address: tgriffin@flinthillsrec.com

Applicant Contact Address: 1564 S. 1000 Rd.

Applicant Contact Address Line 2 (optional):

Applicant Contact City: Council Grove

Applicant Contact State: Kansas

Applicant Contact Zip Code: 66846

Is the Project Contact the same as the Applicant Contact? Yes

Part 2: Build Kansas Fund - Eligibility Criteria

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

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? Geary 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: Grid Resilience Innovation Partnership (GRIP)

What is the funding agency for this Bipartisan Infrastructure Law (BIL) funding opportunity? U.S. Department of Energy

What is the Assistance Listing Number (ALN) for this Bipartisan Infrastructure Law (BIL) funding opportunity? DE-FOA-0003195

What is the application due date for this Bipartisan Infrastructure Law (BIL) funding opportunity? 4/17/2024

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

Enter the amount of funding being applied for, from the Bipartisan Infrastructure Law (BIL) funding opportunity: \$6,793,230.00

Enter the required non-federal match percentage: 25.0

Part 4: Build Kansas Fund - Match Application Information

Enter the non-federal match amount being requested from the Build Kansas Fund: \$2,264,410.00

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

If you are awarded less match than the amount requested, at what amount would your project NOT be able to move forward? \$2,264,410.00

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](#)

Part 5: Build Kansas Fund - Means Test

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 looked into other Department of Energy opportunities along with USDA (RUS).

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:

[Community_Infrastructure_Upgrade_Project.docx](#)

Provide any additional information about this project (optional):

The Community infrastructure Upgrade Project and Portable Substation Project is part of the San Luis Valley Rural Electric Cooperative "Climate Shield Cooperative Network" Consortium that has submitted a full application for Topic Area 1 under the Grid Resilience and Innovation Partnerships (GRIP) (BIL sections 40101(c)). Per the GRIP grant the total matching amount available is 33% of the total project costs.

However, through the Climate Shield Cooperative Network Consortium, Flint Hills Rural Electric Cooperative is applying for a 25% match of our total project costs.

Part 7: Terms and Conditions

Understanding of Fund Release Requirements: checked

Understanding of Use of Funds: checked

Understanding of Reporting Requirements: checked

Authority to Make Grant Application: checked

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

Position/Title: Member Services Manager

Additional: Charles Goeckel

Position/Title: General Manager

Additional:

Position/Title:

Additional:

Position/Title:

Internal Form

Score n/a

Pre-Award Information:

Post-Award Information:

Deviation Report:

Source	Amount	Zip Code	% of project in zip code
BIL Federal Funds (applied for)	\$ 6,793,230.00	66441	50%
Build Kansas Funds (non-federal match)	\$ 2,264,410.00	67449	25%
Additional Project Contribution (if applicable)		66846	12.50%
		66834	12.50%
TOTAL PROJECT COST	\$ 9,057,640.00		100% in KS

Flint Hills REC Community infrastructure Upgrade Project and Portable Substation Project

Flint Hills Rural Electric Cooperative (Flint Hills REC) provides electricity to all or parts of 14 census tracts across 11 counties in East Central Kansas, including Geary, Riley, Wabaunsee, Morris, Dickinson, McPherson, Marion, Chase, Lyon, Butler, and Harvey counties. Flint Hills REC maintains over 2,500 miles of power lines and operates 6 substations and serves approximately 2.6 meters per mile with our service territory covering approximately 3000 square miles. Each of these counties has a population served of less than 10,000, and Flint Hills REC is responsible for serving the most rural members within each county.

In 2022, Flint Hills REC faced significant power interruptions, reporting a System Average Interruption Duration Index (SAIDI) of 249.34 minutes and a System Average Interruption Frequency Index (SAIFI) of 2.82. These numbers were much higher than the national averages of 131.1 (SAIDI) and 1.09 (SAIFI) for the same year, according to the U.S. Energy Information Administration (EIA). As a result, the cooperative incurred estimated losses of \$214,418, covering both revenue loss and repair costs. Over the last five years (2018-2022), total losses amounted to \$1,232,924, with 37.92% attributed to outages caused by Lightning and Wind-Not Trees. Projecting forward, using the same percentage on the average outage costs of \$246,585, considering a 5% inflation rate, Lightning-related costs are expected to rise from \$62,314 in Year 0 to \$101,503 in Year 10. Likewise, Wind-Not Trees costs would increase from \$31,181 in Year 0 to \$50,790 in Year 10, marking a notable 100%+ growth.

This quantification emphasizes the increasing financial impact, highlighting The High Cost of Doing Nothing, especially in these inflationary times. It strongly advocates for proactive measures and investments to address outage root causes, reducing long-term economic repercussions. Prolonged outages not only disrupt daily life for members but also negatively affect local businesses and strain community resources, necessitating a top-priority focus on enhancing service reliability to minimize broader impacts on the community.

Recognizing the need to modernize our infrastructure, we have proposed The Community infrastructure Upgrade Project and Portable Substation Project. This project will consist of replacing 60 miles of existing 80 plus year old copper weld wire and poles that do not meet Flint Hills REC's current construction design standards for span distance, pole, and wire strength and implementing a portable substation to serve as a backup to our 6 existing substations. The total project cost to replace 60 miles of copper weld distribution line and purchase a portable substation would be \$9,057,640.00.

The 60 miles will be replaced in Dickenson, Geary, Morris, and Wabaunsee counties and includes two Disadvantage Communities (DAC's) tract #20041084500 and #20041084600. By implementing new construction design standards, we ensure the durability, resiliency, and longevity of the power lines. The upgrade of the 60 miles will also enhance energy efficiency because the new wire will reduce line loss (wasted electricity). It will also create more capacity, benefiting the future adoption of electric vehicles (EV's). In addition, the project will improve the reliability of the system against extreme weather conditions. Studies show lines rebuilt to the proposed design standards greatly improved reliability during extreme weather events.

The current copper weld line that is in place on our system is over 80 plus years old and is not built to our current construction standards. This makes copper weld construction more vulnerable to outages due to extreme weather events, such as thunderstorms, ice storms, wind, and fire.

A 2008 study done on our system revealed the top three issues causing line failure. These issues are listed in order of highest risk to lowest.

- Poles that did not meet current standards for size and pole class (diameter) were 5.5 times more likely to fail than lines with poles that met current new construction standards.
- Lines with Span lengths > 300' failed at a rate of 3.6 times the rate of lines with span lengths < 300'.
- Copper lines failed at a rate of 1.6 times the rate of non-copper lines containing similar pole sizes and span lengths.

As you can see from the study, findings above show that these three issues cause the greatest reliability risk due to extreme weather events. This study was completed 15 years ago meaning copper conductor is 15 years closer to its end of life.

We will replace the existing copper weld constructed line with our current construction standards. Those standards are replacing the existing copper weld wire with #2 Aluminum-Conductor Steel-Reinforced (ACSR) wire on single phase line and 1/0 ACSR on multi-phase line. Replacing the existing poles with 35 ft. class 5 poles and reducing the span length from 300 ft. down to 270 ft. for single phase line and 255 ft. on multi-phase line.

The Flint Hills REC Copper Weld Upgrade Project will help create 3 to 5 permanent jobs. These linemen will receive above-average compensation and enjoy additional benefits such as a 401k retirement plan, paid holidays, sick time, and comprehensive safety training. This investment will not only support the project's implementation but also continue with career development opportunities and ensure the availability of a highly skilled workforce for future endeavors by implementing our linemen internship program. This also benefits Flint Hills REC by helping them secure future replacements for an ageing workforce due to the lack of qualified workers.

The Portable Substation portion of this project addresses Flint Hills REC's aging substations. Flint Hills REC maintains over 2,500 miles of power lines and operates 6 substations and serves 4,886 consumer-members, through 6,660 meters which is just 2.6 meters per mile (density) of distribution line. However, five of the six substations lack an alternate backup solution due to the extremely rural nature of our service territory. Without an alternative power source, a damaged substation could result in a long duration power outages that could last weeks or more considering the minimum replacement time for a substation transformer is six months, if not longer.

The cost to replace 5 of the 6 aging substations would exceed \$10,000,000.00 significantly increasing electricity rates for Flint Hills REC consumer-members. Currently, several of our areas have experienced adverse cold weather. These substations are 50 years old. Still performing but increasing the failure risk with each passing year. The Community Portable Substation Project costs is a viable option to mitigate the costs to Flint Hills REC consumer-members. The cost to have one portable sub as a back up to the aging substations is less than \$2,500,000.00.

A portable substation addresses the risks associated with our aging substations but also ensures the continuity of power supply (resiliency) in the face of adversity, be it extreme weather, a terrorist attack, or equipment failure. The portable substation will benefit the consumer-members in rural areas of Flint Hills REC's territory and also serve the following DAC's. Chase County (tract # 20017960600), Marion County (Tract #20041084500) and portions of Dickinson County (Tract #20115489500 and tract # 20041084600).

The importance of The Community infrastructure Upgrade Project and Portable Substation Project becomes evident when we consider the implications of prolonged power outages on rural and remote communities. Without power, essential services like healthcare, sanitation, water, and communication are heavily compromised, risking lives. By implementing The Community infrastructure Upgrade Project and Portable Substation Project, we can improve the resiliency of our electrical infrastructure and safeguard the lives and well-being of the communities we serve.

Another significant benefit of the project is the stabilization of electric rates for all consumer-members within the Flint Hills REC territory, including the targeted disadvantaged communities (DACs) mentioned earlier. This is made possible through the increased investment in infrastructure and the subsequent reduction in outages caused by extreme weather events. By improving the resilience and reliability of the electrical system, we can better manage costs and maintain more stable electric rates for our consumer-members.

The Community infrastructure Upgrade Project and Portable Substation Project is part of the San Luis Valley Rural Electric Cooperative "Climate Shield Cooperative Network" Consortium that has submitted a full application for Topic Area 1 under the Grid Resilience and Innovation Partnerships (GRIP) (BIL sections 40101(c)).