EBSCO Solar Grant Narrative 2019

Central Arkansas Library System

LIBRARY BACKGROUND

The Central Arkansas Library System (CALS) first formed in 1975, when several libraries from Little Rock, Jacksonville, Sherwood, and Perryville merged to form one system. Headquartered in downtown Little Rock, CALS serves a population of 402,947 and is the largest public Arkansas library system. Our fourteen libraries are located in the City of Little Rock (Main Library and eight branches), Pulaski County (Wrightsville, Jacksonville, Sherwood, and Maumelle), and Perry County (Perryville).

CALS serves an additional statewide population of nearly one million users through the Gateway Project. The system contains over 1 million items and is the largest research collection in Central Arkansas.

In the past twenty years, CALS has built state-of-the-art branches across our service area, bringing books, internet access, classes, meeting rooms, story times, and helpful librarians within easy walking or driving distance. Technology has multiplied our offerings and brought CALS resources even closer, so patrons can get them on digital devices, anywhere, any time. Even more importantly, CALS offers hundreds of digital literacy classes each year to help close the technology gap for underserved populations and improve economic opportunity for all.

But even after opening more access with our digital library, we know we can do more to serve the community. Our anti-hunger programs feed hundreds of children every day who are at risk for food insecurity. Branch libraries also play a vital role in our neighborhoods by building community ties and hosting clubs and local businesses.

From the frontier period to the present, many Arkansans have faced serious educational and economic challenges. By rising to help people through these challenges and meet crucial needs for all people in our service area, the Central Arkansas Library System has become one of the great community pillars of Central Arkansas. Whether our patrons are advanced scholars of history or art, adults trying to build basic job skills, children learning the magic of books, or homeless patrons who need assistance, the library system has a resolute commitment to treat all our patrons with equal dignity and respect.

CALS plans to continue its work of welcoming, educating, and supporting the people of our service area, particularly through a new focus on reading literacy for children and entrepreneurship training for adults. In addition, CALS will emphasize the sustainability education that has been a part of its mission for years. In central Arkansas, public awareness is still low when it comes to the purpose and need for sustainable living. By modeling sustainability with green buildings and renewable energy, CALS will be uniquely placed to start a wider conversation among children and adults of our region—a conversation about the pressing, immediate need for human beings to take better care of our planet.

GOALS

The Central Arkansas Library System embraces a mission to be a model for sustainability and alternative energy for the community. By modeling sustainability, the library system will raise public awareness of the crucial balance that must be maintained in our ecosystem, as well as the ways in which human beings can make both positive and negative impacts on the natural world. In a state with as much open land as Arkansas, it is hard for residents to see the impact of their actions with their own eyes. Natural resources seem plentiful enough to consume without consequence: garbage and waste are hauled away to be dumped out of public view on "spare land." Because of this tempting illusion of endless space and resources, Central Arkansans need a strong awareness program to emphasize what is at stake if we don't choose sustainability, and how we can make a difference with our individual choices. As with most educational efforts, the most effective way to build consciousness of the need for change is to begin with young people. For that reason, the goals for this grant will begin at our Children's Library, though our ongoing sustainability effort is systemwide and the educational efforts we propose will be portable to all of our 14 library branches.

A Record of Commitment to Sustainability: Achievements and Goals for Conservation

CALS has a strong record of commitment to sustainability that includes ongoing educational initiatives at our Children's Library (equipped with a greenhouse, community garden, and solar oven), and prestigious LEED (Leadership in Energy and Environmental Design) green building certifications.
In 2017, CALS began a major new sustainability initiative by hiring a contractor, Entegrity, to perform an energy audit of our entire library system including 14 branches, a museum/art gallery, a theater, a retail used bookstore, a maintenance facility, and an events center.

Systemwide, our target improvements for sustainability have included making older buildings more energy efficient, with the following ECMS, all of which should be complete by July 2019:

- LED lighting upgrades for over 6,000 existing fixtures across CALS facilities
- water conservation improvements for approximately 60 plumbing fixtures
- HVAC Plant Equipment replacement for the CALS Main Library
- HVAC Retro-Commissioning for several branch locations

Notably, one major recommended component of the current energy conservation initiative was not able to be scheduled for completion due to a lack of available funds: that missing component was **solar energy generation for our Children's Library.**

With grant funds from EBSCO, CALS would be able to move forward with solar panel installation at the Children's Library. The panels would be ground-mounted and highly visible near the greenhouse and sustainability complex adjacent to the library building. The solar panel installation would be accompanied by a high quality, standards-aligned sustainability education program, including curriculum and dashboards. Thanks to a resource called the "solar suitcase," this program can be used extensively at Children's Library but also deployed across the library system by our experienced library programmers with guidance from Entegrity.

PROJECT REQUEST

The previous energy conservation initiative by CALS includes three energy conservation measures going into effect at Children's Library by July 2019.

1) Change 424 lamps to LED
2) Retro-commissioning to optimize HVAC
3) Rate correction with power company

A quick summary of the figures reveals significant savings to be realized from these measures.

The monthly kWh usage for Children's Library is currently approximately 437,000 kWh. Changing the current lamps to LED lights will reduce the total kWh usage per month to 350,000 kWh. Retro-commissioning for the HVAC system is projected to reduce the total monthly usage to 325,000 KWH. These figures show an initial energy usage reduction (resulting from the current initiative) of 25%, with correlated cost savings of 25%.

With the planned installation of solar panels, 184 panels at 340 watts per panel have a 62.5 kW capability which produces another savings of 91,000 kWh to be subtracted from the new monthly total of 325,000 kWh usage, adding an additional 28% load savings realized from the solar panel installation.

The energy cost savings of our previous initiative (~25%) combined with the new solar panel installation (~28%) would be over 50% at the Children's Library.

These cost savings would allow CALS to continue to invest in sustainability education long after the grant was complete. The solar panel installation would also create a working model of renewable energy for the community at large, in a setting already dedicated to sustainability education.

Taking the Model to the Community: Goals for Sustainability Education

CALS will partner with the educational outreach staff at Entegrity to implement a rich new program for youth education at Children's Library and across our 14-branch library system, with the potential to be expanded eventually into adult education efforts as well.

The CALS sustainability education program will be "Trak," a portable, interactive, technology-rich curriculum designed to trigger curiosity and make learning exciting for children. The Trak program will build on existing accomplishments in sustainability, create an exciting new vision for ongoing engagement, save resources, and maximize integrative learning opportunities.

The Trak program begins with easy, youth-led goals that include using the CALS buildings themselves as teaching tools. Youth will receive educational content delivered by trained library programmers, using the following **four key resources** to ensure high quality, engaging education:

1) Learning Lab – lesson plans to be implemented by trained library programmers

   Licenses will be provided for a year of access to Learning Lab, a program that prepares youth and the community for a sustainable future. Incorporating sustainability concepts in project-based learning encourages young minds in scientific thinking, fosters leadership and raises global citizens.

   Learning Lab provides over 500 lesson plans for all K-12 grade levels. The wide variety of lesson plans includes units devoted to energy audits at students' homes, renewable energy sources, and other sustainability basics. Trak's primary mission is to give youth access to learning modules that focus on environment, energy, water, building science, and other related subjects. These lesson plans will make it easy for experienced staff to deliver inspirational, impactful and innovative learning experiences. The catalog features robust, standards-aligned sustainability curriculum from experienced and respected educators and designers. These programs are available in English and Spanish and align with Common Core State Standards and all Next Generation Science Standards.

2) Solar Suitcase – educational tool

   CALS will purchase a solar suitcase, an interactive learning tool that can help teach youth and the community the same lessons as the large solar array, but is also small enough to carry to another library branch.

3) Arc - sustainability benchmarking software

   The Arc software benchmarks and graphs data for Energy, Water, Waste, Transportation, and the Human Experience for this building. The software provides shared accessibility to digital management dashboards with utility monitoring. The clear, easy-to-understand Arc graphic will help users track sustainability improvements at the Children's Library.

4) Sustainability Dashboard – communication of sustainability goals/metrics

   CALS will install a custom web page-based display of two live data streams: real-time solar production and the Arc graphic. The dashboard provides a clean visual display that enhances public awareness of sustainability in a concrete, accessible way. The dashboard will be displayed on a public screen in the Children's Library and on the systemwide CALS library website.

For an installation of 184 panels on the ground, adjacent to the greenhouse, CALS projects the following budget:

Solar panels (184) and installation	$120,000
Educational program, equipment, software, and licensing	27,000

CALS will be able to use some budget line items already assigned to conservation initiatives and sustainability education to help meet the cost beyond the $100,000 provided by the EBSCO grant.

The solar panels could be installed by October or November of 2019, depending on the availability of components.

The EBSCO grant will play a crucial role in allowing this solar panel installation and education initiative to move forward. Without the assistance of the grant, CALS will not be able to realize these plans. We appreciate your consideration and look forward to the opportunity to increase our community's commitment to sustainability, with EBSCO's support.