

**Environment and Natural Resources Trust Fund
2010 Request for Proposals (RFP)**

LCCMR ID: 073-B2

Project Title:

East Bank Mills Energy Center Demonstration Project

LCCMR 2010 Funding Priority:

B. Renewable Energy Related to Climate Change

Total Project Budget: \$ \$1,500,000

Proposed Project Time Period for the Funding Requested: 2 years, 2010 - 2012

Other Non-State Funds: \$ TBD

Summary:

The Energy Center demonstration will test a high-efficiency, renewable heating and cooling system utilizing existing historic infrastructure and river water, and apply information towards development of a community micro-grid.

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Sponsoring Organization: Schafer Richardson, Inc.

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Web Address: _____

Location:

Region: Metro

County Name: Hennepin

City / Township: Minneapolis

_____ Knowledge Base	_____ Broad App.	_____ Innovation
_____ Leverage	_____ Outcomes	
_____ Partnerships	_____ Urgency	_____ TOTAL

MAIN PROPOSAL

PROJECT TITLE:

I. PROJECT STATEMENT

The East Bank Mills project provides two crucial elements that benefit the city, state, and region- a clean and renewable river water Energy Center for heating and cooling a community micro-grid, and the preservation of the National Historic Landmark Pillsbury A Mill building. This project seeks funding from LCCMR for a demonstration project and planning to confirm viability and potential output of the renewable Energy Center and neighborhood micro-grid.

The Energy Center will utilize existing historic infrastructure and the flow of the river water to create heating and cooling, then distribute this renewable energy to surrounding buildings via a closed-loop water system. The Pillsbury A Mill's location along the Mississippi River and existing historic infrastructure will be re-used, including the intact underground headrace tunnel, two turbine drop-shafts formerly used for mechanical hydro-electric power for the A Mill, and the twin tail races. The Energy Center will combine base-load hydro-electric power and a water-source ground-coupled heat pump system.

The demonstration project will test flat plate heat exchangers, and other technologies, within the historic headrace tunnel to study viability of developing the system into a small scale, community micro-grid providing renewable heating and cooling. The larger vision for this project is the creation of an Energy Center to be located within the basement of the historic A Mill building that will heat and cool the 1.6 million square foot, mixed use East Bank Mills development and neighboring properties that wish to connect to a renewable micro-grid. Ultimately the Energy Center will provide an innovative demonstration of the combination of source and load-side management to keep installed costs per kW down while providing low-cost renewable energy, and be open to the public for educational tours.

The impact of a successful river water Energy Center and proposed heating and cooling micro-grid will be significant. Our engineers estimate it will: reduce carbon emissions from the East Bank Mills development alone by 13,630 tons/year when compared with a traditional heating/cooling system, produce 1,750,000 ton-hours in cooling and 82,600 MMBtu in heating annually for the micro-grid, and produce 9,180,000 KWH/year electricity to power the circulating pumps and heat pumps within the buildings connected to the microgrid. The funding of planning and a demonstration project by LCCMR would confirm these calculations in a real-world setting and offer potential solutions for expanding the renewable energy output and size of the micro-grid.

II. DESCRIPTION OF PROJECT RESULTS

Result 1: Renewable Energy Center Demonstration Project Planning **Budget:** \$ 500,000
Architectural planning and project engineering, licensing and permitting needed for Energy Center demonstration project, scope definition, pricing, hiring contractor, and finalizing plan.

Deliverable

1. *Complete engineering for Energy Center demonstration project.
Determine exact energy calculations and technical requirements. Creation*

Completion Date

Spring 2011

of specifications and drawings detailing equipment and other resources project will require. Select contractors and manufacturers for production, construction, and assembly of necessary components for demonstration project.

- 2. Energy Center Plans. Architectural drawings of Energy Center space, structural and other requirements. Creation of specifications detailing project structural and architectural requirements for Energy Center infrastructure. Select contractors for construction of necessary building and infrastructure improvements for demonstration project.* Spring 2011
- 3. Permitting and approvals from governing bodies* Spring 2011

Result 2: Renewable Energy Facility Demonstration Project Construction **Budget:** \$ 1,000,000
Placement of hydro-thermal and hydro-electric heating, cooling and generating equipment, such as flat plate heat exchangers and turbines, within the historic infrastructure in a sufficient quantity to test: heating and cooling output, environmental impacts, placement and infrastructure improvements needed, and best practices for connecting closed loop water system to a micro-grid for renewable energy distribution.

Deliverable

Completion Date

1. Completed and functioning Energy Center demonstration project with small scale closed loop cooling and heat pump system in place serving the A Mill building. Also, final report to be used for increasing scale of energy output and circulation for community micro-grid serving other properties.

Fall 2011

III. PROJECT STRATEGY

A. Project Team/Partners

Mill Development, LLC will act as Master Developer for the East Bank Mills development and Energy Center. Mill Development, LLC consists of principals from Schafer Richardson, as well as other investors. Schafer Richardson staff, on behalf of Mill Development, will hire all necessary team members needed to implement the project, monitor the project budget and seek financing, and manage the planning, design and construction. The team will be partnering with Cermak Rhoades Architects for the A Mill building. The engineering firm for the East Bank Mills Energy Center will be Karges Faulconbridge, Inc., which will design the hydro-thermal and hydro-electric systems for the demonstration project and, ultimately, the micro-grid. The contractors for the Energy Center and Pillsbury A Mill historic complex are yet to be determined. Various other consultants will be hired as-needed for the project. Faegre and Benson, Moss and Barnett, and Felhaber, Lawson are the law firms representing the development and will assist with the legal and permitting aspects of the Energy Center.

B. Timeline Requirements

It is anticipated that the East Bank Mills Energy Center project planning, engineering and permitting work will begin in July 2010 and continue through the Spring of 2011. The construction will begin on the Energy Center demonstration project in late winter of 2011 and continue into Summer 2011. We anticipate testing, observation and analysis of the demonstration project will continue until Fall 2011, when the final report containing technical requirements for scaling up the operation into a micro-grid size will be finalized.

C. Long-Term Strategy

Once the infrastructure for the buildings and Energy Center are complete the project will pay for its own operations by providing renewable energy to consumers connected via micro-grid at competitive or below market rates.

Project Budget

IV. TOTAL PROJECT REQUEST BUDGET (2.5 years)


BUDGET ITEM <i>(See list of Eligible & Non-Eligible Costs, p. 13)</i>	AMOUNT
Contracts:	
Architecture and Engineering- creation of drawings, specifications, and technical requirements for Energy Center building, infrastructure, and equipment construction.	\$ 400,000
Equipment/Tools/Supplies:	
General Building Materials and Construction Labor- lumber, steel, masonry, etc. Installation and oversight.	\$ 200,000
Energy production technologies- heat pumps, turbines, heat exchangers, and other necessary technical equipment for heating, cooling, and energy production.	\$ 800,000
Additional Budget Items:	
Permitting and Licensing	\$ 100,000
TOTAL PROJECT BUDGET REQUEST TO LCCMR	\$ 1,500,000

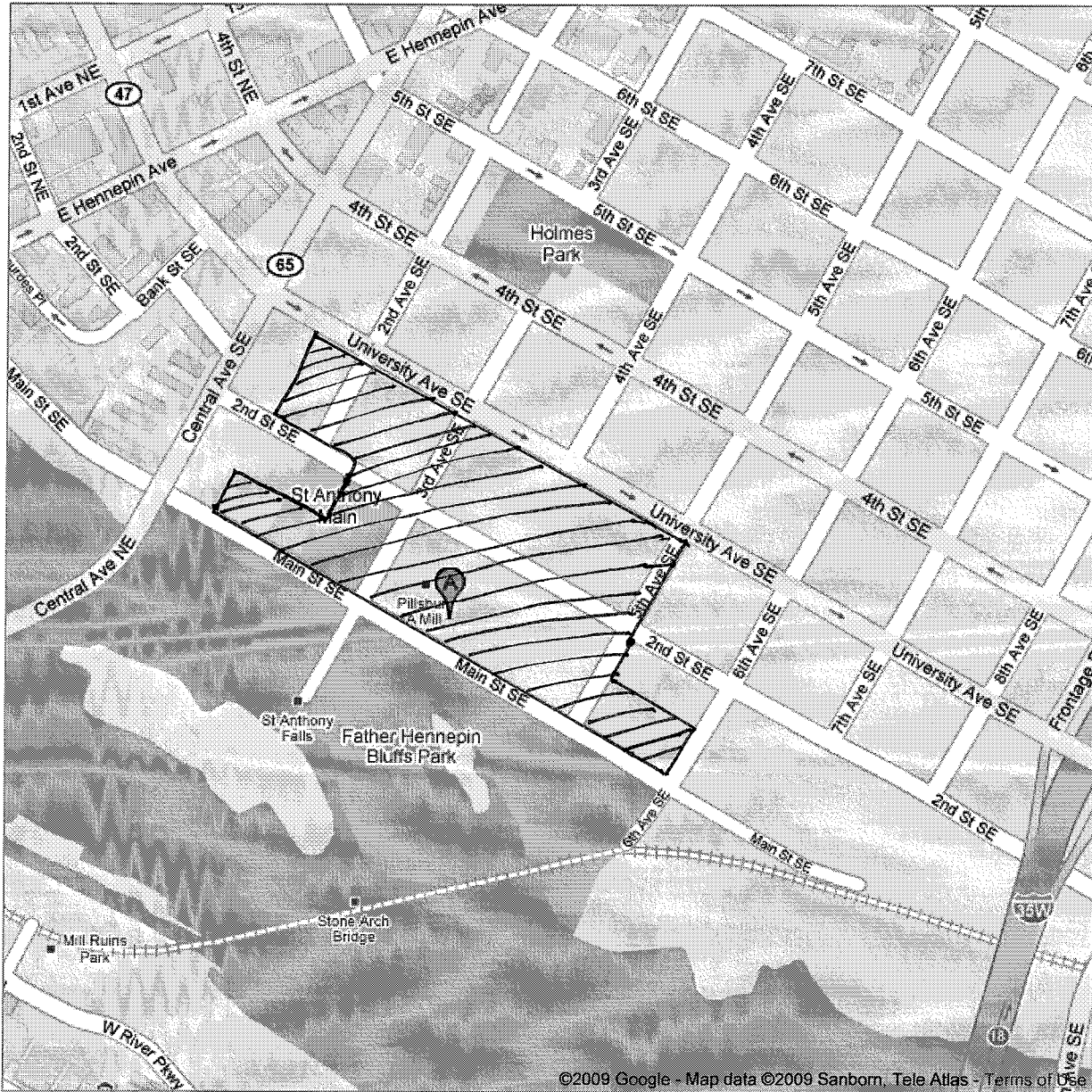
V. OTHER FUNDS

SOURCE OF FUNDS	AMOUNT	Status
Other Non-State \$ Being Applied to Project During Project Period: <i>We are pursuing other funding sources but to-date have not found resources for hydro-thermal related energy production- either through federal, or local grant sources.</i>	\$ -	
Other State \$ Being Applied to Project During Project Period:	\$ -	
In-kind Services During Project Period: Project Management and staff time of Mill Development and affiliates	\$ 150,000	Secured
Remaining \$ from Current Trust Fund Appropriation (if applicable):		
Funding History:	\$ -	



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PROPOSED MICRO-GRID AREA FOR ENERGY CENTER HEATING & COOLING SERVICE

Schafer Richardson, Inc.

Schafer Richardson, Inc. (“SR”) was formed in 1995 by Brad Schafer and Kit Richardson as a development, syndication, consulting, and brokerage services firm. In 1998, the Company started SR Construction Services, Inc. to provide construction services on historical renovations and tenant improvements for both SR’s portfolio and third party clients. SR provides management, accounting, and maintenance services to its own portfolio. Today Schafer Richardson has a controlling interest over a real estate portfolio consisting of 1.5 million square feet of office, retail, and industrial space in the Twin Cities Metropolitan Area.

Kit Richardson, Secretary/Treasurer. Mr. Richardson is a Licensed Architect with over 30 years of experience in commercial real estate and architecture. Prior to forming Schafer Richardson, he was Vice President with Griffin Real Estate Company as an investment and land sales specialist for eight years and also worked as an architect for Ralph Rapson & Associates. Mr. Richardson specializes in design, development, and construction services. He is a member of the American Institute of Architects, Urban Land Institute, National Association of Realtors, the Minneapolis Association of Realtors, Sensible Land Use Coalition, and Tree Advisory Commission.

Brad Schafer, Chief Manager. Mr. Schafer has over 23 years of commercial real estate experience. Prior to forming Schafer Richardson, Mr. Schafer was Vice President with Griffin Real Estate Company as a leasing and investment specialist for 10 years. Mr. Schafer focuses on development and syndication, debt/equity capital formation, property management and consulting. He is a member of the National Association of Realtors, the Minneapolis Association of Realtors, the Sensible Land Use Coalition, the Minnesota Shopping Center Association, and the Urban Land Institute.

David Frank, Director of Development. Mr. Frank has been at Schafer Richardson since March 2003. Prior to joining Schafer Richardson, Mr. Frank worked for six years at the redevelopment agency in Portland, Oregon, where he negotiated public / private agreements for redevelopment and affordable housing and provided public financing for mixed-use projects within the central city. His previous experience includes two years at a commercial mortgage banking company and five years acquisition and finance work for a large real estate investor/operator on the West Coast. Mr. Frank is President of the North Loop Neighborhood Association, and he was a member of the City / County Ballpark Implementation Committee for the new Minnesota Twins stadium.

Maureen Michalski, Project Manager. Prior to joining Schafer Richardson, Ms. Michalski worked in affordable housing development as a Project Manager. Ms. Michalski is a member of the Urban Land Institute and Sensible Land Use Coalition.