Request for City Council Committee Action from the Department of Community Planning and Economic Development

Date: September 21, 2009

To: Scott Benson, Chair, Health, Energy and Environment Committee

Referral to: Lisa Goodman, Chair, Community Development Committee

Subject: Approval of Loan for Hydrothermal Engineering Feasibility Study – East Bank Energy Center

Recommendation: Authorize appropriate City officials to:
a) execute a loan agreement with Schafer-Richardson Real Estate to provide $30,000 in loan funding for a hydrothermal preliminary engineering feasibility study in accordance with the terms described herein, and
b) execute letters in support of funding applications for the East Bank Energy Center, as described herein.

Previous Directives: On June 26, 2009, the City Council accepted a redevelopment grant from Minnesota DEED for the East Bank Mills project. On October 24, 2008, the City Council approved a resolution in support of a fall 2008 brownfield grant application to the Hennepin County Environmental Response Fund for the East Bank Mills project. On September 22, 2006, the City Council approved re-zoning of the East Bank Mills site from I1 to C3A and approved the removal of the ILOD on a portion of the site. On February 24, 2006, the City Council granted the developer's appeal of the HPC's determinations regarding the height and design on the new tower buildings proposed for the east end of the site.

Department Information

Prepared by: Ann Calvert, Principal Project Coordinator, 612-673-5023
Approved by: Charles T. Lutz, Deputy CPED Director _____
Catherine A. Polasky, Director, Economic Policy & Development _____
Presenters in Committee: Ann Calvert, Principal Project Coordinator

Financial Impact
- No financial impact (proposed funding source has already been appropriated)
- Action is within the Business Plan

Community Impact
- Neighborhood Notification: The Marcy-Holmes Neighborhood Association has been supportive of the East Bank Mills project proposal. The East Bank Mills Task Force

met on August 20 to review the updated project plans, including the Energy Center concept, and seemed supportive of the hydrothermal concept.

- City Goals: Implementation of the hydrothermal concept would help the City achieve its goals of increasing renewable/alternative energy sources and implementing its sustainability work plan.
- Comprehensive Plan: Implementation of the hydrothermal concept would address Policies 6.3.4 (Encourage developments to utilize renewable energy sources, including… geothermal…) and 6.4.1 (Partner with others… to explore the feasibility of alternative energy sources for… use by residents and businesses).
- Zoning Code: The proposed East Bank Mills project will comply with the zoning code. A conditional use permit may be required for the Energy Center if it provides heating/cooling outside of the East Bank Mills project.
- Sustainability Targets: If the hydrothermal concept is successfully implemented, the project would use renewable energy (the Mississippi River) to generate heating and cooling while generating significantly fewer emissions.
- Living Wage/Business Subsidy Agreement: Not applicable
- Job Linkage: Not applicable

Supporting Information

The East Bank Mills project for the former Pillsbury A Mill property along Main Street SE has the basic City land use approvals it needs to proceed, but project implementation has been delayed due to the current economy. As a result, the developer, Schafer-Richardson Real Estate (SR-RE) is exploring variations of its development proposal that would allow the first phases of development to move forward and has recently applied for tax increment assistance for the real estate components of the project (as distinct from the Energy Center discussed in this report). They also have been exploring some very innovative concepts that would allow the development to be more environmentally sustainable. This report recommends a City investment to further explore the feasibility of the sustainable Energy Center concept, but without implying any City commitment to approve any other financial investments in the East Bank Mills project. It will be useful to better understand the feasibility of the Energy Center concept regardless of what is developed, and when, on the East Bank Mills site.

<u>Energy Center Concept</u>

What has been dubbed the “East Bank Energy Center” would allow the project (and perhaps additional development on the east bank) to be heated and cooled in a sustainable manner. The Energy Center would make use of the existing system of below-grade tunnels and shafts that once drove the east bank flour milling operations. In the same manner that the ground can be used as a geothermal heating and cooling source, water can be used as a “hydrothermal” source. There are examples of this approach (e.g., the Great River Energy building) that are located in passive water such as a lake or pond. The efficiency of this hydrothermal approach would be even greater if used in flowing water.

The concept is to install flat-plate heat exchangers in water that would flow through the headrace tunnel under Main Street that once served the Pillsbury and Phoenix Mills. This tunnel (shown in light blue on the attached drawing) is apparently owned by SR-RE and already has some water flowing through it that enters from the east bank mill pond in front of St. Anthony Main. The flat-plate heat exchangers are illustrated in red

(although the exact location and length is unknown). After the water is used as a heating/cooling source, it would drop through one of the Pillsbury turbine drop shafts and re-enter the river via an existing tailrace (show in dark blue). As the water drops down the shaft, it also could generate electricity to support the heat pumps that will be part of the hydrothermal system. A similar system is operating successfully in a water power canal associated with an historic textile mill in New Lanark, Scotland.

The end result would be a heating/cooling system that would have little or no carbon footprint. Preliminary estimates indicate there potentially would be enough capacity to heat and cool not just the 1.5 million square foot East Bank Mills project, but also up to 3 million additional square feet on the east bank (existing buildings and/or new development). In addition, it might be possible to use some of the tunnel system for historic interpretive purposes.

This concept is innovative and has great potential for the East Bank Mills project, the entire east bank and possible replication elsewhere in the city. However, there are many questions that would need to be answered to determine if the concept is truly feasible. These include many engineering/technical feasibility questions, as well as questions about legalities, waterfall aesthetics, the impact on the historic resources (e.g., the tunnel, drop shaft and tailrace) and identification of what permits and approvals would be needed for the project to move forward. If further study indicates the concept is, indeed, feasible, then there would appear to be a variety of governmental and private funding sources that might be available for implementation of this type of “green” project.

An initial scoping meeting was held with a large number of governmental entities to test for any fatal flaws. The general consensus seemed to be that the concept merits further exploration, but with participants identifying a number of important questions that must be addressed before they could give the concept any approvals. A similar meeting was held with the task force of neighborhood representatives that was formed to provide input on the East Bank Mills project and they also appeared open to the concept, especially its interpretive potential.

<u>Proposed Loan Terms</u>
SR-RE has approached the City for assistance moving this concept forward through the provision of City funding for the next phase of engineering feasibility. This investment would complement the approximately $3,000,000 cash investment made to date by SR-RE to advance the East Bank Mills project, including the Energy Center. Staff recommends approval of a $30,000 loan from the City to SR-RE on the following terms:

- Source: Hilton Legacy Fund (Fund 01SPH)
- Interest: In the event that the hydrothermal concept is implemented, accrued interest will be paid at the rate of 4% per year, compounded annually. If it is determined that the hydrothermal concept is not feasible, interest will be forgiven, but the principal amount still must be repaid.
- Term: The principal amount of the loan and any accrued interest to be repaid to the City at the earliest of: a) three years after the loan is drawn down, b) the closing on construction financing for the Energy Center, or c) the closing on any financial assistance being provided to the East Bank Mills (or any other SR-RE

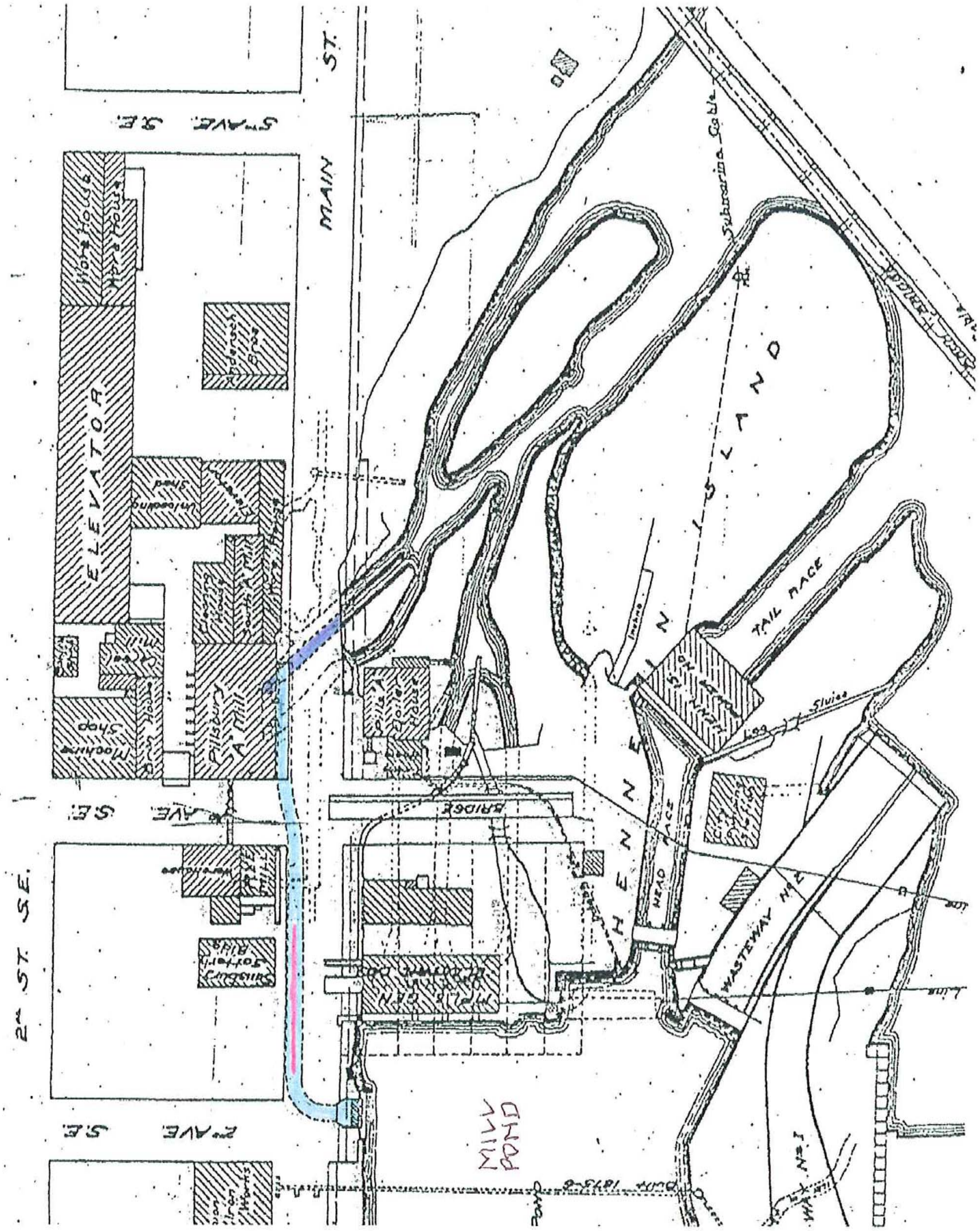
project). The term may be extended with the City's approval on an annual basis for up to an additional two years.

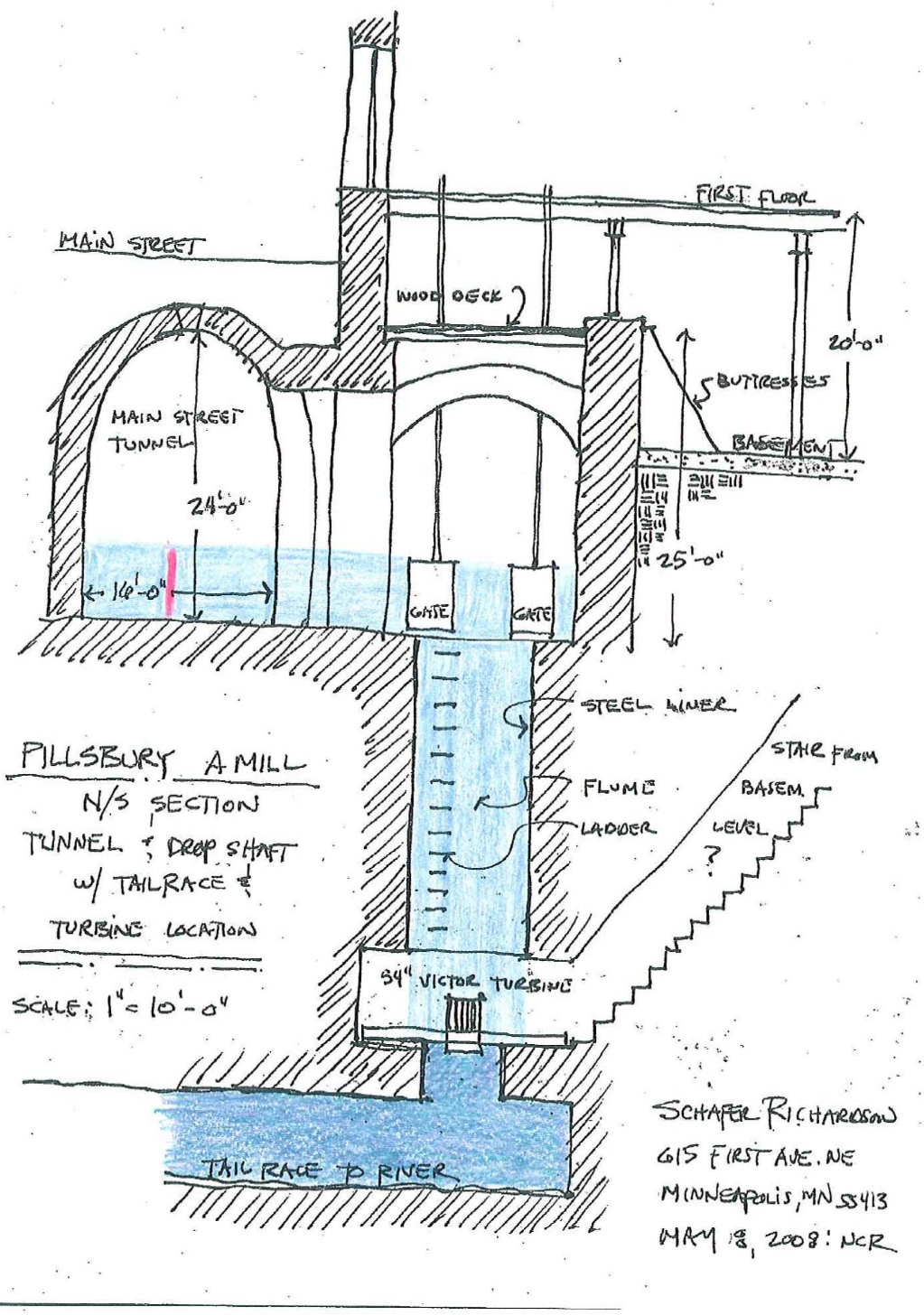
- Other: The City will have the same rights as SR-RE to use the results of the study funded with the loan, for application to the East Bank Mills site, the general east bank or elsewhere in the city that has access to flowing water.

Other City Expressions of Support for Concept

It is anticipated that it will be helpful in the future for the City to provide letters in support of this concept when and if SR-RE applies for additional feasibility and/or implementation funding. It is recommended that the appropriate City officials be authorized to execute letters in general support of exploration of the Energy Center concept and, when and if the concept is found to be feasible and enough additional information is available to address other questions, to provide support for implementation of the concept. Such support would, however, be limited to what is known at the time and would not imply unconditional support for implementation if outstanding questions remain to be answered. As noted, any such support letters also would not imply that any additional funding from the City is committed to implement the Energy Center or the East Bank Mills project.

AC788


MAIN ST.
ELEVATOR
Machine Shop
Unloading Shed
Pillsbury A Mill
2nd ST. S.E.
AVE. S.E.
BRIDGE
HENNEPIN ISLAND
Submarine Cable
TAIL RACE
HEAD RACE
Sluice
WASTEWAY No 2
MILL POND


FIRST FLOOR
MAIN STREET
WOOD DECK
20'-0"
BUTTRESSES
BASEMENT
MAIN STREET TUNNEL
24'-0"
16'-0"
25'-0"
GATE
GATE
STEEL LINER
FLUME
LADDER
STAIR FROM BASEM. LEVEL
?
54" VICTOR TURBINE
TAIL RACE TO RIVER
PILLSBURY A MILL
N/S SECTION
TUNNEL & DROP SHAFT
W/ TAILRACE &
TURBINE LOCATION
SCALE: 1" = 10'-0"
SCHAFER RICHARDSON
615 FIRST AVE. NE
MINNEAPOLIS, MN 55413
MAY 18, 2008 : NCR