



DOWNTOWN BUILDING HEATING AND COOLING UPDATE

JANUARY 26, 2021
ROCHESTER PUBLIC UTILITY BOARD



Why Building Heating and Cooling

1. 5 City buildings are heated (and cooled) by a steam line connected to the Olmsted County Waste to Energy Facility (OWEF)
2. Steam line has reached the end of its useful life and costs (\$30M) to replace
3. County decision not to replace the current steam line and to stop providing Steam October 2023





Purpose

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1. Provide an overview of the building heating and cooling options being considered by the Council.
 - a. Gas Steam Heat and Electric Cooling – Building Based
 - b. Gas Hot Water Heat and Electric Cooling – Building Based
 - b. 180 Degree District Heating and Cooling – City Buildings
 - c. 180 Degree District Heating and Cooling – City and County (downtown) Buildings
2. Answer Questions
3. Seek the Boards consensus

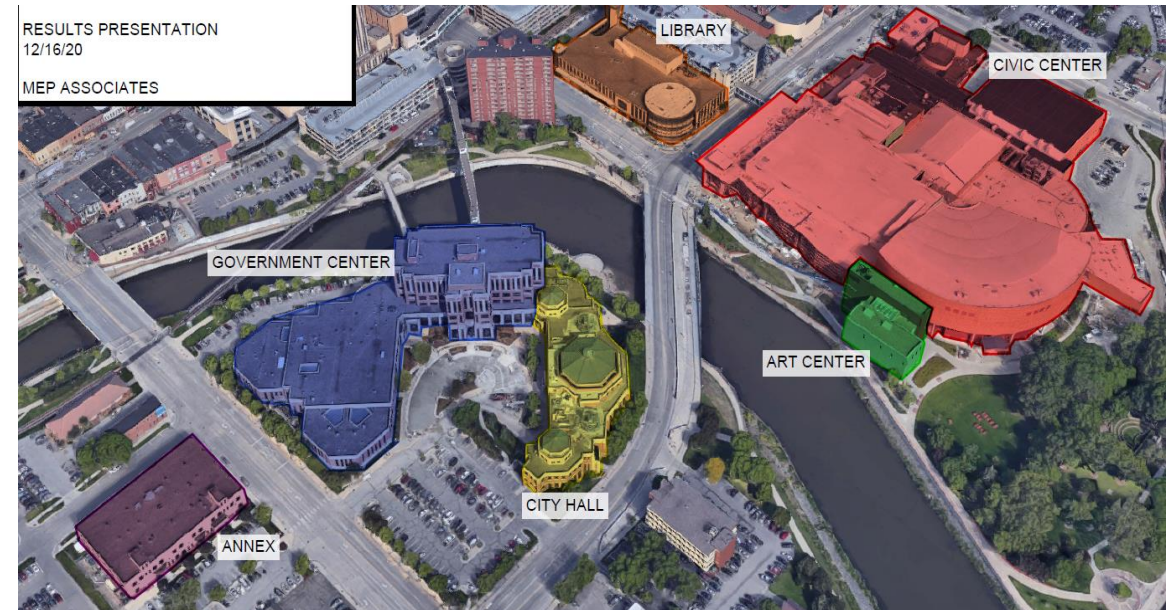


Study Evaluations

1. Building-Based Solutions
 - Install steam boilers and steam-driven chillers (where needed)
 - Install high efficiency gas boilers, hot water heat and electric-driven chillers (where needed)
2. District Energy Solutions (DES)
 - 180 deg F hot water and chilled water loop system (City Only)
 - 180 deg F hot water and chilled water loop system, including county buildings (Gov. Center /Annex)

Note: DES business case includes a \$2M contribution from DMC Funds.

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Business Case Results

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PROJECT APPROACH (CITY BUILDING COSTS ONLY)	CAPITAL COST (\$)	DEBT SERVICE & OPERATING COST/YR (\$000)	PV OF COST DIFFERENCE (30 YRS @3%)	CARBON EMISSIONS (METRIC TONS)
BUILDINGS – GAS STEAM HEAT AND COOLING	\$6.3M	\$1,317	-	4,647
BUILDINGS – GAS HOT WATER HEAT AND ELECTRIC COOLING	\$6.6M	\$1,320	\$181K (AVE \$6K/YR)	3,814 (17.9%) \$217/TON
DES – 180 DEG F SYSTEM CITY BUILDINGS ONLY	\$10.7M	\$1,552	\$5,192K (AVE \$173K/YR)	3,563 (23.3%) \$4,790/TON
DES – 180 DEG F SYSTEM – CITY + COUNTY BUILDINGS	\$14.2M	\$1,348	\$722K (AVE \$24K/YR)	3,563 (23.3%) \$666/TON



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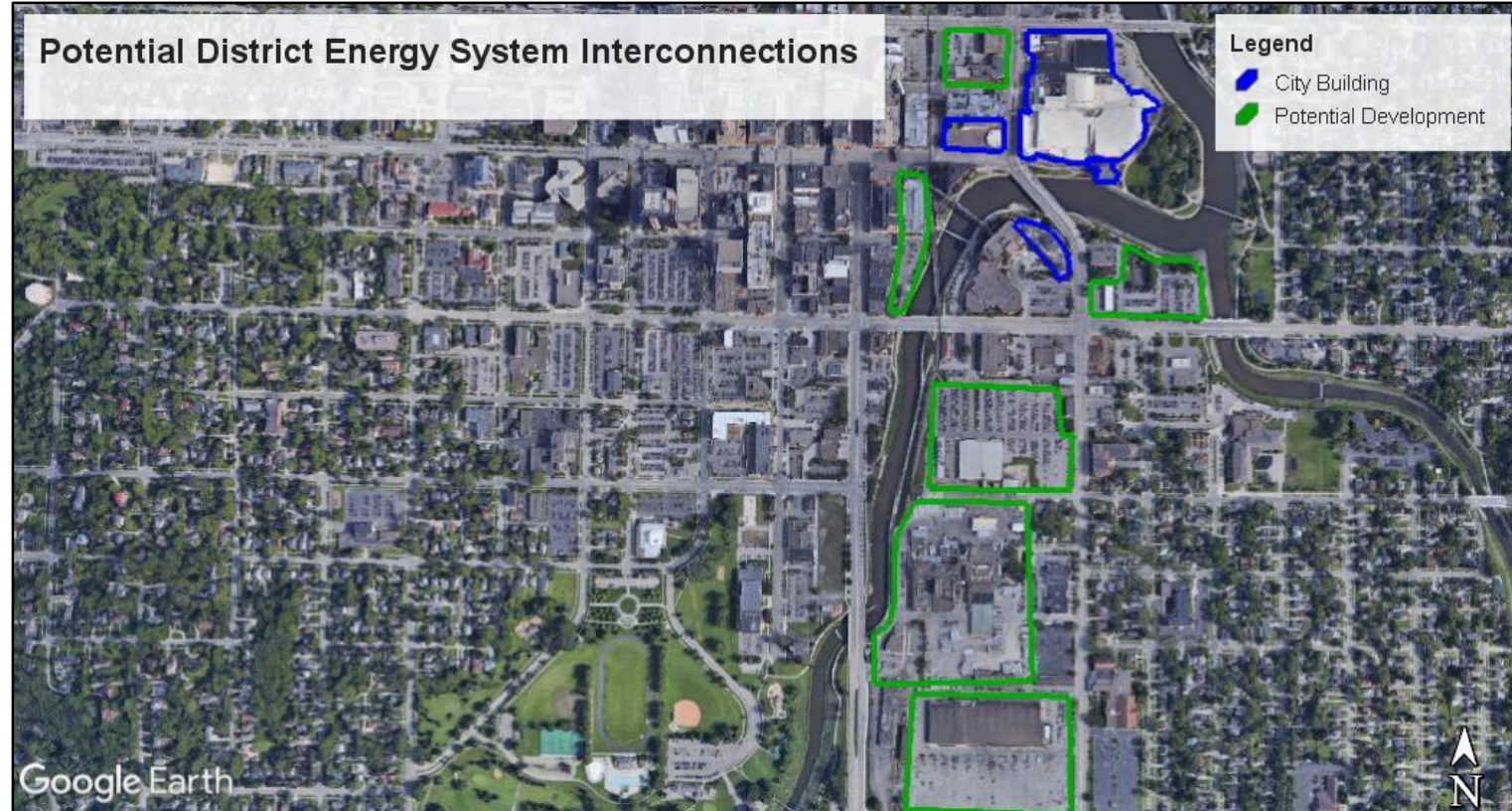


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|-----------------------|---------------|
| Capital Cost | \$ 10,720,943 |
| BAU Capital Cost | \$ 6,272,900 |
| Marginal Capital Cost | \$ 4,448,043 |
- LEGEND:**
- 12" CHWS/R
 - 8" HWS/R
 - 4" HWS/R
- CHILLERS:**
- (1) 373 TON AIR COOLED
 - (2) 300 TON AIR COOLED
 - (1) 800 TON WATER COOLED
 - (1) 101 TON AIR COOLED
 - (6" CHWS/R, 4" HWS/R)
- HIGH EFFICIENCY BOILERS:**
- (3) 6,000 MBH
- ENERGY PLANT**
- FUTURE WEST ZUMBRO DEVELOPMENT -250,000 SQ. FT.**
- Buildings and Landmarks:** MAYO CIVIC CENTER, CIVIC CENTER PARKING RAMP, LIBRARY, U.S. POST OFFICE, DOUBLETREE HOTEL, MARQUETTE BANK, HOLIDAY INN, CITY CENTER BLDG., ZUMBRO MARKET PARKING RAMP, CITY HALL, GOVERNMENT CENTER, GOVERNMENT CENTER PARKING LOT, ANNEX, CIVIC CENTER SOUTH PARKING LOT.
- Streets:** 1ST ST SE, 2ND ST SE, 4TH ST SE, BROADWAY, MN 296.



Benefit to Development of District Energy System

1. Reduced capital cost
2. Reduced ongoing operations and maintenance cost, performed by third party
3. System redundancy and reliability
4. Reduced project design costs
5. More building space for program
6. Furthers progress toward City's environmental goals





Next Steps

1. Continue discussion with County regarding DES including County buildings.
(County Feb 19 discussion)
2. Update and make recommendation to City Council
 - a. City Council Approves building heating and cooling option
 - b. City Council directs management to implement approved option.
3. Move to implementation phase



RPU Board Recommendation

1. Council Selects Building Based Option

No Action needed by RPU Board.

2. Council Selects District Heating and Cooling Option (DES)

RPU Board express support for Council delegating the implementation and operating of the DES to Rochester Public Utilities by ordinance.

Note: Actions if DES is approved

- a. Approve a new enterprise fund (by the Council)
- b. Secure long term service contracts from City and County (30 year)
- c. Obtain funding (\$20 Million Bonds)
- d. Detailed construction and operational planning and execution.

Questions?

Thank You

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