

WHAT FUTURE DO WE WANT FOR DULUTH?

Transformation

Status Quo

\$21 million
state investment

**CREATES
CHANGE
NOW!**

Economic Growth



Spur
construction
jobs

Protect
rate
stability

Promote
economic
development

Saves Money

Reduce
maintenance
costs



Reset life cycle
of critical
infrastructure

Saves Water & Energy

**SAVES 19.4
MILLION
GALLONS**



of Lake Superior water every
year. An additional

40 million gallons

can be saved annually when
the full system vision is realized.

Reduces air emissions

Reduces fuel
use by 8%

**SAVE
80,000
MMBTU**

Reduces use
of chemical
treatment
for city
water

**REDUCES CO₂ EMISSIONS BY
5,000 TONS PER YEAR**

**Reduces coal
consumption**

Without the Superior Street conversion, we will NOT achieve transformation.

Upgraded equipment
saves energy in
customer buildings



Integrate locally-sourced
renewables, such as biomass,
solar, and waste heat

Extend the
life of the
system by
50 years

Keeping steam on
Superior will still
cost Duluth \$9.3
million without
gaining the
benefits of
modernizing the
system

Missed
opportunity to
reduce coal
usage.



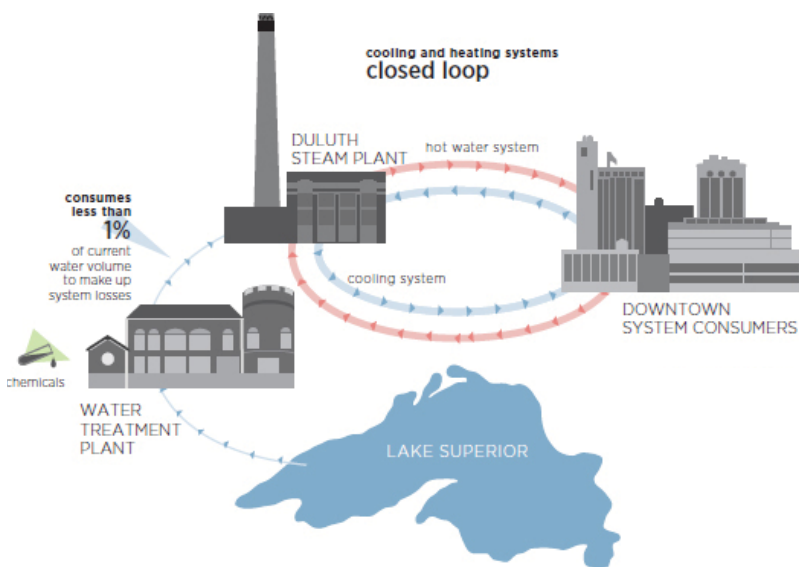
Superior Street reconstruction is a once-in-a-lifetime opportunity to update
Duluth's 83-year-old district energy system.

DULUTH'S ENERGY TRANSFORMATION

Duluth is advancing a grand vision for its energy system that would place it among the country's most forward-looking cities. Duluth has made its energy future a priority and has seized opportunities to work within the community, with its utilities, and in collaboration with experts from around the country to integrate state-of-the-art technology and international best practices for an efficient, cost-effective, and environmentally advanced system.

Together with the City of Duluth, State of Minnesota, and local leadership, we can make Duluth's transformative vision for its energy future a reality.

Vision for Transformation



- Reduced water consumption
- Reduced energy consumption
- Reduced chemical consumption
- Reduced greenhouse gas emissions
- Reduced water and sewer treatment costs
- Increased capacity for future growth

The Time is Now

- Now is the time to modernize this 83 year-old steam system, while Superior Street and local utilities are being renovated starting in 2017.
- Investing in state-of-the-art energy infrastructure is the key to bringing renewables, efficiency, financial savings and stability, and a flexible energy system that will serve the community for years to come.
- This is a once-in-a-lifetime opportunity.

Upgrades are Critical

- Increase stability, reliability, and efficiency.
- Conserve local water supply and reduce water treatment demand.
- Significantly reduce consumption of chemicals and fossil fuels, as well as reduce greenhouse gas emissions.
- Potential integration of local biomass.
- Ensure future reliability, performance, and increased capacity for growth.



According to the United Nations Environment Program, "Cities account for over 70 percent of global energy use and, 40 to 50 percent of greenhouse gas emissions worldwide. Half of cities' energy consumption is for heating and cooling. Any solution for the climate and energy transition must explicitly address sustainable urban heating and cooling, as well as electricity. One of the least-cost and most efficient solutions in reducing emissions and primary energy demand is the development of modern (climate-resilient and low-carbon) district energy in cities."