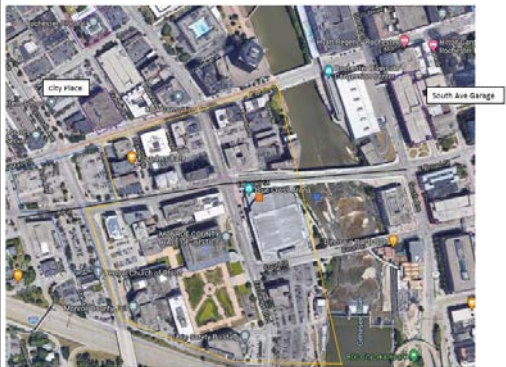


Rochester District Heating Category A Feasibility Study NYSERDA PON 4614

Monroe County

Technical Lead: EMCOR

Anticipated completion of
study/availability of final
report: September 2022



V1 8/2021

The Site & Beneficiaries

Rochester District Heating operates an existing steam heating district serving **47 buildings of which nearly three-dozen are located within a particular segment on the west side of the Genesee River within the Rochester Inner Loop** and is seeking to explore a district-style heat pump system to serve those nearly three-dozen buildings. The nearly three-dozen buildings consist of multifamily residential buildings, office buildings, and other occupancies, totaling approximately 4-million square feet. The analysis will quantify the peak of the composited thermal load and compare it to the sum of the individual peaks in order to assess the load-flattening benefits of serving such buildings via a heat-pump-driven low-carbon thermal district.

Potential Thermal Resources

The primary opportunity anticipated will leverage heat recovery heat pumps to distribute heat from one building to another. Supplemental thermal resources could include sewage heat exchange, ground-coupled boreholes, air-source heat pumps, and the Genesee River. An ice arena, and a data center, are in close proximity to the subject buildings, and will be explored as supplemental heating sources.

Potential Configuration

Will explore 5G design, consisting of a central plant that houses the distribution equipment and from which ambient temperature water will be distributed via conveyance pipes to the end-use buildings and other thermal resources. Benefits of this configuration include: the opportunity to integrate with other supplemental thermal infrastructure, both waste and renewable energy. Members would maintain the flexibility to use the thermal loop to either extract or reject heat depending on their needs, creating a heat sharing network. Heat pumps or other equipment can be used in the end-use buildings for final space conditioning. The loop would primarily use waste heat and natural resources to condition the loop while reserving more traditional electric systems located in the central plant as a supplement to meet demand.