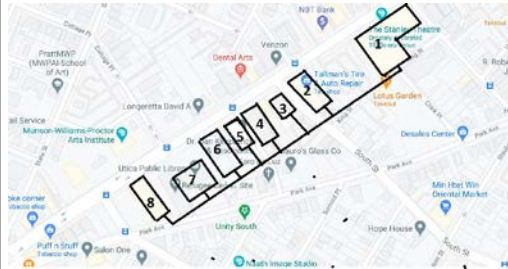


Neighborhood in City of Utica Category A Feasibility Study NYSERDA PON 4614

Oneida County

Technical Lead: Joseph
Technology Corp

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



V1 6/2021

The Site & Beneficiaries

Three consecutive blocks of existing commercial buildings within the downtown section of the City of Utica. A cluster of eight buildings, collectively over 235,000 square feet, will be analyzed to explore district-style heat pumps. Each building has its own individual heating system, mostly consisting of natural gas-fired furnaces. These eight buildings have diverse occupancy patterns and thermal load profiles, consisting of a theater, public library, school, an auto repair shop, and commercial office buildings. One building is already equipped with a ground source heat pump system. 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 aggregating into a district.

Potential Thermal Resources

The primary opportunity anticipated will leverage heat recovery heat pumps to move heat from one building to another, and supplemental thermal resources, if needed, could include ground-coupled boreholes.

Potential Configuration

Will explore 4G design, consisting of a central Thermal Building, which houses the heat pumps and from which hot water and chilled water will be distributed via conveyance pipes to the end-use buildings (simple radiators can be used in the end-use buildings). Benefits of this configuration include: opportunity to integrate with existing thermal infrastructure and use the heat pumps as the first-call (reserving the fossil fuel systems as supplement to meet extreme peaks, or for systemwide redundancy for resilience); focusing the location where electric infrastructure upgrades are needed to meet the expanded electrification demand to occur at the Thermal Building (as opposed to at the end-use buildings) to minimize disruption to mission-focused activities during construction; and cost containment.