

SUNY Oneonta
Category A Feasibility Study
NYSERDA PON 4614

Otsego County

Technical Lead: Ramboll

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



The Site & Beneficiaries

SUNY Oneonta is an existing campus located at the northern edge of the City of Oneonta seeking to explore a district-style heat pump system to serve the 29 buildings currently served via steam or medium temperature water. Currently, 80% of campus buildings are thus served, representing approximately 1.9-million square feet. The buildings have diverse occupancy patterns and thermal load profiles, consisting of academic buildings, dormitories, and support buildings. 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

Heat recovery heat pumps to distribute heat from one building to another, ground-coupled boreholes, air-source heat pumps, and waste heat from cooling.

Potential Configuration

Will explore 4G design, consisting of a central Thermal Building that 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: the opportunity to integrate with other supplemental thermal infrastructure and use the heat pumps as the first-call, the ability to focus 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. Will also explore 5G design, consisting of a so-called “ambient-temperature loop” that each building would connect to, and within each building a heat pump would either extract heat from, or reject heat to, the shared ambient-temperature loop. A district spanning the entire campus, as well as multiple mini-districts throughout campus (nodes) will be explored.