

**Phelps Hospital  
Category A Feasibility Study  
NYSERDA PON 4614**

Westchester County

Technical Lead: Willdan

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



V1 6/2021

**The Site & Beneficiaries**

**Phelps Hospital is an existing medical campus in Sleepy Hollow** with nine buildings. Generally, each building is heated by its own system, typically oil-fired or dual-fuel-fired boilers or furnaces. One building is proceeding with retrofit installation of a single-building heat pump solution. The remaining eight buildings will be assessed for a district style heat pump solution in the scenario without the building currently being retrofitted, as well as the scenario incorporating such ninth building. Collectively, the nine buildings consist of 700,000 square feet. The analysis will develop load profiles for each building, including peak heating and cooling loads, and illustrate the costs / benefits of a common hydronic loop that connects heat pump equipment. Simultaneous heating and cooling loads that enhance the electrification business proposition will be defined. An optimal solution will be recommended in order to produce an economically viable “Pathway to CLCPA Compliance”.

**Potential Thermal Resources**

The primary opportunity anticipated will utilize state-of-the art cold climate heat recovery heat pumps to move heat from one building to another and will include supplemental thermal resources when and if needed.

**Potential Configuration**

The design consists 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. A “booster cycle” dispatch of the heat pumps would be considered for generating a slipstream of hot water at approximately 180 °F in order to meet certain needs.