

Willets Point
Category A Feasibility Study
NYSERDA PON 4614

Queens County

Technical Lead: Endurant
Energy (formerly GI Energy)

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



The Site & Beneficiaries

Willets Point is a new construction, mixed-use development located in the Corona section of Queens seeking to explore a district-style heat pump system to initially serve three buildings, consisting of two residential buildings totaling 880 affordable units, 220 units dedicated to senior housing, and a school. The project at full-build out will consist of a mixed use community of commercial office, multifamily residential, and limited street front retail. Calculations will be made on how to provide the project with low-carbon heating and cooling. The project will be analyzed to explore district-style heat pumps. The buildings have diverse occupancy patterns and thermal load profiles, consisting of multifamily-residential, retail, community facilities, as well as a school. 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 distribute heat from one building to another. Supplemental thermal resources, could include ground-coupled boreholes, energy foundations (structural thermal piles), air-source heat pumps, and sewage heat exchange.

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 (reserving more traditional electric systems as a supplement to meet extreme peaks), 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) for cost containment.