

**City of Troy District Energy  
Project – Phase 1B  
Category B Site Specific Design  
Study  
NYSERDA PON 4614**

Rensselaer County

Technical Lead: CHA Consulting  
Engineering

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



V1 5/2022

**The Site & Beneficiaries**

As part of the City of Troy’s South End Revitalization Plan, CHA Consulting, Siemens, and the City Council of Troy have developed a multi-phase community heat pump project to provide a high efficiency heating and cooling district energy option to buildings in the downtown and waterfront areas. This phase will create a southern district energy node which sets the stage for a clean thermal energy source for the entire downtown Troy area. The project covers 12 potential buildings in the northern waterfront area and the surrounding buildings, including Russel Sage College and Taylor Apartments; all mixed-used multifamily, office and retail buildings. The project supports a major ongoing redevelopment in an underserved community and future revitalization at Sage College.

**Potential Thermal Resource**

The potential buildings were chosen for the district geothermal system because they are proximate to a City of Troy new construction development project and the Hudson River which could help meet the buildings’ heating and cooling loads. The study will include design of the geothermal loop, river heat exchanger and wastewater heat recovery from the sewer interceptor line running along the waterfront area. The Feasibility Study (Category A) for this effort determined that a district energy system would reduce the community’s future energy consumption due to community coincident peak loads being smaller than the sum of individual building peak loads, greater equipment efficiencies of larger equipment, and the reduction of mechanical heating and cooling requirements due to the use of a geothermal system. The use of heat recovery and heat pumps allows for electrification within the limitations of the surrounding electrical infrastructure. The project is projected to save nearly 1250 tons/co2 eq carbon annually.

**Projected Learnings**

It is anticipated this project will serve as a case study for the implementation of community-style heat pumps in urban environments. The results of this project will provide significant insight into the cost effectiveness of various heat pump energy sources, the cost of community-style heat pump systems and system components, and the viability of a community-style heat pump system in urban environments.