

1. Overall Project Summary and Approach

a. Description of GHG Reduction Measures

The Brighton Town Hall would be retrofitted from the existing natural gas-based HVAC systems to using ground source heat pumps (GSHP or geothermal) for all HVAC needs. The rooftop would be filled with solar photovoltaic panels to the maximum extent possible in order to reduce the net electricity draw of the building. The Town Hall currently uses roughly 625,000 kWh of electricity and 3800 Dth of pipeline gas per year.

b. Demonstration of Funding Need

The Town of Brighton, like all New York municipalities, falls under the 2% annual tax cap instituted by New York State. This restriction makes completing large capital projects difficult with bond payments contributing toward the tax cap. A grant to complete these large energy projects would lighten the tax burden and allow funding to be used on other projects without needing to break the tax cap.

c. Transformative Impact

This project would generate a large reduction in the greenhouse gas emissions produced by the Town. The Town Hall is responsible for the majority of the Town government's building portfolio carbon emissions and the proposed project would reduce the building's annual emissions by nearly 80%.

2. Impact of GHG Reduction Measures

a. Magnitude of GHG Reductions from 2025 through 2030

Assuming the 2023 figures from "Projected Emission Factors for New York State Grid Electricity" published by NYSERDA (www.nyseda.ny.gov/-/media/Project/Nyserda/Files/Publications/Energy-Analysis/22-18-Projected-Emission-Factors-for-New-York-Grid-Electricity.pdf), the long-run emissions factor for electricity usage and generation in the Upstate NY grid is 897 lb CO₂eq per MWh.

The annual GHG emissions reductions for the project amounts to 296 tons CO₂eq from the solar and 150 tons CO₂eq from the geothermal HVAC conversion, for a total of 446 tons CO₂eq per year. This amounts to 2,230 tons CO₂eq through 2030

b. Magnitude of GHG Reductions from 2025 through 2050

The annual GHG emissions reductions of 446 tons CO₂eq per year amounts to 11,150 tons CO₂eq avoided by 2050.

c. Cost Effectiveness of GHG Reductions

The proposed grant ask is \$3.69 million and would eliminate 11,150 tons of CO₂eq over a 25 year time scale, for a cost effectiveness of approximately \$330 per ton.

d. Documentation of GHG Reduction Assumptions – Up to 10 additional pages as an appendix to the workplan (see Appendix C of the NOFO)

3. Environmental Results – Outputs, Outcomes, and Performance Measures

a. Expected Outputs and Outcomes

The primary outcome of the proposed project would be the GRG emissions reduction. No other substantial outcomes are expected besides a potential slight improvement in local air quality due to reduced combustion.

b. Performance Measures and Plan

Performance of the outcomes of this project would be captured within the existing framework of municipal energy benchmarking (currently conducted on an annual basis) using EPA Portfolio Manager and in accordance with the New York State Clean Energy Communities and Climate Smart Communities program guidelines. A full-portfolio record of electricity and gas use, as well as annual GHG emissions and total source energy usage are kept and analyzed every spring for the previous calendar year.

c. Authorities, Implementation Timeline, and Milestones

The Town of Brighton would be the primary authority having jurisdiction over this project. NYSERDA would be an involved agency solely for an application for a commercial solar incentive. Construction would primarily take place in 2025, with completion expected by Q1 2026. Geothermal well drilling would occur in Q1 2025, with interior HVAC work and solar installation commencing by Q3 2025.

4. Low-Income and Disadvantaged Communities

a. Community Benefits

The energy savings and avoidance of near-future HVAC system costs would save Town taxpayers money. This will help to avoid an increase in the property tax burden on lower-income residents. Additionally, the money ultimately saved by the Town in utility costs can be repurposed to complete further energy savings measures and/or other programs benefiting lower income residents. All GHG emissions reducing programs ultimately benefit primarily lower-income communities as these are the communities most impacted by the threat of climate change.

b. Community Engagement

Upon completion of this project, the Town would plan to set up public information displays and educational material to engage with the community as a demonstration project. This would include details on incentive programs and grants available from state and federal entities.

5. Programmatic Capability and Past Performance

a. Past Performance

- b. The Town has one prior similar project that has been completed, a full net-zero conversion of an existing park building to operate on a heat pump and cover its full energy usage with solar photovoltaics. This project was completed in January 2024 and utilized two grants from NYSEDA in concert with local match funds. The Town of Brighton has also utilized SAM grants in the past for several projects, including LED streetlight conversion in 2022-2023, and NY Climate Smart Communities grants for a Town Climate Action Plan (2022-2023) and a trail study (2023-2024).

c. Reporting Requirements

The Town is prepared to comply with any reporting requirements included in this plan.

d. Staff Expertise

The Town of Brighton retains several staff members with experience to oversee completion of this grant program. A three-person engineering department will oversee all bidding, construction, and reporting requirements as is standard practice for all public works projects in Town. One staff member is well-versed in energy engineering, building energy modeling, and solar and geothermal installation; in previous employment he was a consultant for NYSEDA running energy programming and has been involved in numerous large-scale solar and geothermal implementation projects including one several times larger than this proposed project.

6. Budget (Optional Budget Spreadsheet and up to 10 additional pages may be added if needed as an appendix to the Workplan)

a. Budget Detail

The conversion of the Town Hall's HVAC system to geothermal has been estimated at \$3,318,097 by a consultant report. Town staff has identified a rooftop capacity of approximately 600 kW of rooftop solar, enough to provide 660,000 kWh per year, roughly 80% of the projected electricity usage of Town Hall including the new geothermal HVAC system. A local solar installation company that has done another project for the Town estimated the price of this solar job to cost around \$3.25 per watt, or \$1.95 million. In total, the projects combine to

approximately \$5.27 million. Due to the direct pay provision of the Inflation Reduction Act, this full amount would be eligible for a municipal direct payment of 30% of the project cost, or \$1.58 million. An additional NYSERDA incentive of roughly \$150,000 would be applied to the geothermal project as well. After these credits, the final project cost would be \$3.54 million. All expenses would be contractual expense-all related Town staff time would be provided with local funding. No other expenses are expected. These costs would be encumbered by mid-2025 with expenditure completed by mid-2026.

b. Reasonableness of Costs

All contracts would be selected through a competitive bidding process to ensure reasonable costs. In general, these expenditures are cost-competitive with standard utility usage and will ultimately save money over time versus the capital expenditure.