

Budget Narrative

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ELECTRICITY GENERATION

| PCAP Measure | |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| E2 | Install solar panels, add battery storage and develop microgrids on buildings and properties owned by municipalities (e.g. schools, town halls, parking lots) |

1. Microgrid Feasibility Study

The overall goal is to identify the most impactful and feasible location (s) for a microgrid that would provide the maximum community benefit.

Contractual: Consulting Services: \$260,000

Conceptual Design: The funding will also be put towards feasibility and conceptual design as well as electrical and mechanical engineering.

Technology Assessment: Different generation and storage technologies will be investigated as part of this effort and ultimately the most reliable, yet least emissions intensive technology will be selected for implementation.

Other: Subaward(s): \$50,000

Community Outreach and Engagement: As part of the planning process, the city hopes to engage and educate local communities on the benefits and amenities such a project will bring and to allow the community to become a part of the planning process.

2. Solar Array 1

This project would entail constructing a 35 kW DC solar array on the rooftop of the 40 Jennings Building in Hartford. It is estimated that the system would produce 40,390 kWh AC and help to reduce city scope 2 emissions by roughly 7.83 MTCO₂e annually.

Equipment: \$96,184

Funding would be used to cover costs to procure equipment (Panels, inverters, wiring, controls, racking, and ballasting), install the system (labor, interconnection)

Contractual: \$31,804

Consulting and project management fees by Bridge Energy are included in the “soft cost” category. This system would operate and provide emissions reduction and budget reduction to the city for over twenty years. The system is likely to be configured behind the meter in a “net-metering” configuration. Soft costs include permitting, contingency, overhead, developer profits, and consulting fees.

3. Solar Array 2

This project would entail constructing a 70 kW DC solar array on the rooftop of the 50 Jennings Building in Hartford. It is estimated that the system would produce 80,800 kWh AC and help to reduce city scope 2 emissions by roughly 14.7 MTCO₂e annually.

Equipment: \$96,184

The grant funding would be used to cover costs to procure equipment (Panels, inverters, wiring, controls, racking, and ballasting), install the system (labor, interconnection)

Contractual: \$63,608

Consulting and project management fees by Bridge Energy are included in the “soft cost” category. This system would operate and provide emissions reduction and budget reduction to the city for over twenty years. The system is likely to be configured behind the meter in a “net-metering” configuration. Soft costs include permitting, contingency, overhead, developer profits, and consulting fees.

TRANSPORTATION

| PCAP Measure | |
|--------------|--------------------------------------------------------------------------------------------------|
| T1 | Convert Light Duty Municipal Fleets to EV/ Hybrids and Install Municipal Charging Infrastructure |

1. Municipal Fleet Conversion

Includes fleet conversion of the eldest vehicle stock from 2007 to 2013, across seven City Departments including: Hartford Fire Department; Department of Development Services; Department of Public Works; Finance Department; and Department of Family, Children, Youth, and Recreation. The Fire Department has agreed to use hybrids if they meet their size specifications for their non- emergency vehicles (inspection vehicles, Fire Marshall vehicles, etc.) and the City can either use the State Contract with Ford or enter into a contract with Ford as that is the preferred manufacturer for the City due to availability and affordability of parts. The City has already purchased a small allotment of Toyota Priuses so the mechanics can work on those and there is a history of those vehicles. Those vehicles will be used for other employees who would normally drive a standard passenger vehicle (Housing Code Inspectors, Recreation Personnel, Health/Environmental Inspectors, etc.)

Equipment: \$5,318,172

- (16 Ford Escape Hybrid Vehicles) X (\$37,960 each) = \$607,360
- (10 Toyota Prius Vehicles) X (\$27,950 each) = \$279,500
- (9 CNG Trash Truck: Labrie Automzier 33yd (27+6) HD Right Hand Arm) X (\$492,368 each) = \$4,431,312.

2. Municipal EV Charging Infrastructure

Personnel: Project Manager B: \$50,625

Will dedicate 25% of annual time and salary over 2 years. Under general supervision and direction of Paul Drummey, the Director of Capital Projects and Operations has full responsibility for executing the construction of the EV charging. The incumbent will manage the work of design and community education & outreach consultants, surveyors, other consultants, and contractors.

Fringe Benefit Cost: \$26,340

Includes benefits for Project Manager B at 52.03% of 25% salary dedicated to the project.

Travel: \$163

Standard mileage rate reimbursement of \$.65 cents per mile X (125 miles of local travel) = \$163

Equipment: \$192,368

Installation Costs: 6 Level 2 and DCFC chargers Dual Chargers (12 in total) at 2 locations have been identified for EV infrastructure. Specifications for DCFC equipment will include the following:

- Level 2 Dual Port Charger (\$12,500 per charger) X 6 Chargers) = \$150,000
- Set Up Fee Per Charger (\$85 per charger) X (12 Chargers) = \$1,020
- Signage costs will include wayfinding signs throughout the park and parking signs at each space to note that they are EV only and the parking hour limit, along with other relevant information (contact information to report parking violations and other issues). The cost for a standard parking sign is \$16.00 per sign, including labor costs.
- Parking and Wayfinding Signs (\$16/2 signs) X (16 Signs) = \$128

Operation Costs: The City of Hartford will contract with third-party providers to provide turnkey EV services, including operations. Operating costs are budgeted for the first five (5) years, and include:

- Payment Processing Fee (\$1950 Per Charger, for 5 years) X (12 Chargers) = \$23,400

Maintenance Costs: The City of Hartford will contract with third-party providers to provide turnkey EV services, including operations. Maintenance costs are budgeted for the first five (5) years, and include:

- Extended Warranty (\$1485 Per Charger, for 5 years) X (12 Chargers) = \$17,820

Contractual: Consultant Services: \$480,000

Project planning and development: Hartford will need to design and engineer the planned EV stations. Stakeholder engagement activities will also take place to gather input, particularly from departments, consultants, and other organizations that may use the site services.

Project administration costs, including salaries, fringe benefits, and indirect costs, are also captured.

Other: Internal and Community Engagement: \$2,500

Communication with city departments and community stakeholders.

Indirect Cost(s): \$7,697

Applicant elects to use the de minimus rate of 10% of 25% of annual personnel and fringe benefits dedicated to this project.

| PCAP Measure | |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------|
| T6 | Encourage mode shift across the region with complete streets projects that make it safer and easier to bike and walk for all users. |

1. Signal Projects

Nine locations have been identified for the installation of signal infrastructure. The projects entail the full replacement of traffic signal equipment and associated improvements at nine signalized intersections in Hartford, CT. These signals are part of a larger effort by the City of Hartford to modernize their signal system citywide. The project will replace outdated pedestrian facilities with modern Accessible

Pedestrian Signal (APS) equipment that is compliant with current ADA and MUTCD guidelines. Additionally, the project will replace failing (or nonexistent) vehicle detection at each of the intersections with the City standard 360-degree video detection equipment. 360-degree video detection equipment will improve traffic operations and facilitate detection of bicyclists as well as motor vehicles. This project will also restore damaged interconnect cable so that these intersections can be connected and integrated into the City of Hartford ATMS.NOW central system.

- Locations: Prospect Street at Bob Steele, Market Street at Talcott Street, Trumbull Street at Pearl Street, Park Street at Washington Street, Main Street at Church Street, Main Street at Pratt Street, West Boulevard at Sisson Avenue & I-84 Ramps, Washington Street at Webster Street, New Britain Avenue, and Barnard Street, and Market Street at Pleasant Street.

Personnel: Project Manager A: \$50,625

Will dedicate 25% of annual time and salary over 2 years. Under general supervision and direction of Frank Dellaripa, the Assistant Director of the Department of Public Works and City Engineer, the Project Manager has full responsibility for executing the construction of nine signal projects. The incumbent will manage the work of design and community education & outreach consultants, surveyors, other consultants, and contractors.

Fringe Benefit Cost: \$26,340

Includes benefits for Project Manager A at 52.03% of 25% salary dedicated to the project.

Travel: \$163

Standard mileage rate reimbursement of \$.65 cents per mile X (125 miles of local travel) = \$163

Supplies: Cost: \$200

Includes office supplies necessary for the execution of all implementation activities to include but is not limited to paper, pens, printer ink, etc.

Equipment: Total Equipment Costs: \$7,565,000

A complete list of detailed costs is found in the budget detail spreadsheet.

Other: Subaward(s): Construction Phase Community Engagement: \$50,000

Public engagement activities will also take place in all communities to gather input from stakeholders, particularly low-income and minority residents in underserved census tracts. Project administration costs, including salaries, fringe benefits, and indirect costs, are also captured.

Indirect Cost(s): \$7,697

Applicant elects to use the de minimus rate of 10% of 25% of annual personnel and fringe benefits dedicated to this project.

2. General Streetscape Costs

Personnel: Project Manager A: \$206,577

Project Manager A will dedicate 75% of annual time and salary over 3 years. Under general supervision and direction of Frank Dellaripa, the Assistant Director of the Department of Public Works and City Engineer, the Project Manager has full responsibility for executing the construction of two streetscape

projects. The incumbent will manage the work of design and community education & outreach consultants, surveyors, other consultants, and contractors.

Fringe: \$107,482

Includes benefits for Project Manager A at 52.03% of 75% salary dedicated to the project.

Travel: \$731

Standard mileage rate reimbursement of \$.65 cents per mile X (375 miles of local travel) = \$731

Supplies: \$2,621

Includes costs incurred from projects administration and management necessary for one year to the execution of all implementation activities related to streetscape, signal projects, the retrofitting of municipal building with energy efficiency upgrades that will include the following items: laptop: HP ProBook 450 G9 Notebook 15.6, Laptop software and licensing: HP ProDesk 600 G6 Wolf Pro Security-mini desktop Core i5 10500T 2.3G, Cell phone and phone plan, and office supplies.

Indirect Cost(s): \$31,406

Applicant elects to use the de minimus rate of 10% of 75% of annual personnel and fringe benefits dedicated to this project.

2a. North Main Street Streetscape

Contractual: Construction Services: \$9,485,000

Project on Main Street beginning from Tower Avenue and ending at the Windsor town line. Line items include wayfinding signage, pedestrian signal equipment, installation of bicycle lanes and bus shelters, new sidewalks, pedestrian buffers, and more.

Critical activities include oversight of the project, tracking and processing administrative details, inspection for quality control, and engineering services during the entire construction phase.

Other: Subaward(s): Construction Phase Community Engagement: \$125,000

Dedicated communications support is necessary to ensure successful delivery of this measure. Similar streetscape efforts to this scale have required standalone community engagement support in concert with the construction contractor and the construction administrator to allow for timely and accurate updates and discourse with the public, who bears the brunt of the daily impacts of construction.

2b. Reimagine Main Street Streetscape

Contractual: Construction Services: \$10,051,000

Project on Main Street from Wyllys Street (with some modest transitional signage and striping at Retreat Avenue) and ending at Charter Oak Avenue. Features include the installation of: wayfinding signage, bumpouts to shorten crossing distances, a dedicated cycletrack, pedestrian signal equipment, installation of transit amenities, new sidewalks, pedestrian buffers, and more.

Critical activities include oversight of the project, tracking and processing administrative details, inspection for quality control, and engineering services during the entire construction phase.

Other: Subaward(s): Construction Phase Community Engagement: \$125,000

Dedicated communications support is necessary to ensure successful delivery of this measure. Similar streetscape efforts to this scale have required standalone community engagement support in concert with the construction contractor and the construction administrator to allow for timely and accurate updates and discourse with the public, who bears the brunt of the daily impacts of construction.

COMMERCIAL/RESIDENTIAL BUILDINGS

| PCAP Measure | |
|--------------|------------------------------------------------------|
| B2 | Undertake Efficiency Upgrades to Municipal Buildings |

1. General Commercial/Residential Building Costs

Personnel: Project Manager B: \$206,577

Project Manager A will dedicate 100% of annual time and salary over 3 years. Under general supervision and direction of Frank Dellaripa, the Assistant Director of the Department of Public Works and City Engineer, the Project Manager has full responsibility for executing the construction of two streetscape projects. The incumbent will manage the work of design and community education & outreach consultants, surveyors, other consultants, and contractors.

Fringe Benefit Cost: \$107,482

Includes benefits for Project Manager B at 52.03% of 100% salary dedicated to the project.

Travel: \$731

Standard mileage rate reimbursement of \$.65 cents per mile X (375 miles of local travel) = \$731

Indirect Cost(s): \$31,406

Applicant elects to use the de minimus rate of 10% of 100% of annual personnel and fringe benefits dedicated to this project.

Other: Subaward(s): Construction Phase Community Engagement: \$75,000

Communications support is necessary to ensure successful delivery of this measure. The focus of this item is to provide timely and accurate updates with the public, who bears the brunt of the daily impacts of construction.

1a. Board of Education Project Costs

Eight locations have been identified for the installation of signal infrastructure. A complete list of detailed costs is located in found in the budget detail spreadsheet.

Equipment: \$14,397,340

- Public School Maintenance Building
 - Lighting: energy efficient lighting installation (LED components).
 - HE HVAC: "High-efficiency systems are engineered and installed to deliver more comfort, better moisture control, improved indoor air quality, and quieter operation."
 - Demand controlled ventilation (DCV): adjust/reprogram the ventilation settings within a building, based on the fluctuating occupancy to automatically reduce ventilation intensity during off-peak hours.

- Public High School
 - Lighting: energy efficient lighting installation (LED components).
 - HE package/ Split AC Units: High-efficiency systems are engineered and installed to deliver more comfort, better moisture control, improved indoor air quality, and quieter operation.”
 - Variable Frequency Drive (VFD) on HVAC: “electrical device used as a fan accessory to increase and decrease the rotations per minute (RPM) of an alternating current (AC) motor.
 - ❖ Adjusts the electrical power frequency supplied to the motor to vary system airflow.”
 - Demand controlled ventilation (DCV): adjust/reprogram the ventilation settings within a building, based on the fluctuating occupancy to automatically reduce ventilation intensity during off-peak hours.
 - EMS- static pressure test: *measure static pressure vs airflow is known as a manometer.*
- Lewis Fox School
 - Lighting: energy efficient lighting installation (LED components).
 - High efficiency water cooled chiller pumps: produce chilled water using less than 0.50 kW per ton of cooling capacity for comfort cooling.
- Classic High School
 - Lighting: energy efficient lighting installation (LED components).
 - HVAC: ventilation system that maintains pressure and comfort.
 - High Efficiency (HE) Chiller: produce chilled water using less than 0.50 kW per ton of cooling capacity using a refrigeration system that reject the heat that it removes using a cooling tower for water cooling the condenser (most efficient) or using fans for air cooling the hot refrigerant of the condenser coil.
 - Demand controlled ventilation (DCV): adjust/reprogram the ventilation settings based on the fluctuating occupancy to reduce ventilation intensity during off-peak hours.

Contractual: Construction Phase Community Engagement: \$530.353

Soft Costs: (Architectural, Engineering, Environmental, Commissioning Services)

Other: Subaward(s): Construction Phase Community Engagement: \$125,000

Communications support is necessary to ensure successful delivery of this measure. The focus of this item is to provide timely and accurate updates with the public, who bears the brunt of the daily impacts of construction.

1b. City of Hartford Municipal Buildings Project Costs

Equipment: \$225,430

- Colt Maintenance Office Shop
 - Lighting: energy efficient lighting installation (LED components).
- Maintenance Building # 1 40 Jennings:
 - Lighting: energy efficient lighting installation (LED components).

- Maintenance Building # 2 40 Jennings
 - Retrofit lighting: A Lighting Retrofit. is simply an upgrade to your light fixtures or lamps, which typically increases energy efficiency with LED components.
- Fire Station # 16
 - Lighting: energy efficient lighting installation (LED components).
 - Pipe Insulation: Insulate Steam Piping in Boiler room and Basement steam piping.

PROPPER MANAGEMENT OF GRNAT FUNDS

The City of Harford holds the technical capacity to manage this critical infrastructure project, having the appropriate policies and protocols in place to deploy federal funds as well as previous experience working with federal agencies. The following demonstrates the City's technical capacity and readiness:

A. Procurement Standards

To ensure Compliance with all City, State & Federal Purchasing & Contracting requirements in a cost effective & streamlined manner, while delivering quality customer service and maximizing local vendor participation.

- Competitive Bidding: Requests for Proposals (RFP) will require compliance with the Connecticut NEVI Program standards and requirements.
- RFP review Panels

B. Built-In Technical Capacity

Within this grant application, the City has incorporated two project managers to function as pointer person for all grant activity involving "contractual services" to further bolster the dedicated staff time for management and proper quality control of the relevant grant funds. Additionally, a number of on-call contractors will support the grant. Bridge Energy Services, LLC, will be managing all projects within the Electricity Generation measure; their credentials are listed below:

Example Consultant Expertise: Bridge Energy Services, LLC

The proposed consultant on the project, Bridge Energy Services, ensures that all projects that get construction will be offered at a fair and competitive rate to the City of Hartford. Bridge utilizes proprietary cashflow and risk scenario modeling to ensure that a project is the most competitive in terms of pricing it can be. They achieve this by running a competitive RFP for development with a minimum of 5 reputable respondents. They then incorporate qualitative and quantitative information provided in these proposals to rank offers in terms of quality and benefit to the city. This technique to ensure proper spending of funds is essential in the eyes of the city to ensure we do not overpay for services and products we are receiving. Any funds that are generated or 'budget reductions' calculated from the implantation project also have the potential to be added to a collective 'green fund' or other type of fund-to-fund future energy projects.

C. Technical Experience and Resources Dedicated to the Project

In terms of technical capacity, the City is well suited to implement a project of this capacity and nature. The City's Development Services Department, Department of Public Works, and Capital Projects and

Operations, and Office of Sustainability is comprised of a team of full-time employees who initiate and manage the implementation of the City's long-term transportation, public works, and economic development plans.

- The City also has an on-going Capital Improvement Program (CIP) Task Order Contract, through which a team of consulting engineers and planners assists the City with the implementation and management of various Capital Projects.
 - An Associated dashboard through PowerBI functions as a central management hub to ensure all funding is properly allocated and spent.

D. Extensive Experience with Projects of Similar Scope

The City of Hartford has completed several projects that have a similar scope.

E. Compliance with all Federal Requirements

The City of Hartford, as the applicant, will ensure all federal requirements are met as part of this project.

F. Accounting and Compliance Standards and Protocol

The City manages funds in accordance with applicable local, state, and federal regulations. It also submits state and federal audits every year - archive here [Accounting & Control – City of Hartford \(hartfordct.gov\)](https://www.hartfordct.gov/Accounting%20&%20Control)

G. Letters of Support

The City of Hartford has received letters from state, regional and local partners supporting this project. Those letters are included in a separate attachment "Letters of Support."