

**City of Rochester, NY Climate Pollution Reduction Grants Program  
(CPRG) EPA-R-OAR-CPRGI-23-07: Budget Narrative**

**Consolidated Budget**

<b>CATEGORY</b>	<b>Requested from EPA</b>	<b>Other Funds</b>	<b>Total Project Cost</b>
TOTAL PERSONNEL	\$61,928	\$0	\$61,928
TOTAL FRINGE BENEFITS	\$32,388	\$0	\$32,388
TOTAL TRAVEL	\$0	\$0	\$0
TOTAL EQUIPMENT	\$0	\$0	\$0
TOTAL SUPPLIES	\$0	\$0	\$0
TOTAL CONTRACTUAL	\$2,303,933	\$1,576,800	\$3,880,733
TOTAL CONSTRUCTION	\$17,365,208	\$12,318,978	\$29,684,186
TOTAL OTHER	\$236,520	\$0	\$236,520
<b>TOTAL</b>	<b>\$19,999,977</b>	<b>\$13,895,778</b>	<b>\$33,895,755</b>

**Project #1: Residential Solar Program**

<b>Notes</b>	<b>Itemized Costs</b>	<b>Requested from EPA</b>	<b>Other Funds</b>	<b>Total</b>
<b>Personnel</b>				
1	Project Oversight (Total For 5 years)	\$12,150	\$0	\$12,150
	Manager of Environmental Quality @ \$59/hr x 88 hours = \$5192			
	Energy and Sustainability Manager @ \$49/hr x 142 hours = \$6958			
1	Grant Administration (Total for 5 years)	\$3,332	\$0	\$3,332
	Senior Administrative Analyst @ \$34/hr x 98 hours = \$3332			
	<b>Total</b>	<b>\$15,482</b>	<b>\$0</b>	<b>\$15,482</b>
<b>Fringe Benefits</b>				
1	52.3% of personnel costs (FICA, retirement, health, vacation, sick leave)	\$8,097	\$0	\$8,097
	<b>Total</b>	<b>\$8,097</b>	<b>\$0</b>	<b>\$8,097</b>
<b>Travel</b>				
	N/A	\$0	\$0	\$0
<b>Equipment</b>				
	N/A	\$0	\$0	\$0
<b>Supplies</b>				
	N/A	\$0	\$0	\$0
<b>Contractual</b>				
2				
2a.	Homeowner Contribution	\$0	1,576,800	1,576,800
2b.	Consultant services-tracking, monitoring	\$35,000	\$0	\$35,000
2c.	Participant outreach and education	\$100,000	\$0	\$100,000
	<b>Total</b>	<b>\$135,000</b>	<b>\$1,576,800</b>	<b>\$1,711,800</b>

<b>Construction</b>				
3	Contractor to install rooftop solar on 400 homes (80 per year over 5 years)	\$3,603,600	\$4,928,000	\$8,531,600
	<b>Total</b>	<b>\$3,603,600</b>	<b>\$4,928,000</b>	<b>\$8,531,600</b>
<b>Other</b>				
4	Loan loss reserve fund	\$236,520	\$0	\$236,520
	<b>Total</b>	<b>\$236,520</b>	<b>\$0</b>	<b>\$236,520</b>
<b>Indirect Costs</b>				
	N/A	\$0	\$0	\$0
	<b>TOTAL FUNDING</b>	<b>\$3,998,699</b>	<b>\$6,504,800</b>	<b>\$10,503,499</b>

## Notes

### 1. Personnel/Fringe

EPA grant funds will be used to pay a portion of the annual salary and fringe benefits for three (3) City staff in the Dept. of Environmental Quality. The Project Manager will handle operational and programmatic tasks including coordination with other City Departments, oversight of consultants, and project reporting. A DEQ Administrative Analyst will manage reporting and grant administration, and the DEQ Energy and Sustainability Manager will oversee outreach/education efforts associated with the Project and track environmental metrics of the program. The blended rate for these City employees is \$4719.40 (salary and fringe) per year for five (5) years. The City's average fringe rate is 52.3%.

### 2. Contractual

#### a. Consulting Services

Consulting services to track and monitor the performance of the solar panels and the reductions in greenhouse gas emissions amount to \$7000/year over 5 (five) years for a total of **\$35,000**.

#### b. Participant Outreach and Education

EPA funds of **\$100,000** will be used to support outreach and education to help homeowners understand how the loan program operates, the responsibilities associated with participating, and the expected benefits from lower electricity costs during the expected life of the solar panels.

### 3. Construction

Solar Contractor:

Total EPA grant funds will be used to pay for contractors to install rooftop solar on 80 low-income residents' homes each year for five years. Requested EPA funds for solar system installation are \$9,009 per house, which is 15% of the total contract value or system price.

The total cost of installing rooftop solar on a typical house is \$27,800 based on an average system size of roughly 7kW. Actual costs will vary by the size of the system as shown in the following table.

<b>System Size</b>	<b>\$/Watt</b>
<b>4-6kW</b>	\$ 4.50
<b>6-8kW</b>	\$ 3.90
<b>8-10kW</b>	\$ 3.45
<b>10+kW</b>	\$ 3.10

These costs are based on the following pricing assumptions:

- Enphase, 425 w/ IQ8M
- Asphalt rooftop
- >10 degree pitch
- <45 degree pitch
- Metal roof: - add \$.10/watt
- Consumption Monitoring included
- External conduit and external BOS
- Service Upgrades included (when required): \$1000 per house (actual cost is \$2,000 - \$3,000 per system but fewer than one-half of homes will need it.)
- Single Meter Homes only

For a 7 kW system, installation cost per house is estimated at 7 kW x \$3.90/Watt x 1000 Watts = \$27,300. Depreciation over the 12 years of the lease reduces the cost to the customer by \$3,541, resulting in a total cost per house of \$23,759.

In addition to the system installation costs, each house will be charged a \$500 processing fee and \$1,012 for the upfront lease buyout. The homeowner will pay these costs in addition to \$2,430 toward the cost of the solar installation.

The EPA grant will be supplemented by the following other funds for each house:

- \$1,400      NYSERDA rebate
- \$8,190      federal tax credit
- \$2,730      IRA credit for domestic content.

Rebates and incentives total \$12,320 per house.

The following summarizes the typical cost per house.

#### **Installation/ Contractual Costs**

System installation cost (7 kW x \$3.90/ Watt)	\$27,300
Depreciation (over 12-year lease term)	\$ (3,541)
Processing fee	\$500
Lease buyout	\$ 1,012
<b>Total</b>	<b>\$25,271</b>

#### **Rebates and Incentives**

NYSERDA rebate	\$1,400
Base tax credit	\$8,190
IRA domestic content tax credit	\$2,730
<b>Total</b>	<b>\$12,320</b>

#### Homeowner Contribution

Processing fee	\$500
Lease buyout	\$1,012
Portion of System Cost	\$2,430
<b>Total</b>	<b>\$3,942</b>

#### EPA Grant per system installed:

**\$25,271 minus \$12,320 minus \$3,942 = \$ 9,009 x 400 homes = \$3,603,600**

The program is set up to use a single pay lease option where the customer (the City on behalf of the homeowner) will pay the lease buyout off in a single payment allowing the third party owner (solar installer) to take the Federal tax credits and NYSERDA rebates in order to reduce the system price to the customer. At the end of a 12-year lease term, ownership of the system will be transferred to the homeowner. The cost of the upfront lease buyout assumes depreciation of \$3,541 over the 12-year lease term.

#### 4. Other (Loan Loss Reserve Fund)

A Loan loss reserve fund in the amount of **\$236,520** will be established to reduce risk to the lender. This amount would be used in case of loan defaults of up to 60 of the participating houses. (\$236,520 / \$3,942 maximum loan per house = 59.9 houses)

#### Project #2 Residential Clean Heating and Cooling Program

Notes	Itemized Costs	Requested from EPA	Other Funds	Total
<b>Personnel</b>				
1	Project Oversight (Total For 5 years)	\$12,150	\$0	\$12,150
	Manager of Environmental Quality @ \$59/hr x 88 hours = \$5192			
	Energy and Sustainability Manager @ \$49/hr x 142 hours = \$6958			
1	Grant Administration (Total for 5 years)	\$3,332	\$0	\$3,332
	Senior Administrative Analyst @ \$34/hr x 98 hours = \$3332			
	<b>Total</b>	<b>\$15,482</b>	<b>\$0</b>	<b>\$15,482</b>
<b>Fringe Benefits</b>				
1	52.3% of personnel costs (FICA, retirement, health, vacation, sick leave)	\$8,097	\$0	\$8,097
	<b>Total</b>	<b>\$8,097</b>	<b>\$0</b>	<b>\$8,097</b>

<b>Travel</b>				
	N/A	\$0	\$0	\$0
<b>Equipment</b>				
	N/A	\$0	\$0	\$0
<b>Supplies</b>				
	N/A	\$0	\$0	\$0
<b>Contractual</b>				
2.	Consulting services-program monitoring, GHG end energy cost reduction measurement	\$35,000	\$0	\$35,000
	<b>Total</b>	<b>\$35,000</b>	<b>\$0</b>	<b>\$35,000</b>
<b>Construction</b>				
3.	Incremental additional cost for contractors to install air source heat pumps, heat pump water heaters, and insulation/air sealing at 300 houses	\$4,738,000	\$3,000,000	\$7,738,000
	<b>Total</b>	<b>\$4,738,000</b>	<b>\$3,000,000</b>	<b>\$7,738,000</b>
<b>Other</b>				
	N/A	\$0	\$0	\$0
<b>Indirect Costs</b>				
	N/A	\$0	\$0	\$0
	<b>TOTAL FUNDING</b>	<b>\$4,796,579</b>	<b>\$3,000,000</b>	<b>\$7,796,579</b>

#### Notes

##### 1. Personnel/Fringe

EPA grant funds will be used to pay a portion of the annual salary and fringe benefits for three (3) City staff in the Dept. of Environmental Quality. The Project Manager will handle operational and programmatic tasks including coordination with other City Departments, oversight of consultants, and project reporting. A DEQ Administrative Analyst will manage reporting and grant administration, and the DEQ Energy and Sustainability Manager will oversee outreach/education efforts associated with the Project and track environmental metrics of the program. The blended rate for these City employees is \$4719.40 (salary and fringe) per year for five (5) years. The City's average fringe rate is 52.3%.

##### 2. Contractual

Consulting services for program monitoring and measurement of GHG end energy cost reduction amount to \$7000/year over 5 (five) years for a total of \$35,000.

##### 3. Construction

EPA Funds will be used to pay contractors for the incremental additional cost for heat pump water heater/ air source heat pump, minus incentives, as compared to a traditional gas-fired furnace or water heater. Additionally, construction costs will provide insulation/air sealing and electrical panel upgrades to participants in the program.

The estimated cost per house is based on the following assumptions for a typical 1200 sq. ft. house.

- Insulation/air sealing total is \$8,000
- Air-source heat pump is \$18,000. As a natural gas furnace costs \$5,500, the incremental additional cost is \$12,500
- Heat pump water heater cost is \$5,800. As a natural gas furnace would cost \$3,000, the incremental additional cost is \$2,800
- Panel upgrades and other required items are \$3,800

The program assumes that 300 households will receive air source heat pumps, insulation/air sealing and panel upgrades and 160 households will receive heat pump water heaters.

New York State Empower program for low-income homeowners offers a maximum of \$10,000 per house for the low income homeowners that qualify for the City's Clean Heating and Cooling program.

Per House Cost	Installation Cost	Minus cost of natural gas version	Incremental Additional Cost	# of houses	Total Cost
Insulation/air sealing	\$8,000		\$8,000	300	\$2,400,000
Air-source heat pump	\$18,000	\$5,500	\$12,500	300	\$3,750,000
Heat pump water heater	\$5,800	\$3,000	\$2,800	160	\$448,000
Panel upgrades and other items	\$3,800		\$3,800	300	\$1,140,000
					<b>\$7,738,000</b>

Empower + Low Income Incentives:	\$10,000	300	\$3,000,000
Installation cost minus incentives:			\$4,738,000

<b>Total EPA</b>	<b>\$4,738,000</b>
Other Funds	\$3,000,000
<b>Total Cost</b>	<b>\$7,738,000</b>

### **Project #3: Municipal Facilities Solar Upgrades**

Notes	Itemized Costs	Requested from EPA	Other Funds	Total
<b>Personnel</b>				
1	Project Oversight (Total For 5 years)	\$12,150	\$0	\$12,150
	Manager of Environmental Quality @ \$59/hr x 88 hours = \$5192			
	Energy and Sustainability Manager @ \$49/hr x 142 hours = \$6958			
1	Grant Administration (Total for 5 years)	\$3,332	\$0	\$3,332
	Senior Administrative Analyst @ \$34/hr x 98 hours = \$3332			
	<b>Total</b>	<b>\$15,482</b>	<b>\$0</b>	<b>\$15,482</b>
<b>Fringe Benefits</b>				

1	52.3% of personnel costs (FICA, retirement, health, vacation, sick leave)	\$8,097	\$0	\$8,097
	<b>Total</b>	<b>\$8,097</b>	<b>\$0</b>	<b>\$8,097</b>
<b>Travel</b>				
	N/A	\$0	\$0	\$0
<b>Equipment</b>				
	N/A	\$0	\$0	\$0
<b>Supplies</b>				
	N/A	\$0	\$0	\$0
<b>Contractual</b>				
2.				
2a.	Design and construction inspection (10% of installation cost)	\$859,808	\$0	\$859,808
2b.	Consulting services-program monitoring and reporting, GHG and energy cost savings calculations	\$35,000	\$0	\$35,000
	<b>Total</b>	<b>\$894,808</b>	<b>\$0</b>	<b>\$894,808</b>
<b>Construction</b>				
3.	Contractors to install rooftop solar PV systems on five municipal facilities	\$5,436,708	\$3,161,378	\$8,598,086
	<b>Total</b>	<b>\$5,436,708</b>	<b>\$3,161,378</b>	<b>\$8,598,086</b>
<b>Other</b>				
	N/A	\$0	\$0	\$0
<b>Indirect Costs</b>				
	N/A	\$0	\$0	\$0
	<b>TOTAL FUNDING</b>	<b>\$6,355,095</b>	<b>\$3,161,378</b>	<b>\$9,516,473</b>

## Notes

### 1. Personnel/Fringe

EPA grant funds will be used to pay a portion of the annual salary and fringe benefits for three (3) City staff in the Dept. of Environmental Quality. The Project Manager will handle operational and programmatic tasks including coordination with other City Departments, oversight of consultants, and project reporting. A DEQ Administrative Analyst will manage reporting and grant administration, and the DEQ Energy and Sustainability Manager will oversee outreach/education efforts associated with the Project and track environmental metrics of the program. The blended rate for these City employees (salary and fringe) is approximately \$2357.00 (Year 1), \$3537.00 (Year2), \$7074.00 (Year3), \$7074.00 (Year 4), and \$3537.00 (Year5). The City's average fringe rate is 52.3%.

### 2. Contractual

#### a. Design and Construction Oversight

Design and construction inspection services estimated at 10% of the installation cost for the buildings. Design will consist of structural investigations to ensure that the building can withstand

the weight of the panels as well as developing construction drawings and specifications.  
Construction inspection services will involve oversight during construction.

Facility	Design Costs
Blue Cross Arena	\$546,875
Rochester Riverside Convention Center	\$208,260
Public Safety Building	\$104,673
<b>Total:</b>	<b>\$859,808</b>

**b. Consulting Services**

Consulting services for program monitoring/reporting and GHG/energy cost savings calculations amount to \$7000/ year over five (5) years for a total of **\$35,000**.

**3. Construction**

Solar Contractor:

Total project costs to install PV systems are based on \$2,750 per kW for the buildings with array sizes smaller than 1000 kW and \$2,500/ kW for the larger Blue Cross Arena.

NYSERDA incentives will reduce the cost by \$250/kW.

Federal Tax credit valued at 30% of the total installed cost (after NYSERDA rebates)

Facility	Proposed Array Size (kW)	Cost per kW	Installation Cost (before incentives)	NYSERDA Incentive (\$250/ kW)	Federal Tax Credit	Net Installation Cost (to be funded by EPA grant)
Blue Cross Arena	2187.50	\$2,500	\$5,468,750	\$546,875	\$1,476,563	\$3,445,313
Rochester Riverside Convention Center	757.31	\$2,750	\$2,082,603	\$189,328	\$567,983	\$1,325,293
Public Safety Building	380.63	\$2,750	\$1,046,733	\$95,158	\$285,473	\$666,103
	<b>3325.44</b>		<b>\$8,598,085</b>	<b>\$831,360</b>	<b>\$2,330,018</b>	<b>\$5,436,708</b>

**Project #4: Solid Waste Facility Sustainable Upgrades**

Notes	Itemized Costs	Requested from EPA	Other Funds	Total
<b>Personnel</b>				
1	Project Oversight (Total For 5 years)	\$12,150	\$0	\$12,150
	Manager of Environmental Quality @ \$59/hr x 88 hours = \$5192			
	Energy and Sustainability Manager			

	@ \$49/hr x 142 hours = \$6958			
1	Grant Administration (Total for 5 years)	\$3,332	\$0	\$3,332
	Senior Administrative Analyst @ \$34/hr x 98 hours = \$3332			
	<b>Total</b>	<b>\$15,482</b>	<b>\$0</b>	<b>\$15,482</b>
<b>Fringe Benefits</b>				
1	52.3% of personnel costs (FICA, retirement, health, vacation, sick leave)	\$8,097	\$0	\$8,097
	<b>Total</b>	<b>\$8,097</b>	<b>\$0</b>	<b>\$8,097</b>
<b>Travel</b>				
	N/A	\$0	\$0	\$0
<b>Equipment</b>				
	N/A	\$0	\$0	\$0
<b>Supplies</b>				
	N/A	\$0	\$0	\$0
<b>Contractual</b>				
2.				
2a.	Engineering Design & Construction Inspection (25% of construction costs)	\$1,204,125	\$0	\$1,204,125
2b.	Consulting services-program monitoring and reporting, GHG and energy cost savings calculations	\$35,000	\$0	\$35,000
	<b>Total</b>	<b>\$1,239,125</b>	<b>\$0</b>	<b>\$1,239,125</b>
<b>Construction</b>				
3.	Contractor to construct sustainable upgrades to Solid Waste Operations Facility-(West Side Garage). Upgrades to include rooftop solar PV system, geothermal HVAC system, enhanced insulation, windows, LED Lighting upgrades	\$3,586,900	\$1,229,600	\$4,816,500
	<b>Total</b>	<b>\$3,586,900</b>	<b>\$1,229,600</b>	<b>\$4,816,500</b>
<b>Other</b>				
	N/A	\$0	\$0	\$0
<b>Indirect Costs</b>				
	N/A	\$0	\$0	\$0
	<b>TOTAL FUNDING</b>	<b>\$4,849,604</b>	<b>\$1,229,600</b>	<b>\$6,079,204</b>

#### Notes

##### 1. Personnel/Fringe

EPA grant funds will be used to pay a portion of the annual salary and fringe benefits for three (3) City staff in the Dept. of Environmental Quality. The Project Manager will handle operational and programmatic tasks including coordination with other City Departments, oversight of consultants, and project reporting. A DEQ Administrative Analyst will manage reporting and grant administration, and the

DEQ Energy and Sustainability Manager will oversee outreach/education efforts associated with the Project and track environmental metrics of the program. The blended rate for these City employees (salary and fringe) is approximately \$2357.00 (Year 1), \$3537.00 (Year2), \$7074.00 (Year3), \$7074.00 (Year 4), and \$3537.00 (Year5). The City's average fringe rate is 52.3%.

## 2. Contractual

### a. Design and Construction Oversight

Design and construction oversight estimated at 25% of the total construction cost. The total costs for design and construction oversight is **\$1,204,125**. Costs include developing design drawings and specifications, bidding documents and inspection during construction.

### b. Consulting Services

Consulting services for program monitoring/reporting and GHG/energy cost savings calculations amount to \$7000/ year over five (5) years for a total of **\$35,000**.

## 3. Construction Costs

EPA funds will be used to perform sustainable upgrades to Solid Waste Operations Facility-West Side Garage. Upgrades include rooftop solar PV system, geothermal HVAC system, enhanced insulation, and LED Lighting upgrades.

Construction Components	Total Cost	Incentives*	Net Cost (EPA funds)
Insulation	\$735,000		\$735,000
Geothermal well field	\$1,350,000	\$405,000	\$945,000
Heat pump system	\$630,000	\$189,000	\$441,000
HVAC Connections	\$153,600		\$153,600
PV System	\$1,747,900	\$635,600	\$1,112,300
LED lighting upgrades	\$200,000		\$200,000
	<b>\$4,816,500</b>	<b>\$1,229,600</b>	<b>\$3,586,900</b>

\*Incentives include 30% IRA tax credit for geothermal/heat pump and PV system. Additionally, the PV system includes a NYSERDA incentive of \$250 per kW.

### PV System Cost Detail

<i>Proposed Array Size (kW)</i>	635.6
<i>Cost per kW</i>	\$2,750
<i>Installation Cost</i>	\$1,747,900
<i>NYSERDA Incentive (\$250/ kW)</i>	\$158,900
<i>Federal Tax Incentives</i>	\$476,700
<b><i>Net Installation Cost (to be funded by EPA grant)</i></b>	<b>\$1,112,300</b>