



The City of
Worcester



Inspiring Climate Action: Funding Decarbonization and Navigating Energy Codes

From a Green Community to a Climate Leader

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City of Worcester


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Department of Sustainability and Resilience

[Green.WorcesterMA.gov](https://www.Green.WorcesterMA.gov)



Highlights of the Presentation

1. Green Community Designation - 2010
 2. Energy Savings Performance Contract – 2010 - ongoing
 3. Solar Farm Installation – 2017
 4. Climate Resilience Work – 2018 (MVP) - ongoing
 5. Municipal Aggregation Program – 2020
 6. Green Worcester Plan – 2021
 7. Specialized Stretch Code – effective July 1, 2024
 8. Recipe for Success - Reflections
 9. Looking Forward
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Becoming a Green Community

- In 2010, we adopted the **Stretch Code** (28th municipality in the MA) and were designated as a Green Community and awarded an \$852,000 Green Community Designation Grant.
 - *Approximately 74% of the program budget was allocated for financial incentives to encourage investment in energy efficient building improvements and renewable energy projects among Worcester homeowners (200 dwellings benefited). The rest was used to develop the outreach and marketing campaign.*
- Consequent GC Action Grant (in 2016 and 2019) were used for large LED projects at a city school and the Worcester Senior Center.

Green Communities Criteria


- Adopt as-of-right siting for RE/AE generation, R&D, or manufacturing
- Adopt expedited permitting process
- Create an Energy Reduction Plan to reduce energy use by 20% in 5 years
- Purchase only fuel-efficient vehicles
- Minimize life cycle cost in new construction – a.k.a adopt the Stretch Code



Joel Fontane, Director of Planning Division and John Odell, Energy Manager, holding the designation plaque. They were instrumental in getting the City's certification.




Reducing Municipal Emissions: The Critical Role of the Energy Savings Performance Contract

- In 2009, we hired our first ESCO
 - 2009 - Completed an Investment Grade Audit (IGA).
 - 2011 – 2016 - Executed \$26.6M energy savings performance contract (ESPC) and implemented energy efficiency measures in 92 municipal facilities.
 - 2013-2017 – Installed 8 solar projects on school buildings, completed a landfill solar farm project, and converted all of the streetlights to LEDs (\$55M project).
 - **ESPC has been a critical tool** in addressing energy efficiency issues in our municipal buildings – as it allows to finance it via 20-year bonds, and pay for itself via energy savings.
 - As of June 2024, we are on phase 6 of our ESCO and beginning a new IGA soon
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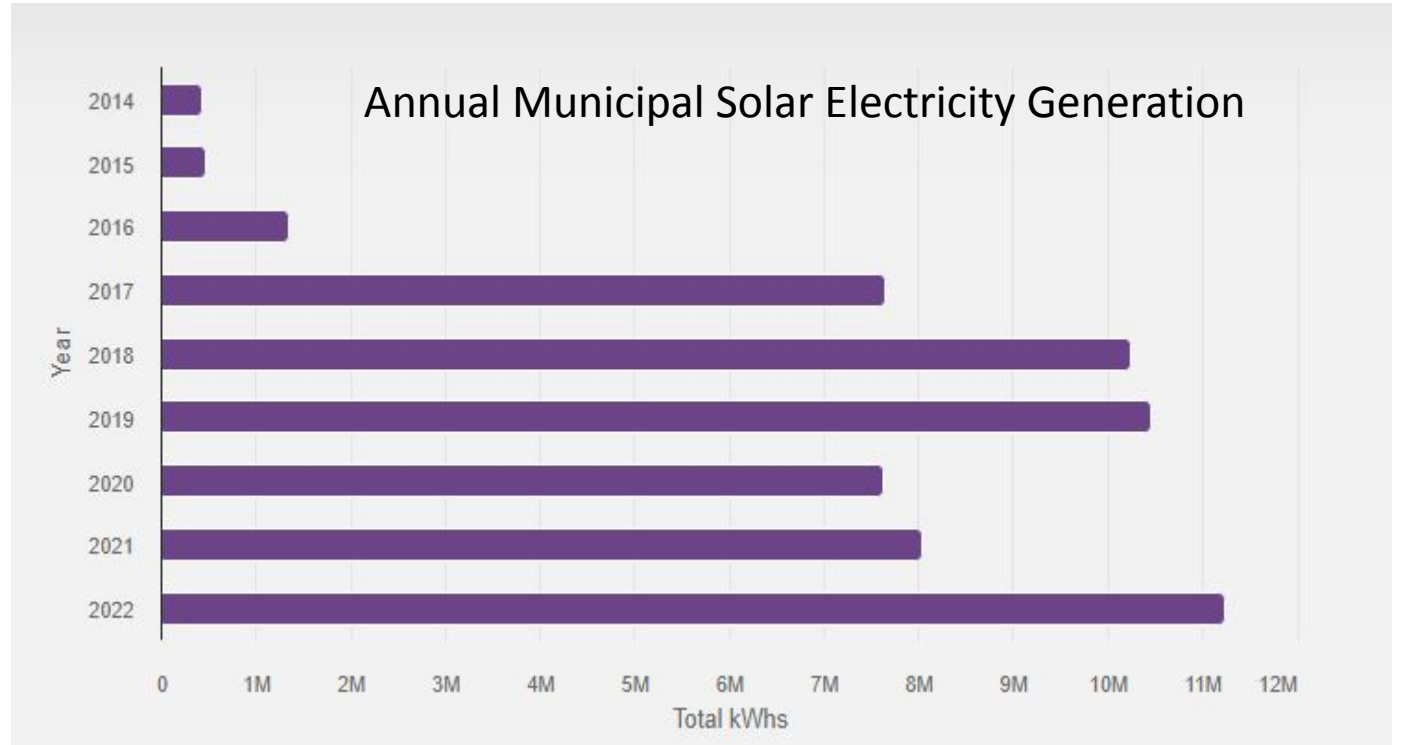
Solar Farm Installation and a Key Decision to Own It

- In 2017, we completed the installation of 8.1 MW-DC solar array, covering the entire top plateau area of the former landfill (about 26 acres)
- The solar array is municipally-owned which allows the City to take advantage of selling the Solar Renewable Energy Credits (SRECs) and selling net-metering credits.
- The decision to own and maintain, and not lease, was critical in providing revenues for the growth of sustainability initiatives and establishment of the Carbon Mitigation Revolving Fund.



Municipal Solar Generation Over Time

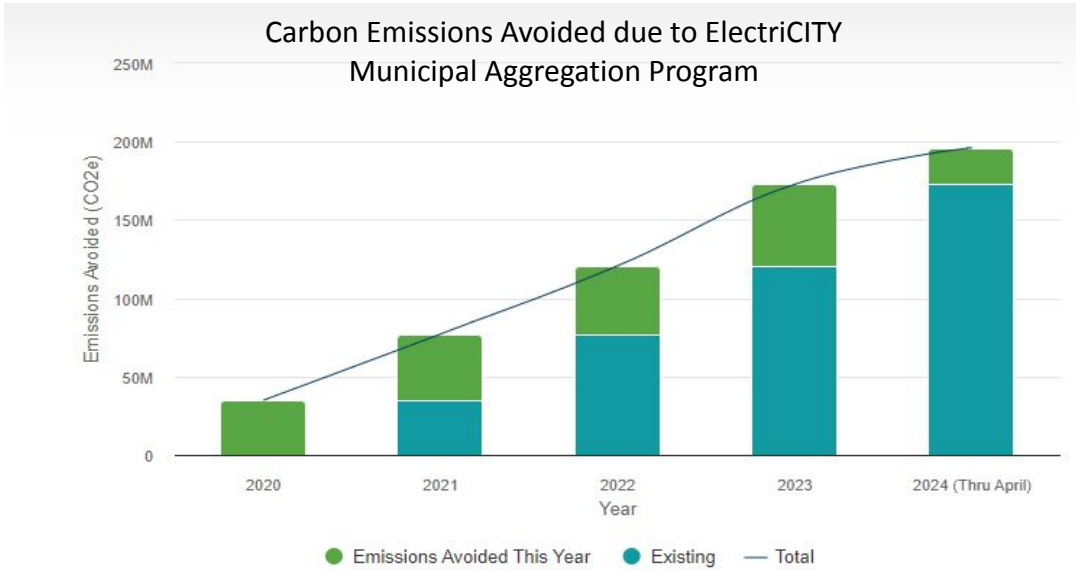
- In the past decade, we've installed solar panels on 16 facilities – including 12 schools and the closed Greenwood Landfill.
- In 2022, we produced over 11 million kWhs worth of clean energy
- This offsets approximately 10% of our municipal building electricity usage.



Reducing Community Emissions: Green Worcester ElectriCITY Municipal

Aggregation — primary way to reduce community emissions and reach our goal of being a zero-emission community by 2045

- Launched In 2020
- Standard enrollment is 64% from Class 1 Renewables from New England - an additional 40% renewable electricity over state requirements
- 43% of Worcester accounts participate
- Prevented almost 200 million pounds of carbon from going in the atmosphere



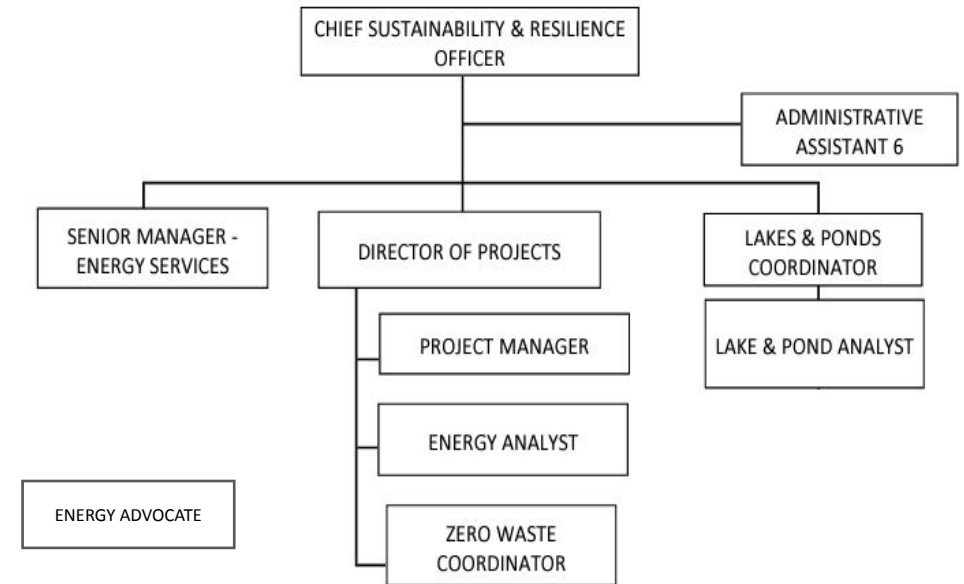
Worcester Standard Green
An additional 40% renewable electricity (*automatic enrollment*)

Renewable energy**	2023	2024	2025
From new resources in the New England region (MA Class I RECs)			
Added by Worcester	40%	40%	40%
Required by state law	22%	24%	27%
Total from new resources in the New England region (MA Class I RECs)	62%	64%	67%

The Green Worcester Plan and Establishment of the Department of Sustainability & Resilience

- In 2021, we completed the GWP, after over a year of community engagement and a Task Force.
 - By 2035: 100% renewable electricity for the entire community through the Municipal Electrical Aggregation program;
 - By 2045: 100% renewable energy for the entire community, including for building heating and transportation.
- 2021 – Established DSR and the Green Worcester Advisory Committee (to serve as the forum for information exchange and to advise on the City's sustainability and resilience activities.).
- Currently – 10 employees.
- Need resilience project manager to continue to make advances in climate resilience work.
- Carbon Mitigation Revolving Fund is funding a lot of our work.

DEPARTMENT OF SUSTAINABILITY & RESILIENCE ORGANIZATIONAL CHART




Program Evolution: From Green Community to Climate Leader

Green Communities Criteria		Climate Leaders Criteria
Adopt as-of-right siting for RE/AE generation, R&D, or manufacturing		Establish/maintain local committee to advise, coordinate, and/or lead clean energy and climate activities
Adopt expedited permitting process		Municipal decarbonization commitment
Create an Energy Reduction Plan to reduce energy use by 20% in 5 years		Create Municipal Decarbonization Roadmap with 2030 & 2050 goals
Purchase only fuel-efficient vehicles		ZEV-First vehicle policy
Minimize life cycle cost in new construction – a.k.a adopt the Stretch Code		Specialized Stretch Code Adoption – effective July 1, 2024

Recertify every 3 years – must complete a community engagement "best practice"





Recipe for Success – Reflections

- **Commitment** and support from the top – City Council and City Manager
 - Favorable State **Policies and Incentives** (*Green Communities Act, Global Warming Solutions Act, Renewable Portfolio Standard, etc.*)
 - External **Advocates**
 - Internal **Advocates**
 - Effective **implementation** from within - time, persistence, institutional knowledge
 - Foresight to own our solar projects – **funding** for the future (\$)
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Looking Forward

- Complete Decarbonization **Roadmapping**
 - New Investment Grade Audit and Energy Savings Performance **Contract** (90+ buildings)
 - Looking for state and federal **grants** for municipal and community projects related to energy efficiency
 - Increase % **green electricity** in our future aggregation contracts
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THANK YOU

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