

A photograph of the Worcester, Massachusetts cityscape, featuring a prominent glass skyscraper and several brick buildings. The image is framed by large, overlapping geometric shapes in teal, green, purple, and white. The green shape on the left contains white dots, and the purple shape on the right contains orange dots. The bottom right corner features a red dot pattern.

GREEN WORCESTER PLAN

First Annual Progress Report
July 2021 – December 2023

*Produced by the Department of Sustainability and Resilience,
in collaboration with the Green Worcester Advisory Committee*



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Table of Contents

Introduction	1
Reading This Report	4
Executive Summary	5
Summary of Completed Green Worcester Plan Actions.....	7
Summary of Ongoing Green Worcester Plan Actions.....	8
Summary of Progress to Date.....	13
Looking Forward	17
DSR’s Priority Actions in 2024.....	19
Status and Progress	21
Chapter II – Stewardship, Transparency, and Accountability.....	23
Chapter III - 100% Clean and Affordable Energy.....	28
Chapter IV - Blue Spaces with Healthy Natural Systems.....	32
Chapter V - Net-Zero and Climate-Resilient Buildings.....	35
Chapter VI - Sustainable Transportation Choices.....	39
Chapter VII - One Water – Integrated Water Management.....	44
Chapter VIII - Towards Zero Waste.....	48
Chapter IX - Sustainable Food Systems.....	50
Chapter X - Pollution Prevention.....	52
Chapter XI - Climate Change Resilience.....	54
Chapter XII - Sustainability, Resilience, and Green Education in All Policies.....	57
Acknowledgements	60





Letter from the Chief of the Department of Sustainability and Resilience

Dear partners, neighbors, and friends,

“The Green Worcester Plan is a strategic framework ...to making Worcester one of the most sustainable and climate-resilient mid-sized cities in America by 2050.” That’s the lead sentence in the Executive Summary of the GWP. It is an ambitious and bold statement, intentionally so. Real progress does not happen on the fringes and not knowing how we will achieve a goal is not a good reason not to set it. It should be clear to everyone as we close 2023, the warmest year ever recorded and quite possibly the warmest in past 125,000, that bold local and global responses to climate change are needed. The City’s GWP provides just such a roadmap to achieve that vision.

The plan has ambitious and actionable goals, but also recognizes that future conditions are not known, so the plan will need to change and adapt to changing circumstances, needs and opportunities. As you’ll see in this report, some of the goals and projects reported are directly set forth in the GWP, whereas others were developed as the work began and we needed to pivot based on grant opportunities or other timely priorities. We also need to recognize, in part due to significant challenges over the past two years: a global pandemic, energy prices spiking to unprecedented levels, supply chain delays and more, that we have not met all the carbon mitigation metrics we should have to date. We will know the details of how far behind the curve we are when our 2023 carbon emissions report is completed in the spring of 2024. Still, as you will see below, much progress was made.

I want to assure you that together with our many city partners, organizations, businesses, and residents who have worked with us in shared stewardship and mutual care of our city and our planet, we will continue to work diligently to pursue opportunities that will help Worcester become one of the most sustainable and climate-resilient mid-sized cities in America.

Please join us.

Sincerely,

John Odell

Chief of Department of Sustainability & Resilience



Statement of the Green Worcester Advisory Committee

January 8, 2024

The Green Worcester Advisory Committee (GWAC) enthusiastically commends the Department of Sustainability and Resilience (DSR) and the City of Worcester on their excellent work executing the Green Worcester Plan over the past two years.

What is also clear from this first progress report is the magnitude of the task before us and the need for a much more significant investment of municipal resources, if we are to fully implement the Plan on schedule.

The Plan's benchmark climate goal, to achieve 30 percent renewable energy for heating and transportation citywide by 2030 and 100 percent by 2045, is a case in point. The City's efforts toward achieving this goal are just beginning and tracking early progress doesn't predict the pace of later progress. However, annually converting 4 to 5 percent of the City's building stock to renewable energy over the next six to seven years—what's needed to meet the 2030 goal of 30 percent—will require significant resources.

A related benchmark goal, converting municipal buildings to 100 percent renewable/net-zero energy by 2030, will be a bellwether for achieving the broader citywide goal. While municipal buildings are a small fraction of the City's total building stock, our efforts will both provide proof of concept and a model for best practices. Accelerating the pace of municipal building conversions is essential, given that it has taken ten years to reduce emissions by 16 percent. Even as inevitable obstacles arise, we must find ways to make sustainability projects feasible in order to meet the Plan's goals.

Recognizing the major challenges ahead, the GWAC also sees this moment as a huge opportunity for Worcester. Sustainability is unavoidable in the long run, and no matter what we do, free market forces will eventually push us all in that direction. But there will be huge benefits to Worcester if the City continues to make good on its intention to lead the way on sustainability. The Plan describes co-benefits of sustainability in the realms of health, equity, and prosperity. We need to remember these benefits as our guiding priorities.

Therefore, the GWAC urges the City to do the following:

- Allocate more resources to sustainability initiatives citywide, both to support additional needed staffing and the City's ability to leverage additional funding and partnership opportunities within and beyond city government.
- Sustainability must become a bedrock principle for the City, in the Now | Next Plan, and in the goals, plans, programs, and projects of all City departments, not just DSR.



Spending on sustainability is money well spent, justified by energy and other cost savings, and so much more. Worcester will reap multiple benefits from leadership on sustainability—in quality of life, in public health and safety, in equity and environmental justice, in avoided costs, in workforce development, and in our starring role as a center of expertise and innovation.

The best thing Worcester can do for its businesses, workforce, and residents is to give them all the advantages that will flow from fully realizing the Plan's sustainability goals. This first annual report on the Green Worcester Plan shows how much we have achieved in our start-up years, and how much more work remains to be done.

Green Worcester Committee Members

- Mary Knittle, Chair
- Evelyn Herwitz, Vice Chair
- Patricia Austin
- Ted Conna
- Nathan Fournier
- Mary Leovich
- Deirdra Murphy



Reading This Report

As part of the Green Worcester Plan, the City made a commitment to transparency and accountability. This first progress report of the Green Worcester Plan (accepted in April of 2021) consists of the following sections:

- An executive summary, which provides a summary list of completed and ongoing actions (excluding those not yet started), as well as the summary of progress made to date of top goals and early actions identified by the Green Worcester Plan (GWP),
- A list of priority actions for 2024 that the Department of Sustainability and Resilience will focus on, and
- A status update for all the actions listed in the Green Worcester Plan, from July 2021 through December 2023. This last section is broken into ten sub-sections, covering chapters 2-12 of the plan. Each table includes the action item, the status, and a short description of our progress. We are using the following system to designate the status of each goal:

Status	Description
Not Started	This action has not been started
In Progress	The City or community have begun working on action implementation
Ongoing	An action that calls for recurring action(s) (with no definitive end)
Completed	The action is complete, and all milestones have been reached
Refocused	Action wasn't feasible, relevant, and/or necessary and therefore, it was refocused to a different action aligned with the intent of the initial action



EXECUTIVE SUMMARY



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Summary of Completed Green Worcester Plan Actions

The Green Worcester Advisory Committee (GWAC) enthusiastically commends the Department of Sustainability and Resilience (DSR) on their excellent work executing the Green Worcester Plan over the past two years. What is also clear from this first progress report is the magnitude of the task before us and the need for a much more significant investment of municipal resources, if we are to fully implement the Plan on schedule.

Action	Progress
Create a new Department of Sustainability	The Department of Sustainability and Resilience (DSR) was founded in July 2021. The department now has 11 full and part-time staff members. (Chapter II, Action 1)
Create a Green Worcester Advisory Committee	The Green Worcester Advisory Committee had their first meeting on March 7, 2022. The committee has seven members, with each district having at least one representative. (Chapter II, Action 3)
Create a Green Worcester Fund	The City has a Carbon Mitigation Fund that provides modest funding to DSR, allowing them to partially fund their staff and pursue carbon mitigation projects. This account is funded, in large part, by selling virtual net metering credits associated with electricity produced by the City's Greenwood Street Solar Farm. (Chapter II, Action 4)
Develop and implement a Sustainability and Resiliency Dashboard	DSR published a dashboard highlighting the City's accomplishments and outlining how residents can help us meet our sustainability goals. It was launched on April 21, 2023, Earth Day, and is updated on a regular basis. (Chapter II, Action 6)
Join the Urban Sustainability Network (USDN)	DSR joined USDN in July 2022, and we have used the network for learning opportunities such as webinars, connecting with other municipal staff and posting our job openings. (Chapter II, Action 18)
Support and advocate for an advanced State Energy Code	The City has adopted a highly efficient energy building code, the Specialized Stretch Code, which will go into effect on July 1, 2024. (Chapter IV, Action 13)
Establish a Sustainable Transportation and Mobility planning body	The City created the Department of Transportation and Mobility (DTM) in July of 2022. DTM plans, coordinates, designs and implements transportation programs and projects that promote safe, equitable, connective, and sustainable mobility options. (Chapter VI, Action 1)



Summary of Ongoing Green Worcester Plan Actions

Action	Progress
Ensure enforcement and training for sustainability and resiliency codes and regulations	Through a City Council vote, the City has adopted a highly efficient energy building code called the Specialized Stretch Code. The new code will go into effect on July 1, 2024. The Inspectional Services Department (ISD) will receive the needed training to enforce the new code. (Chapter II, Action 2)
Prepare and publish Annual Progress Report	The City is committed to updating this report annually. In the future we will adapt the timescale of this report to capture developments over the previous calendar year. (Chapter II, Action 7)
Implement an outreach strategy	DSR is spearheading Green Worcester’s outreach strategy. DSR has monthly communication strategy meetings and is reaching out to people through monthly newsletters, surveys, the Green Worcester Dashboard, social media posts, and radio PSAs. (Chapter II, Action 8)
Develop datasets to make data-driven decisions	The Office of Urban Innovation merged with Technical Services Department to become the Department of Innovation and Technology. Due to this merge, we refocused this action to be managed by DSR instead. DSR has hired an internal Energy Analyst; created the Green Worcester Dashboard to better display our data; and has begun compiling data from other departments to keep better track of our energy and sustainability data. (Chapter II, Action 9)
Integrate sustainability and resilience in school curriculum	The City has begun to explore opportunities to include local sustainability and resilience content in the Worcester Public Schools’ curriculum, including discussion with the WPS curriculum coordinator, meeting with the Doherty Environmental Club, and facilitating Holy Cross projects for the WPS classroom content. (Chapter II, Action 10)
Promotion Green Worcester Plan to private stakeholders	DSR held 35+ public presentations for city stakeholders including the Worcester Garden Club, the Worcester Board of Health, and the Worcester Business Improvement District. (Chapter II, Action 11)



Action	Progress
Encourage development of a business committee	DSR has developed a working relationship, through the exchange of knowledge and information, with the Chamber of Commerce on sustainability, energy, and zero waste related projects. (Chapter II, Action 12)
Promote collaboration with educational institutions	The City has made several successful connections, through the exchange of knowledge and information, with local higher education institutions, including Clark, WSU, WPI, and Holy Cross, and is continuing to build our connections with educators in public schools in Worcester. (Chapter II, Action 14)
Identify opportunities for innovative energy pilot projects	The City, working closely with local neighborhood groups, requested that Eversource select Worcester to be part of the geothermal networked neighborhood pilot project but our efforts were not successful. We will continue to look for similar opportunities. (Chapter III, Action 6)
Update and implement Open Space and Recreation Plan	The City updates their Open Space Recreation Plan every seven years. Our most recent update was in 2021. (Chapter IV, Action 1)
Make new green spaces in urban core	The City was recently awarded a State Grant to plant Miyawaki Forests, small, fast-growing biologically diverse forests, in heat-island, environmental justice areas of the City. We have also invested in a Heat Map study to identify areas of the City that experience the Urban Heat Island Effect the most. The City is also actively creating a “Green Street” along Endicott and Bigelow Streets in the Green Island Neighborhood. (Chapter IV, Action 3)
Manage water supply open spaces lands	The City’s Department of Public Works and Parks (DPW&P) continues to manage the City’s 10 drinking water reservoirs, delivering 8 billion gallons of safe drinking water annually. (Chapter IV, Action 8)



Action	Progress
Expand Lakes & Ponds Program and reduce water pollution	<p>The City's Lakes & Ponds Program added two new ponds to their treatment management program. The program now monitors and manages a total of six waterbodies. Additionally, the program leads a group of community scientists to monitor cyanobacteria at over 20 waterbodies in Worcester. They are continually looking for funding to expand their monitoring and management capabilities. (Chapter IV, Action 9)</p> <p>The Lakes & Ponds Program installed an "Alum" dosing station at Indian Lake to maintain lake water quality, resulting in fewer beach closures. State ARPA funds were acquired to complete analysis and implementation of other water quality improvement projects. The program also hosted over 50 outreach events to teach residents about their waterbodies. (Chapter VII, Action 13)</p>
Raise awareness of stormwater management	The City has distributed 179 rain barrels since 2021. Additionally, we are developing a collaborative relationship with Worcester Native Plant Initiative, a local volunteer group dedicated to planting native plants in the City. (Chapter IV, Action 10)
Enforce code compliance	The updated Stretch Code and Specialized Stretch Code increase energy efficiency requirements. The City's Inspectional Services Department (ISD) maintains current energy code metrics and has a good track record of compliance. ISD has noted only one compliance issue since 2010. (Chapter V, Action 11)
Support update to land use and zoning	We are working collaboratively with other key Departments on the development of the City's Now Next Plan, which will include zoning recommendations. (Chapter V, Action 14)
Prioritize connectivity in transportation planning	Department of Transportation and Mobility is developing a Mobility Action Plan, with overarching goals of safety, equity, sustainability, and connectivity in the city. The plan will identify strategies to promote those goals and is expected to be completed in early 2024. A part of the Plan will include a "Vision for a Bike and Micromobility Network in Worcester: Improving Access to Green and Blue Spaces for All." (Chapter VI, Action 3)
Promote sustainable event transportation	There is currently a shuttle from the City's parking garages to Polar Park on game days. (Chapter VI, Action 4)



Action	Progress
Promote electric vehicle use	The City installed 9 dual port Electric Vehicle Charging stations in 2023, increasing the number of publicly owned charging station ports to 30. The City is also actively increasing our stock of Electric Vehicles by purchasing an EV for City Manager use and applying for money to purchase 20 EV school buses. (Chapter VI, Action 6)
Optimize WRTA service	Worcester Regional Transit Authority eliminated fares to promote ridership and increase route efficiency. Collecting fares slows service and creates inefficiency costs. The Mobility Action Plan will include plans for pedestrian improvements to support transit stops. (Chapter VI, Action 10)
Identify new urban agriculture sites	The Regional Environmental Council added four community gardens since the Green Worcester Plan was adopted and continues to expand their community gardens network. (Chapter IX, Action 2)
Integrate school gardens in the curriculum	The Regional Environmental Council has supported 25 school gardens and engaged 2,677 students with hands-on gardening activities and classroom workshops. (Chapter IX, Action 5)
Continue brownfields program	In May of 2023, the City received a \$2.7 million from the EPA for brownfield remediation. The City has previously been awarded \$5.1 million by the EPA for brownfield remediation, which was used to fund 13 brownfields remediation projects. (Chapter X, Action 4)
Continue lead abatement programs	The City's Office of Economic Development (OED) manages a lead abatement program and a brownfield cleanup loan fund to mitigate two of these large historic issues. Since July 2021, 135 units were de-leaded, funded by federal grants. (Chapter X, Action 5)
Create a Resilience Working Group	DSR has set up regular interdepartmental working meetings with the Department of Public Works and Parks, the Department of Transportation and Mobility, and the Executive Office of Economic Development. These meeting provide the forum needed to collaborate on resiliency related programs and projects. (Chapter XI, Action 1)



Action	Progress
Promote a resilient food system	The Regional Environmental Council, a community partner, offered access to fresh local food through their standing and mobile farmer’s market programs; supported 25 school gardens; engaged 2,677 students with hands-on gardening activities and classroom workshops; added four community gardens to their network; and maintained their Healthy Incentives Program which allows residents to use SNAP and EBT benefits at Farmer’s markets. (Chapter XI, Action 3)
MVP ¹ Priority Actions: Improve social resilience	The City developed and launched the “Worcester 311” app for a quick and easy way for residents to submit non-emergency requests for assistance with issues around the City. (Chapter XI, Action 4b)





Summary of Progress to Date

Top Goals and Early Actions of the GWP

Climate Change Mitigation

As greenhouse gas (GHG) emissions are the primary cause of climate change, moving city energy users to 100% clean and affordable energy by 2045 is a core tenet of the Green Worcester Plan. To do this, total net fossil-fuel related emissions will need to be reduced to zero by this date. This work will be done in three concurrent phases:

- By 2030: Use 100% renewable energy for municipal facilities
- By 2035: Provide 100% residential renewable electricity city-wide through the Community Choice Aggregation program
- By 2045: Use 100% renewable energy for residences and businesses, including for heating and transportation

Use 100% renewable energy for municipal facilities

Carbon emissions from municipal operations have decreased by 16% since 2009. Municipal buildings, specifically, saw an 18% reduction in emissions. The decline is a result of Worcester's dedication to making our buildings more efficient and installing solar arrays on municipal buildings and parking lots. Since 2011, the City has converted roughly 14,000 streetlights to LEDs and implemented a wide variety of energy conservation measures – such as installing advanced building management systems, insulation & air-sealing, and electric heat pumps – in 92 of our largest, occupied facilities. These measures work to improve our efficiency – lowering the City's reliance on fossil fuels and thereby reducing our carbon emissions. Our work to lower our building's emissions and reduce fuel usage has saved the City over \$16 million dollars to date.

The City owns one of the largest municipally owned solar farms in New England (8.1 MW-DC of electric capacity –

see green.worcesterma.gov for a solar energy dashboard). The City currently owns and operates 19 other, smaller solar arrays, including recent installations at 3 schools, and the Worcester Senior Center. The four new solar arrays have a combined capacity of 1.25 MW increasing our total solar production capacity by 12%. Adding solar panels to new and older buildings is cost-effective way to move towards net-zero.

Provide 100% Renewable Electricity City-Wide

A primary goal of the Green Worcester Plan is providing 100% renewable electricity citywide. To help achieve this by 2035, the City began the Green Worcester ElectricITY Aggregation Program in 2019. The program offers premium green electricity to residents at a fair and reliable rate. As of December 2023, 62% of the energy provided by the aggregation program is from green renewable plants in New England – National Grid is only required by the state to provide 26% renewable energy in their supply. Since



the program began in 2019, the program has saved over 160,000,000 pounds of carbon dioxide from being emitted into the atmosphere, the equivalent of taking over 15,000 gasoline-powered passenger vehicles off the road for one year.

Use 100% renewable energy for residences and businesses

Based on our most recent GHG emissions inventory, buildings produce 65% of the City's GHG emissions. As the electrical grid continues to become greener, using electric heat pumps combined with using less energy will be key to lowering the City's GHG emissions. To help this transition the City has completed the following:

- The City adopted the new Massachusetts Opt-in Specialized Stretch Code in September 2023. This Specialized Stretch Code will require all new buildings to be essentially net zero ready – by promoting electrification and extensive weatherization that will reduce the cost and energy needed to heat and cool buildings. The code will go into effect in July of 2024.
- In 2023, the City launched the Smart Energy Advice program by hiring two Energy Advocates, funded in part by a Mass Save grant, to promote energy efficiency improvements in homes and small businesses. The advocates focus on reaching populations that have historically been underserved by Mass Save including landlords, small businesses, non-profits, income eligible households and English isolated households to help them access the program, apply for rebates, and receive energy assessments.

Building Climate Change Resilience

The Department of Sustainability and Resilience (DSR), in partnership with a variety of other entities, is striving to make the City and its population more resilient to climate change impacts such as more frequent extreme storms, severe flooding, heat island effects, and more.

Increasing Our Tree Canopy

The Department of Public Works and Parks (DPW &P) is developing the City's first Urban Forest Master Plan. The final plan should be completed by the beginning of 2024.

In 2022, DSR completed a city-wide extreme heat study that will help us target resilience solutions where they are needed most. To achieve the level of cooling needed, the key recommendation was to increase the total tree canopy in Worcester by 30,000 - 35,000 trees by 2050, prioritizing plantings in areas with little tree cover. Consistent annual tree funding will be needed to attain this goal.

The City was awarded a Municipal Vulnerability Preparedness Action Grant by the state to plant two Miyawaki forests on municipal land. These small pocket forests, known for their co-benefits of reducing heat and flooding, will be the first of their kind in the City and they will be planted by July 2024.

Improving Water Quality and Reducing Flooding

To better understand the City's storm water system, the City is mapping and modeling the existing drainage system via a state Municipal Vulnerability Plan action grant. The map and models will help the City prioritize citywide grey and green infrastructure improvements. The plan is expected to be completed by June 2024.

After over 3 years of planning, construction of an alum dosing station was completed in Spring 2023 with the support of many collaborators including land donations from Bancroft School and The Unitarian Universalist Church. The station, installed at the mouth of Ararat Brook, automatically applies an environmentally friendly chemical, polyaluminum chloride, to the water as it flows into Indian Lake. The “alum” immobilizes phosphorus before it enters the lake, reducing the available food for harmful cyanobacteria blooms.

The Lakes and Ponds program oversees the Worcester Cyanobacteria Monitoring Collaborative (WCMC), a community science group in which interested residents collect samples at 26 local lakes and ponds. The samples help the Lakes and Ponds program staff understand the risk of cyanobacteria blooms. L&P staff trained over 48 community scientists volunteers in 2022 and over 59 in 2023 on how to collect and analyze lake water samples.

Advancing Mobility Transformation

Our most recent Greenhouse Gas Emissions Inventory, completed in 2022, found that transportation caused 27% of the community’s GHG emissions and 16% of municipal emissions. With such high associated emissions, transforming how we move continues to be crucial to meet the City’s goal of becoming a green and net zero city.

In July 2022, the City formed the Department of Transportation and Mobility (DTM) to work collaboratively with other departments and agencies to plan, coordinate, design and implement transportation programs and projects that promote safe, equitable, and sustainable mobility options. DTM is also spearheading the development of a Mobility Action Plan (MAP), which will help the department identify goals and priorities for their work.

In 2022-2023, DSR installed six electric vehicle charging ports in each of the three municipal garages for a total of 18 new charging ports and added one electric vehicle (EV) to our municipal fleet. Due to supply chain delays, progress to meet municipal fleet electrification goals has been lagging.

Striving Towards Zero Waste

One of the top ten Green Worcester Plan early action recommendations is to develop a Zero Waste Master Plan for the City. DSR hired a Zero Waste Coordinator in August 2023 to coordinate that planning process. In addition, the Department of Public Works and Parks formed an interdepartmental working group to create and implement a recycling campaign to tackle the issue of high contamination in residential curbside recycling. The committee’s work was successful, resulting in a reduction of contamination over four quarters from about 20% to less than 10%. Additionally, the DPW&P launched the City’s first textile recycling curbside pickup program.

Improving the Health and Safety of Our Residents

Like many older, previously industrial cities, many facilities in Worcester are contaminated with legacy pollution. The City’s Office of Economic Development (OED) manages a lead abatement program and a brownfield cleanup loan fund to mitigate two of these large historic issues. Since July 2021, 135 residential units were de-leaded and 13 brownfields abated, funded by federal grants.

Worcester partners with the community groups such as the Regional Environmental Council (REC), Worcester Food Policy Council, and the Worcester Regional Food Hub. Each organization is furthering our sustainable food systems. The



REC supports a network of over 70 community gardens, brings local produce to those most in need of it through their mobile markets, and provides economic opportunity and professional development to Worcester youth through urban agriculture.

The Racial and Ethnic Approaches to Community Health (REACH) program is a national program administered by the Centers for Disease Control and Prevention (CDC) to reduce racial and ethnic health disparities. Through the REACH program, the City has installed refrigerators at four food pantries across Worcester to increase access to fresh produce – much of which is donated by local community gardens many of which are coordinated by the REC.

Public Engagement and Outreach

Outreach and Public Engagement are key functions for DSR. Examples of efforts made to date include the following:

- DSR published a dashboard highlighting the City's accomplishments and outlining how residents can help us meet our sustainability goals. It was launched on Earth Day 2023 and is updated on a regular basis.
- The City has also made several successful connections, through the exchange of knowledge and information, with local higher education institutions, including Clark, WSU, WPI, and Holy Cross, and is continuing to build our connections with educators in lower education in Worcester.
- DSR plays the lead role in Green Worcester's outreach strategy with monthly communication strategy meetings and is reaching out to people through monthly newsletters, surveys, the Green Worcester Dashboard, social media posts, and radio PSAs.

- DSR held 35+ public presentations for city stakeholders including the Worcester Garden Club, the Worcester Board of Health, and the Worcester Business Improvement District.

Planning for Success and Integration of Sustainability and Resilience Policies Citywide

Over the past two years, DSR, DTM, the Office of Economic Development, the Department of Planning and Regulatory Services, and DPW&P have collaborated in interdepartmental working groups to integrate sustainability into zoning policies, street redesigns, and park upgrades.

In Spring 2022, the City kicked off the development of a comprehensive plan called Worcester Now|Next, which has engaged the community in exploring issues such as land use, housing, transportation and mobility, economic opportunity, arts and culture, recreation, open space and environment, and more. The draft plan includes goals such as ensuring the City is resilient to the effects of climate change, achieving net zero by 2045, managing and expanding our urban forest and more. Many of the critical Green Worcester Plan goals will be integrated into this plan.



LOOKING FORWARD



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DSR's Priority Actions in 2024

A lot has been accomplished since the launch of the Green Worcester Plan (GWP). The initial focus has been on establishing the internal infrastructure to enable the plan's implementation. The City created a Department of Sustainability and Resilience (DSR), a Green Worcester Advisory Committee, and advanced planning activities related to mobility planning, urban forest planning, and comprehensive master planning. The recently formed Departments of Public Facilities and Transportation & Mobility also have significant sustainability and resilience emphasis.

While the GWP report provides a status update on all of its designated priority actions, i.e., those assigned to the City government, businesses, residents, and institutions, this section focuses specifically on the GWP-aligned priorities of the Department of Sustainability and Resilience for the upcoming year.

DSR was formed in July of 2022 (now with 9 permanent and 3 part-time positions), with a mission to promote the GWP's vision of Worcester becoming the most sustainable and climate-resilient mid-sized city in America by 2050. DSR's mission is *"to implement the ambitious and urgent goals of the Green Worcester Sustainability and Resilience Strategic Plan (GWP). To be a strong and reliable advisory and collaborative partner which supports integration of sustainability and resilience and leveraging projects' co-benefits into all functions of the City via policies, projects, and initiatives. To use the lenses of health, equity and prosperity to guide projects."*

While many of the Early Action Items in the GWP were accomplished, now is the time to look ahead to 2024. Below is a list of DSR's priorities for the upcoming year, which will align with DSR's work planning, funding requests, and choices around resource allocation.

Energy

- Launch the next generation *energy efficiency project for municipal facilities* using an energy savings performance contract; manage a contract for timely maintenance and repair of all *municipally owned* solar PV facilities.
- Seek and pursue opportunities for the City's *5000 triple-deckers* related to improving energy efficiency, as well as increasing renewable energy and electrification projects.
- Continue to implement and innovate the *Smart Energy Advice* program.
- Continue to *advance vehicle electrification* – through installing electric vehicle charging stations and promoting purchases of the electric vehicles for the City's municipal fleet.

Mobility

- Following the Transportation and Mobility Action Plan completion, and in collaboration with internal and external partners, pursue funding to begin the *Green-Blue Mobility Network* design and then target a date and funding for implementation.

Zero Waste

- Develop *Zero Waste Master Plan* which will set out the goals and priorities for implementation.

Resilience and Environment

- Complete the *Drainage and Green Infrastructure Master Plan* with identified priorities for green and grey infrastructure improvements and pursue opportunities to start implementing those priorities.
- Complete the installation of two Miyawaki Forests and conceptual designs for two Community Resilient Spaces.
- Invest in expanding the City's urban forest (in line with the Urban Forest Master Plan goals) as a means of achieving numerous co-benefits, including such potential actions as additional Miyawaki forests plantings, establishing a tree nursery, partnering to establish a Worcester Tree Academy, and increasing the number of new street tree plantings.
- Develop *Watershed Management Plans* and implement associated water quality improvement projects for the Lakes and Ponds Program.

Policy / Planning / Workforce

- Support implementation of the Worcester Zoning Ordinance revision – a central recommendation in the Now|Next Master Plan - with the emphasis on sustainability, mobility, livability, health and equity in the built environment.
- Explore and pursue opportunities for Worcester Public Schools' Curriculum, as well as Workforce and Youth Workforce Development for maintenance of green infrastructure and biodiversity/pollinator friendly landscapes, with the help of community partners such as the vocational school, Regional Environmental Council, the Green Jobs Academy and local Higher Education Institutions such as Holy Cross.

Urban Agriculture and Sustainability

- Develop an Urban Agriculture Plan which will set out the goals and priorities for encouraging and incentivizing homeowners to grow food and native plants.





STATUS & PROGRESS



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Chapter II Stewardship, Transparency, and Accountability

Action	Status	Progress
1. New Department of Sustainability: Create a Department of Sustainability and Resilience within City government separate from a new Public Facilities Department (and retire the Energy and Asset Management Division).	Completed	The Department of Sustainability and Resilience (DSR) was founded in July 2021. The department now has 9 permanent and 1 temporary staff member.
2. Sustainability and resiliency codes and regulations: Ensure that the City provides sufficient enforcement, training, and knowledgeable staff to develop and implement sustainability and resiliency codes and regulations.	Ongoing	Through a City Council vote, the City has adopted a highly efficient building energy code called the Specialized Stretch Code. The new code will go into effect on July 1, 2024. The Inspectional Services Department (ISD) will receive the needed training to enforce the new code.
3. Green Worcester Advisory Committee: Create a Green Worcester Advisory Committee made up of non-governmental stakeholders to serve as the forum for information exchange and to advise on the City's sustainability and resilience activities.	Completed	The Green Worcester Advisory Committee had their first meeting on March 7, 2022. The committee has seven members, with each district having at least one representative, and meets almost monthly.



Action	Status	Progress
4. Green Worcester Fund: Create a Green Worcester Fund for the City's sustainability and resilience programs.	Completed	The City has a Carbon Mitigation Fund that provides modest funding to DSR, allowing them to partially fund their staff and pursue carbon mitigation projects. This account is funded, in large part, by selling virtual net metering credits associated with electricity produced by the City's Greenwood Street Solar Farm. (Chapter II, Action 4)
5. Sustainability Performance Outcomes for New Development.	In Progress	The City is pivoting from developing our own performance metrics to implementing the State developed Specialized Stretch Code related to energy efficiency of the building. Additionally, we anticipate that through the future zoning ordinance revision (part of the Now Next Master Plan recommendations) – many other sustainability performance outcomes will be addressed.
6. Develop and Implement a Sustainability and Resiliency Dashboard.	Completed	DSR published a dashboard (green.worcesterma.gov) highlighting the City's accomplishments and outlining how residents can help us meet our sustainability goals. It was launched for Earth Day 2023 and is updated on a regular basis.
7. Annual Progress Report: Prepare an annual public progress report.	Ongoing	The City is committed to updating this report annually. In the future we will adapt the timescale of this report to capture developments over the previous calendar year.
8. Outreach Strategy: Implement a transparent Green Worcester outreach strategy to include traditional and new media and activities.	Ongoing	DSR is spearheading Green Worcester's outreach strategy. DSR has monthly communication strategy meetings and is reaching out to people through monthly newsletters, surveys, the Green Worcester Dashboard, social media posts, and radio PSAs.



Action	Status	Progress
9. Data and Data-Driven Decisions: Work with the Office of Urban Innovation to develop relevant datasets to measure progress and make data-driven decisions about sustainability and resilience.	Refocused and Ongoing	The Office of Urban Innovation merged with Technical Services Department to become the Department of Innovation and Technology. Due to this merge, we refocused this action to be managed by DSR instead. DSR has hired an internal Energy Analyst; created the Green Worcester Dashboard to better display our data; and has begun compiling data from other departments to keep better track of our energy and sustainability data.
10. School Curriculum: Integrate sustainability and resilience into the curriculum at all levels in the Worcester Public Schools.	Ongoing (2024 Priority Action)	The City has begun making connections with Worcester Public School staff, and city staff has met with environmental groups at the high schools to discuss sustainability and resilience in Worcester.
11. Promotion to Private Stakeholders: Publicize and promote the Green Worcester Plan to important city stakeholders and civic groups such as the large and small business community, realtors and developers, neighborhood associations, educational and medical institutions, faith communities, immigrant associations, and social services groups.	Ongoing	DSR held 35+ public presentations for diverse city stakeholders, such as the Worcester Garden Club, the Worcester Board of Health, Chamber of Commerce, higher educational institutions, the Worcester Business Improvement District, and many more.



Action	Status	Progress
12. Business Committee: Encourage the Greater Worcester Chamber of Commerce to create a sustainability and resilience committee.	Refocused and Ongoing	DSR has developed a working relationship, through the exchange of knowledge and information, with the Chamber of Commerce on sustainability, energy, and zero waste related projects.
13. Worcester Civic Group on Sustainability and Resilience: Promote and help create a citywide sustainability/ resilience umbrella group or coordinating network to link existing organizations, provide public information and access to ongoing activities, and work with the City and other partners to achieve Green Worcester goals.	Not Started	
14. Collaboration with Educational Institutions: Promote continued collaboration with the City's educational institutions to achieve Green Worcester goals.	Ongoing	The City has made several successful connections with local higher education institutions, including Clark University, Worcester Polytechnical Institute, Worcester State University, and Holy Cross, and is continuing to seek out connections with educators in Worcester's public schools.
15. Pilot "Sustainability District": Designate one or more pilot "Sustainability Districts" as areas to test, refine, and promote new sustainability and resilience efforts.	Not Started	



Action	Status	Progress
16. LEED ² Certification: Consider seeking LEED certification as a sustainable community.	Not Started	The City investigated the LEED certification and decided not to pursue due to cost.
17. Mayors' Covenant: Join the Global Covenant of Mayors for Climate and Energy.	Not Started	
18. Urban Sustainability Network: Join the Urban Sustainability Directors Network.	Completed	DSR joined in July 2022, and we have used the network for learning opportunities such as webinars, connecting with other municipal staff and posting our job openings.
19. Carbon Neutral Cities: Seek nomination for membership in the Carbon Neutral Cities Alliance.	Not Started	



² Leadership in Energy and Environmental Design



Chapter III

100% Clean and Affordable Energy

Action	Status	Progress
1. Zero Emissions: Eliminate 100% of greenhouse gas (GHG) emissions citywide.	In Progress 3% of Goal	<p>The Department of Sustainability and Resilience (DSR) was founded in July 2021. The department now has 9 permanent and 1 temporary staff member.</p> <p>Green Worcester ElectriCITY Aggregation provides energy that consists of 40% premium renewable electricity in addition to the state required 22% (resulting in 62% renewable energy) to residents and commercial customers via the new aggregation contract, which began in December 2023 and ends in December 2025. Since the program began in 2019, the program has eliminated the release of over 160 million pounds of carbon dioxide emissions into the atmosphere.</p> <p>A Greenhouse Gas Emission Inventory was completed in 2022, comparing the progress from 2009-2019. The inventory found there was a 3% decrease in citywide GHG emissions since 2009 (find more at www.worcesterma.gov/greenworcester). We are going out to bid to hire a consultant to conduct another inventory for 2020-2023 and plan to conduct inventories bi-annually after that.</p> <p>See Action 4 below for details on our municipal operations.</p>
2. Community Choice Program: Achieve 100% renewable electricity sources by 2035 via aggregation.	In Progress 62% of Goal	See Chapter III, Action 1, above.



Action	Status	Progress
3. Carbon Neutral Cities Alliance: Seek nomination for membership.	Not Started	
4. Net Zero City Operations: Aim to make city facilities and operations net zero by 2030, including the City's vehicle fleet.	In Progress (2024 Priority Action)	<p>The City hired a company, Honeywell, to conduct an assessment of our facilities to increase energy efficiency providing cost savings for our municipal operations. We just completed our most recent contract with Honeywell and are launching the next phase soon. In the past 10 years, the City has decreased our emissions by 16%. The City installed 3 new solar PV systems on municipal buildings (South High School, West Tatnuck Elementary School, and Nelson Place).</p> <p>See Chapter VI, Action 6 for details on city fleet.</p>
5. Flexible Commutes for City Employees: Develop commuting and/or work at home programs for City employees to cut emissions.	Not Started	
6. Identify opportunities for innovative energy pilot projects	In Progress (2024 Priority Action)	
7. Building Disclosure Policy: Adopt a building performance disclosure policy for non-residential buildings.	Not Started	



Action	Status	Progress
8. PACE Program: Opt into the proposed Massachusetts PACE (Property Assessed Clean Energy) program.	Not Started	
9. Public EV Charging: Establish EV charging stations in all City-owned parking areas with 20 or more parking spaces.	In Progress 33% of Goal (2024 Priority Action)	The City installed three dual-port electric vehicle charging stations in three municipally owned public garages (Pearl Elm, Worcester Common, and Federal Plaza) for a total of eighteen new ports in 2023. There are twelve municipally owned parking areas with 20+ parking spots. Four have EV Charging Stations. For more details, visit: Vehicle Electrification City of Worcester, MA (worcesterma.gov) and See Chapter VI.
10. Multifamily EV charging: Require EV stations and EV-ready parking at all new 5-unit plus multifamily buildings with on-site parking.	In Progress	Effective July 2024, 20% of residential and business parking spaces associated with new construction will be required to be wired for electric vehicle charging due to updated building code (Specialized Stretch Code).
11. Solar Zoning Ordinance: Develop and adopt a solar zoning ordinance with clear standards for siting solar farms and solar installations (residential and commercial).	Not Started	
12. Solar Map Tool: Work with educational institutions to create a solar map tool with information on solar opportunities in Worcester, including information on utility poles, roof material, and so on.	Not Started	



Action	Status	Progress
13. Regional Electricity Aggregation: Work towards becoming a Level II Aggregator.	Not Started	
14. Energy Ownership Models: Support efforts to diversify energy ownership models.	Not Started	





Chapter IV Blue Spaces with Healthy Natural Systems

Action	Status	Progress
1. Open Space and Recreation Plan: Continue to update and implement the City's Open Space and Recreation Plan as required to ensure City eligibility for state funding.	Ongoing	The City updates their Open Space Recreation Plan every seven years. Our most recent update was in 2021.
2. Join the City Parks Alliance.	Not Started	
3. Urban Core and Green Spaces: Make new green spaces, street trees, sidewalk planters, and street landscaping in the urban core of the City a high priority (in the Open Space and Recreation Plan and other municipal plans) to reduce the urban heat island effect and help manage stormwater.	Ongoing (2024 Priority Action)	<p>The City completed a Heat Map study to identify areas of the City that experience the Urban Heat Island Effect the most. The City is developing a plan to redevelop Endicott and Bigelow Streets in the Green Island Neighborhood as a "Green Street".</p> <p>The City was recently awarded a State Municipal Vulnerability Preparedness (MVP) Grant to plant Miyawaki Forests - small, fast-growing biologically diverse forests - in hot, environmental justice areas of the City.</p>
4. GreenStreets Routes: Designate "GreenStreets" routes for neighborhood access to parks to implement improvements that enhance safe and comfortable walking and biking and prioritize these routes for shade by planting trees.	In Progress	See Chapter VI, Action 13.



Action	Status	Progress
5. Cluster Subdivision: Revise the Cluster Subdivision zoning provision to allow by-right development using zoning consistent with the principles of the State's Model Open Space Design/ Natural Resources Protection Zoning.	Not Started	
6. Urban Forestry: Develop and implement an Urban Forestry Plan.	In Progress (2024 Priority Action)	The City's Parks Division and Urban Forestry Tree Commission are finalizing the Urban Forest Master Plan.
7. Tree Standards: Establish development standards for tree retention, replacement and planting for private projects that meet size thresholds.	Not Started	
8. Habitat Lands: Continue management of Worcester's water supply open space lands (located outside city limits) as high-quality environmental systems.	Ongoing	The City's Department of Public Works and Parks (DPW&P) manages the City's 10 drinking water reservoirs, delivering 8 billion gallons of safe drinking water annually.



Action	Status	Progress
9. Lakes & Ponds Program: Continue the program to improve water quality and expand it to additional surface water features.	Ongoing (2024 Priority Action)	The City's Lakes & Ponds Program added two new ponds to their treatment and management program. The program now monitors and manages a total of six waterbodies. Additionally, the program has been leading a growing group of community scientists to monitor cyanobacteria at over twenty waterbodies in Worcester. Worcester State University faculty and staff have participated in cyanobacteria monitoring and have conducted additional monitoring at two ponds using the protocol developed by the Lakes and Ponds Program to increase the number of waterbodies with comprehensive monitoring to eight. There are continuing efforts to seek additional funding to expand water quality monitoring and management of more water bodies.
10. High Performance Private Landscapes: Raise public awareness about beneficial stormwater best management practices for drainage areas of lakes and ponds, such as permeable pavement, rain gardens, rain barrels, and lawn buffers at stream and pond shores.	Ongoing	The City has distributed 179 rain barrels since 2021. Additionally, we are developing a collaborative relationship with Worcester Native Plant Initiative which is a local volunteer group dedicated to planting native plants in the City.
11. Upgrade Regulations: Complete and enforce any needed upgrades to regulations related to land disturbance and development that result in nonpoint pollution to streams, lakes, and ponds.	Not Started	



Chapter V Net-Zero and Climate-Resilient Buildings

Action	Status	Progress
1. Sustainability of All City Building Systems: Continue to transition City-owned buildings away from dependence on fossil fuels and towards full electrification and renewable energy through establishing sustainability requirements and thresholds for all City buildings. (See Chapter III.)	In Progress	<p>New municipal buildings will need to be constructed to the standards set forth in the Specialized Stretch Code set to go into effect in July 2024.</p> <p>Where feasible, the City will electrify its existing buildings during renovation projects.</p>
2. Municipal Strategic Building Energy Management Plan.	In Progress	The Department of Public Facilities (DPF) was created in 2022 to oversee and manage most City facilities. DPF uses a real time energy monitoring system to track the City facilities' energy usage. Over 2/3 of our buildings are part of the management system and more continue to be added.
3. Fossil Fuels to Renewable Fuels: Develop a program to move all Worcester buildings from dependence on fossil fuels, including natural gas, to renewable energy sources.	In Progress (2024 Priority Action)	<p>The City has adopted a highly efficient energy building code, the Specialized Stretch Code, which will go into effect on July 1, 2024. New buildings constructed after this date will have no or limited fossil fuel use as a result.</p> <p>In January 2023, the City received a grant from the sponsors of Mass Save to fund two temporary city staff, Energy Advocates, to promote the Mass Save incentives and rebate programs and assist residents and businesses in making their buildings more energy efficient. In Fall 2023, the City launched the Smart Energy Advice program by onboarding the two Energy Advocates.</p>



Action	Status	Progress
4. Mandatory Energy Efficiency in City-Funded programs.	Not Started	
5. Annual Energy Performance Data on Large Buildings: Require buildings that meet size thresholds to submit annual energy performance data by adopting a building performance disclosure policy.	Not Started	
6. Cool Roof Incentives: Establish an incentive program for “cool roofs” and “green roofs” to reduce air conditioning costs, the urban heat island effect, and, in the case of green roofs, help in stormwater management.	Not Started	
7. Distributed Energy Systems: Promote solar installations, geothermal networks, and other distributed energy systems, working with the state, National Grid, and other stakeholders.	Ongoing	The City worked with local neighborhood groups to apply to be a part of the geothermal networked neighborhood pilot project managed by Eversource, but was not selected as a pilot site at this time. We will continue to explore similar opportunities.



Action	Status	Progress
8. Sustainability Incentives for Private Buildings: Provide at least two incentives for private sector buildings that meet the standards of LEED ³ or an equivalent green building rating system.	Not Started	
9. Green Vocational Training: Establish training programs at the Worcester Technical High School for sustainable building systems and renewable energy.	Not Started	
10. Awards: Promote establishment of an annual award for green development projects, including retrofits.	Not Started	
11. Code compliance: Enforce consistent compliance with current energy codes.	Ongoing	The updated Stretch Code and upcoming Specialized Stretch Code increase energy efficiency requirements. The City's Inspectional Services Department (ISD) will receive training on the updated codes, as it is responsible for enforcing those codes.
12. Home MPG ⁴ Rating: Advocate for passage of state legislative proposals to require an energy assessment label (at time of sale) for single family, 1-4 family, and condominium homes.	Not Started	

⁴ Miles Per Gallon



Action	Status	Progress
13. State Energy Code: Continue to support and advocate for advanced state energy code regulations, such as a net zero energy code.	Completed	The City has adopted a highly efficient energy building code, the Specialized Stretch Code, which will go into effect on July 1, 2024.
14. Land Use and Zoning: Use the comprehensive plan and zoning ordinance to support initiatives and regulations that promote reduced GHG emissions in housing and non-residential buildings.	Ongoing (2024 Priority Action)	DSR is a collaborative partner in the Planning Division’s work on the City’s Now Next Plan. Once the Plan is approved, DSR will continue to work together to implement the plan’s high priority actions, especially related to updating zoning ordinance to promote the goals of the GWP.
15. Sustainable Reuse of Underutilized Properties.	In Progress	See Chapter XII, Action 3.



Chapter VI

Sustainable Transportation Choices

Action	Status	Progress
1. Sustainable Transportation and Mobility: Establish a sustainable transportation and mobility policy and planning section within the Department of Sustainability.	Refocused and Completed	The City established the Department of Transportation and Mobility (DTM) in July of 2022. DTM plans, coordinates, designs, and implements transportation programs and projects that promote safe, equitable, connective, and sustainable mobility options.
2. Transportation Emissions Reductions: Make the reduction of greenhouse gas emissions an explicit goal of City of Worcester transportation planning.	In Progress	DTM, in collaboration with DSR, is currently developing a Transportation and Mobility Action Plan, which will include numerous schematic level plans for improving our City's mobility infrastructure while reducing transportation related emissions.
3. Connectivity: Make connected networks an explicit goal of City of Worcester transportation planning. Maximize connectivity to move people – not just vehicles – between destinations.	Ongoing (2024 Priority Action)	DTM is currently creating a Transportation and Mobility Action Plan which will include a map of connected networks.
4. Event Transportation: Promote sustainable transportation choices at high profile locations and events, such as Polar Park and DCU events.	Ongoing	There is currently a shuttle from the City's parking garages to Polar Park on game days.
5. Idling Reduction: Enforce the Massachusetts Anti-Idling Law (Chapter 90, Sec. 16A).	Not Started	



Action	Status	Progress
6. Electric Vehicle Use: Promote the use of electric vehicles in Worcester.	Ongoing (2024 Priority Action)	The City installed eighteen Electric Vehicle Charging stations, increasing the number of publicly owned charging stations to 30. The City is also actively working to increase our stock of Electric Vehicles by purchasing an EV for the City Manager use and collaborating on the application for a grant to purchase twenty EV school buses. The City is also working with MassCEC on the Accelerating Clean Transportation School Bus Advisory Services Program, which will help with planning and implementing school bus electrification.
7. WRTA Fleet: Transition the WRTA bus fleet to 100% electric buses by 2035.	Not Started	
8. Transit Demand: Work with large employers to identify transit demand and priority routes for their employees, and seek funding for solutions to reduce single occupancy vehicle use.	Not Started	
9. Consultation with the WRTA: Include the WRTA in the Transportation Advisory Group and consult the WRTA from the beginning in City transportation, street redesign and resurfacing projects.	Not Started	



Action	Status	Progress
10. WRTA Service Optimization: Review WRTA service and make changes as needed to promote higher ridership while balancing coverage and social service responsibilities.	Ongoing	Worcester Regional Transit Authority temporarily eliminated fares to promote ridership and increase route efficiency. Collecting fares slows service and creates inefficiency costs. The Transportation and Mobility Action Plan will include plans for pedestrian improvements to support transit stops.
11. Transit to Serve Higher Education: Work with higher education employers, institutions, and student populations to identify transit demand and priority routes and seek funding.	Not Started	
12. Complete Streets Policy: Implement the policy by developing a priority plan for designing roadway space for all users.	Refocused and In Progress	The City's Transportation and Mobility Action Plan will include a complete streets prioritization plan.
13. Micromobility Plan: Develop and Implement a Pedestrian, Bicycle, and Micromobility Plan.	In Progress	Pedestrian, Bicycle, and Micromobility will be large focuses in the City's forthcoming Transportation and Mobility Action Plan.
14. Bike and Micromobility Share: Find a reliable partner to create a new city micromobility share program for bicycles, scooters, and similar light-weight transportation.	Not Started	



Action	Status	Progress
15. Open Streets Program: Create an “Open Streets” program to close a set of downtown or other suitable streets on Sunday mornings, monthly or weekly, or as one-off events, for biking and walking.	Not Started	
16. Energy-efficient Truck Routes: Study and revise, as needed, the truck routes for city-owned or city-contracted trucks, to enhance energy efficiency and reduce GHG emissions.	Not Started	
17. Mitigate Truck Route Impacts: Develop, implement and enforce a truck route plan that avoids negative impacts on residential and commercial areas.	Not Started	
18. Truck Idling: Work with the Port of Worcester and CSX to reduce or eliminate idling at their yards.	Not Started	
19. Last Mile Freight Delivery: Work with businesses for opportunities to establish innovative “last mile” freight delivery options that reduce GHG emissions.	Not Started	



Action	Status	Progress
20. Coordinated Land Use Decisions: Use the comprehensive plan and zoning ordinance to support multi-modal transportation, especially walking, bicycling, and transit.	Not Started (2024 Priority Action)	
21. Zero-Emission Urban Villages: Use the comprehensive plan and zoning ordinance to support existing and future mixed-use, higher-density neighborhood “urban village” centers that support zero-emissions pedestrian, bicycle, and other micromobility transportation.	Not Started	





Chapter VII

One Water – Integrated Water Management

Action	Status	Progress
1. Sustainability and Resilience Benefits: Prioritize sustainability and resilience benefits when implementing the Integrated Water Management Plan.	Not Started	
2. System-wide Stormwater Model: Create a comprehensive system-wide stormwater hydraulic/hydrologic model to help the City to better understand the drainage infrastructure and inform capital improvement priorities (to address flood resiliency).	In Progress (2024 Priority Action)	The City is developing a Drainage and Green Infrastructure Master Plan funded in part by a \$1.2 million state grant. The project kicked off in Fall 2022 with an anticipated completion in June 2024.
3. Watershed Model for Water Supply: Create a comprehensive system-wide watershed model of the water supply reservoir network (to address drought resiliency).	Not Started	
4. Urban Forestry and Stormwater: Include stormwater management improvements and benefits when developing an Urban Forestry Master Plan.	In Progress	See Chapter IV, Action 6.



Action	Status	Progress
5. Low Impact Development Standards: Establish regulations and guidelines to require standards on Low Impact Development, stormwater runoff reduction, and green infrastructure in new development and in significant additions and renovations.	Not Started	
6. Stormwater Utility: Explore creating a stormwater utility to incentivize use of best management practices on private property.	Not Started	
7. Landscape Practices: Use Integrated Pest Management and organic landscape practices in managing city-owned property to reduce stormwater impacts of fertilizer, herbicides, and pesticides on surface waters.	Not Started	
8. City Green Infrastructure: Identify and implement opportunities for green infrastructure in City facilities and landscapes.	In Progress	DSR has been working with DPW&P on a <i>Drainage and Green Infrastructure Master Plan</i> since September 2022 and expect to complete it by June 2024, which will identify priorities for green and grey infrastructure improvements and will then pursue opportunities to start implementing those priorities.



Action	Status	Progress
9. Private Green Infrastructure: Promote green infrastructure practices to manage stormwater in private development.	Not Started	
10. Prepare Streams for Climate Change Impacts: Map currently culverted streams and study the potential for daylighting and green infrastructure.	Not Started	
11. Workforce Development for Green Infrastructure: Develop youth workforce development program for maintenance of green infrastructure projects like rain gardens, bioswales, and bioretention areas.	Not Started (2024 Priority Action)	
12. Landscape Practices: Promote sustainable landscape practices for private property that eliminate or minimize excess fertilizer, herbicide, and pesticide use to private property owners and landscaping contractors.	Not Started	



Action	Status	Progress
13. Lakes & Ponds Program: Continue and expand the Lakes & Ponds program and coordinate with initiatives to reduce nonpoint source pollution to lakes, ponds, and streams.	Ongoing	The Lakes & Ponds Program installed an “Alum” dosing station at Indian Lake to maintain water quality resulting in fewer beach closures. State ARPA funds were acquired to complete analysis and implementation of water quality improvement projects. The program hosted over 50 outreach events to teach residents about their waterbodies. Staff regularly attend meetings of the City’s three watershed associations to provide input and coordinate on additional outreach and education activities.





Chapter VIII Towards Zero Waste

Action	Status	Progress
1. Waste Management Master Plan: Develop and Implement a Zero Waste Master Plan.	In Progress (2024 Priority Action)	In August 2023, the City hired a Zero Waste Coordinator to advance the Zero Waste goals. We are currently in the process of hiring a consultant to help us develop the Zero Waste Master Plan.
2. Trash and Recycling Receptacles: Increase the number of and place trash and recycling receptacles strategically in public places.	Not Started	
3. Purchasing Policies: Establish environmentally conscious purchasing policies aimed at reducing waste and toxic materials and promoting use of recyclable materials.	Not Started	
4. Composting: Expand and initiate programs to divert waste to compost.	Not Started	
5. Food Waste Elimination: Promote food waste elimination initiatives by WPS, institutions, and businesses and reduce use of disposable food service ware.	In Progress	The City is working to build connections with Worcester Public Schools, and hopes to outline the school's food waste elimination plan in the future Zero Waste Master Plan.



Action	Status	Progress
6. Reuse Initiatives: Work with community organizations and City departments to organize Swap Shops, Fix It clinics, and similar initiatives.	Not Started	





Chapter IX Sustainable Food Systems

Action	Status	Progress
1. Existing sites: Protect access to land of existing community gardens and urban farms.	Not Started	
2. New urban agriculture sites: Identify additional locations for community gardens and larger-scale production.	Ongoing	The Regional Environmental Council added four community gardens since the Green Worcester Plan was adopted and continues to expand their community gardens network.
3. Community orchards: Identify potential locations for community orchards in selected public spaces or edges of community gardens.	Not Started	
4. Farm to School: Continue and expand the Farm to School program for WPS, working with the Worcester Food Hub.	Ongoing	Worcester Head Start is participating in the Farm to Early Massachusetts Farm to School aided by Coach Eliza Lawrence (Regional Environmental Council (REC)).
5. Gardens in Schools: Integrate school gardens and garden curricula in the Worcester Public Schools.	Ongoing	The Regional Environmental Council has supported 25 school gardens and engaged 2,677 students with hands-on gardening activities and classroom workshops.
6. Local food sourcing: Promote local food sourcing by all institutions.	Not Started	



Action	Status	Progress
7. Preferential Procurement: Adopt preferential procurement policies to source locally produced foods.	Not Started	
8. Resilient Regional System: Develop a plan to enhance the resilience of the regional food supply system.	Not Started	
9. Indoor Farming: Develop a pilot project with students to develop a sustainable return on investment analysis of indoor farming.	Not Started	





Chapter X Pollution Prevention

Action	Status	Progress
1. Procurement Policies: Update the City's Environmentally Preferable Purchasing Policy.	Not Started	
2. Land Use and Transportation: Implement transportation and land use policies and actions to reduce greenhouse gas emissions and particulate matter.	Not Started	
3. Toxic Materials Reduction: Encourage local businesses to adopt policies to avoid toxic materials in their operations and products.	Not Started	
4. Brownfields: Continue brownfields remediation programs and policies.	Ongoing	In May of 2023, the City received a \$2.7 million from the EPA for brownfield remediation. The City has previously been awarded \$5.1 million by the EPA for brownfield remediation, which was used to fund 13 brownfields remediation projects. There are 137 brownfields in Worcester, identified by the Massachusetts Department of Environmental Protection.
5. Lead Abatement: Continue lead abatement programs, including regular public outreach to increase awareness of the programs.	Ongoing	The City's Office of Economic Development manages a lead abatement program and a brownfield cleanup loan fund to mitigate two of these large historic issues. Since July 2021, 135 units were de-leaded, funded by the federal grants.



Action	Status	Progress
6. Water Quality and Toxins: Continue and expand water quality programs and partnerships.	Ongoing	See Chapter VII, Action 13.





Chapter XI Climate Change Resilience

Action	Status	Progress
1. Resilience Working Group: Create a climate change resilience working group of municipal staff to coordinate tasks and timelines for priority resilience actions from the MVP ⁵ , HMP, and other relevant planning groups, such as the Planning and Public Health Departments.	Refocused and Ongoing	DSR has set up regular interdepartmental working meetings with the Department of Public Works and Parks, the Department of Transportation and Mobility, and the Executive Office of Economic Development. These meeting provide the forum needed to collaborate on resiliency related programs and projects.
2. Resilience Building Standards: Establish standards for climate resilience in new and rehabilitated buildings.	In Progress	The City has adopted the Specialized Stretch Code which will result in more efficient and well-built buildings that are by default more resilient. However, there is an opportunity to create more resiliency standards for buildings that are undergoing rehabilitation.
3. Resilient Food System: Promote a robust and resilient regional food system.	Ongoing	The Regional Environmental Council, a community partner, has offered access to fresh local food through their standing and mobile farmer’s market programs; supported 25 school gardens; engaged 2,677 students with hands-on gardening activities and classroom workshops; added four community gardens to their network; and maintained their Healthy Incentives Program which allows residents to use SNAP and EBT benefits at Farmer’s markets.
4a. MVP Priority Actions: Infrastructure Resilience.	Ongoing	See Chapter VII.



Action	Status	Progress
4b. MVP Priority Actions: Social Resilience.	Ongoing	The City developed and launched the “Worcester 311” app for a quick and easy way for residents to submit non-emergency requests for assistance with issues around the City.
4c. MVP Priority Actions: Environmental Resilience.	Ongoing	See Chapter IV, VII, VIII, X.
5a. HMP ⁶ Priority Actions: Transportation: Integrate disaster mitigation into transportation projects.	Not Started	
5b. HMP Priority Actions: Drought and Water Supply: Implement water supply emergency/drought projects.	Ongoing	See Chapter VI.
5c. HMP Priority Actions: Public Information and Awareness: Improve information available and educate property owners.	Ongoing	See Chapter IV, VII, X.
5d. Update the Zoning and Wetlands Protection Ordinances: Incorporate Low-Impact-Development and limit impervious surfaces.	Ongoing	See Chapter XII.

⁶Hazard Mitigation Plan

Action	Status	Progress
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5e. Best Management Standards: Create best management practices for land clearing and grading.	Not Started	
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Chapter XII Sustainability, Resilience, and Green Education in All Policies

Action	Status	Progress
1. Integrate Green Worcester goals and strategies into day-to-day planning.	Refocused and In Progress	In collaboration with the Office of Economic Development, the Department of Sustainability and Resilience (DSR) created a sustainability checklist for the Affordable Housing Trust Fund Board of Trustees to utilize when assessing housing applications. This effort proved to be ineffective, so DSR is instead planning to work on development of a comprehensive guide for development projects related to energy efficiency incentives.
2. Comprehensive Plan: Ensure that the City's new comprehensive plan is informed by the Green Worcester Plan and other relevant plans, as well as a robust community participation program.	In Progress	The City is incorporating sustainability into their new Now Next Plan as well as the Transportation and Mobility Action Plan. Both plans are expected to be finalized and City Council approved in 2024.
3. Zoning and Development Standards: Ensure that changes to zoning and development standards resulting from the comprehensive plan advance achievement of Worcester's sustainability and resilience goals.	In Progress (2024 Priority Action)	The Now Next plan will create the starting point for developing updated zoning and development standards.



Action	Status	Progress
4. Policy Development: Use the guidance of the Green Worcester Plan and other frameworks to develop transportation planning, design, and construction policies.	Not Started	
5. Envision Rating System: Consider using the Envision TM infrastructure rating system to evaluate proposed infrastructure projects for high performance sustainability.	Not Started	
6. LEED Community: Consider seeking LEED certification as a sustainable community.	Not Started	The City investigated the LEED certification and decided not to pursue due to cost.
7. Pilot Sustainability District: Designate a pilot “Sustainability District” as an area to test, refine, and promote new sustainability and resilience efforts.	In Progress	See Chapter II, Action 15.
8. Sustainability Performance Outcomes: Establish sustainability performance outcomes to be met by all new construction or redevelopment projects seeking tax incentives from the City.	Not Started	



Action	Status	Progress
9. Place-Based Neighborhood Planning: Create and implement a program for place-based neighborhood or district planning with community participation.	In Progress	Place-based neighborhood planning will be a key facet in the City's Now Next plan which is currently under development.
10. School Curriculum: Integrate sustainability and resilience into the curriculum at all levels in the Worcester Public Schools.	Ongoing	See Chapter II, Action 10.
11. Workforce Development Partners: Convene a working group to develop a framework for a coordinated green jobs framework in Worcester.	Not Started (2024 Priority Action)	
12. Workforce Development for Green Infrastructure: Develop youth workforce development programs, like the park ranger program, for maintenance of green infrastructure projects.	Not Started (2024 Priority Action)	
13. Outreach Strategy: Implement a transparent Green Worcester outreach strategy to include traditional and new media and activities.	Ongoing	See Chapter II, Action 8.



Acknowledgements

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City Staff

Eric D. Batista, City Manager
Department of Transportation and Mobility
Executive Office of Economic Development
Department of Public Works and Parks
Department of Inspectional Services
Worcester Public Schools

Green Worcester Advisory Committee

Mary Knittle, Chair
Evelyn Herwitz, Vice Chair
Patricia Austin
Ted Conna
Nathan Fournier
Mary Leovich
Deirdra Murphy

Mayor and City Council

Joseph M. Petty - Mayor & Councilor-at-Large
Morris A. Bergman - Councilor-At-Large
Donna M. Colorio - Councilor-At-Large
Khrystian E. King - Councilor-At-Large
Thu Nguyen - Councilor-At-Large
Kathleen M. Toomey - Councilor-At-Large
Sean M. Rose - District 1 Councilor
Candy F. Mero-Carlson - District 2 Councilor
George J. Russell - District 3 Councilor
Sarai Rivera - District 4 Councilor
Etel Haxhiaj - District 5 Councilor

External Partners

Regional Environmental Council
Higher Education Institutions
(Holy Cross, Worcester Polytechnical Institute, Clark,
Worcester State University)
Worcester Native Plant Initiative
Worcester Regional Chamber of Commerce
Worcester Regional Transit Authority
WalkBike Worcester

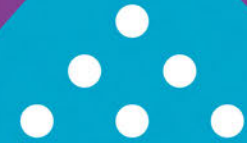


**GREEN
WORCESTER**



The City of
WORCESTER

Department of Sustainability and Resilience



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