

What's in the Worcester's new Urban Forest Master Plan?

Dr. Joy Winbourne
Chair of Worcester's Urban Forestry Tree Commission



About me: Dr. Joy B. Winbourne (she/her/hers) Assistant Professor at University of Massachusetts Department of Environmental, Earth, and Atmospheric Sciences



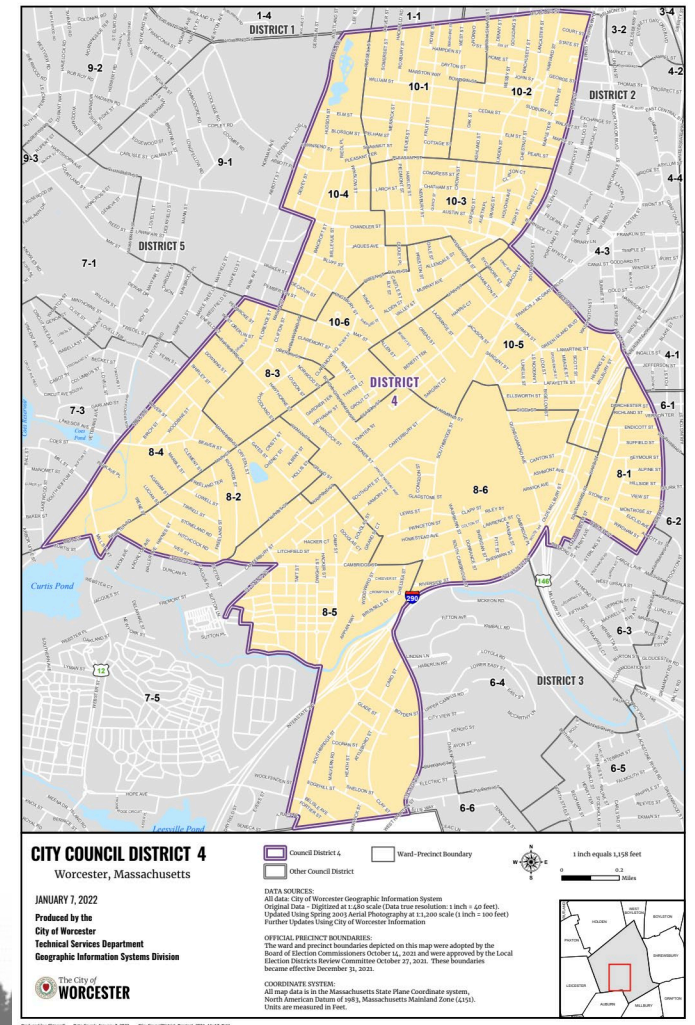
For more info on my research activities: www.joywinbourne.com



Worcester Urban Forestry Tree Commission

- Created in 2022
- Who we are?
 - Kristin Wobbe – District 1
 - Joy Winbourne – District 2 (Chair)
 - Robin Karoway-Waterhouse – District 3
 - Alexander Elton - District 5
- Open vacancy for District 4

Do you live in district 4?
Come join the WUFT Commission!



Pathway to creating Urban Forestry Master Plan

2021 Green Worcester Plan states the goal to develop urban forestry master plan



2022 Creation of the Worcester Urban Forestry Tree Commission with first meeting in October



Spring 2022 Davey Tree Company hired to conduct street tree inventory



June 2023 Davey presents first draft of master plan



October 2023 Davey presents second draft of master plan

Where to find a draft of the plan?

<https://www.worcesterma.gov/parks/trees>

URBAN FOREST MASTER PLAN



The City of Worcester is finalizing the development of the first Urban Forest Master Plan. The Plan will serve as a roadmap to proactively manage and grow the City's tree canopy and provide a shared vision for the future of the urban forest to help inspire us to care, plant and protect our trees.

Draft Master Plan

The revised (second) draft Urban Forest Master Plan was submitted in October 2023. If you have comments, please email them to WorcesterTrees@worcesterma.gov. The deadline for comments will be Wednesday, January 10, 2024. There is a meeting of the Urban Forestry Tree Commission scheduled for Wednesday, January 17, 2024 at 6 p.m. to discuss this second draft. View the Plan by clicking on the button below.

[VIEW THE DRAFT MASTER PLAN](#)

Presentations

-  Parks & Recreation Commission Presentation - May 4, 2023
-  Urban Forestry Tree Commission Presentation - May 3, 2023



Vision for Worcester's Urban Forest



A model of proactive management, sustainability, and climate reliance.



We envision a city where the urban forest is well cared for, with proactive measures in place to ensure its health and longevity.



Through intentional planning and community engagement, we will ensure tree diversity and well-distributed tree canopy cover, care, and green spaces for the entire Worcester community.



Through nurturing a resilient and sustainable urban forest, we aim to create a greener, healthier, and more vibrant Worcester.





The City of Worcester Urban Forest Master Plan

ACKNOWLEDGEMENTS

CITY MANAGER

Eric D. Batista

CITY COUNCIL

Joseph M. Petty, Mayor

Morris A. Bergman

Candy Mero-Carlson

Donna M. Colorio

Etel Haxhiaj

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URBAN FORESTRY TREE COMMISSION

Joy Winbourne, Chair

Alexander Elton

Robin Karoway-Waterhouse

Joseph Mogel

Kristin K. Wobbe

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DAVEY RESOURCE GROUP

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Moriah Day, Associate Consultant

Ashley McElhinney,
Associate Consultant

Thank you to the city departments, organizations, and individuals that helped in creating the Worcester Urban Forest Master Plan.

City of Worcester Department of Public Works & Parks

City of Worcester Department of Sustainability and Resilience

City of Worcester Office of Human Rights

City of Worcester Planning and Regulatory Services

Clark University

Greater Worcester Land Trust New England Botanic Garden @ Tower Hill

Mass Audubon

National Grid

Regional Environmental Council Worcester

Worcester GreenCorp (Chamber of Commerce)

Worcester Residents

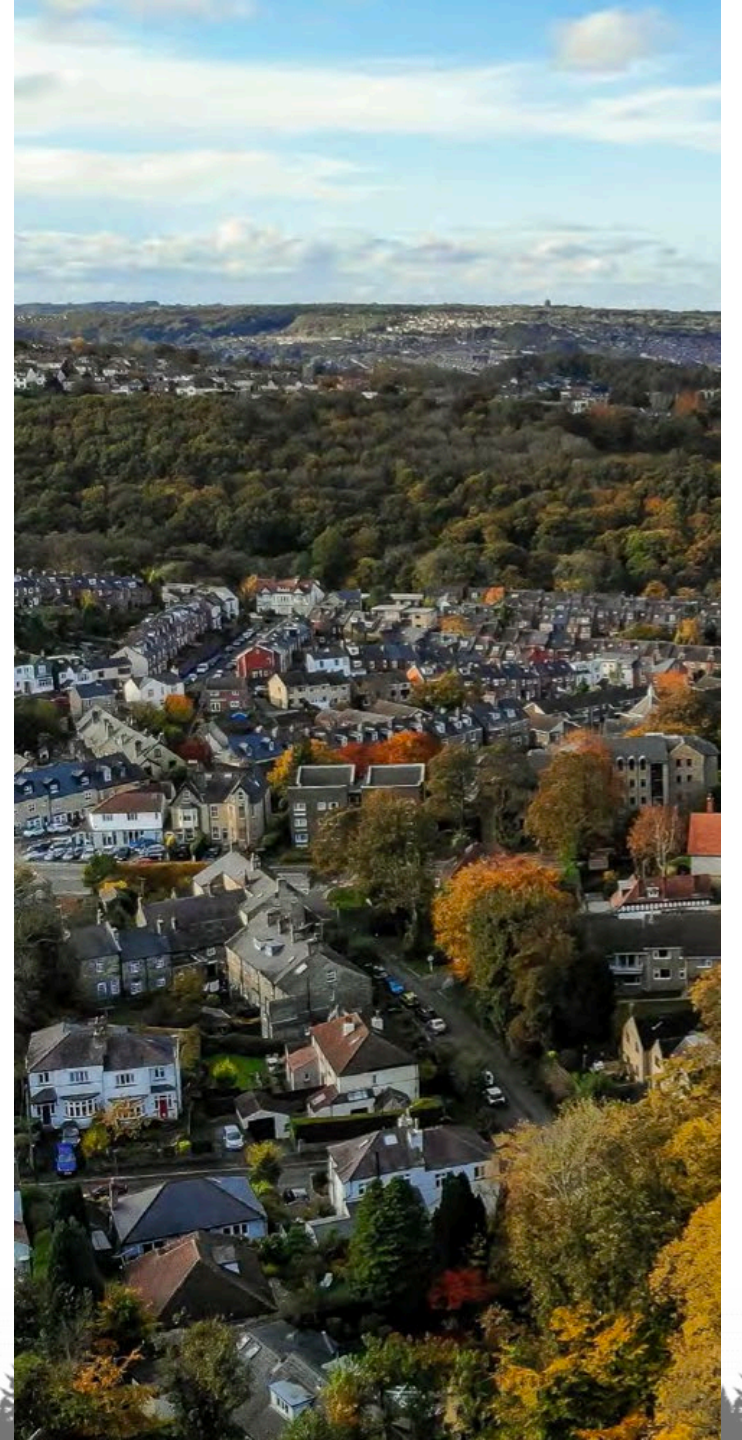
The City of Worcester wants to thank the over one thousand residents who took their time to complete the survey or attend a public hearing in an effort to express their thoughts on the City of Worcester Urban Forest.

What is in the plan?

- **Section 1.** Overview and Benefits of urban trees
- **Section 2.** State of the Current Urban Forest
- **Section 3.** Management plan
- **Section 4.** Engagement & Outreach
- **Section 5.** Recommendations & Action Steps

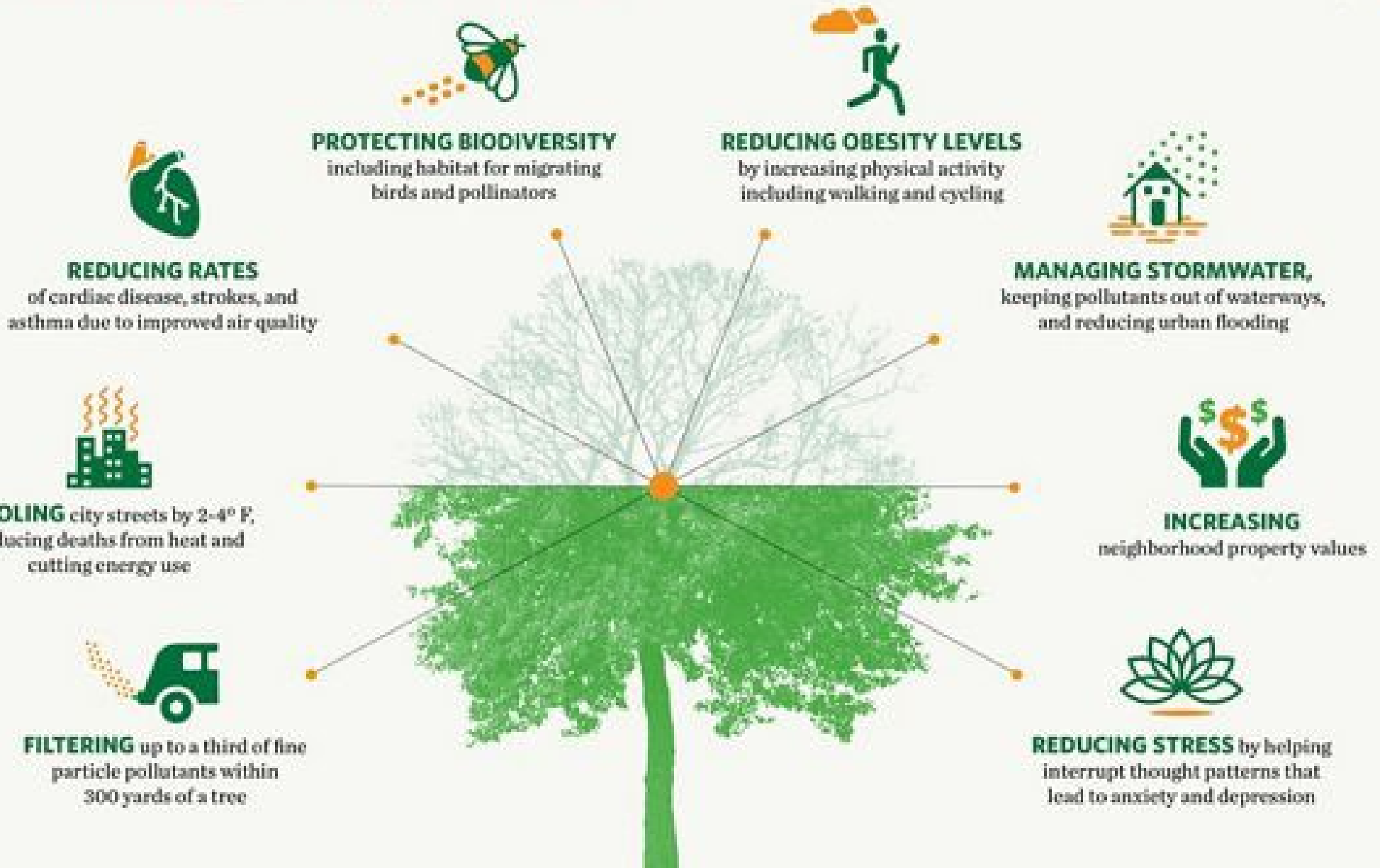


What is an urban forest?



Benefits of Urban Trees

Research has linked the presence of urban trees to...



REDUCING RATES
of cardiac disease, strokes, and
asthma due to improved air quality

PROTECTING BIODIVERSITY
including habitat for migrating
birds and pollinators

REDUCING OBESITY LEVELS
by increasing physical activity
including walking and cycling

MANAGING STORMWATER,
keeping pollutants out of waterways,
and reducing urban flooding

INCREASING
neighborhood property values

REDUCING STRESS by helping
interrupt thought patterns that
lead to anxiety and depression

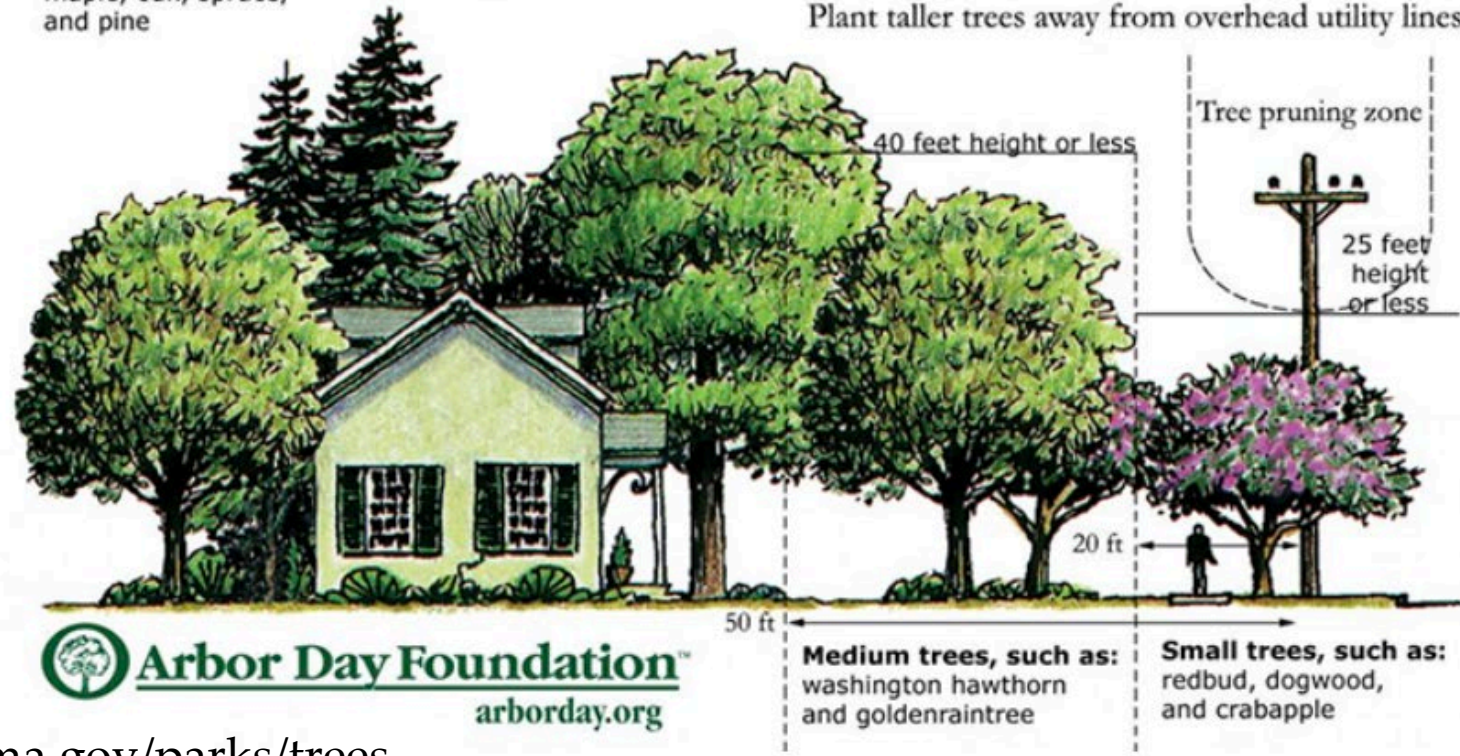
COOLING city streets by 2-4° F,
reducing deaths from heat and
cutting energy use

FILTERING up to a third of fine
particle pollutants within
300 yards of a tree

TREES IN THE CITY - RIGHT TREE, RIGHT PLACE

Tall trees, such as:
maple, oak, spruce,
and pine

Plant the right tree in the right place
Plant taller trees away from overhead utility lines



<https://www.worcesterma.gov/parks/trees>



Current state of the urban forest

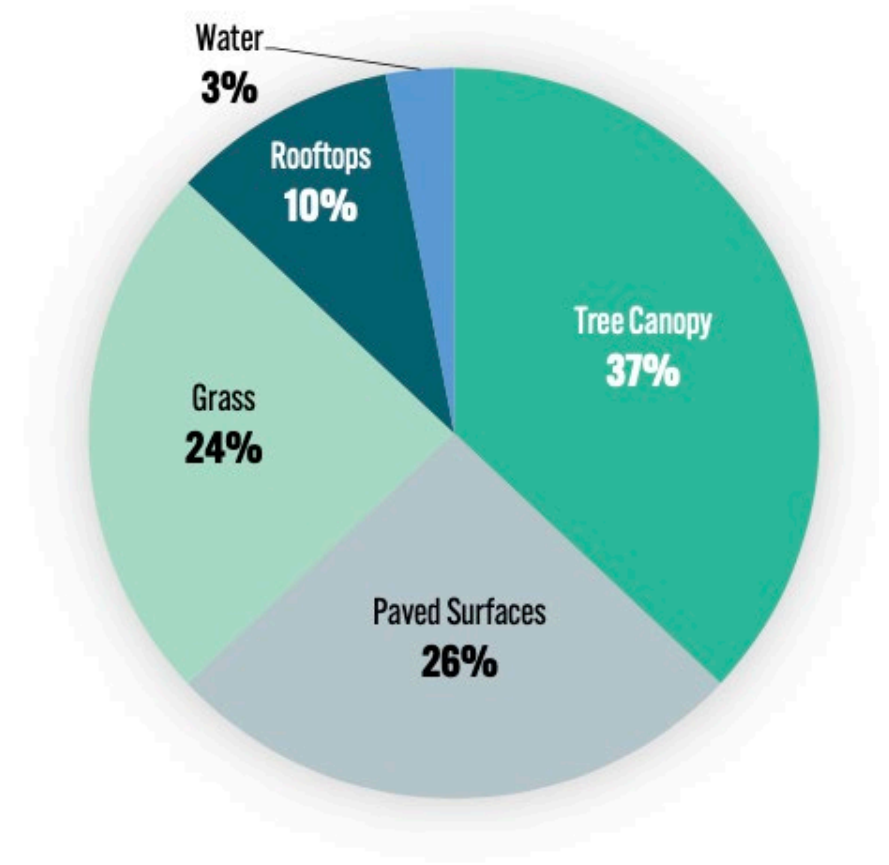
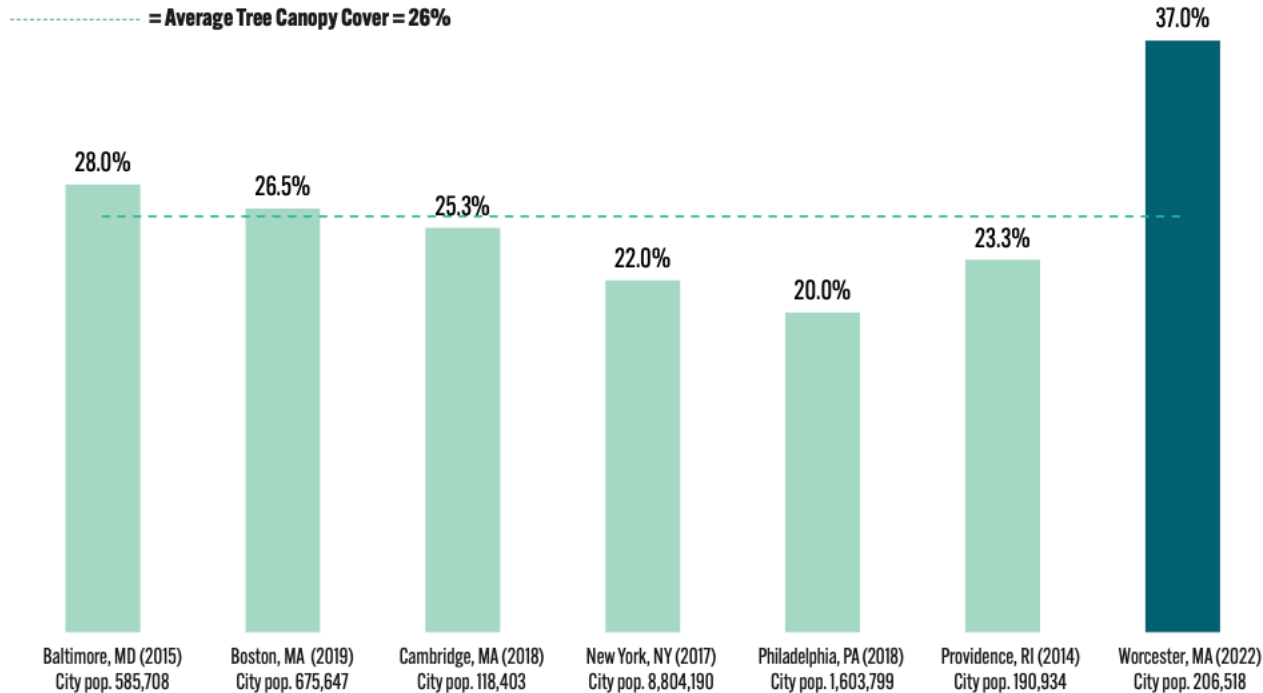
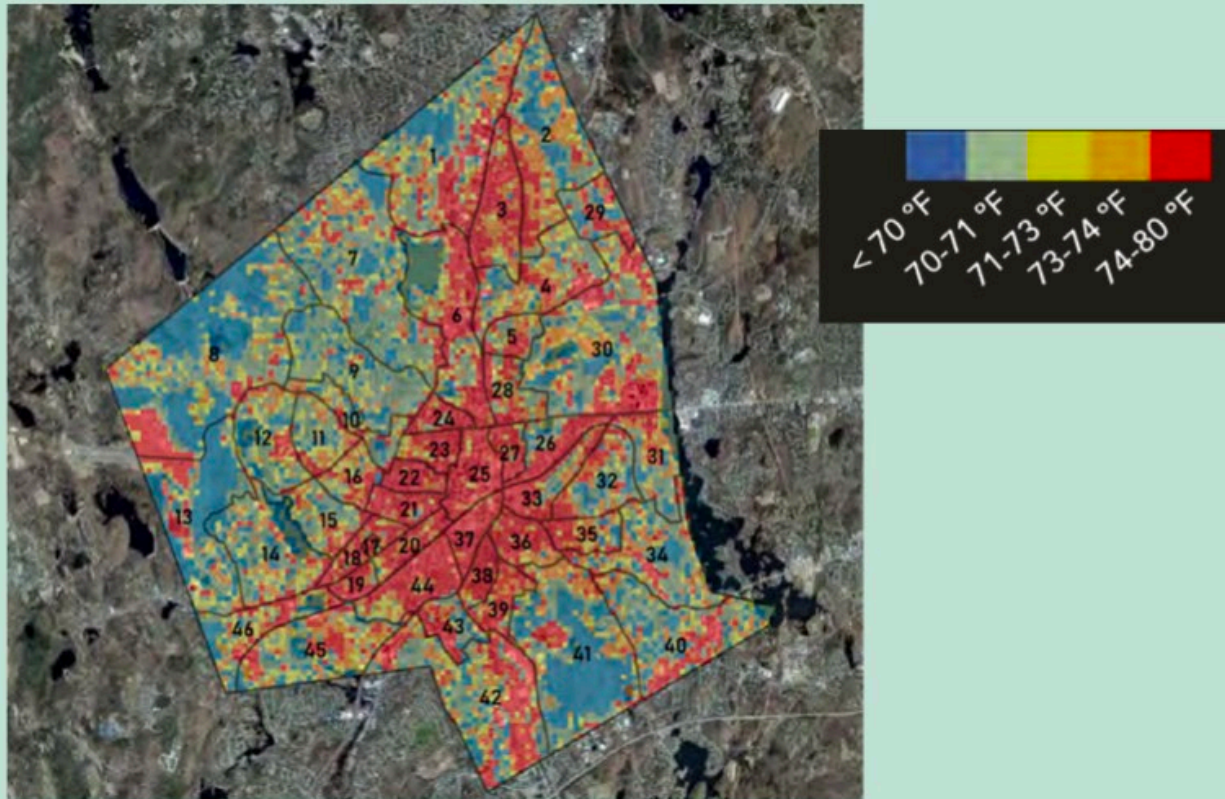


Figure 5. Worcester's 2022 tree canopy cover compared to Northeast U.S. cities.

Note: This information is provided for general comparison purposes only. The methodologies used to calculate tree canopy cover may differ between cities referenced and/or the information may be outdated.



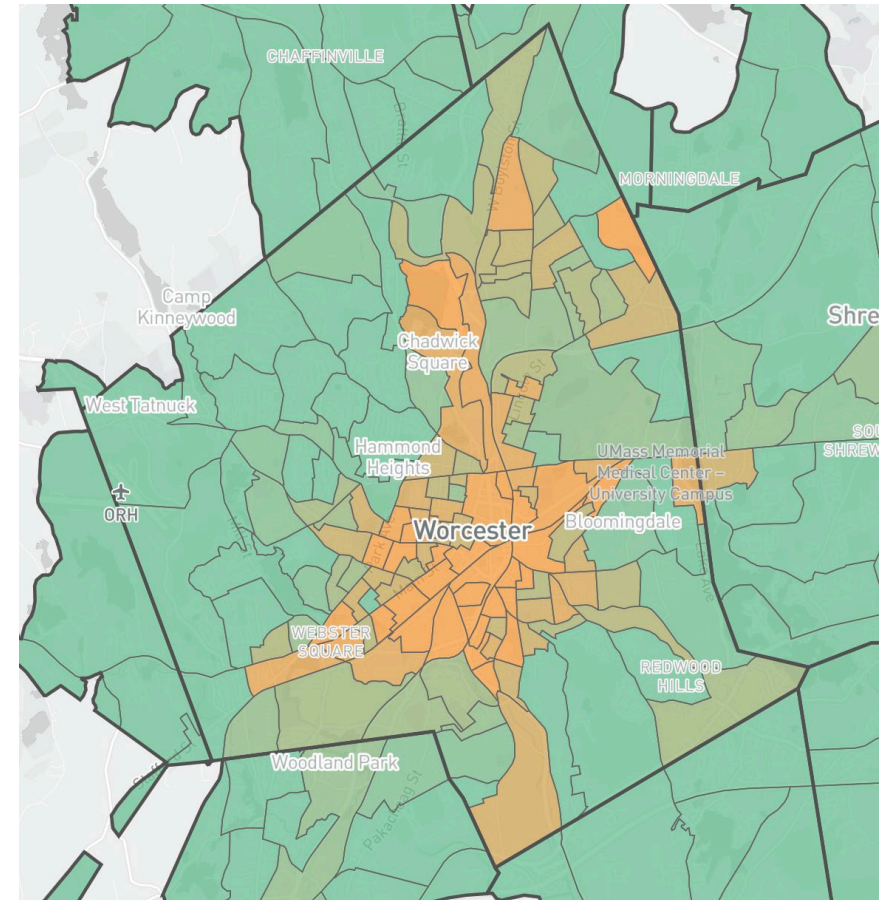
Increasing tree canopy identified as key recommendation by Worcester extreme heat study



- study conducted in 2022 by Dept. of Sustainability and Resilience
- Recommendation to increase total tree canopy in Worcester by 30,000 – 35,000 trees by 2050 in areas with little tree cover.

Tree canopy in Worcester is not equitably distributed

- There is low canopy cover in downtown Worcester where it is needed the most but also has the least amount of current planting location opportunities
- We need to get creative about planting trees in our most densely populated areas of the City



<70  100

Tree Equity Score

<https://www.treeequityscore.org/about>

Street Tree Inventory

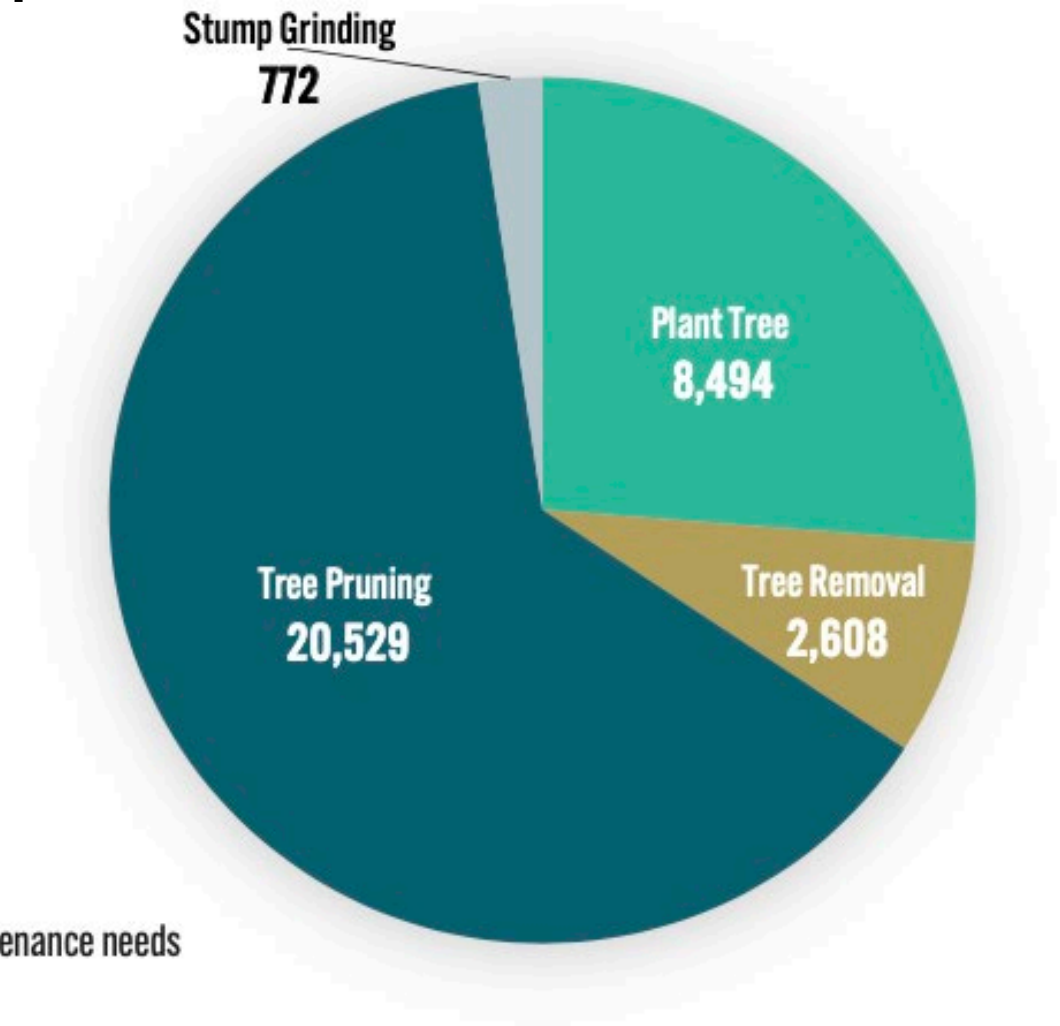


Table 1. Street tree population changes 2005 to 2022 by Council District and citywide.

	District 1	District 2	District 3	District 4	District 5	Worcester
Number of Trees—2005	5,880	2,370	1,689	1,302	4,245	15,486
Number of Trees—2022	8,437	3,869	3,021	1,460	6,350	23,137
% change from 2005—2022	+43%	+63%	+79%	+12%	+50%	+49%
% trees per district—2022	36%	17%	13%	6%	27%	100%
Trees per public street mile—2022	72	33	36	24	55	47



Opportunities for growth



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Figure 9. Street tree maintenance needs



Our street tree populations are becoming more diverse

	2005			2022		
	Species	Count	Percent of Total Population	Species	Count	Percent of Total Population
1	Norway maple (<i>Acer platanoides</i>)	9,364	60%	Norway maple (<i>Acer platanoides</i>)	6,522	28%
2	Sugar maple (<i>Acer saccharum</i>)	1,346	9%	Cherry (<i>Prunus spp.</i>)	1,700	7%
3	Red maple (<i>Acer rubrum</i>)	1,029	7%	Littleleaf linden (<i>Tilia cordata</i>)	1,161	5%
4	Silver maple (<i>Acer saccharinum</i>)	342	2%	Pin oak (<i>Quercus palustris</i>)	1,075	5%
5	Littleleaf linden (<i>Tilia cordata</i>)	335	2%	Honeylocust (<i>Gleditsia triacanthos</i>)	1,018	4%
6	Red oak (<i>Quercus rubra</i>)	327	2%	Red maple (<i>Acer rubrum</i>)	1,005	4%
7	Callery pear (<i>Pyrus calleryana</i>)	270	2%	Silver maple (<i>Acer saccharinum</i>)	820	4%
8	Pin oak (<i>Quercus palustris</i>)	265	2%	Red oak (<i>Quercus rubra</i>)	708	3%
9	White ash (<i>Fraxinus americana</i>)	225	1%	Northern white cedar (<i>Thuja occidentalis</i>)	671	3%
10	Japanese tree lilac (<i>Syringa reticulata</i>)	170	1%	Callery pear (<i>Pyrus calleryana</i>)	627	3%



To achieve increases in canopy cover we need to invest more in urban forestry City budget

We spend about a third less than cities with similar population size

Figure 12. Worcester's Forestry budget by fiscal year 2019-2022

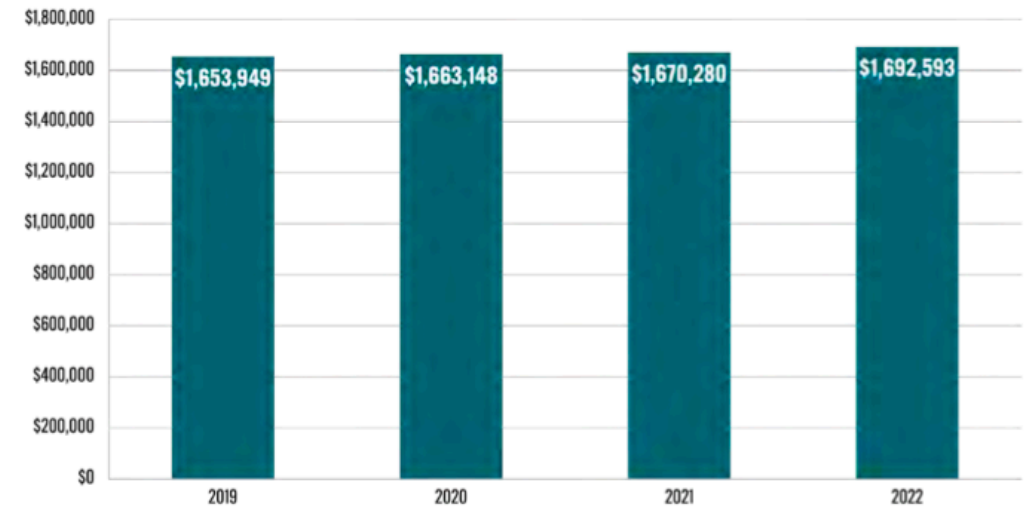
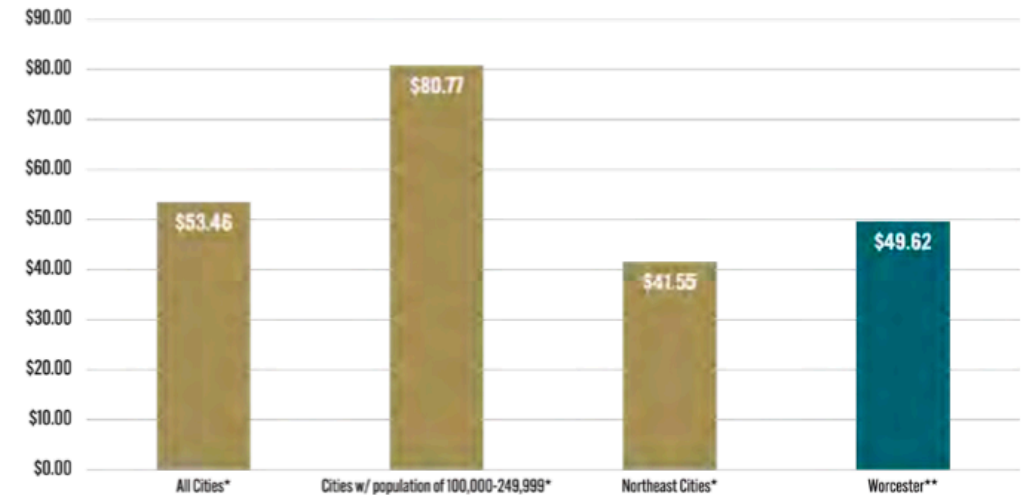


Figure 13. Worcester's estimated per street tree spending compared to respondents of the 2014 Municipal Tree Care Census.



*2014 Municipal Urban Forest Census. Per street tree costs have been adjusted for inflation and represent October 2022 costs (based on CPI inflation calculator)

**Approximately 17% of Forestry's annual operating budget goes towards non-tree care and planting related activities, including leaf pick and biomass recycling.

Community Survey

1,131 respondents in survey; >50% of respondents have lived in Worcester >11 years

Community Meetings

June 1, 2022

UFMP Community Open House (Stearns Tavern)

June 2, 2022

UFMP Community Open House (Green Hill Park)

September 21, 2022

District #2 UFMP Meeting

September 22, 2022

District #5 UFMP Meeting

October 17, 2022

District #1 UFMP Meeting

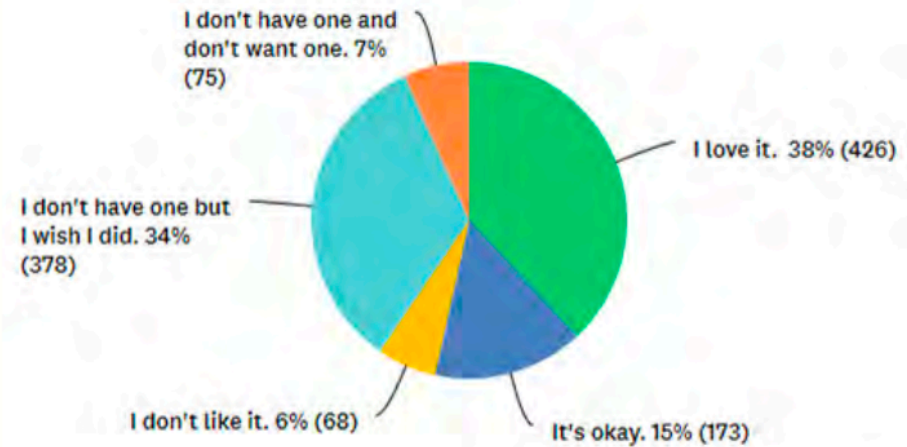
October 19, 2022

District #3 UFMP Meeting

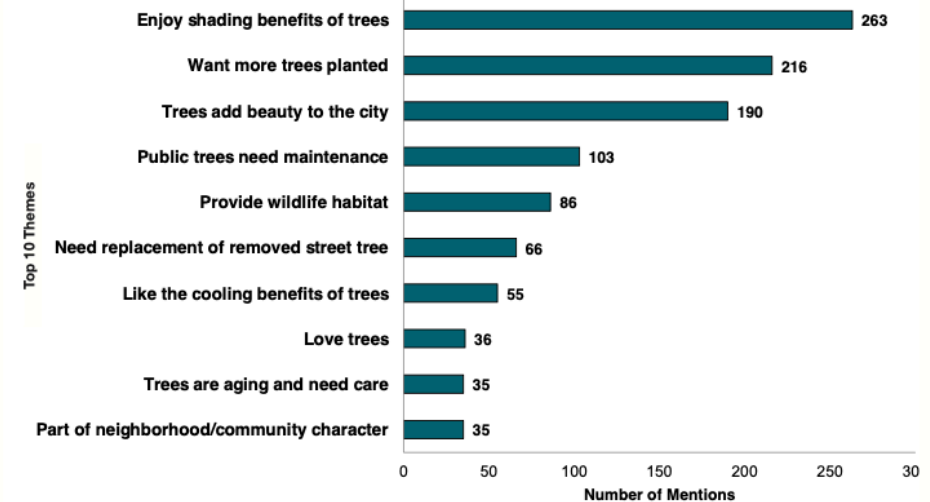
October 20, 2022

District #4 UFMP Meeting

How do you feel about the street tree in front of your home?



Why do you feel the way you do about your street tree?



Community partners

- Clark University
- Greater Worcester Land Trust
- Mass Audubon
- Massachusetts Dept. of Conservation & Recreation
- National Grid
- New England Botanic Garden at Tower Hill
- Regional Environmental Council
- Worcester GreenCorp (Chamber of Commerce)
- Worcester Polytechnic Institute



Plan Recommendations

1. **Establish a proactive management program for Worcester's public trees that is beyond the current Customer Service based model.**
2. **Increase City staff and contractors to transition to a proactive public tree management program and support urban forest planning, operations, and education.**
3. **Revise and develop urban forestry processes to support improvements to customer service, service delivery, data, technology, and information management using national arboricultural standards and best management practices.**
4. **Expand and develop regulations, best management practices, and guidelines to support urban forest growth and preservation.**
5. **Ensure there is adequate space for trees to grow and thrive in Worcester's challenging urban environment.**
6. **Conduct a comprehensive urban tree canopy assessment for the City of Worcester.**
7. **Continue tree planting and care citywide with attention to areas that advance city sustainability, resilience, and equity priorities.**
8. **Strengthen and develop partnerships with community and regional partners to support implementation of the urban forest master plan.**
9. **Implement an urban forestry communication and outreach plan that supports the growth and care of Worcester's urban forest.**
10. **Expand development and implementation of a program to monitor and address environmental threats to Worcester's urban forest.**



Next steps

- June 5, 2024 WUFC meeting to discuss updated plan
- Updating Tree Ordinances
- Planning an annual Worcester Urban Forestry Summit for setting city-wide canopy goals and strategies





Questions?

