

# Worcester Urban Forest Master Plan

District 3 Meeting  
19 October 2022



The City of  
**WORCESTER**



# Worcester's Urban Forest

## What is It?

### Urban Forest

All of the trees that surround us every day in Worcester

### Public Trees

- Streets
- Parks and Natural Areas
- Other City-owned Property

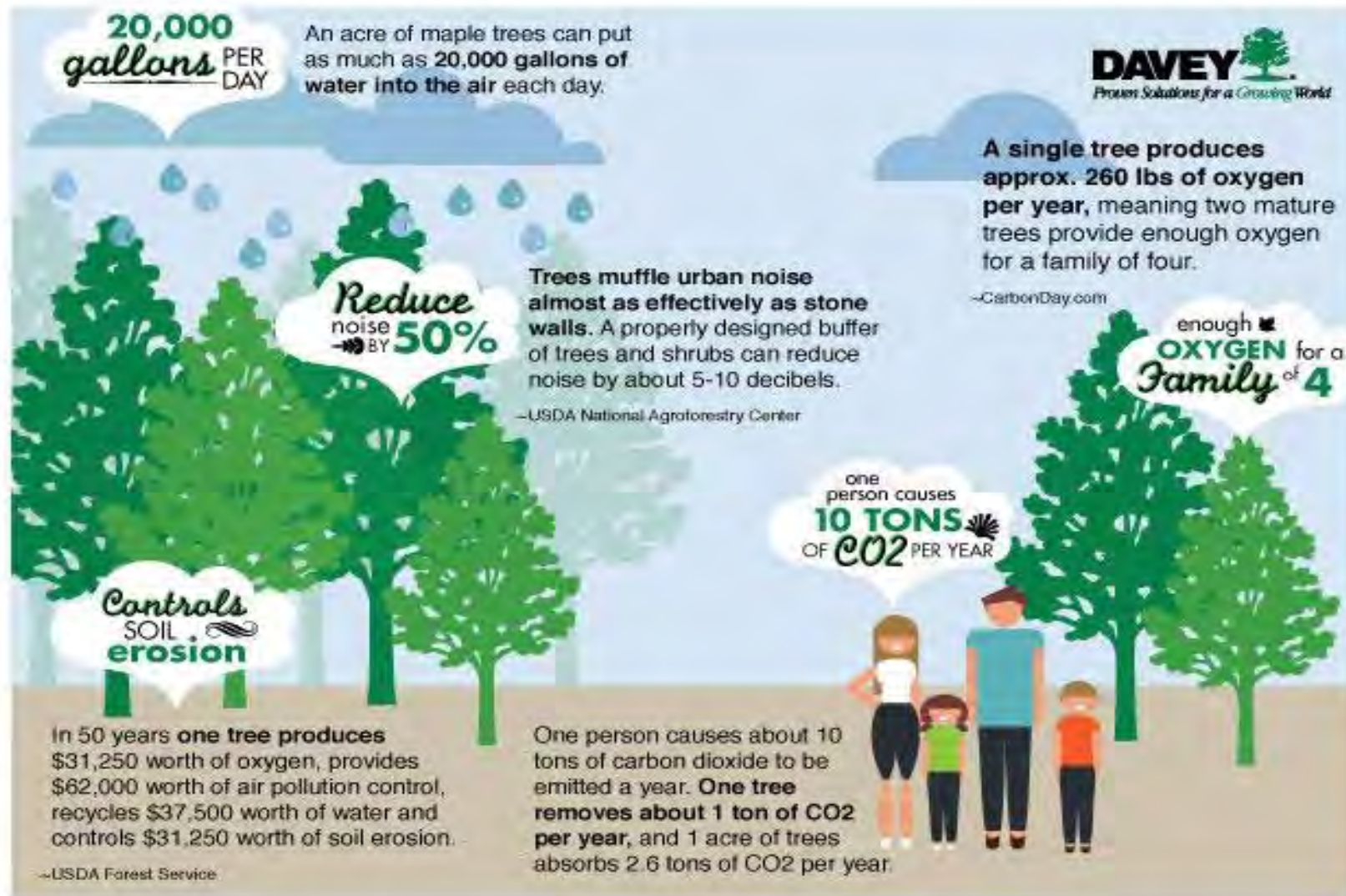
### Private Trees

- Residential
- Commercial
- Industrial
- Institutions (colleges, universities, hospitals, etc.)



Photo: Worcester Polytechnic Institute [wpi.edu](http://wpi.edu)

# General Benefits of the Trees

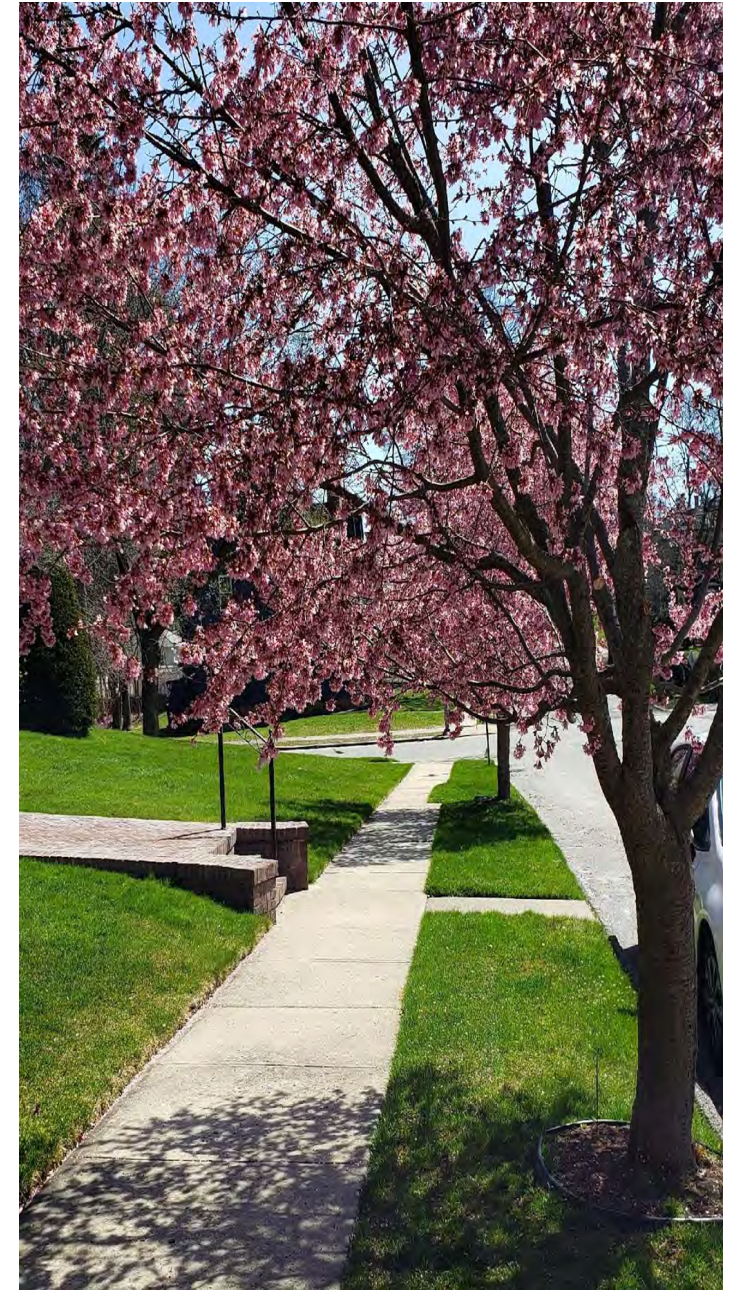


# Urban Forest Master Plan

## Why Plan?

The Urban Forest Master Plan will serve as a **guiding document** for Worcester to ...

- **sustainably manage, maintain and grow** Worcester's urban forest.
- develop a **unified community vision** for the future of Worcester's urban forest
- **maximize the benefits** that trees provide.



# Project Timeline

## **LATE FALL**

Project  
Launch

## **SPRING – FALL**

Street & Park Tree Inventory  
Community Engagement

## **WINTER**

Develop and  
Finalize Plan

**2021**

**2022**

**2022**

**2022**

**2023**

## **WINTER**

Stakeholder Engagement  
Operations Review

## **FALL**

Develop and Present  
Draft Recommendations

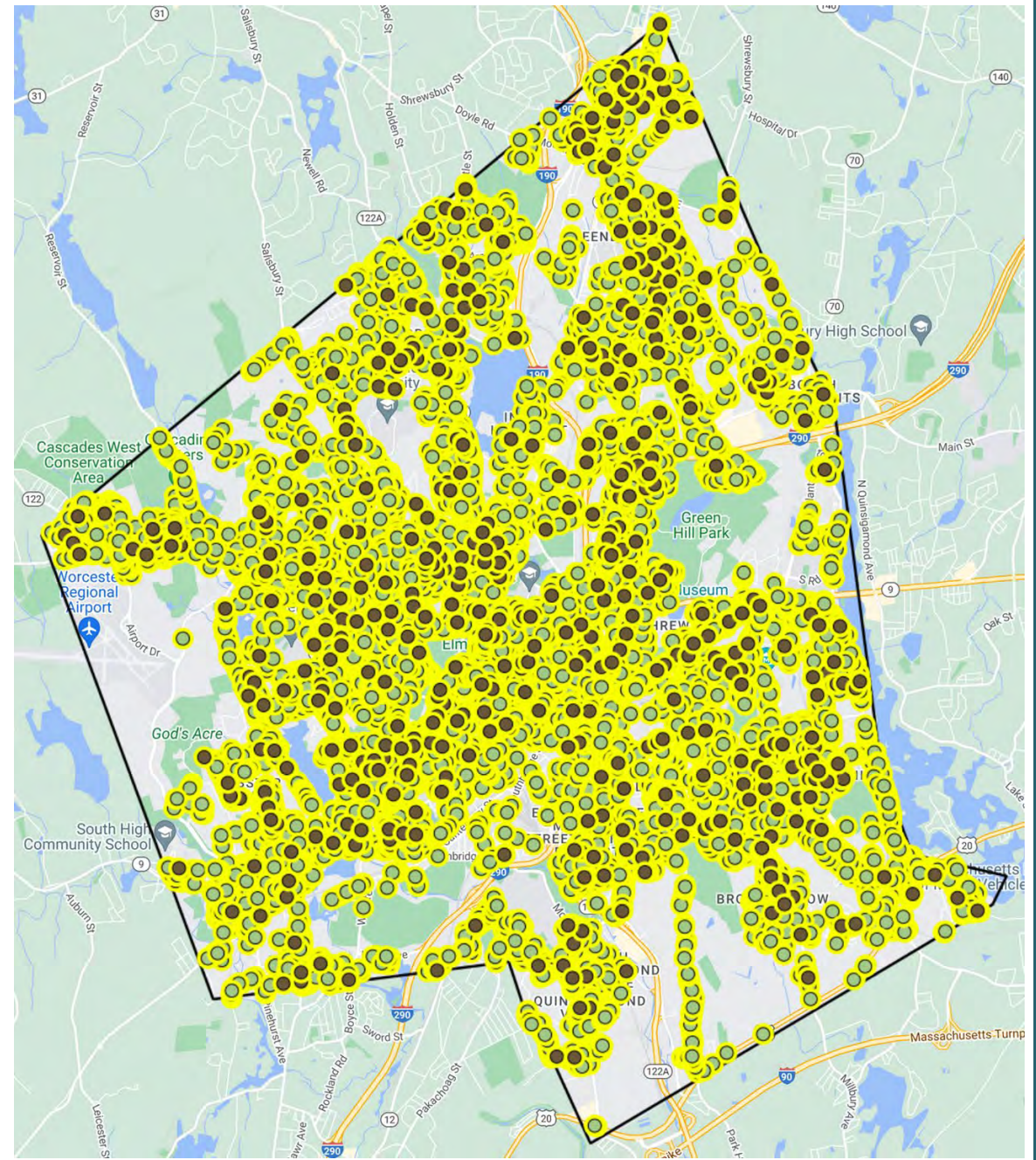
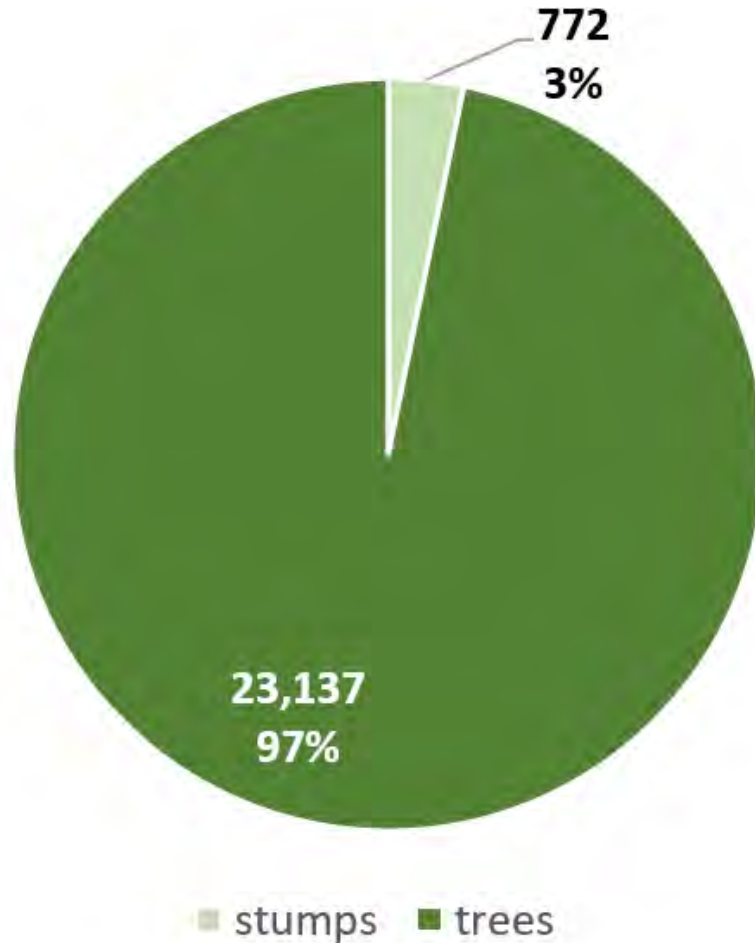


# Street Tree Inventory

# What Do We Have?

## TREE INVENTORY SUMMARY

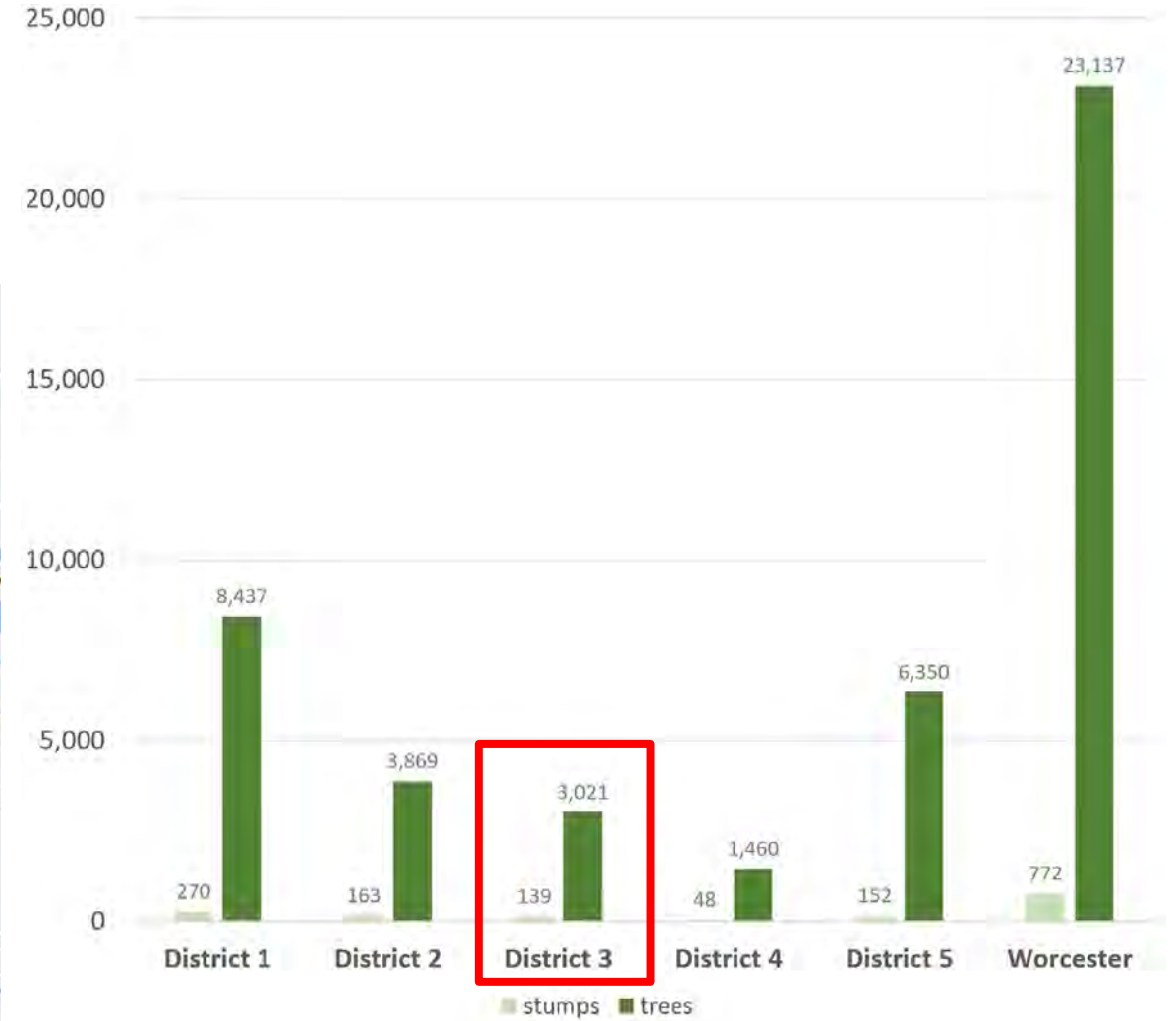
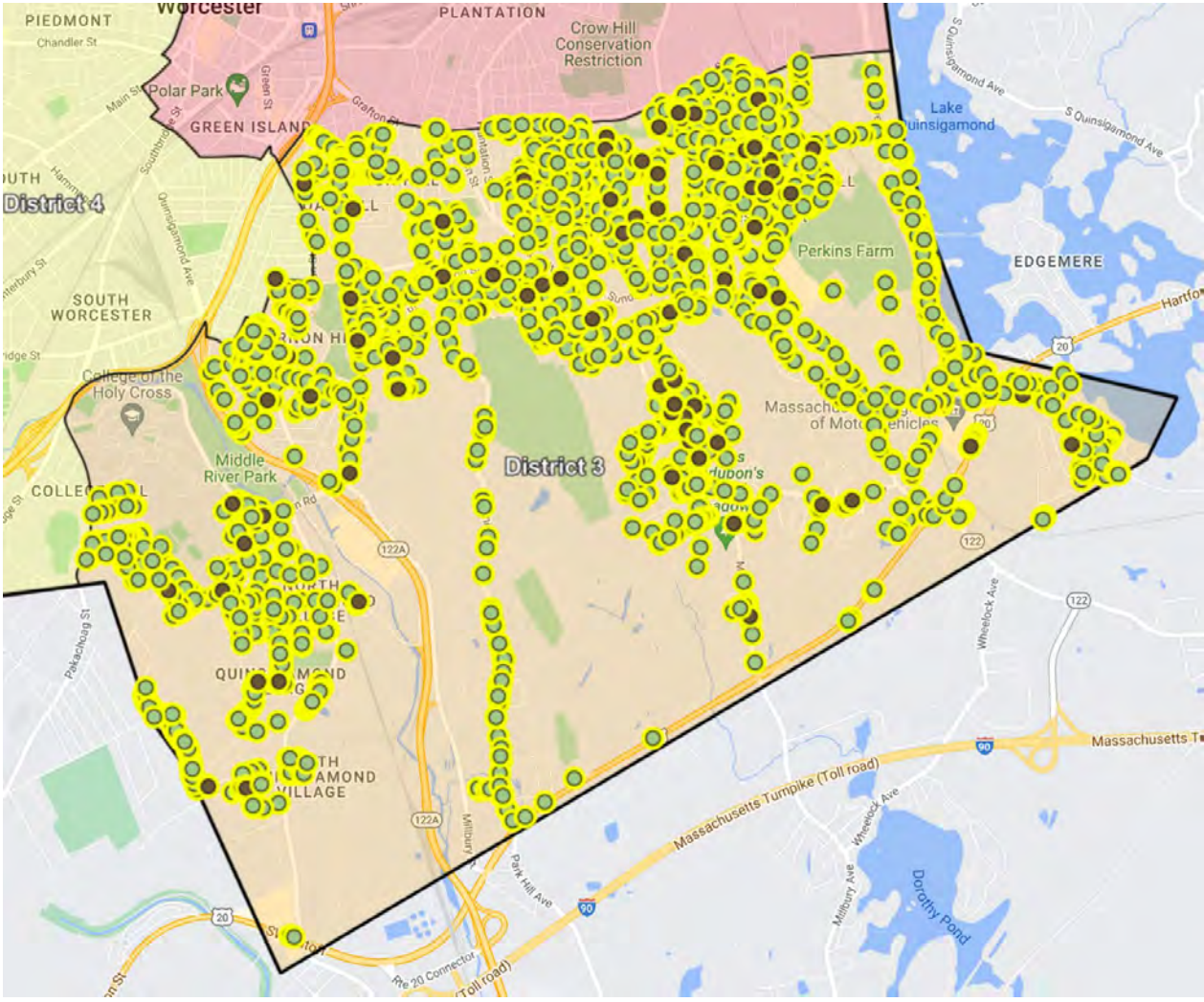
### Street Trees & Stumps



# What Do We Have?

## TREE INVENTORY SUMMARY

### Street Trees & Stumps



| Trees      | District 1 | District 2 | District 3 | District 4 | District 5 | Worcester |
|------------|------------|------------|------------|------------|------------|-----------|
| 2005       | 5,880      | 2,370      | 1,689      | 1,302      | 4,245      | 15,486    |
| 2022       | 8,437      | 3,869      | 3,021      | 1,460      | 6,350      | 23,137    |
| % change   | 43%        | 63%        | 79%        | 12%        | 50%        | 49%       |
| 22 % total | 36%        | 17%        | 13%        | 6%         | 27%        | 100%      |

# What Do We Have?

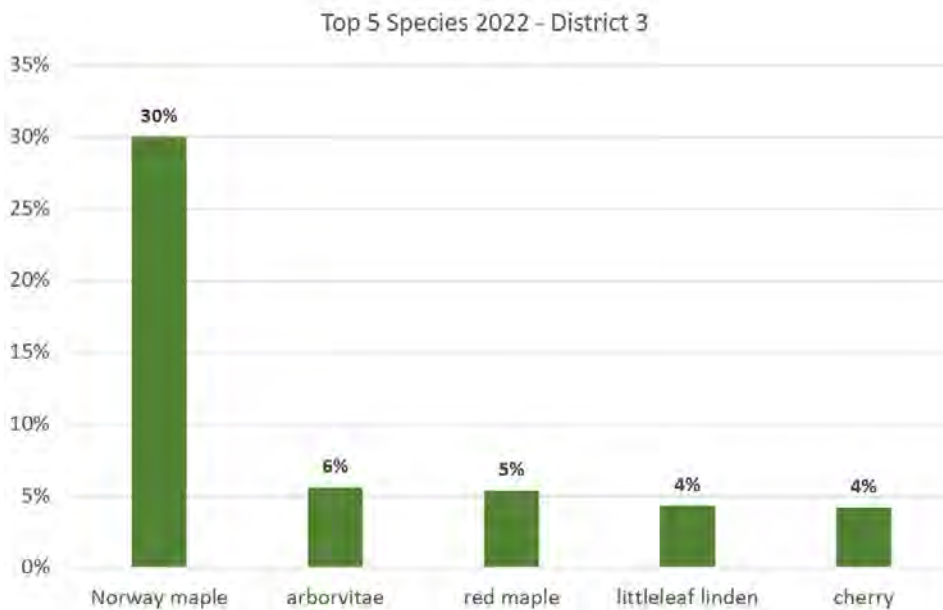
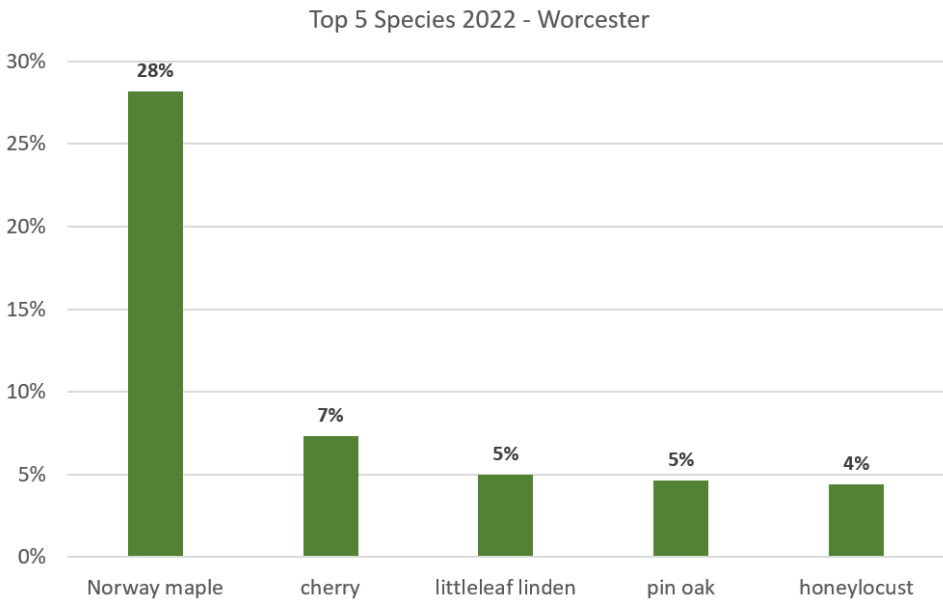
## TREE INVENTORY SUMMARY

### Street Tree Diversity

| District 3        |       |         |                   |       |         |          |
|-------------------|-------|---------|-------------------|-------|---------|----------|
| 2005              |       |         | 2022              |       |         |          |
| Species           | Count | Percent | Species           | Count | Percent | % change |
| Norway maple      | 1,094 | 65%     | Norway maple      | 907   | 30%     | -17%     |
| sugar maple       | 95    | 6%      | arborvitae        | 169   | 6%      |          |
| red maple         | 91    | 5%      | red maple         | 162   | 5%      | 78%      |
| pin oak           | 54    | 3%      | littleleaf linden | 130   | 4%      | 202%     |
| littleleaf linden | 43    | 3%      | cherry            | 126   | 4%      |          |
| red oak           | 41    | 2%      | red oak           | 111   | 4%      | 171%     |
| silver maple      | 35    | 2%      | crabapple         | 102   | 3%      |          |
| Callery pear      | 26    | 2%      | pin oak           | 83    | 3%      | 54%      |
| white oak         | 24    | 1%      | honeylocust       | 82    | 3%      |          |
| scarlet oak       | 23    | 1%      | black oak         | 79    | 3%      |          |

maples -8%  
oaks +166%  
cherries +467%  
crabapples +500%  
elms +511%

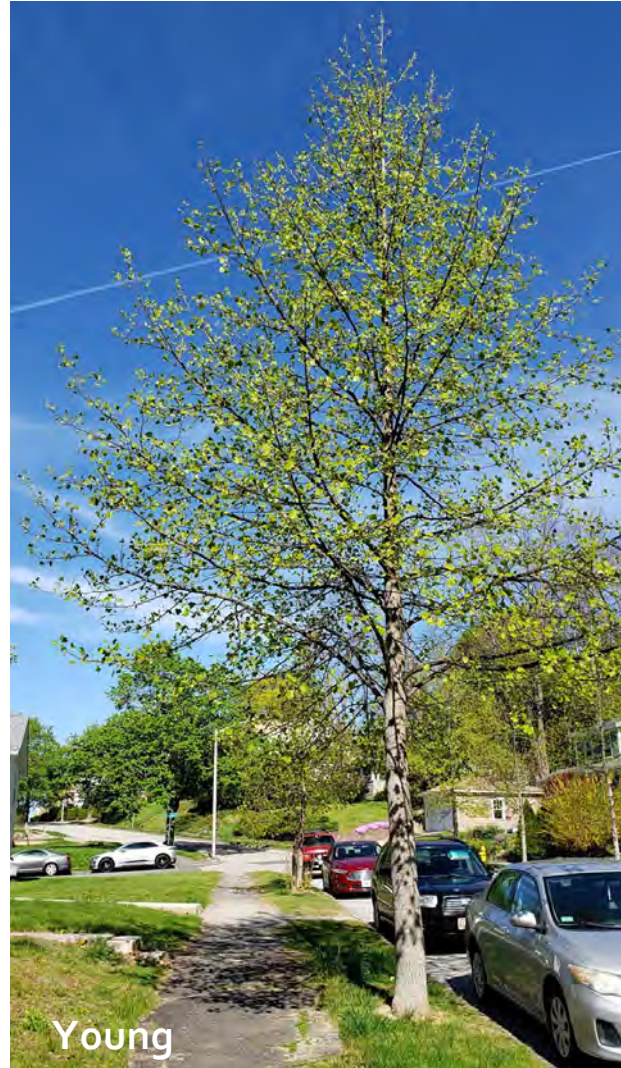
Genus Diversity Changes in District 3  
2005-2022



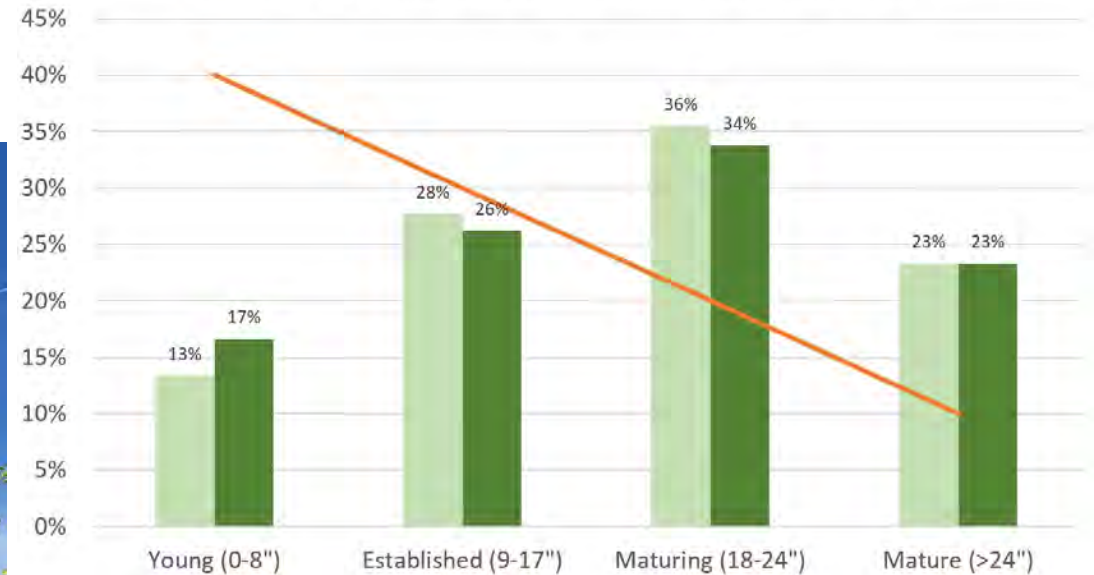
# What Do We Have?

## TREE INVENTORY SUMMARY

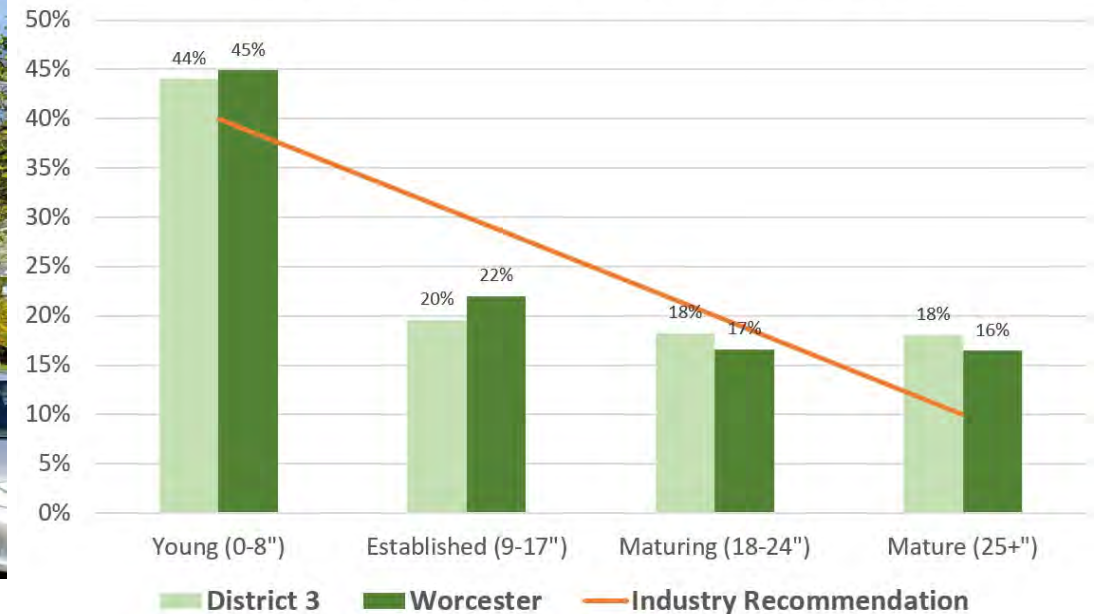
### Street Tree Age



Relative Age Distribution of Inventoried Trees 2005



Relative Age Distribution of Inventoried Trees 2022



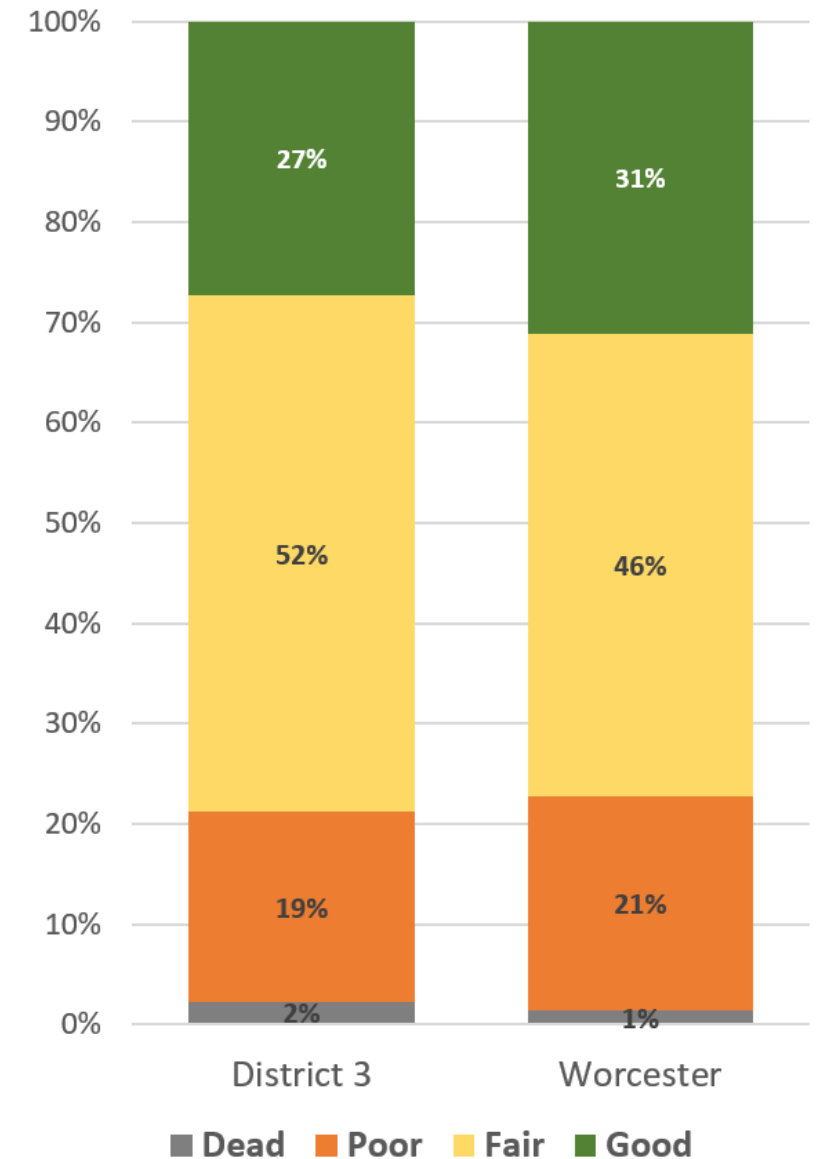
# What Do We Have?

## TREE INVENTORY SUMMARY

### Street Tree Condition



Proportion of Street Trees in Good, Fair, Poor, or Dead Condition 2022



# What Do We Have?

## Street Tree Benefits

### Carbon Storage

**17,600+ tons of carbon** captured and held in tree tissues

### Replacement Value

(cost to replace all inventoried street trees with a similar tree) is **\$39.7 million**



### Air Quality

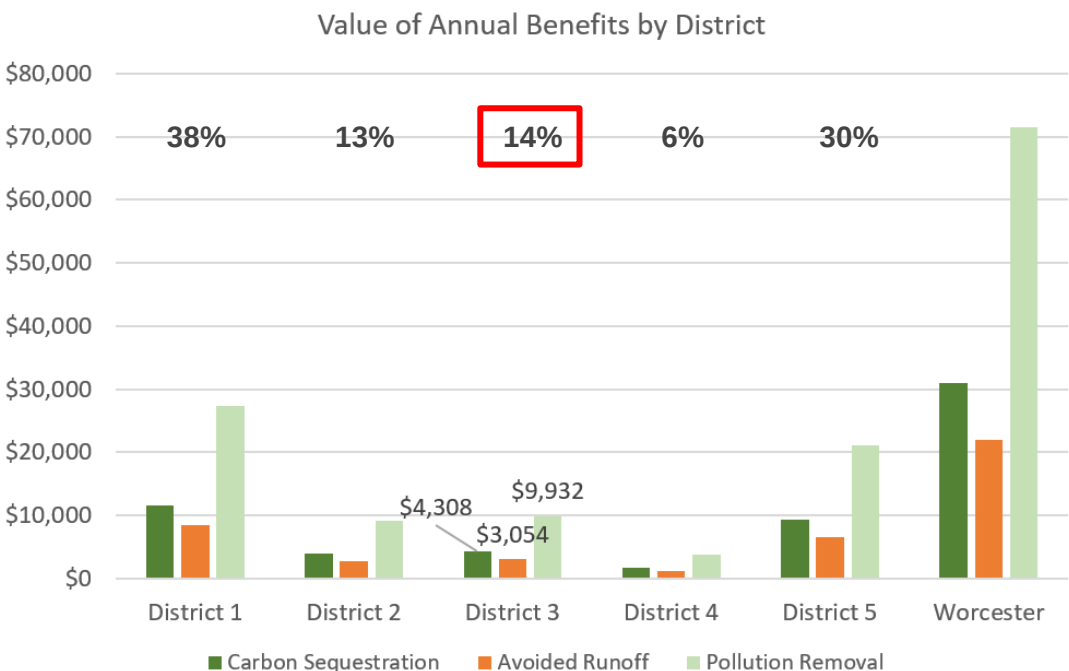
**Remove 8,080 pounds** of airborne pollutants and particulate matter each year.

### Carbon

Sequester (absorb) **181 tons of carbon** each year.

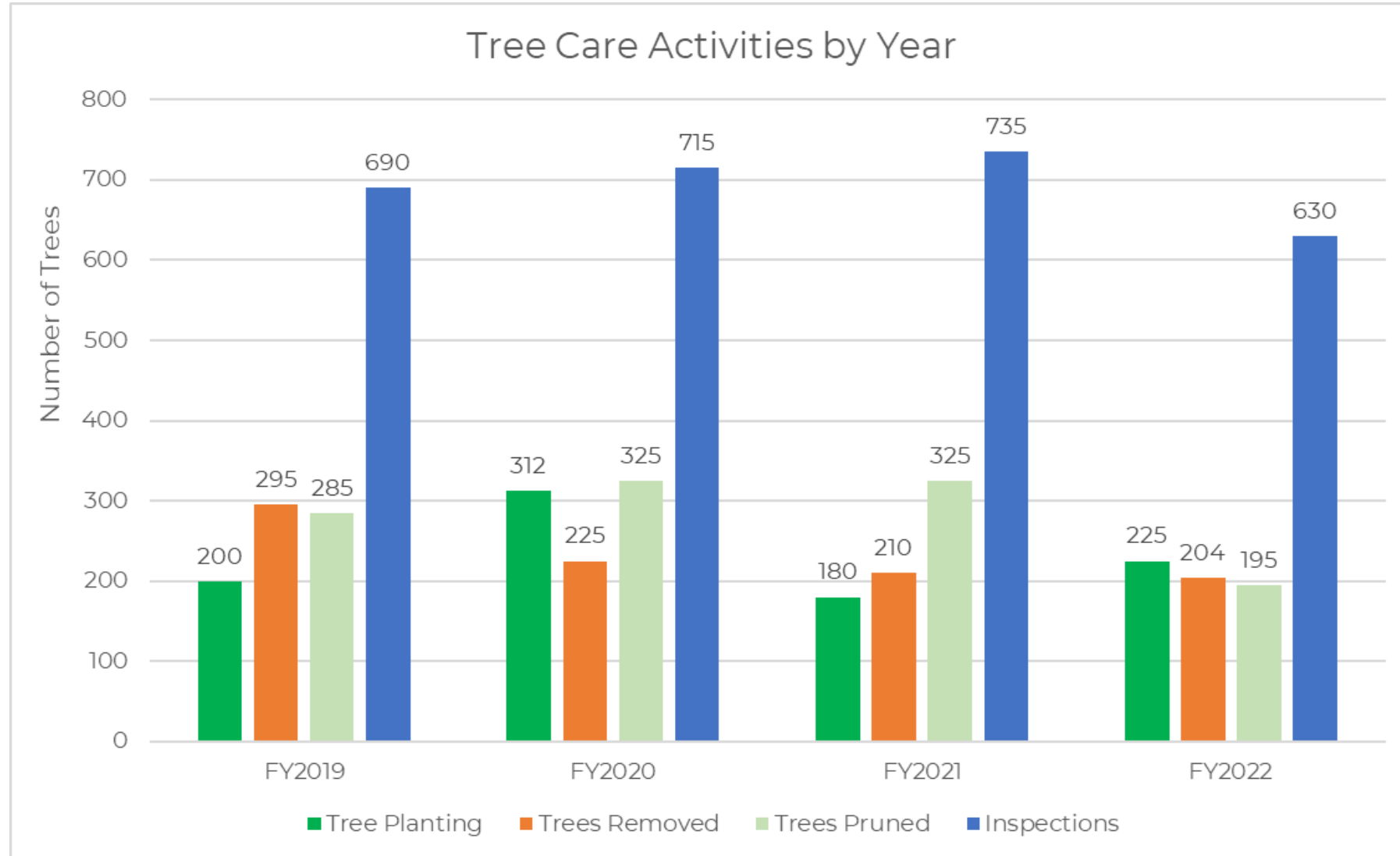
### Stormwater

Intercept and absorb **2,457,237 gallons of rainwater per year.**



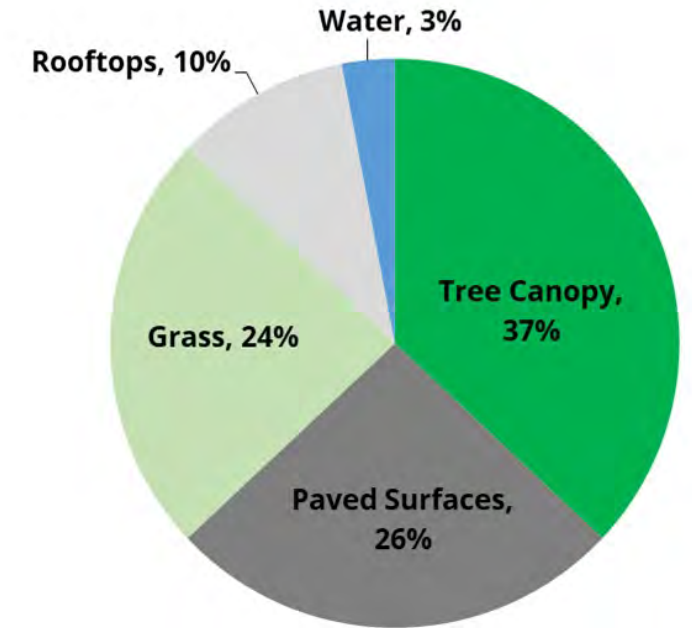
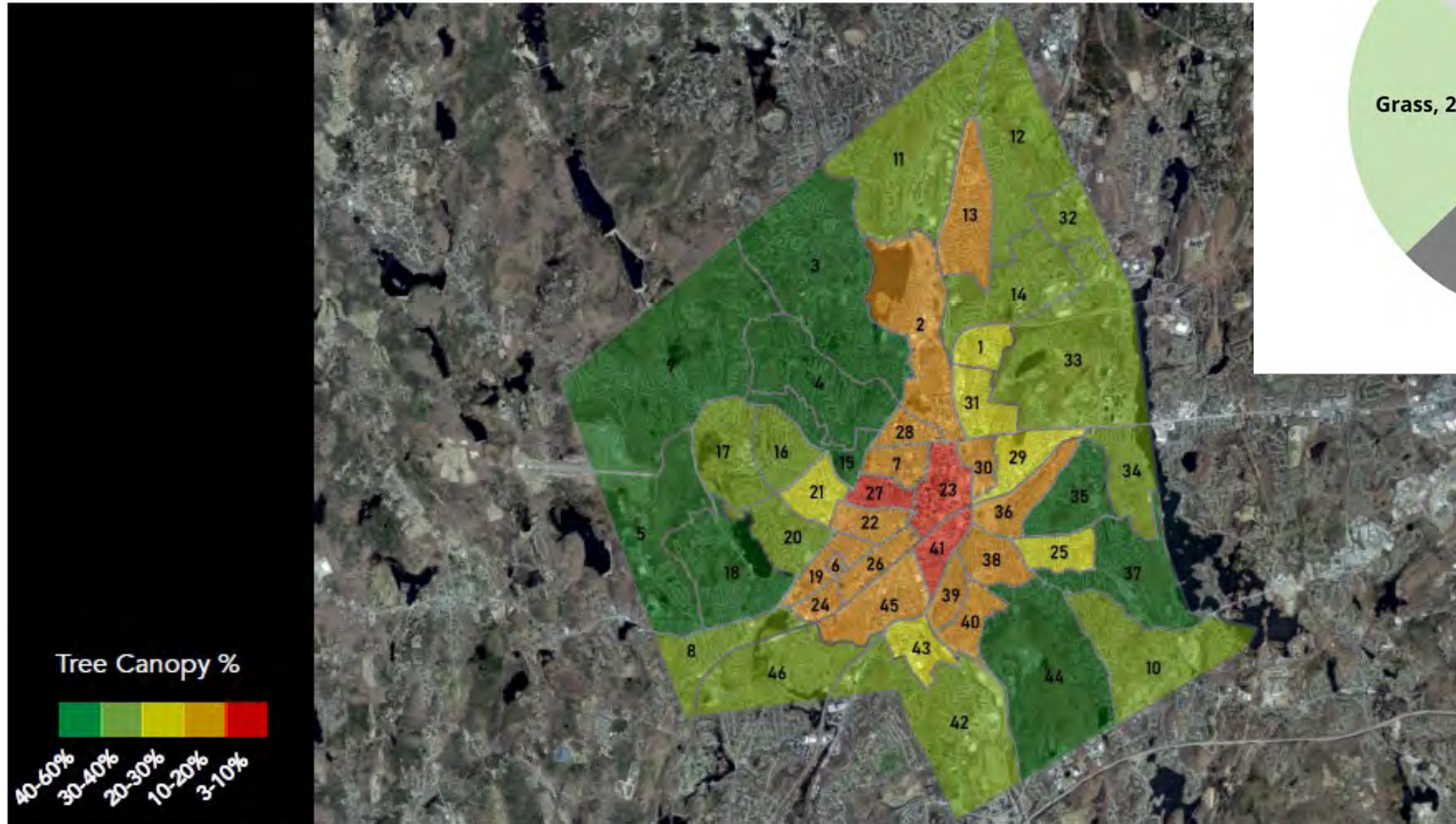
# What Do We Have?

## Forestry Tree Care Activities



# What Do We Have?

## Tree Canopy

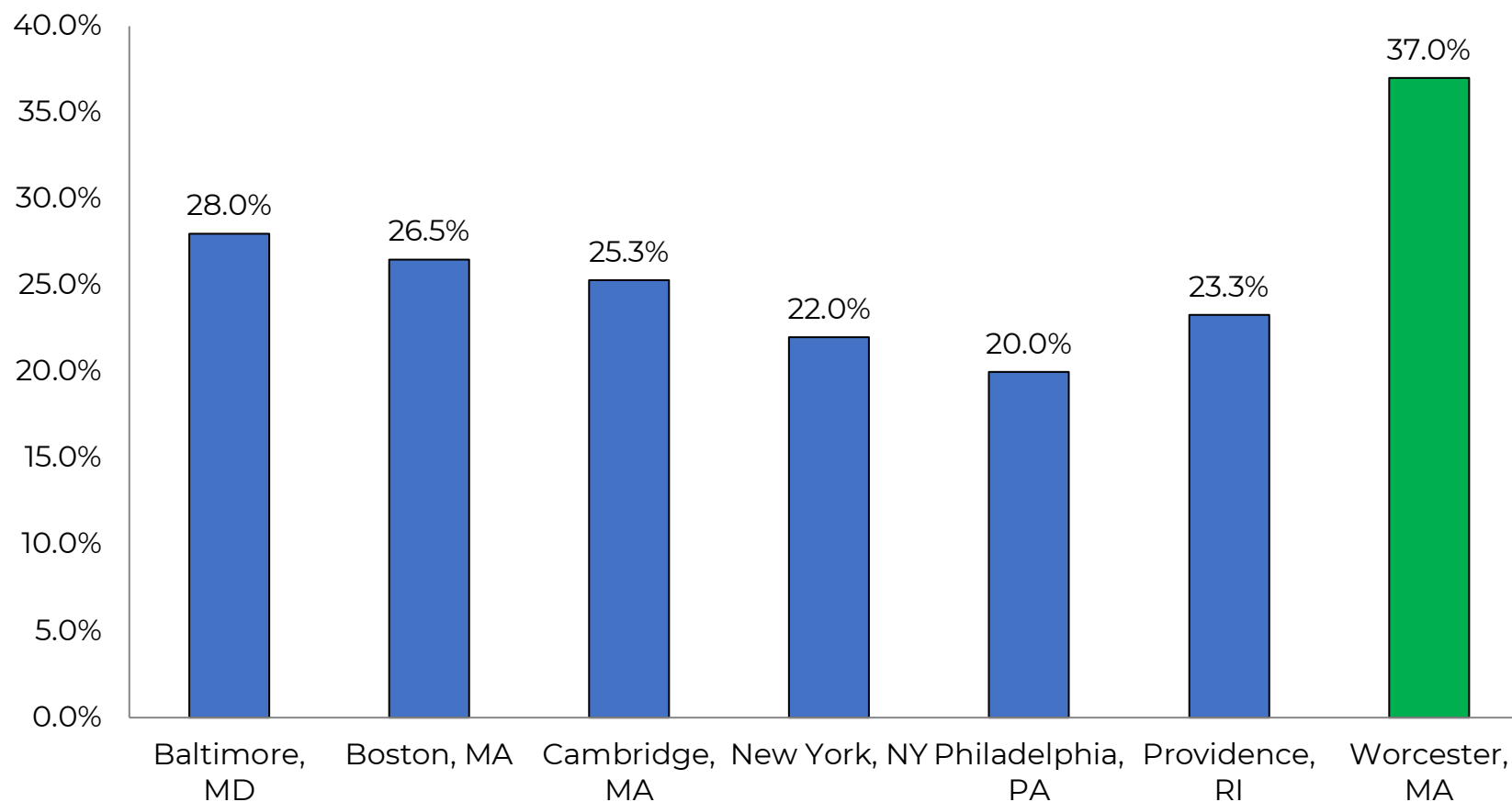


Source: Worcester Heat Risk Assessment (2022) conducted by Urban Climate Consulting for the Worcester Department of Sustainability and Resilience

# What Do We Have?

Tree Canopy – How Does Worcester Compare\*?

## Tree Canopy Cover by City



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



## **What Have We Heard So Far?**

# What have we heard so far?

## ENGAGEMENT AND OUTREACH

### **Stakeholder Meetings**

#### **City of Worcester**

- Parks and Recreation
- Forestry
- Sustainability and Resilience
- Planning and Regulatory Services
- Public Works
- Human Rights

#### **Community Organizations**

- New England Botanic Garden @ Tower Hill
- Worcester GreenCorp (Chamber of Commerce)
- Massachusetts Audubon Society
- Regional Environmental Council
- Greater Worcester Land Trust
- Clark University
- National Grid

### **Community Open House Meetings**

- June 1 and 2, 2022

### **Community Survey**

- Open May 1 – August 19, 2022
- 1,131 Responses

# What have we heard so far?

## COMMUNITY SURVEY RESULTS



# What have we heard so far?

## COMMUNITY SURVEY RESULTS

**Across the city of Worcester there are...**



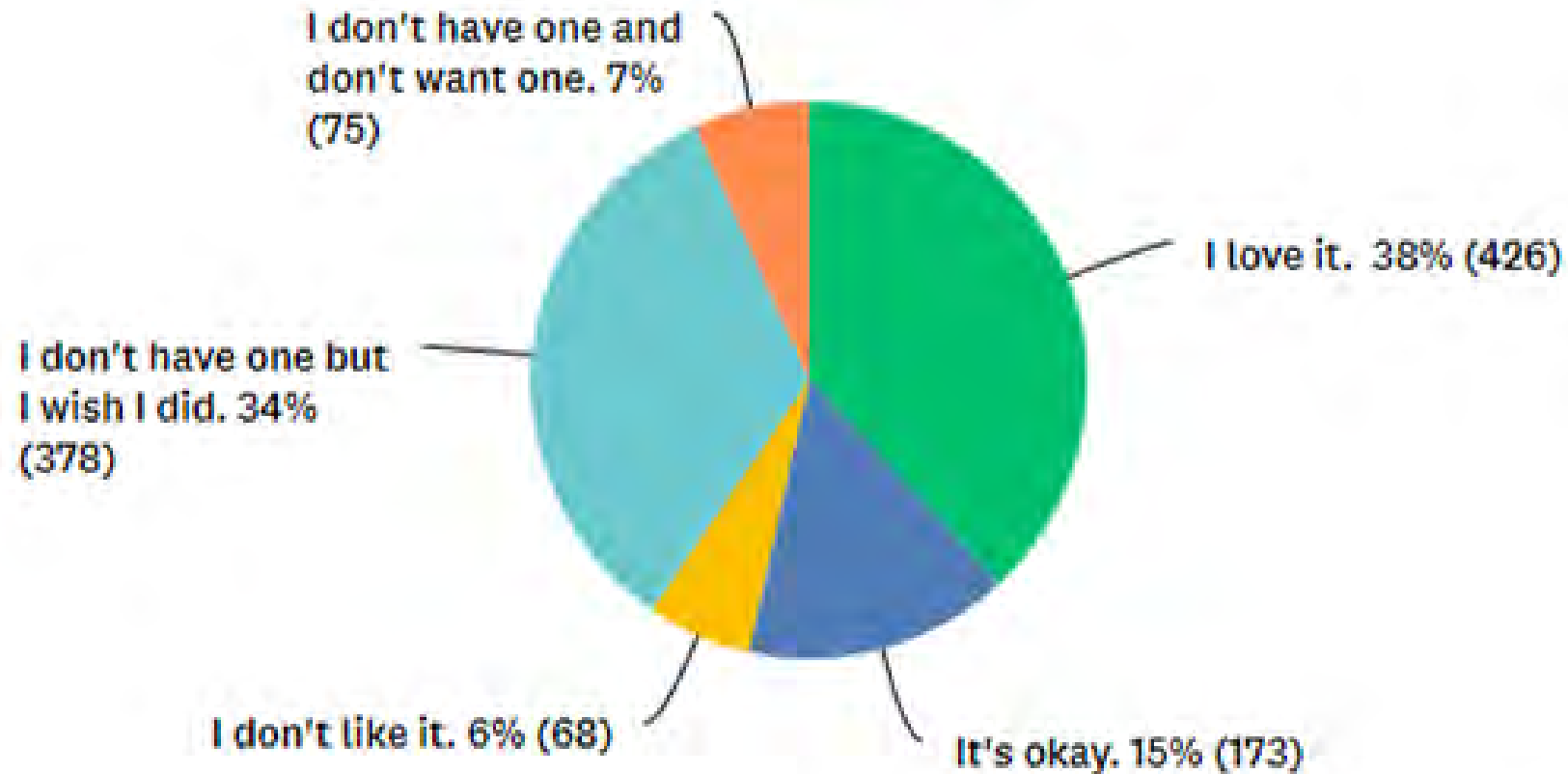
**In your neighborhood there are...**



# What have we heard so far?

## COMMUNITY SURVEY RESULTS

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



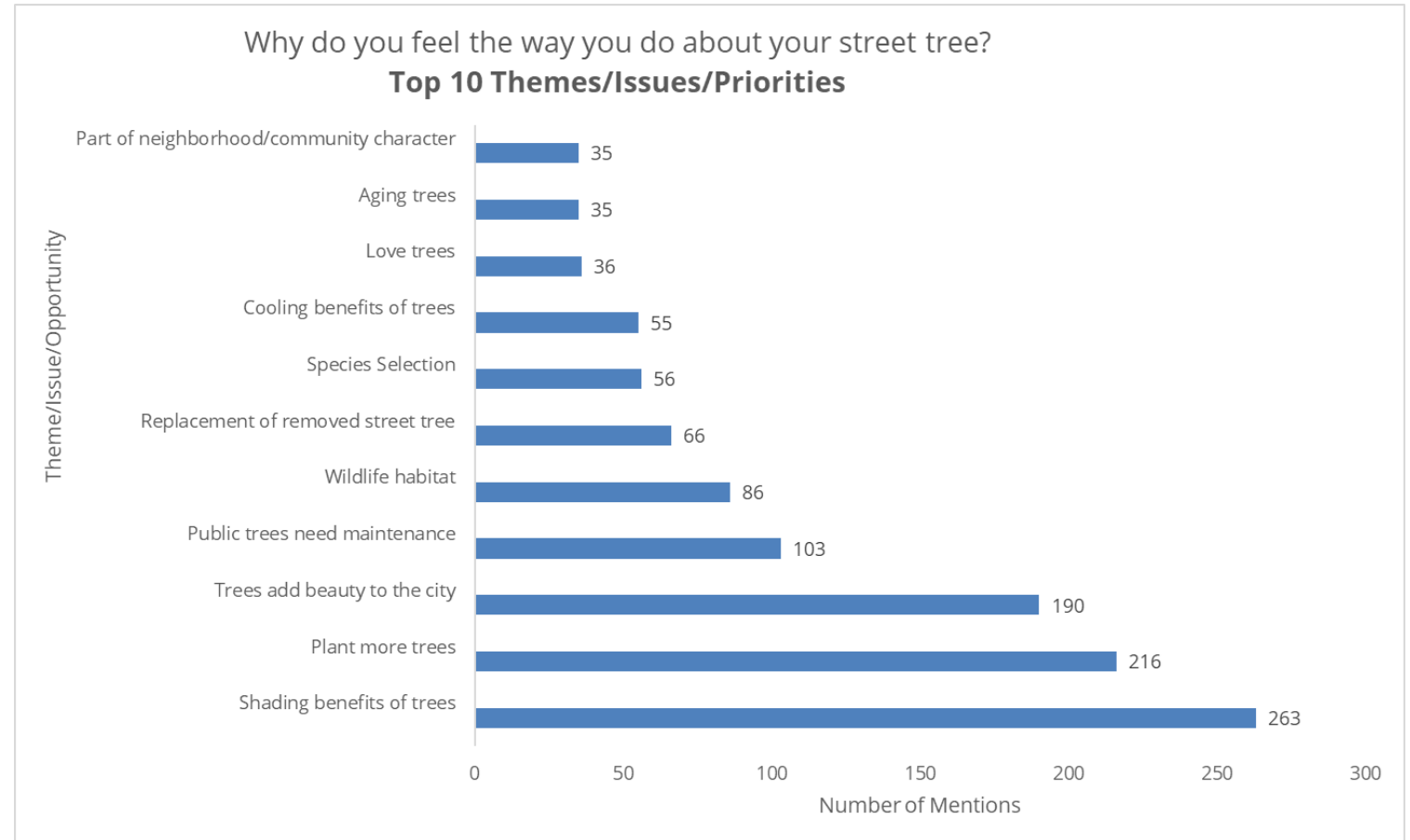
# What have we heard so far?

## COMMUNITY SURVEY RESULTS

**Tell us why you feel the way you do about the street tree in front of your home.**

### Top Themes Topics

1. Trees provide important benefits
2. Care, maintenance and planting of public trees
3. Importance of Species Selection

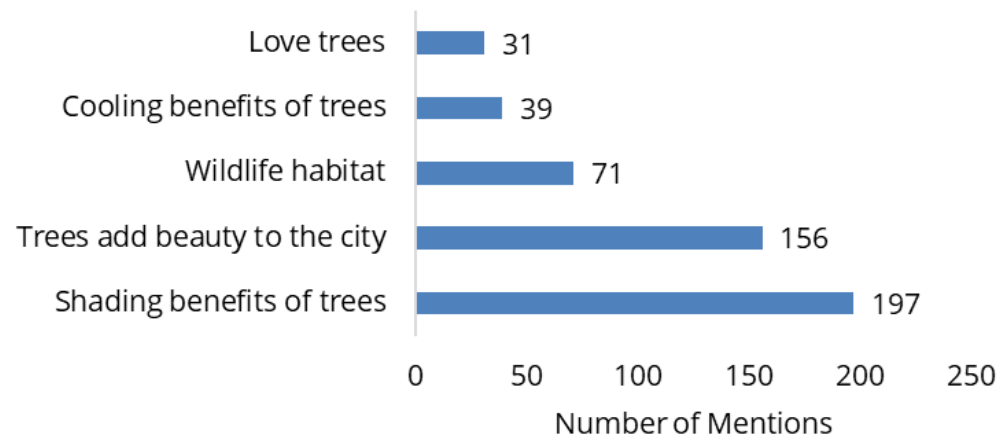


# What have we heard so far?

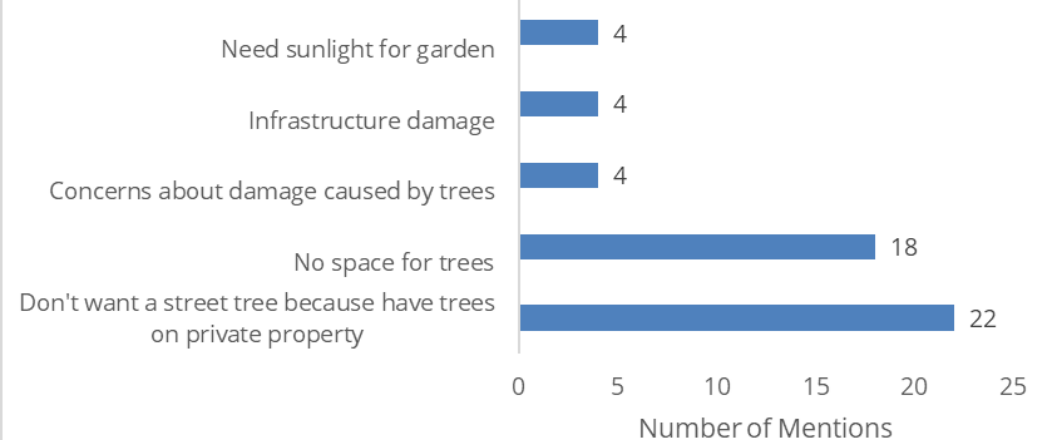
## COMMUNITY SURVEY RESULTS

**Tell us why you feel the way you do about the street tree in front of your home.**

I have a street tree and I love it  
**Top 5 Themes/Issues/Priorities**



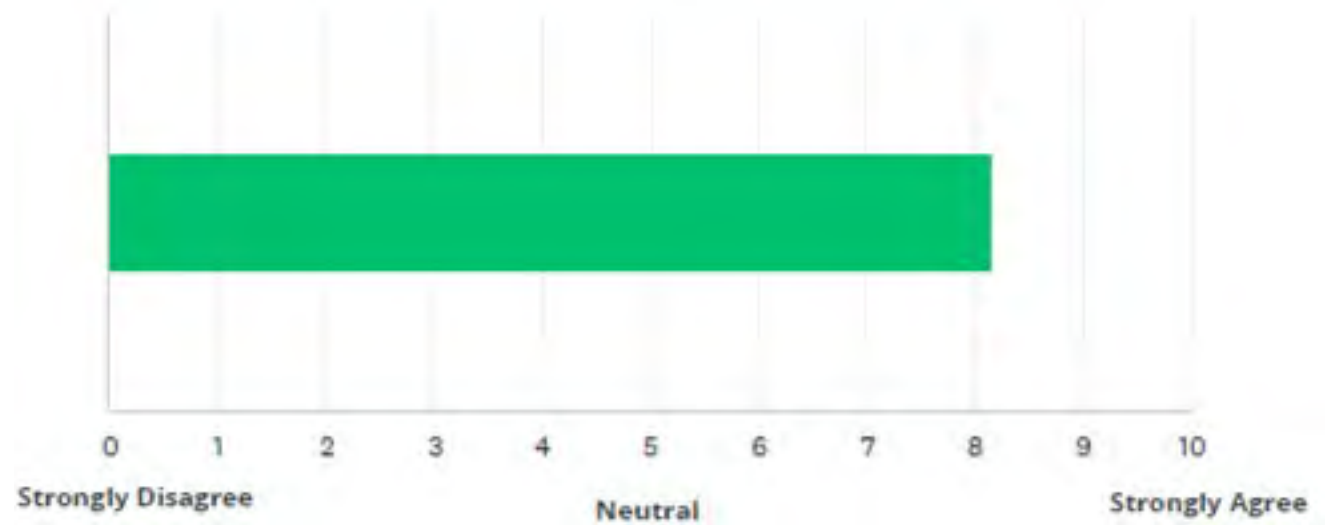
I don't have a street tree and I don't want one  
**Top 5 Themes/Issues/Priorities**



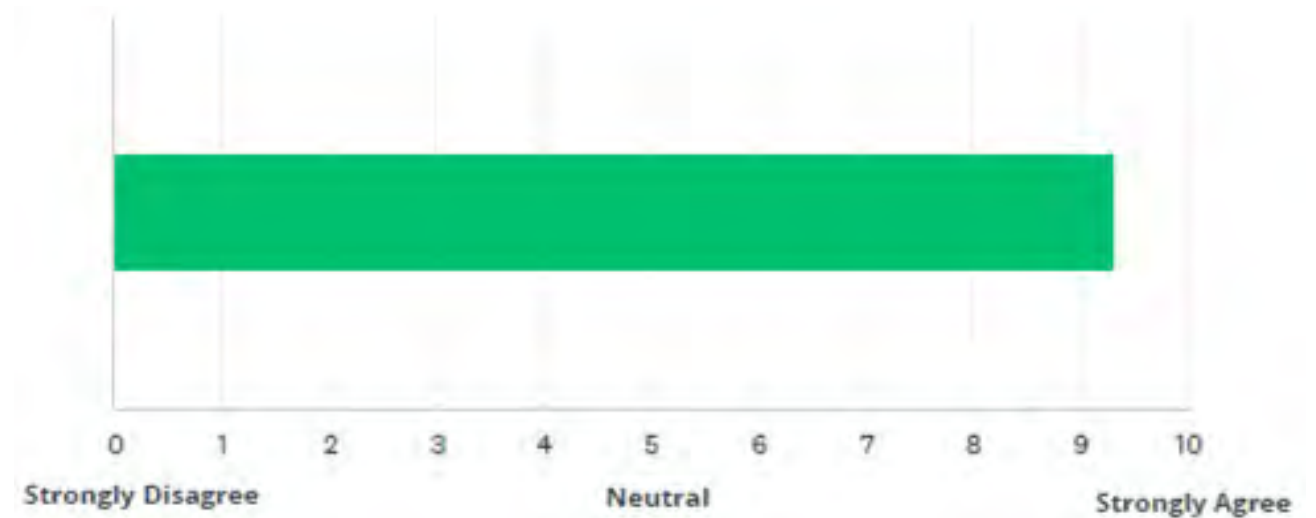
# What have we heard so far?

## COMMUNITY SURVEY RESULTS

**Planting new trees on private property in Worcester is important**



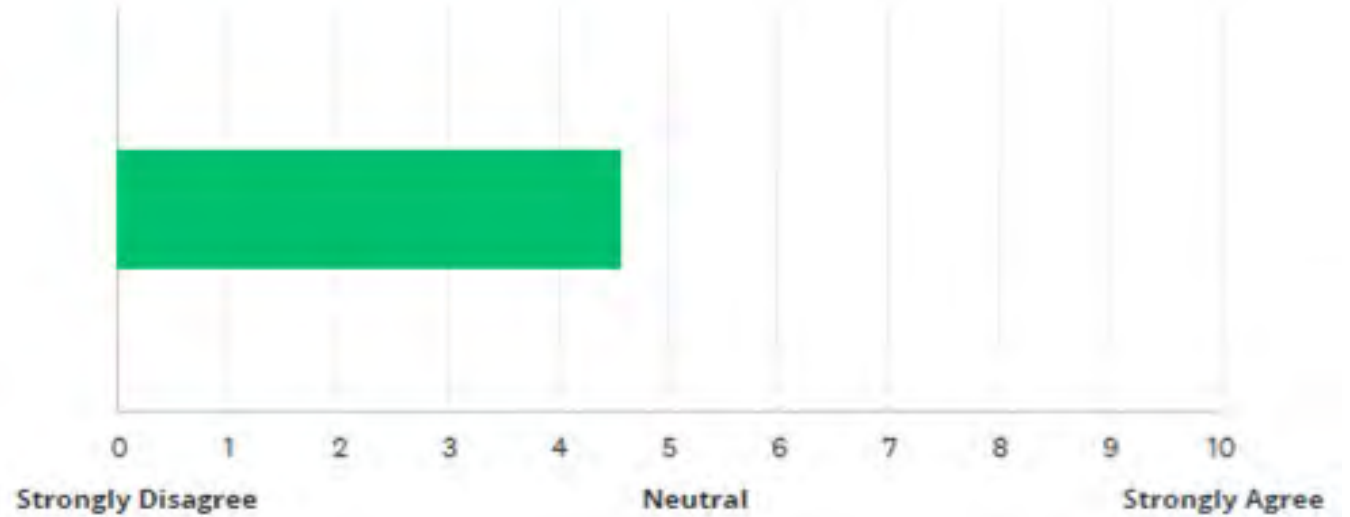
**Planting new trees in parks and along streets in Worcester is important**



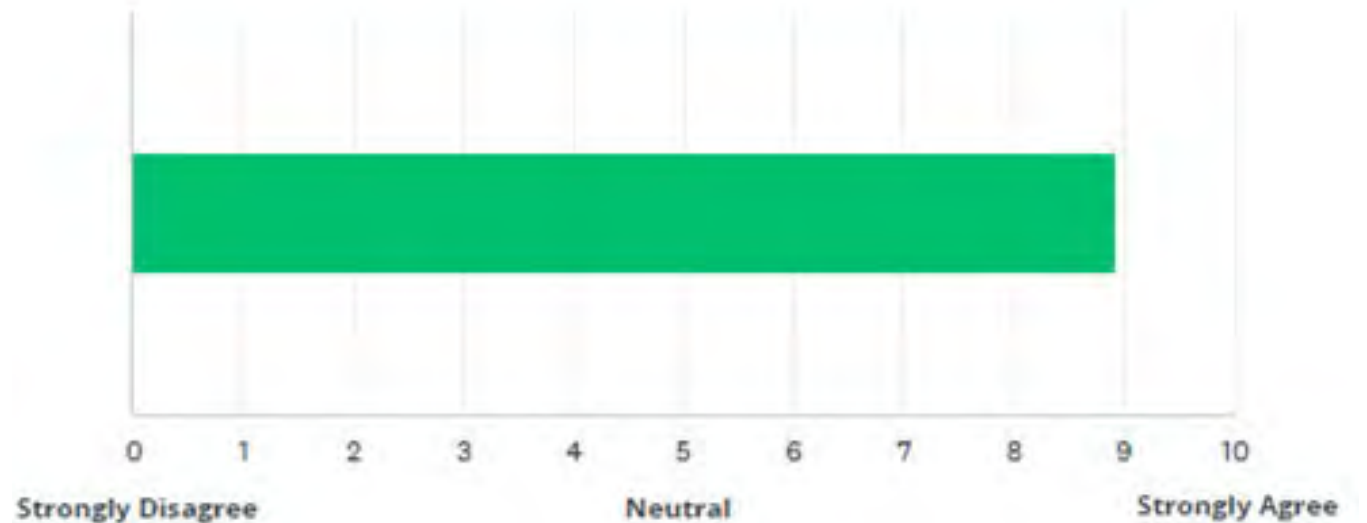
# What have we heard so far?

## COMMUNITY SURVEY RESULTS

**Public street and park trees seem well cared for in Worcester.**



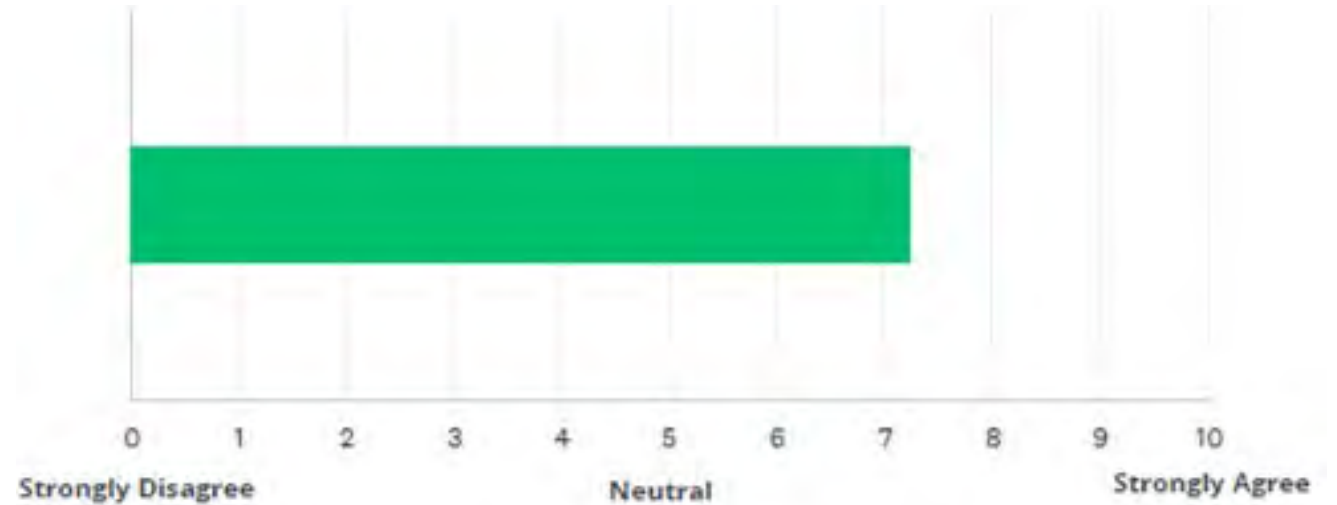
**Having trees is worth the financial cost of maintaining them.**



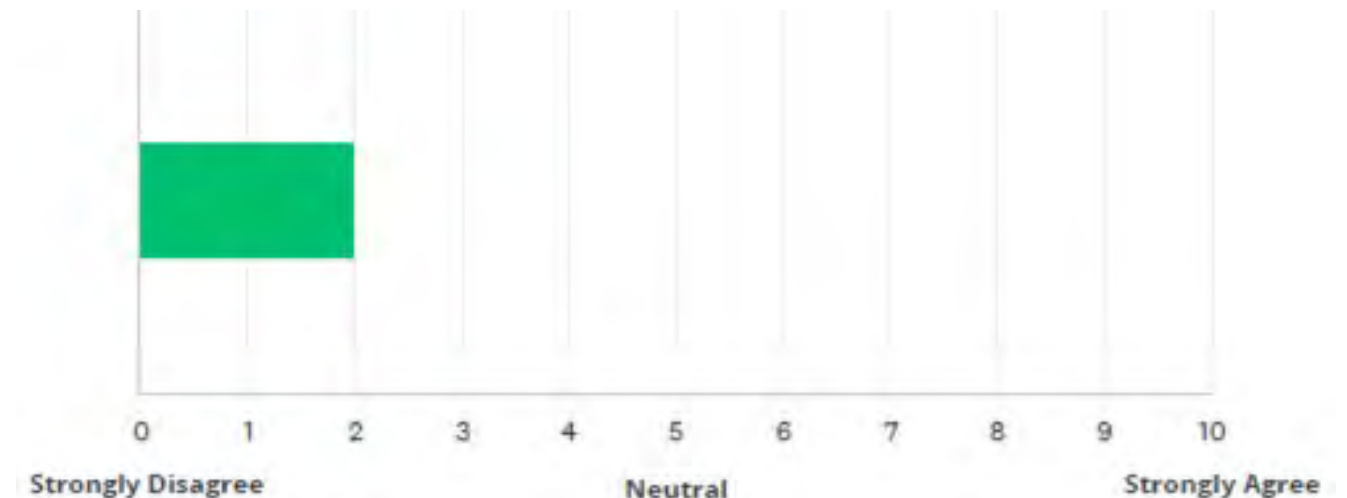
# What have we heard so far?

## COMMUNITY SURVEY RESULTS

**The City of Worcester does not spend enough money on trees.**



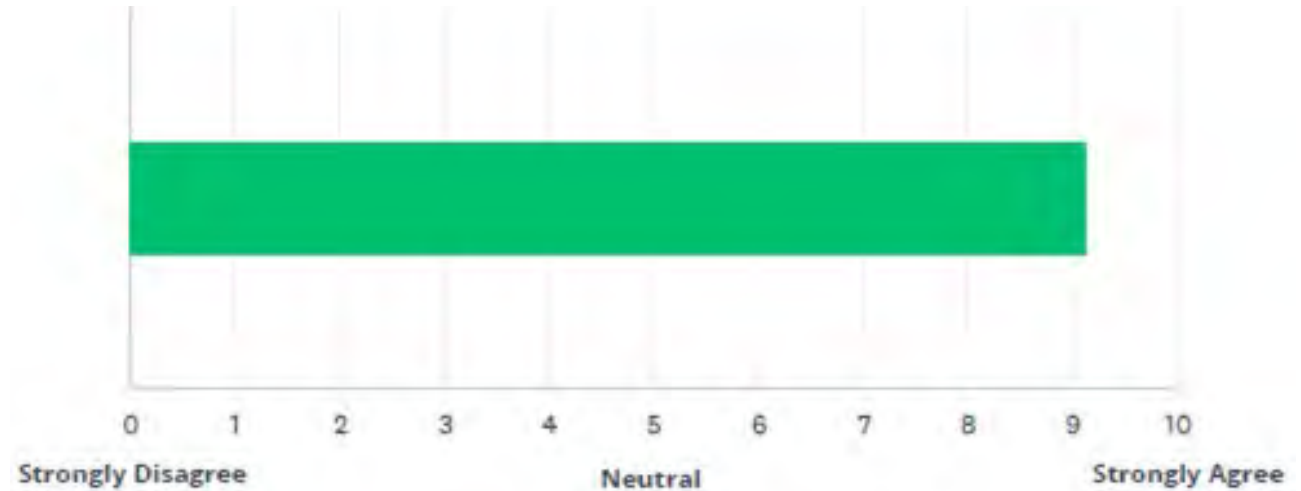
**The City of Worcester spends too much money on trees.**



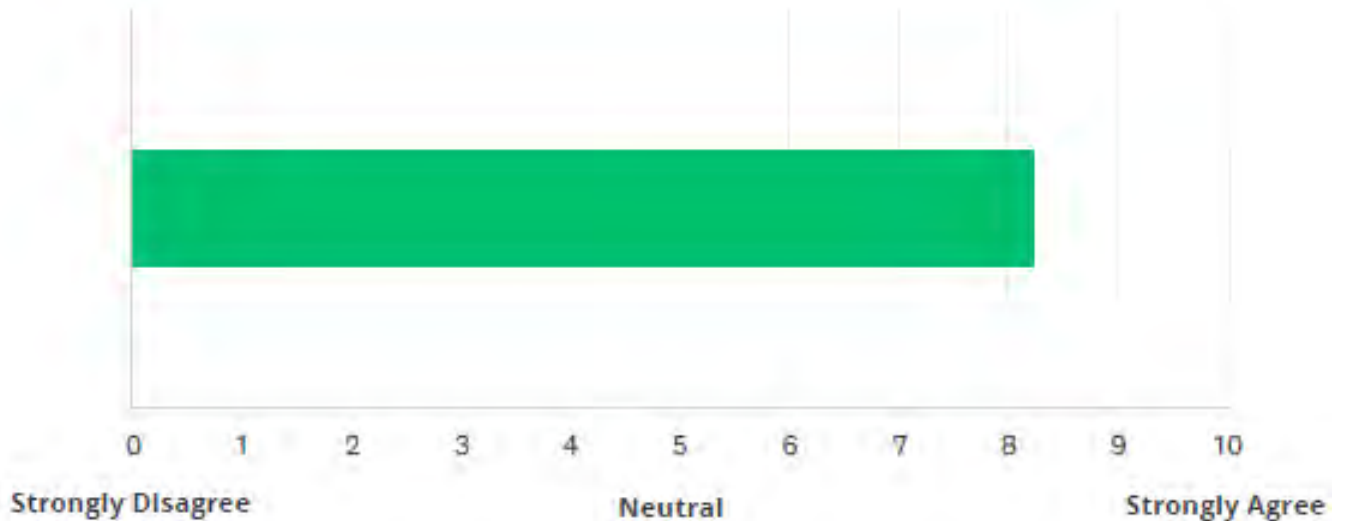
# What have we heard so far?

## COMMUNITY SURVEY RESULTS

**Large, mature trees should be preserved on public property in Worcester.**



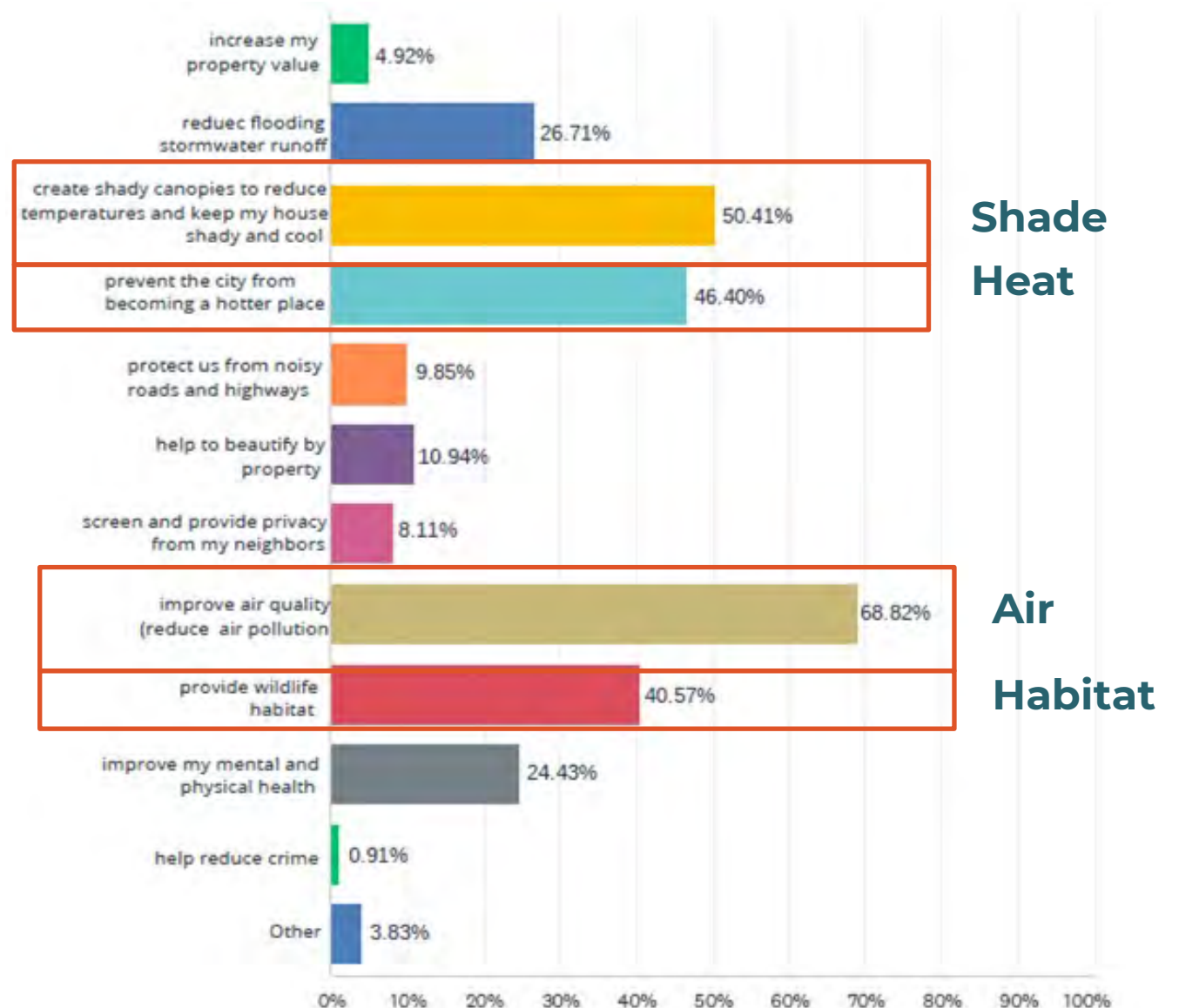
**Large, mature trees should be preserved on private property in Worcester.**



# What have we heard so far?

## COMMUNITY SURVEY RESULTS

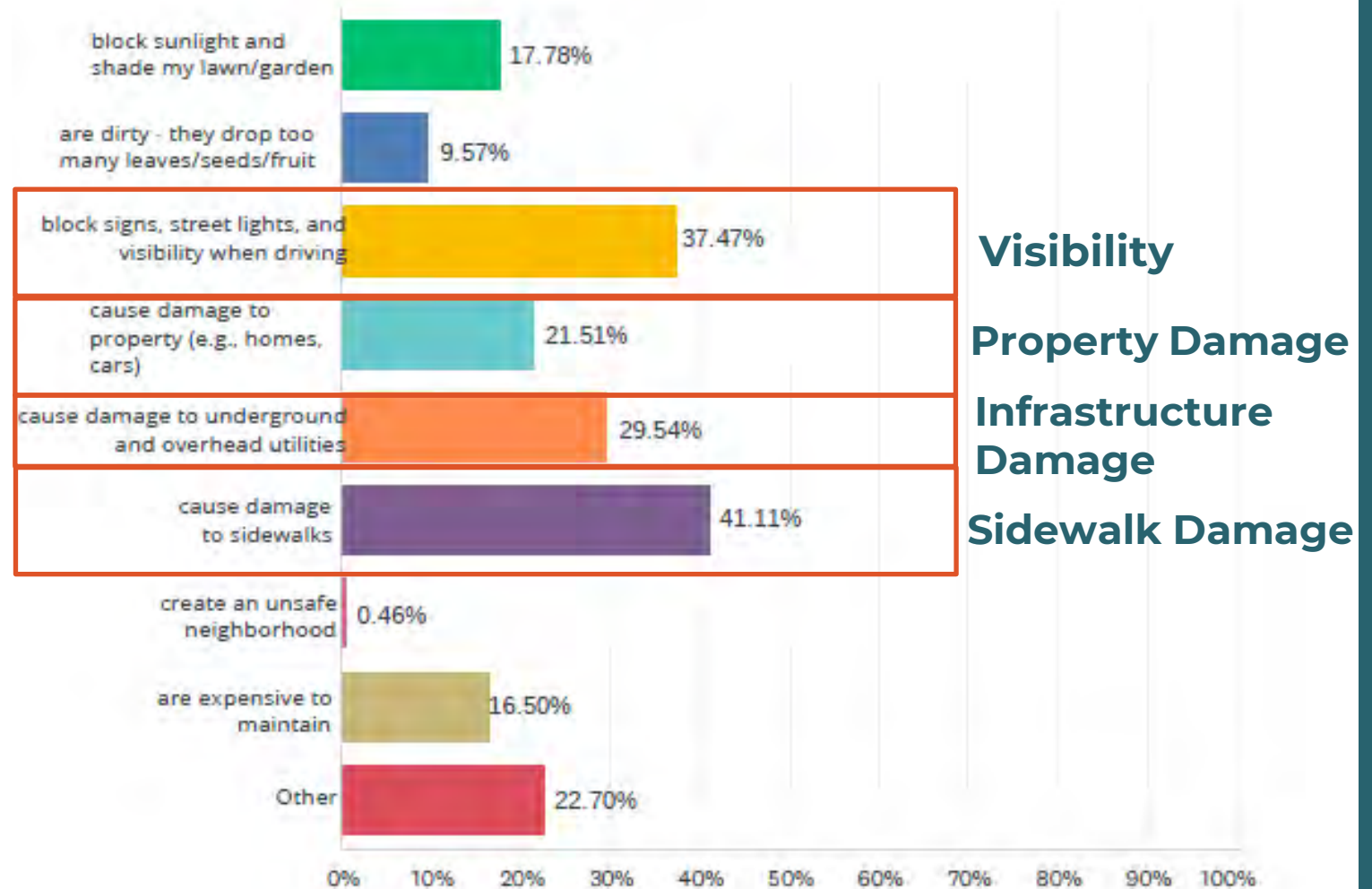
**Benefits of Trees. I want the trees in Worcester to...**



# What have we heard so far?

## COMMUNITY SURVEY RESULTS

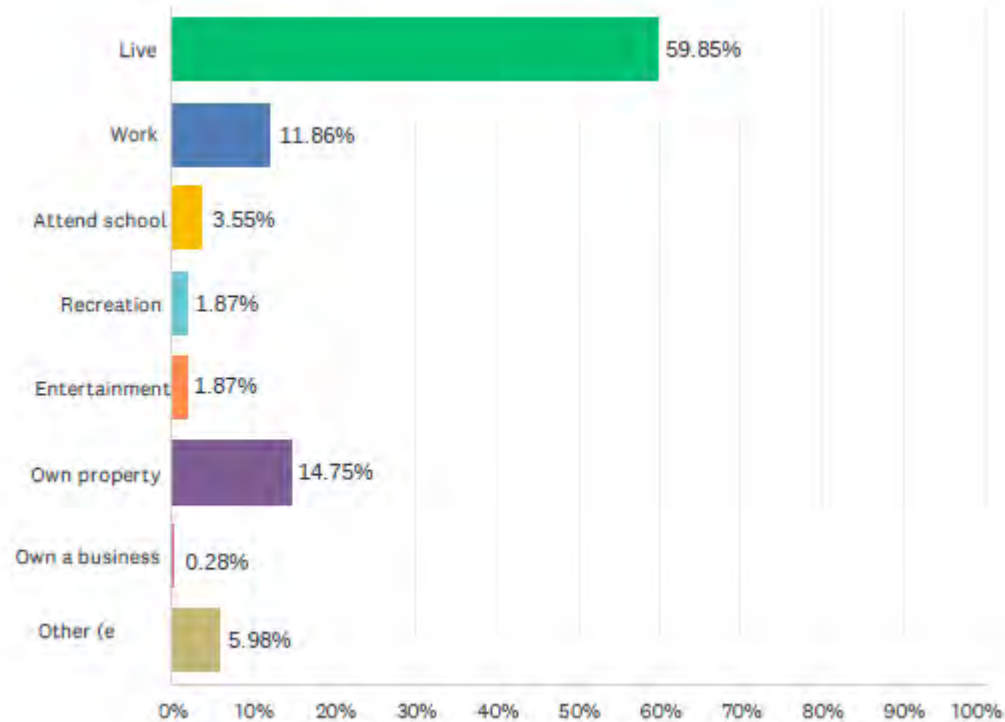
### Challenges of Trees. Trees...



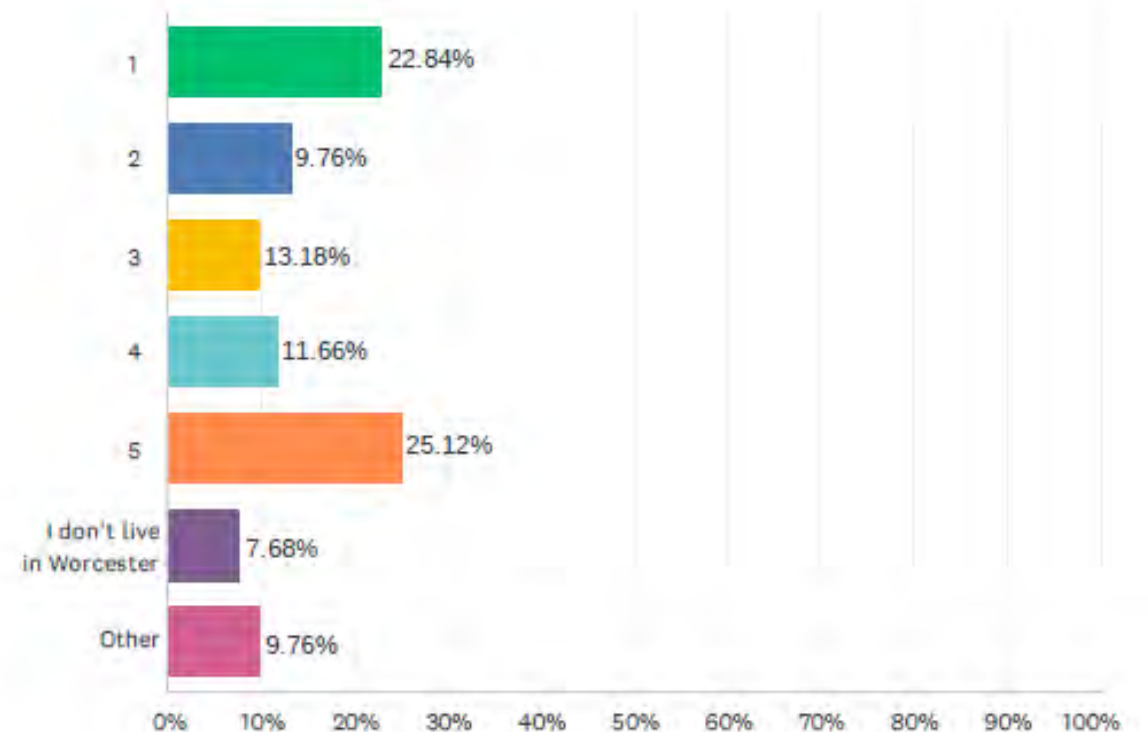
# What have we heard so far?

## COMMUNITY SURVEY RESULTS

### What draws you to Worcester?



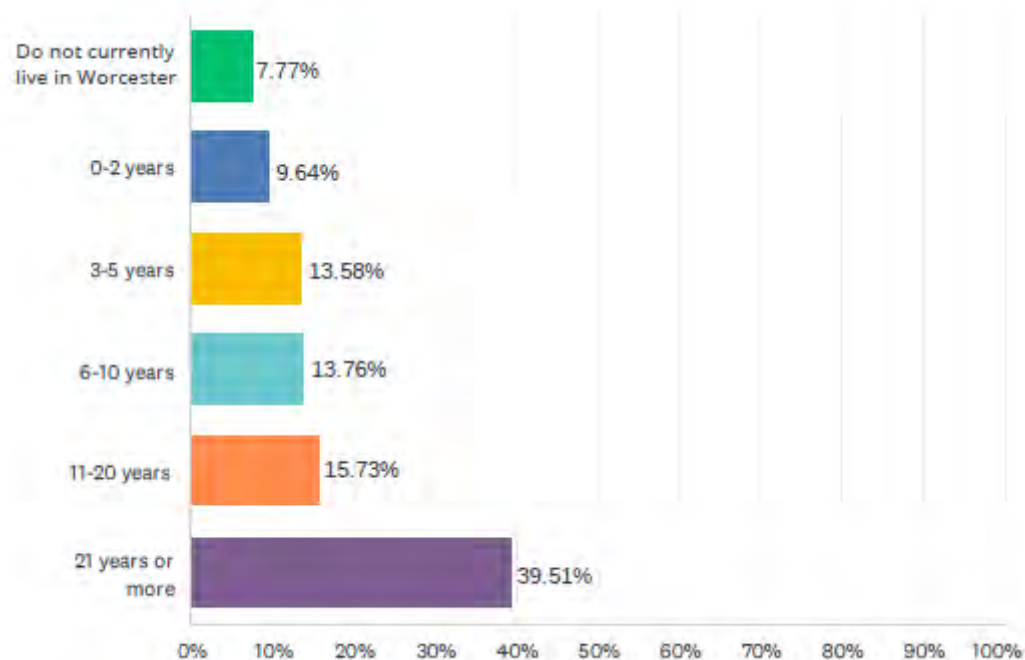
### What Council District do you live in?



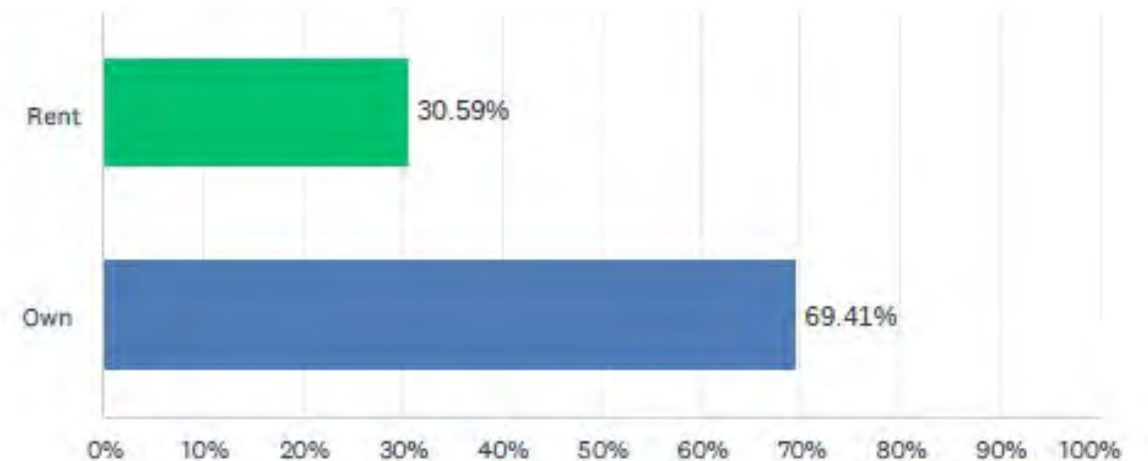
# What have we heard so far?

## COMMUNITY SURVEY RESULTS

**If you live in Worcester, how many years have you lived in the city?**



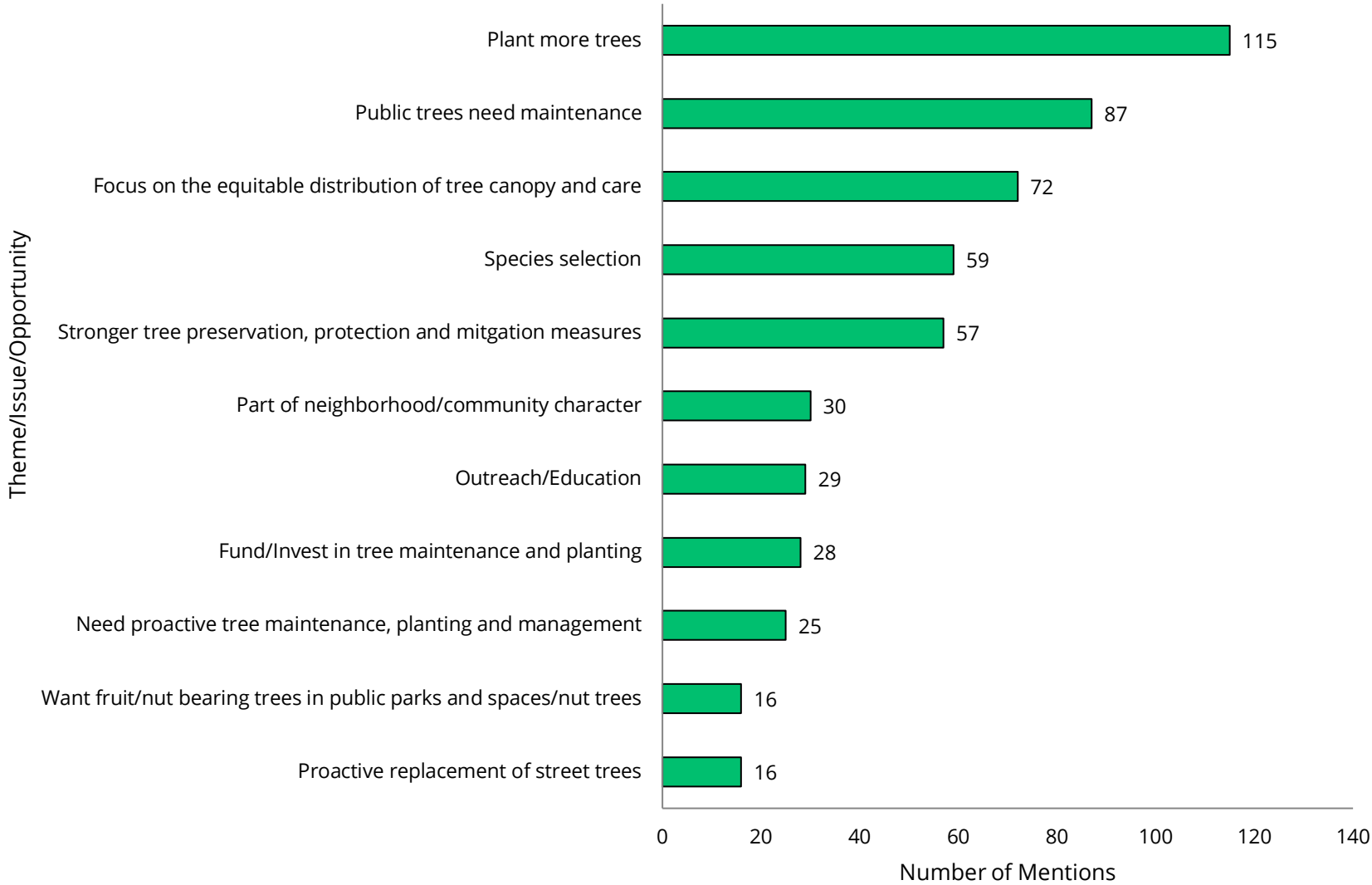
**If you currently live in Worcester, do you...**



# What have we heard so far?

## COMMUNITY SURVEY RESULTS

Anything else you would like to tell us about Worcester’s trees and urban forest?



# What have we heard so far?

## COMMUNITY SURVEY RESULTS

**Anything else you would like to tell us about Worcester's trees and urban forest?**

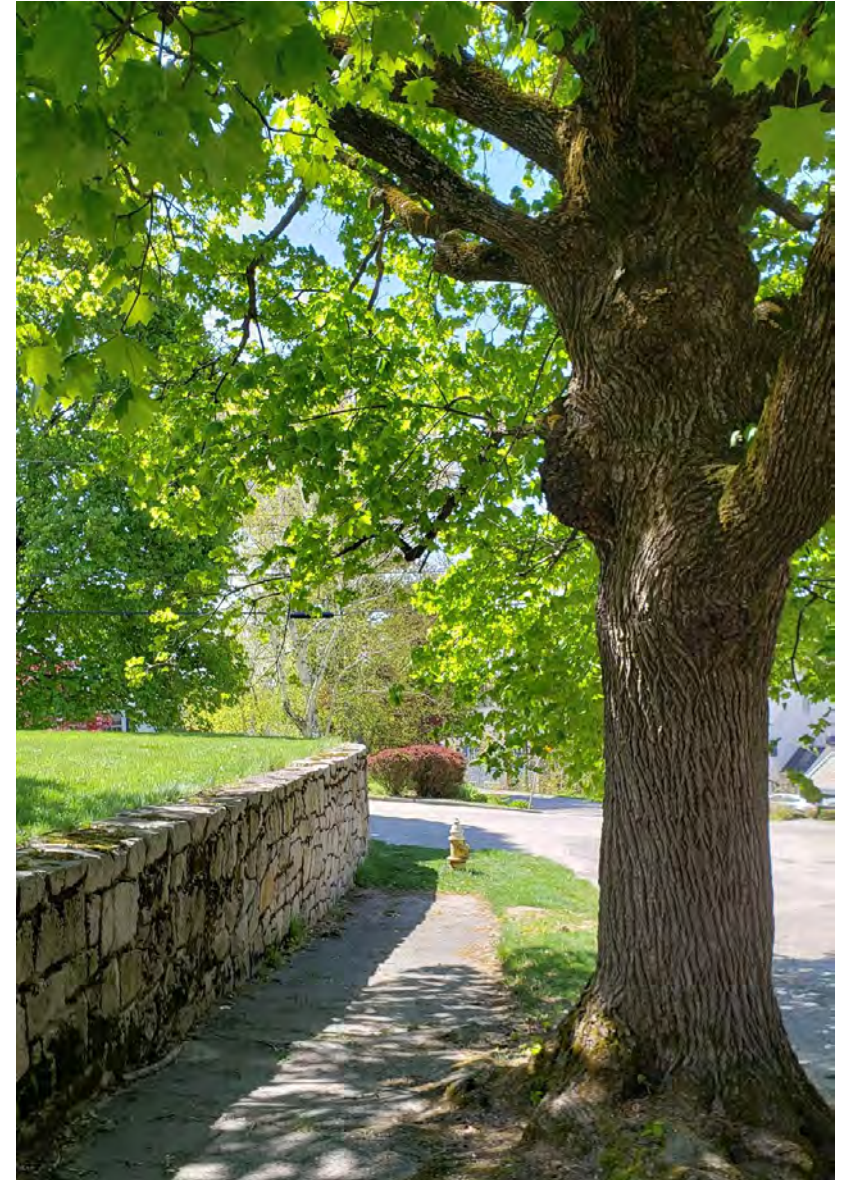
### **Top Themes Topics**

1. Public Tree Planting And Care
2. Equitable tree canopy
3. Importance of Species Selection
4. Tree Preservation and Protection

# What have we heard so far?

## THEMES

- **Diverse community opinions around trees**
  - Value benefits particularly shading, beauty and cooling
  - Concerns about large trees
- **Tree Planting**
  - Increase street tree planting
  - Equity considerations
  - Right tree/right place
  - Space for trees
- **Public Tree Maintenance**
  - Need for proactive tree maintenance
  - Funding and Investment
  - Young tree establishment and care
- **Proactive Management**
  - No net loss in public tree canopy
  - Planning



# What have we heard so far?

## THEMES

- **Sidewalks/Infrastructure**
  - Damage
  - Accessibility
  - ADA compliance
- **Standards**
  - Need for the development of urban forestry best management practices and standards
- **Tree Preservation and Protection**
  - Stronger regulations to preserve large trees
  - Requiring tree replacements for removal of trees
- **Ordinances/Regulations**
  - Revise ordinances
  - Increase tree planting requirements in/around parking lots
  - Limited staff to enforce ordinances



# What have we heard so far?

## THEMES

- **Species Selection**
  - Promote use of native species
  - Consider a variety of factors during species selection, including form, invasive potential, climate resilience and wildlife benefits
- **Composition of city trees**
  - Aging tree canopy
  - Species diversity
- **Legacy of Asian longhorned beetle (ALB)**
  - Tree loss and replacement
  - Species selection



# What have we heard so far?

## THEMES

- **Staffing and resources**
  - Increase staffing & resources for more proactive and responsive service
- **Interdepartmental coordination**
  - Process improvements
- **Communication, education and outreach**
  - Improved City communication around trees, forestry and decision-making around tree activities
  - Outreach and education on topics including
    - Proper tree care
    - Benefits of trees
    - Rental property owner engagement
- **Partnerships**
  - Fostering and growing partnerships
  - Capacity building



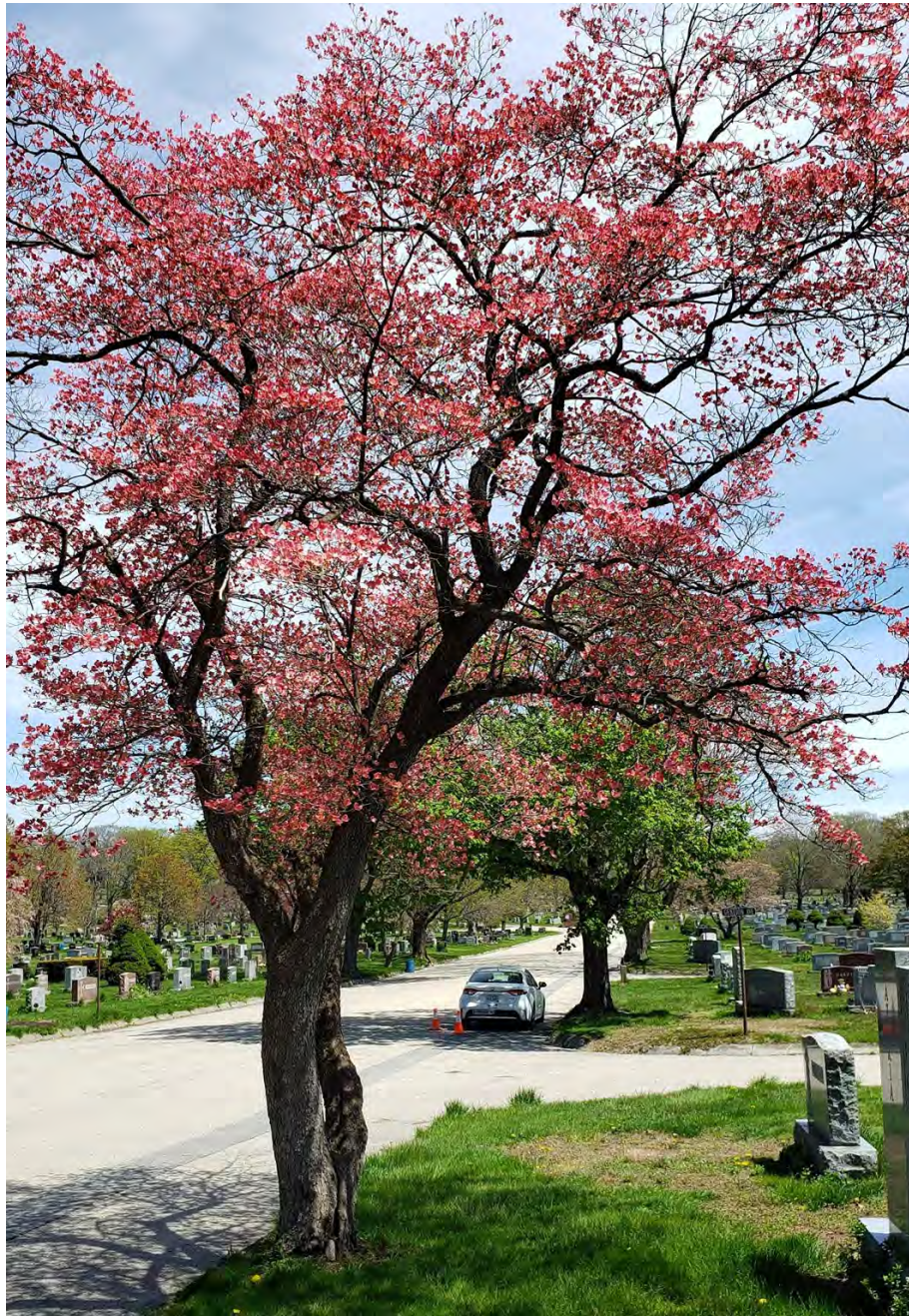
# What have we heard so far?

## THEMES

- Diverse community opinions around trees
- Tree Planting
- Public Tree Maintenance
- Proactive Management
- Sidewalk/Infrastructure
- Standards
- Tree Preservation and Protection
- Ordinances/Regulations
- Species Selection
- Composition of City trees
- Legacy of Asian longhorned beetle (ALB)
- Staffing and resources
- Interdepartmental coordination
- Communication, education and outreach
- Partnerships



**Are we  
missing any?**



# Next Steps



**Community Engagement –  
District Meetings (Sept – Oct 2022)**



**Develop Draft Plan  
Recommendations (Late Fall 2022)**



**Create Urban Forest Master Plan  
(Late Fall 2022/Winter 2023)**



**Thank You!**