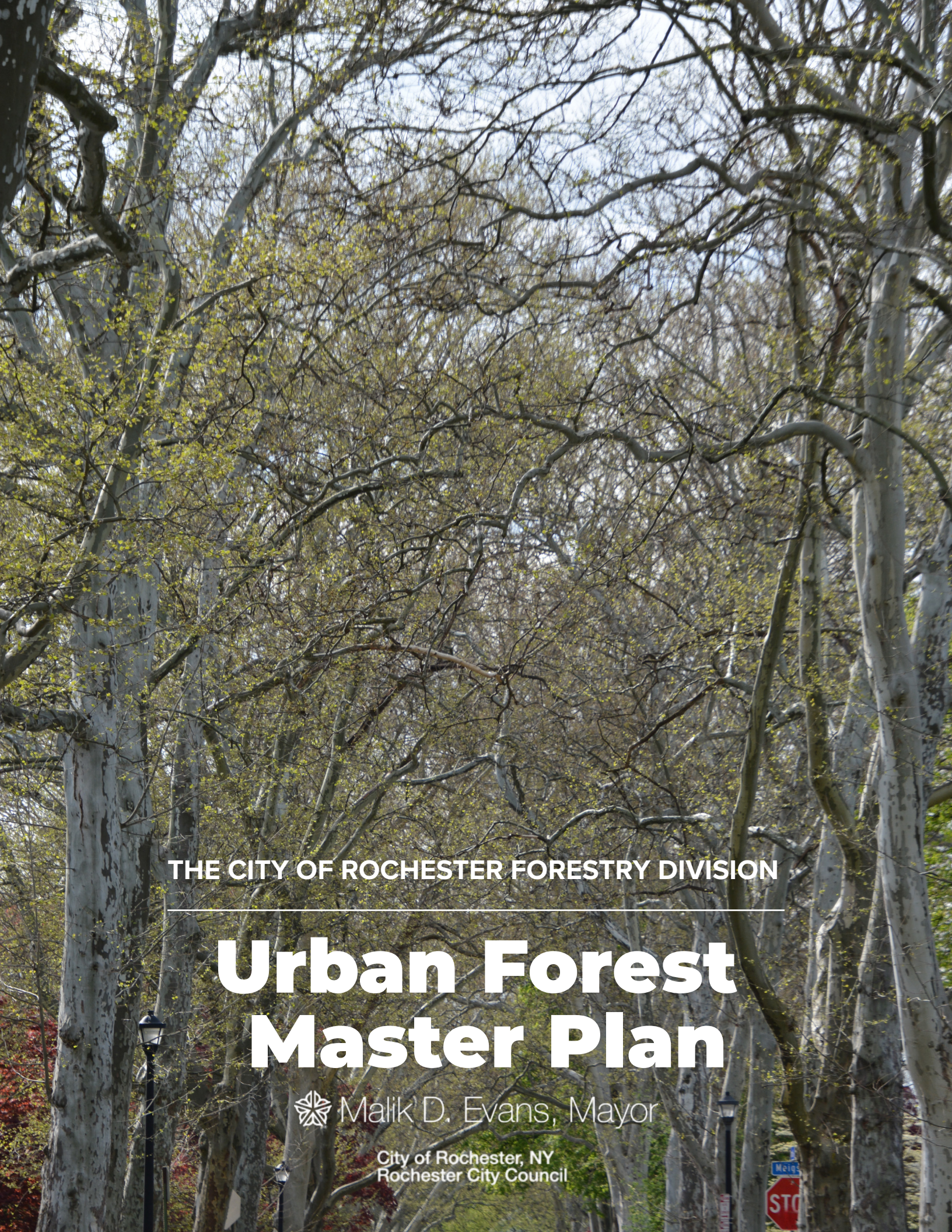

THE CITY OF ROCHESTER FORESTRY DIVISION

Urban Forest Master Plan

Malik D. Evans, Mayor

City of Rochester, NY
Rochester City Council

2024

ACKNOWLEDGMENTS

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INTRODUCTION

In 2024, the City of Rochester's Urban Forest Master Plan was updated for a fourth edition. This edition reviews the unique history of urban forestry in Rochester, examines the benefits of trees to the community, and assesses the current health and diversity of the urban forest.

Rochester's urban forest policy is discussed in detail, as well as the City's initiatives to address current issues such as environmental justice and climate change.

Finally, the plan poses a series of challenges and recommendations for the preservation and expansion of Rochester's urban forest, consistent with feedback from public engagement.


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PREFACE

Executive Summary

Executive Summary

The Executive Summary provides a high-level overview of the findings and recommendations of the 2024 Urban Forest Master Plan.

LEGACY OF THE URBAN FOREST

Trees have been vitally important to Rochester since the city's founding. Charles Sprauge Sargent, the first director of Harvard University's Arnold Arboretum, called Rochester a "city in a forest". Almost as quickly as trees were cut to make room for roads and structures, they were replanted for shade and decoration in the early settlement.

The prominent flour miller, Hervey Ely, planted sugar maples along Washington Street in the 1830's; Josiah Bissel, a nursery owner, did the same along East Avenue in the 1840's. H. E. Hooker, owner of Hooker Brothers Nursery, recognized that street trees enhanced the value of residential properties when, as the developer of Oxford Street, he designed a mall and planted it with magnolias.

Many horticultural nurseries operated in Rochester in the 19th century. Ellwanger and Barry built the largest nursery in the world on 650 acres along Mount Hope Avenue.

The Rochester Parks Commission, at its first meeting in 1888, decided to hire Frederick Law Olmsted to design a park system for the city. His major efforts include Genesee Valley Park, Maplewood Park, Highland Park, and Seneca Park. In 1894, the Parks Commission was empowered to care for existing street trees, and shortly thereafter, began planting them as well. The commission evolved into the Department of Parks in 1915.

In the 1950's, the Forestry Division was mobilized to remove elm trees infected with Dutch elm disease. A second challenge for the Forestry Division occurred with the ice storm in 1991, which destroyed 14,000 public trees in the city.

Additional events, including the Labor Day windstorm of 1998, the April 2003 ice storm, the arrival of Emerald Ash Borer in 2011 and a windstorm in March 2017 have also impacted the urban forest.

In 2023, the Forestry Division embarked on a three year tree planting initiative with two main objectives:

1.) Increase the City tree inventory from 64,000 trees to 70,000 trees, and

2.) Address disparities in street tree stocking by allocating plantings in such a way to increase the tree stocking level to 85 percent across all City quadrants.

HEALTH AND DIVERSITY OF ROCHESTER'S URBAN FOREST

As of 2024, The City's managed urban forest includes over 67,000 trees along city streets and in parks and cemeteries:

- 40 percent are young (less than 12-inch diameter)
- 60 percent are mature (greater than 12-inch diameter)
- 13 percent are in excellent condition
- 41 percent are in good condition
- 42 percent are in fair condition
- 4 percent are in poor condition

Stocking is a measure of the number of existing trees as a percentage of sites available to plant trees. The current street tree stocking level is 81.9 percent citywide. There are 173 species with 12 tree genera in excess of 1 percent in the city-managed urban forest. Maples dominate the population at 29 percent. Honeylocusts are second at 10 percent. Oaks and lindens each constitute 7 percent, with ash at 5 percent. London planetree, cherry, and pear also constitute a larger than average share.

TREE BENEFITS, PUBLIC HEALTH, AND THE ENVIRONMENT

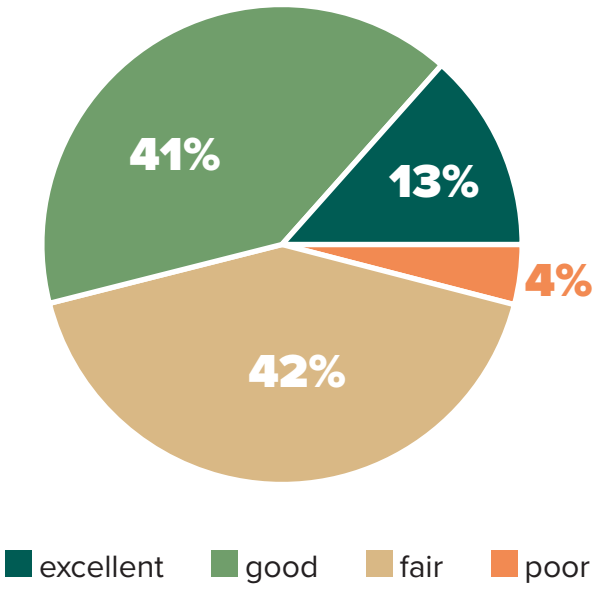
The immensity and beauty of Rochester's urban forest are visible every day, but the benefits are often overlooked. Trees filter toxic pollutants from the air and release life-giving oxygen. They intercept rainfall and slow erosion and storm water runoff.

Besides providing shade that cools people, streets and structures, trees demonstrably cool the air itself on hot summer days. Cooling and heating energy savings of as much as 25 percent result from properly positioned trees.

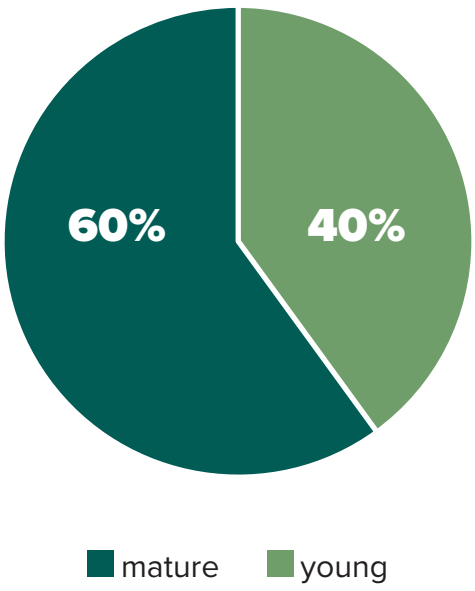
Trees enhance the attractiveness of streetscapes, which results in increased property values. Trees reduce urban noise by blocking, absorbing, and diffusing sound waves. And finally, trees soften the hard surfaces of a city and connect us with nature.

In 2023, to further explore and quantify the benefits of trees, the City commissioned Urban Design 4 Health, Inc. to study and provide an overview of the impacts of urban tree canopy on public health and the environment.

Tree Condition



Tree Age



ELEMENTS INFLUENCING ROCHESTER'S URBAN FOREST

Rochester's average temperature is 49° Fahrenheit. With an annual rainfall of 34 inches and snowfall of 93 inches, there is generally ample moisture for tree growth. This combination of temperature and moisture allows for an extraordinarily broad range of tree species to grow here.

In 2012, Rochester was classified in USDA Plant Hardiness Zone 6A (-10°F to -5°F). At the time of this update, Rochester has moved to Zone 6B (-5°F to 0°F), an indicator of climate change with increasing annual temperatures.

Continued climate change and the resulting changes in hardiness zones may be considerations in species selection, allowing for increased diversity in our urban forest.

Trees have many pests, in most cases however, it is environmentally prudent to allow natural systems to manage pest populations. Some invasive pests, such as Emerald Ash Borer, pose a serious threat to the health of our urban forest and have such prompted a response from the City.

Construction is a major man-made influence affecting the urban forest. According to a publication from Mississippi State University[1], trees typically die from construction-related stress slowly over one to 10 years. Vandalism and de-icing materials also profoundly affect tree establishment and longevity.

Funding and management practices, along with condition survey and data collection have the most direct man-made influence on our urban forest.

Without funding, trees do not get planted, pruned or removed. Planning and organizing workloads, driven by data analysis, provides the foundation for effective management of our forest resource.

PUBLIC ENGAGEMENT

Public engagement was a major component in the development of recommendations in this plan, highlighted by the formation of an Urban Forest Master Plan Advisory Committee. The committee, consisting of community stakeholders, provided vital insight and feedback to inform the plan. Public engagement also included in-person and virtual meetings, an online survey, pop-up and experiential events, and the formation of a Community Tree Ambassador Program.

ROCHESTER'S URBAN FOREST POLICY

Rochester's urban forest is healthy and growing in size and grandeur. Citizens and visitors recognize and appreciate the environmental, economic, and social benefits our forest provides for our community and are engaged in its care and renewal.

The predecessor to this plan, *Rochester, a City in a Forest*, is known throughout the country as a model in urban forestry stewardship and progressive management. The urban forest was considered an integral part of *Rochester 2010: The Renaissance Plan*, and impacted seven of the eleven campaigns.

More recently, the Rochester 2034 Comprehensive Plan recognizes the urban forest as an integral part of the City's infrastructure, essential for the well-being of residents. The Rochester 2034 plan recommends utilizing the Urban Forest Master Plan to guide efforts in protecting and expanding our urban forest.

It is the City's responsibility to protect, regulate, and fund tree planting, maintenance, and removal on city-owned lands or within the public right-of-way in the most socially responsible, responsive, environmental, and economic manner possible.

Mature trees receive periodic pruning to remove potential hazards and promote tree health and longevity. Annual inspections are performed to identify hazardous conditions. Ideally, one-sixth of the City's trees will be comprehensively inventoried each year. Tree removal will be completed to ensure public safety, urban forest health, and responsible fiscal management. Monetary fines will be imposed for destructive construction practices.

Renewal of our urban forest will be accomplished through annual tree planting. Tree species selected for planting will not exceed 10 percent of the tree population to ensure minimal impact from future events. In 2004, the City adopted a policy of not planting trees of the Fraxinus (ash) genus in response to the potential invasion by Emerald Ash Borer (*Agrilus planipennis*) (EAB).

Edible fruit tree plantings will be primarily restricted to parks, community gardens, and other open spaces. Fruit trees do not make ideal street trees in the urban environment due to poor soils, narrow tree lawns, and their low branching habit conflicting with clearances. Fruits such as apples, pears, and cherries become problematic with infrastructure and pose threats to public safety.

Pest control will only be considered when there is significant risk to a large population of trees, such as the case with the discovery of EAB in 2010. As a result, the Forestry Division has developed and implemented a successful, cost-effective EAB management program, allowing the City to maintain tree canopy and strategize a long-term plan for tree replacement.

CHALLENGES AND RECOMMENDATIONS

The Forestry Division, through public engagement and in partnership with the Urban Forest Master Plan Advisory Committee, identified current issues of importance which present challenges to sustaining the City's urban forest.

In response to these issues, recommendations were developed to be utilized in the development and implementation of fiscal and operational plans. Annual status reports should be made available. This master plan should be reviewed in five-year increments to evaluate its impact and to revise as appropriate.

1. Brady Self, "Preserving Trees in Construction Sites," Mississippi State University Extension Service, 2022, https://extension.msstate.edu/publications/publications/preserving-trees-construction-sites.

TREE STORIES

Rochester 2034

The Importance of Trees and the Urban Forest

From The Placemaking Plan Initiative Area (page 44 of Rochester 2034):

A Celebration of Sidewalks and Front Porches "A consistent five-foot wide walkway is found along nearly every residential street in the city, encouraging people to walk for leisure, social, and practical reasons. Sidewalks not only connect all houses to their neighbors on a block, but are a human-scale, elaborate transportation network that links to nearly every home and business in Rochester. The presence of that network, which is largely decorated with tree lawns and street trees, is a major point of pride and unity for residents.

As well, the front porch serves as a transition zone between private and public space in support of the sidewalk commons. It is a design feature unique to North American residential architecture. It is so integral to urban and village living that the front porch is part of the Landmark Society of Western New York's 2017 Five to Revive list, which celebrates and advocates for the preservation of key community assets."

From the Natural Resources Section (page 271 of Rochester 2034):

"Trees cool cities affected by the "heat island effect" and clean the air, which allows cities to be resilient against negative health effects brought on by climate change, including rising temperatures and air pollution. Trees also fight against noise pollution, increase the presence of wildlife, and allow people to connect with nature, all things that are linked to better mental health, as well as better productivity at school and work. Street trees create a buffer between walkers and drivers.

Urban neighborhoods are unique because of unifying elements that provide a sense that residents belong to something bigger than themselves and their property. These pedestrian-scale elements include sidewalks, street trees, tree lawns, streetlights, front porches, and a relatively consistent, shallow setback of homes from the street. A healthy urban forest is an important part of the City's infrastructure and essential for the well-being of residents."

The Rochester 2034 highlights the role of the urban forest in complementing sidewalk networks, mitigating the effects of climate change, and enhancing quality of life.

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