FORESTRY INSIGHTS

Engaging private residential tree owners in Madison

Insights from the Wisconsin Urban Landowner Survey

Madison

Katy Thostenson, Wisconsin Department of Natural Resources
Laura Witzling, University of Wisconsin-Madison
Bret Shaw, University of Wisconsin-Madison & University of Wisconsin-Extension
Tricia Gorby Knoot, University of Wisconsin-Extension

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MADISON'S URBAN FOREST

In Wisconsin, private urban landowners play an important role in promoting the health and resilience of urban forests. A majority of Wisconsin's urban trees grow in residential areas (69%), providing tens of millions of dollars in ecosystem services for the people who live and work in Wisconsin's cities and suburbs (Nowak et al., 2017). The City of Madison has a tree canopy cover of almost 28%, amounting to about 222 m^2 of tree canopy for every resident. In comparison, the statewide tree canopy cover for urban areas is almost 29%. As a whole, the diversity of tree species that comprise Wisconsin's total urban tree canopy is greater than the diversity of its public street trees, further underscoring the important role of private lands in maintaining a healthy and resilient urban forest (Nowak et al., 2017; Cumming et al., 2008).

USING SURVEY INSIGHTS TO IMPROVE LANDOWNER OUTREACH

To better understand the perceptions, attitudes and behaviors of Wisconsin's private residential urban landowners, the Wisconsin Urban Landowner Survey was sent in early 2017 to 6,000 landowners across four Wisconsin metro areas: Milwaukee, Madison, Green Bay and Wausau. The primary decision-maker for managing the trees and green space for each property was invited to complete the survey. Key findings from Madison respondents are highlighted in this brief with a focus on single-family homeowners, who represent 78% of the 524 survey respondents from Madison.

The first step in the landowner outreach process is to understand attitudes toward urban trees. This includes the relative importance of the perceived benefits and concerns around tree care and landowners' preferred sources of information about tree care. Using this information, urban forestry professionals can design targeted messages that more effectively reach and motivate landowners to be active stewards of their trees. Whether professionals choose to communicate with landowners using direct mail, social media or face-to-face engagement, this brief can provide initial insights, including:

- Which tree benefits should I feature as part of my messaging?
- What are homeowners **most** concerned about when deciding to plant trees?
- Who is **best** positioned to deliver a message to homeowners in my area?
- Who is **most willing** to volunteer in my community or **most likely** to plant a tree on their property?

RESPONDENT DEMOGRAPHICS: MADISON SINGLE-FAMILY HOMEOWNERS *(411 RESPONDENTS)*

Madison survey respondents are primarily white (93%), male (65%) and are in their late 50s on average (Figure 2). The largest proportion earn $50,000-$99,000 (36%), and 67% have

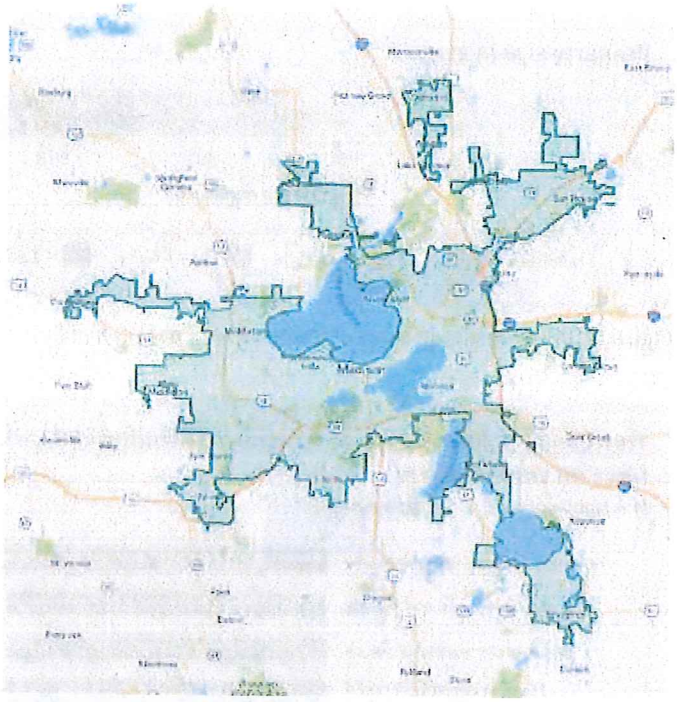


Figure 1. Madison city and suburban sample area.

a bachelor's or advanced degree. 45% of respondents own less than or equal to .25 acres (Figure 3), and 34% own only 1-4 trees:

- The median property size is .3 acres.
- For respondents within Madison city limits, the average property size is .4 acres.

Insight: *In comparison to other urban areas surveyed, Madison respondents generally own smaller properties (≤ .25 acres) and have fewer trees on their properties. Given the demographics of the respondents, more research is needed before generalizing these survey results to engage minority or low-income homeowners or to engage residents who live in multi-family units.*

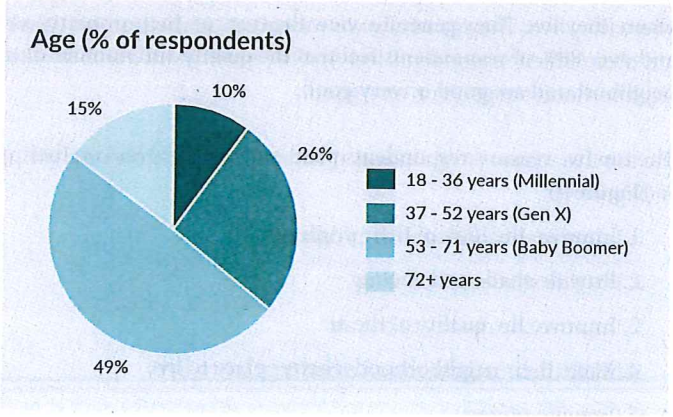


Figure 2. Madison area respondents by age.

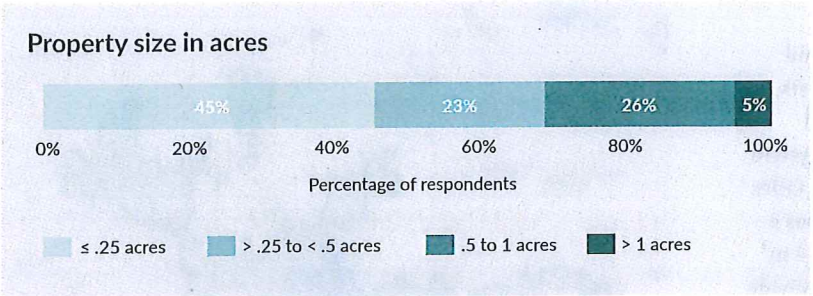


Figure 3. Property size in acres of Madison area respondents.

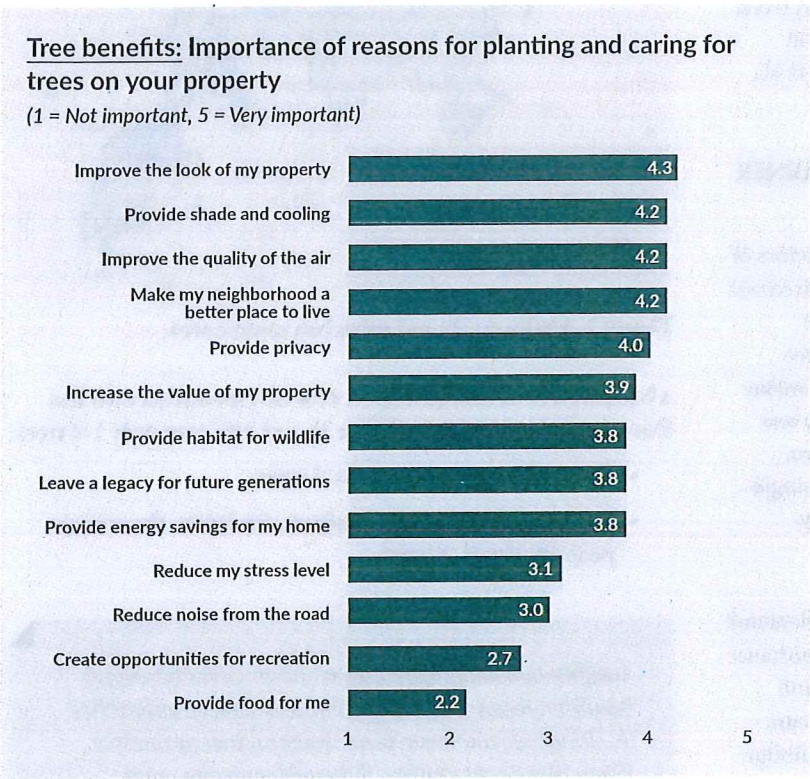


Figure 4. Madison area respondents' perceived level of importance of the benefits provided by trees.

PERCEIVED BENEFITS OF PLANTING AND CARING FOR TREES

Overall, Madison area respondents have a very positive perception of the trees where they live. They generally view the trees on their property as beneficial, and over 80% of respondents feel that the quality and number of trees in their neighborhood are good or very good.

The top five reasons respondents plant and care for trees on their property are to (Figure 4):

1. Improve the look of their property
2. Provide shade and cooling
3. Improve the quality of the air
4. Make their neighborhood a better place to live
5. Provide privacy

Respondents who place greater importance on the benefits of their trees show a greater intention to plant trees on their property and support urban forestry programs.

> ***Insight:*** *Framing messages around the benefits that are* ***most important*** *to homeowners can help tip the balance in favor of a pro-tree action as they weigh tree benefits against their concerns about the particular action, such as planting a large-growing tree near their home.*

PERCEIVED CONCERNS ABOUT TREES ON THEIR PROPERTY

Madison area respondents are most concerned about potential property damage from trees growing on their property (Figure 5). Almost half of the respondents report serious concern about trees and branches breaking and damaging their property (48%) and tree roots interfering with building foundations, pipes or pavement (45%).

Respondents who own their property in the city limits show greater levels of concern about the trees on their property than suburban respondents.

Insight: Messaging about trees must address homeowners' concerns, particularly for city homeowners where the concerns may be a barrier to planting new trees. Messaging could promote specific, actionable tree-care options, such as pruning (rather than tree removal), properly planting and placing trees and choosing tree species that reduce perceived risks while providing benefits.

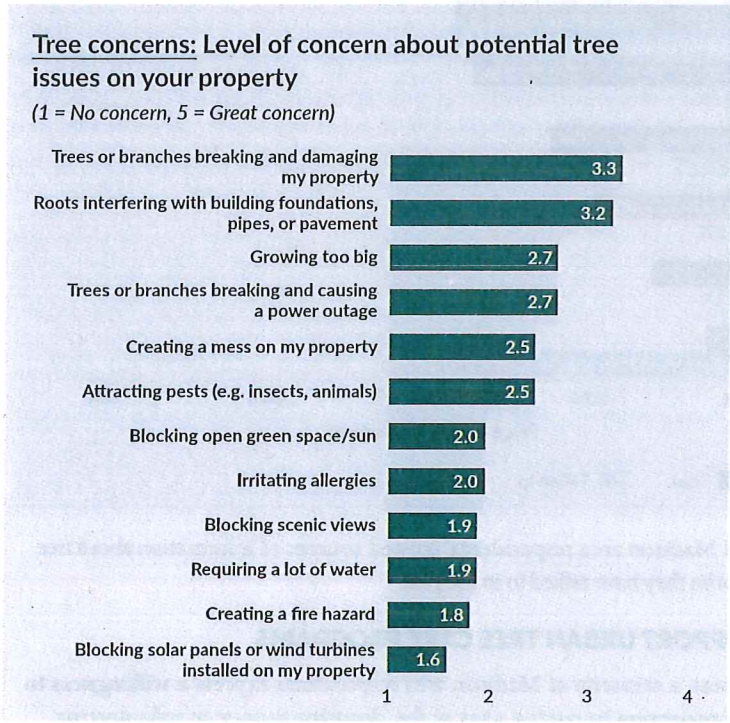


Figure 5. Madison area respondents' perceived level of concern about the tree issues on their properties.

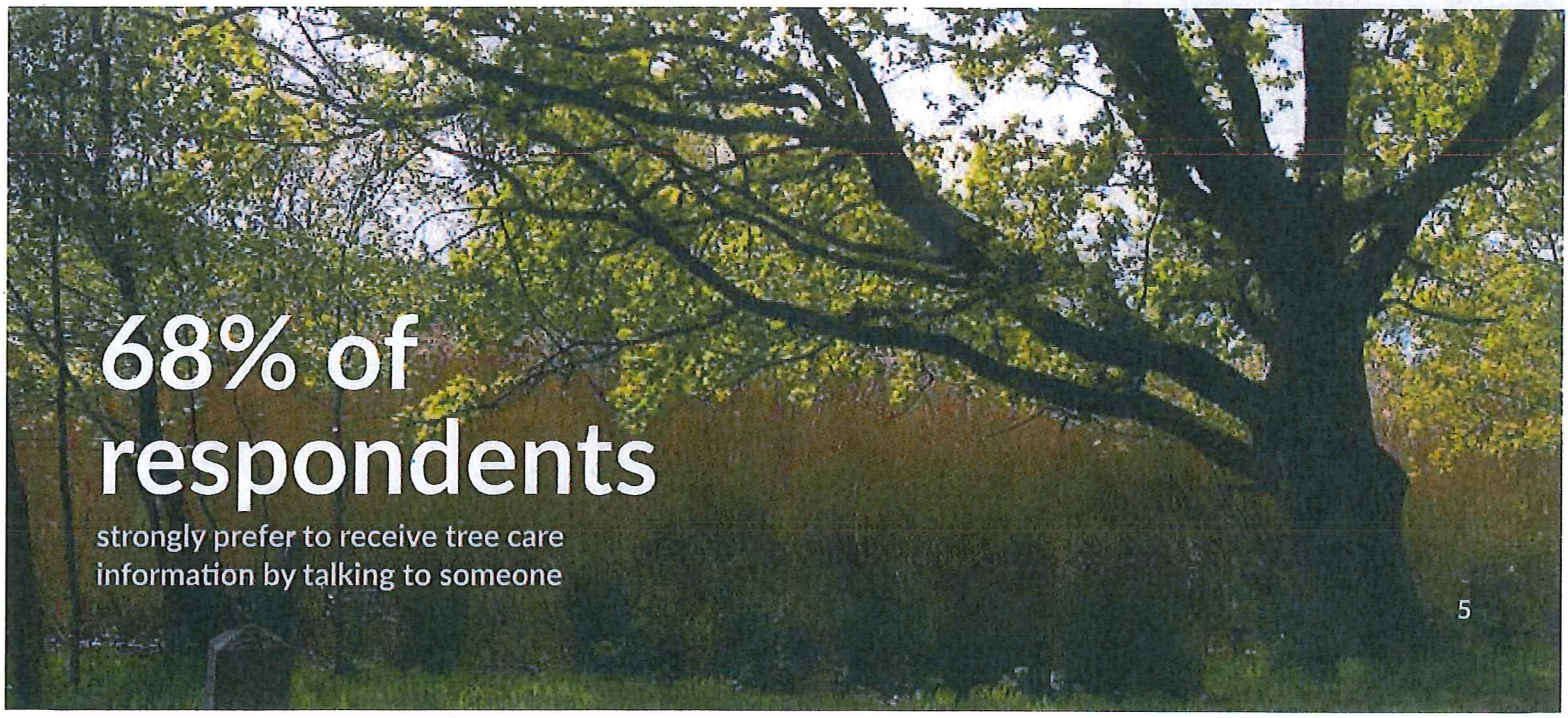
PREFERRED SOURCES OF INFORMATION ABOUT TREE CARE

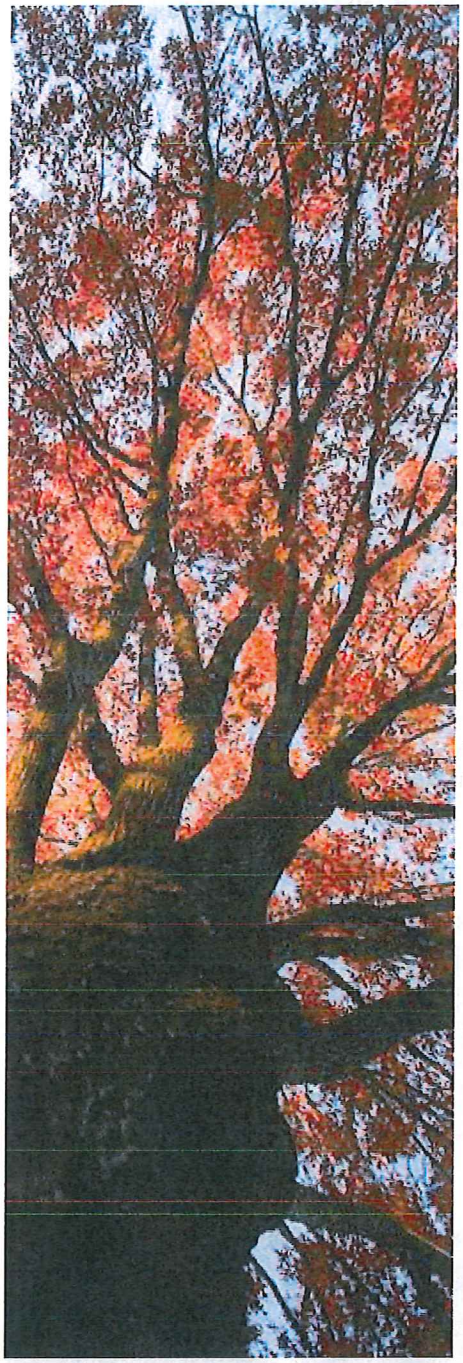
The largest proportion of Madison area respondents (70%) say they **trust** private sector professionals for information about caring for or planting trees on their property (Figure 6). This is followed by trust in their family and friends (42%). Similarly, the largest proportions of respondents say they **have talked to** private sector professionals (43%) and family and friends (40%) in the past year for advice about caring for their trees and green space.

In a separate survey question, when asked about their familiarity with the services provided by different types of professionals, Madison area respondents report they are **more familiar** with private tree care and landscape professionals (34% are very or extremely familiar), compared to Extension educators (9%) and municipal tree care professionals (17%).

When asked **how they prefer to receive information** about tree care, Madison area respondents strongly prefer receiving information by talking to someone (68%), followed by browsing the Internet or social media (54%) and reading print materials (44%).

Insight: To be most effective, outreach efforts should consider partnering with the private sector and community groups to disperse information and messages. UW-Extension is also poised to be a trusted, public source for information about tree care in comparison to other non-profit and public sources.





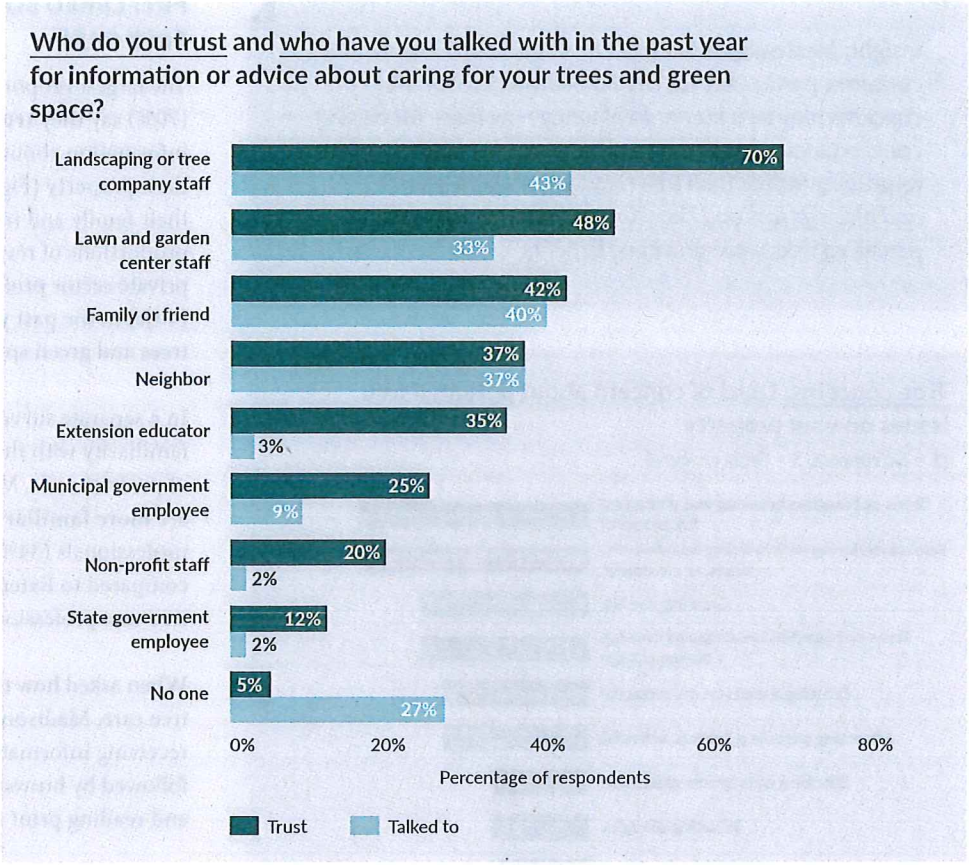


Figure 6. Comparison of Madison area respondents' trusted sources of information about tree and green space care and who they have talked to in the past.

WILLINGNESS TO SUPPORT URBAN TREE CARE PROGRAMS

Similar to other urban areas, a minority of Madison area respondents express **a willingness to support urban tree care programs** by paying a tax or fee, donating money or volunteering, though Madison area respondents are significantly more willing to pay a tax or fee (44% of respondents) than other urban areas surveyed (Figure 7).

- Respondents who own larger properties (> 1 acre) are significantly less willing to pay a tax or fee or donate money to support urban tree programs.
- Millennials (ages 36 and under) are more willing to volunteer than older generations.

Meanwhile, only 27% of respondents say they are strongly interested in **participating in a program** that would help cover the expense of planting or caring for trees on their property.

Insight: *It may be that support for and interest in tree care programs is low because people may not perceive a need for them. Indeed, on average, respondents are very satisfied with the number and quality of trees in their neighborhood. Further studies are needed to more fully understand homeowners' openness to specific urban forestry programs.*

Marketing for any program should be attentive to different audiences' openness to community programs. For example, messages about volunteering might be designed to reach Millennials, who appear more interested in volunteer opportunities. Messages might also be tailored for homeowners who have larger properties and live farther from the city center, appealing to their attitudes and beliefs to build their interest in urban tree care programs. Furthermore, it may be helpful to obtain a more thorough understanding of the homeowners who express a willingness to donate and target marketing initiatives to these willing homeowners.

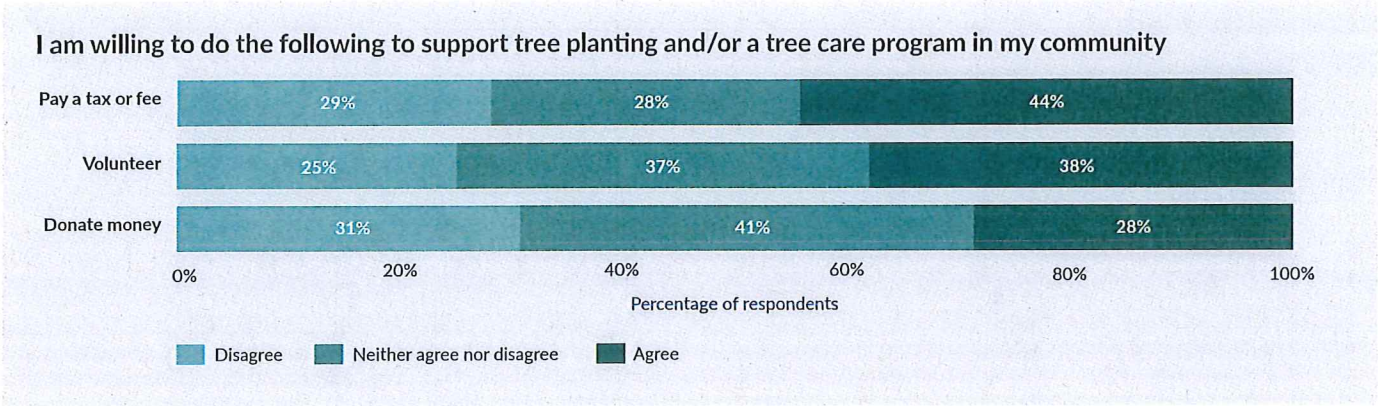


Figure 7. Madison area respondents' willingness to support urban tree care programs.

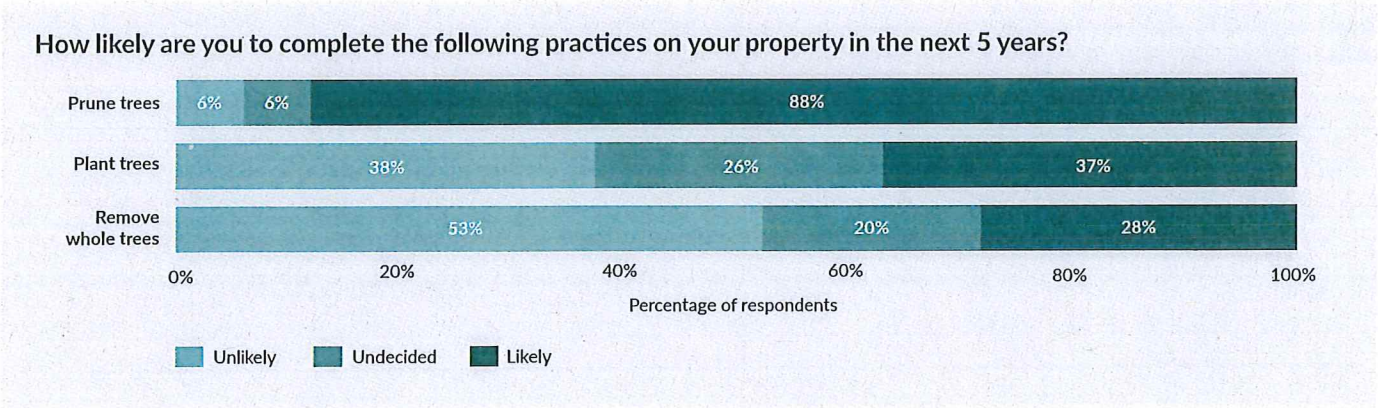


Figure 8. Madison area respondents' likelihood to complete a practice on their properties.

HOW LIKELY ARE HOMEOWNERS TO PLANT AND CARE FOR THEIR TREES IN THE FUTURE?

Similar to respondents in other urban areas, the vast majority of Madison area respondents say they carry out tree and yard work themselves (85%). A minority of Madison area respondents report hiring tree care companies (39%) and landscaping companies (26%) to carry out this work.

Most respondents say they are "extremely likely" or "likely" to prune trees in the next 5 years, while only 37% say they are likely to plant trees (Figure 8). Suburban homeowners are more likely to report the intention to plant trees than city homeowners.

Insight: *Messaging to homeowners about behaviors they are already more open to, such as pruning trees, may provide an opportunity to build trust and open dialogue to talk about more challenging practices, such as planting trees or spending money to remove a dead or dying tree.*

TO LEARN MORE

Read the full report on the Wisconsin Urban Landowner Survey: *www.forestryinsights.org/urban-forestry*

Connect with the Wisconsin Department of Natural Resources Urban Forestry Program: *www.dnr.wi.gov/topic/UrbanForests/contact.html*

Explore landowner outreach strategies with Forestry Insights: *www.forestryinsights.org*

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City of Madison, Wisconsin

Urban Forest

Madison's **urban forest** is made up of all public and private trees that grow within the city. These trees provide the community many benefits, and these tree benefits are driven by the amount of canopy cover.

Public **street trees** serve as the basis of Madison's green infrastructure, they form scenic corridors, and create a sense of unity and character throughout the city.

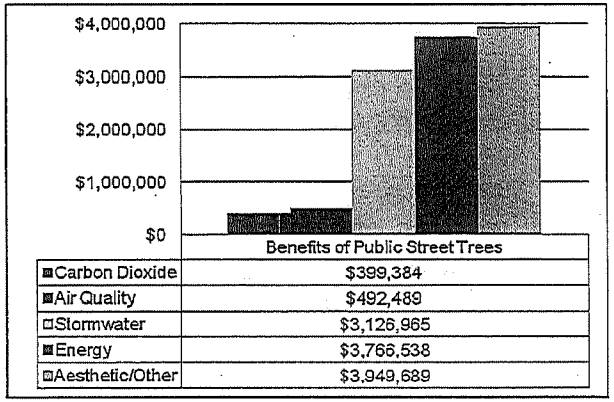
- Public street tree population total 96,074 trees.
- Every year public street trees provide benefits equal to $11,735,065.
- Each tree provides $122 in annual benefits.
- For every $1 spent on trees the city receives $3.35 of benefits in return.

Public Street Tree Benefits

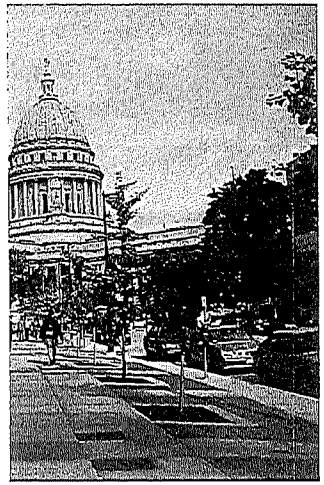
Madison's public street trees provide shade and beauty that contribute to the community's quality of life. They soften the hard appearance of concrete structures, parking lots, and streets. Trees help stabilize soils by controlling wind and water erosion and also help reduce noise levels; cleanse pollutants from the air; produce oxygen and absorb carbon dioxide; and provide habitat for wildlife.

Trees provide significant economic benefits, including increased real estate values and more attractive settings in which to locate commercial businesses. Trees provide shade and act as windbreaks, helping to decrease residential energy consumption.

Madison's public street trees provide **$11,735,065 of annual benefits** to the community.



Benefits of Public Street Trees	
Carbon Dioxide	$399,384
Air Quality	$492,489
Stormwater	$3,126,965
Energy	$3,766,538
Aesthetic/Other	$3,949,689



There are 11,008 acres of public and private tree canopy, equal to **22.4%** of the total land area.

Methods

Using the i-Tree software suite developed by the U.S. Department of Agriculture (USDA) Forest Service, Davey Resource Group completed an i-Tree Canopy assessment of Madison's urban forest with National Agricultural Imagery Program (NAIP) 4-band imagery acquired by the USDA in 2010.

Davey Resource Group entered Madison's computerized street tree inventory data and current maintenance costs into the i-Tree Streets tool to quantify the dollar value of annual environmental and aesthetic

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Stormwater

Trees reduce stormwater runoff by capturing and storing rainfall in their canopy and releasing water into the atmosphere. Tree roots and leaf litter create soil conditions that promote the infiltration of rainwater into the soil.

Trees help slow down and temporarily store runoff and reduce pollutants by taking up nutrients and other pollutants from soils and water through their roots. Trees transform pollutants into less harmful substances.

Madison's street trees intercept **115,378,156** gallons of rainfall every year worth **$3,126,965.** Intercepted rainfall helps to keep Madison's lakes clean.

Intercepted stormwater can fill 17 Olympic-sized pools annually.

Energy

Trees reduce energy usage by lowering local air temperatures when they transpire water and shade surfaces. Urban trees shade buildings in the summer and block winter winds.

Madison's street trees provide energy savings worth **$3,766,538** every year.

The net cooling effect of a healthy tree is equivalent to 10 room-size air conditioners operating 20 hours a day. Trees placed properly around buildings as windbreaks can save up to 25 percent on winter heating costs.

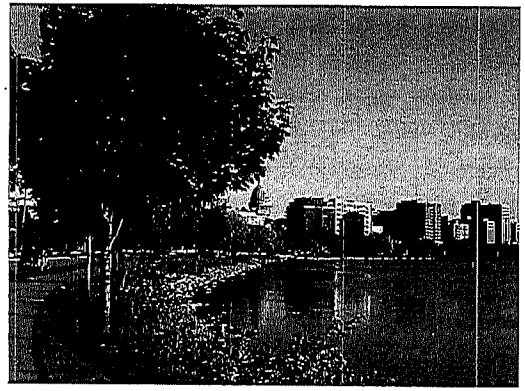
Carbon Dioxide and Air Quality

Trees improve air quality. During photosynthesis, trees remove CO_2 from the atmosphere to form carbohydrates that are used in plant structure/ function and return oxygen back to the atmosphere as a by-product. Trees, therefore, act as a carbon sink. Urban forests cleanse the air by intercepting and slowing particulate materials and by absorbing pollutant gases on their leaf surfaces.

Madison's street trees remove **175,136** pounds of pollutants every year worth **$492,489.**

Madison's street trees sequester **30,819,750** pounds of carbon every year worth **$399,384.**

Trees act as natural pollution filters; one tree can absorb carbon dioxide at a rate of 48 pounds per year.

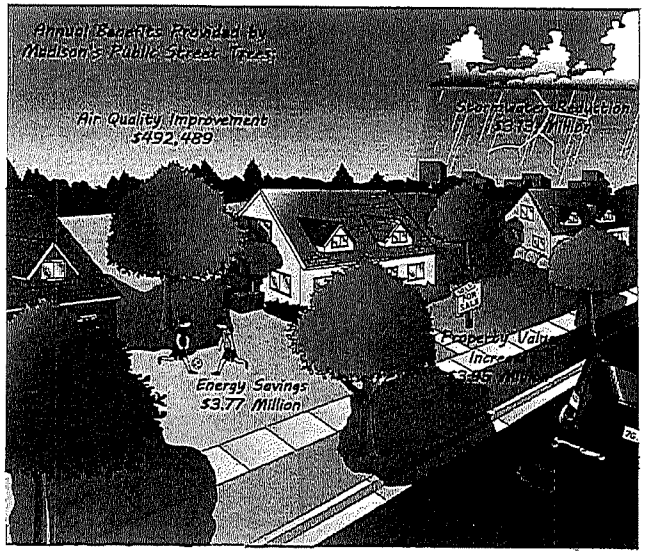


Aesthetics and Other Benefits

In addition to increasing property values, research has shown that trees can lead to reduced crime rates, decreased amounts of human stress, and shorter lengths of hospital stays. Tree-lined streets also make our streets safer by reducing traffic speeds and the amount of stress drivers feel which likely reduces road rage. Trees are important for wildlife as well. In Madison trees provide nesting sites for birds and support a wide range of insects which are important food sources for birds and other wildlife.

Madison's street trees provide **$3,949,689** every year in aesthetic and other benefits.

Landscaping, especially with trees, can increase property values as much as 20 percent.



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