



**CHICAGO
REGION
TREES
INITIATIVE**

Our Trees.
Our Communities.
Our Future.

Master Plan 2050

Executive Summary



Chicago Wilderness



Metropolitan Mayors Caucus

The Nature Conservancy

The Morton Arboretum



Chicago Metropolitan Agency for Planning



ILCA ILLINOIS LANDSCAPE CONTRACTORS ASSOCIATION



Metropolitan Water Reclamation District of Greater Chicago



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TREE FUND Cultivating Innovation



EXECUTIVE SUMMARY

The CRTI Master Plan is a significant effort for the Chicago region leading to 2050.

There are approximately 200 Chicago Region Trees Initiative (CRTI) partner organizations across the seven-county Chicago region. These partners have worked together through the CRTI organizational framework to identify the vision, mission, goals, outcomes, and tactics that form the CRTI Master Plan to improve the health and canopy of the Chicago region's forest by 2050. The master plan was designed to coincide with and support stakeholder needs, goals, and strategies including those of the lead partner organizations of the Executive Advisory Council (EAC).

Vision: The Chicago region will be the most verdant, most livable, most resilient region in North America.

Mission: Chicago Region Trees Initiative believes that trees are critical to achieving this vision. We will ensure that trees are healthier, more abundant, more diverse, and more equitably distributed to provide needed benefits to all people and communities that live in the Chicago region.

There are four overarching goals to ensure that the region's "trees are healthier, more abundant, more diverse, and more equitably distributed to provide needed benefits to all people and communities that live in the Chicago region." These goals are:

- Inspire people to value trees
- Increase the Chicago region's tree canopy
- Reduce threats to trees
- Enhance oak ecosystems

There are four outcomes for each of the goals resulting in increased benefits provided and improved quality of life in the Chicago region:

- Improved tree health
- Improved urban forest policy
- Increased funding for urban forestry
- Integration of science

This plan recognizes that trees and the collective urban forest in the Chicago region provide critical benefits and services to the people who live here. The Chicago region has many challenges, which include an expanding population and increased urban sprawl that create significant impacts on water and air quality, flooding, and loss of green space. In addition, areas within the region have too few resources. Reduced access to financial and physical resources impacts quality of life.

Urban trees are critical infrastructure—just like roads, storm sewers, or water mains. Studies show that the size and health of the tree canopy directly relates to the benefits and services these trees provide and the ability of this canopy to offset impacts from urban living. Every year, trees in the Chicago region intercept and absorb billions of gallons of stormwater, sequester and store 17 million tons of carbon and 24,000 tons of pollution, reduce the effect of the heat island and save \$44 million in building energy usage (Nowak et al. 2013), and offset impacts to a changing climate (Bonan 2008). The urban forest also provides important economic benefits such as



increased property values (Anderson et al. 1988; Sander et al. 2010), and improved sales in commercial areas (Wolf 2005). Trees provide important physical and mental benefits such as improved mental and physical health (Donovan et al. 2013; Villeneuve et al. 2012; James et al. 2016; Ulrich 1984), social cohesion and community engagement (Dwyer et al. 1991; Kuo et al. 1998 and Kuo 2003), and provide important habitat for wildlife (Lindenmayer et al. 2017).

To achieve these goals and outcomes challenges to the urban forest need to be addressed. A study conducted by The Morton Arboretum and the US Forest Service in 2010, *Urban Trees and Forests of the Chicago Region* (referred to as the Tree Census) (Nowak et al. 2013), revealed that 30 percent of the 157 million trees in the Chicago region are the exotic invasive species European buckthorn and Amur honeysuckle. These species grow aggressively and replace desirable species in the landscape. Invasive species change the soil structure, making it inhospitable for other native plant species, which can harm wildlife (Sacerdote and King 2014). The region's trees are not growing to maturity, which is when they could provide the most benefits. Seventy-three percent of the region's trees are less than six inches in diameter (Nowak et al. 2013). Native oak ecosystems are under threat from development, fragmentation, lack of age diversity, and impacts from exotic invasive species (Fahey et al. 2015). In addition, diversity of species is low, which provides greater opportunity for catastrophic tree loss due to a pest or pathogen that attacks a specific species. Eight percent of the region's trees are being killed by an exotic pest species, the emerald ash borer (Nowak et al. 2013). In the Chicago region, 60 percent of the region's trees are from only ten tree species, and this lack of species diversity provides an increased opportunity for ongoing catastrophic loss (Nowak et al. 2013).

Each of the CRTI Work Groups has identified specific tactics to support successful achievement of the master plan. These tactics are related to each group's area of focus: stewardship and planting; green infrastructure, policy, and native ecosystems; forest composition and analysis; and risk assessment and management. Accomplishment of the tactics will result in successful achievement of the master plan goals and outcomes. The CRTI goals and outcomes are explained below.

I. Goal: Inspire people to value trees

a. Improved tree health:

The Chicago Region Trees Initiative will help landowners, managers, individuals, agencies, and organizations across the Chicago region and across diverse populations understand why increased canopy is important and appreciate the benefits that trees provide. They also need to know how to correctly care and advocate for trees in their communities and across the region. Everyone has an important role to play to improve tree health.

b. Improved urban forest policy:

Improved policies will only take place when the general public advocates to protect trees on public and private land. As infrastructure, trees cover a wide range of land uses and provide important functions for quality of life regardless of where they are growing. The Chicago Region Trees Initiative will work with individuals and decision makers to develop, implement, and enforce tree preservation policies, practices, and incentives on both public and private land.

c. Increased funding for urban forestry:

Strong, well-armed advocates can urge decision makers to support and provide strong urban forestry budgets. Something that is not typical, but that CRTI would like to see in the next 32 years, is inclusion of urban forestry funding in 10-year capital improvement schedules. Trees are critical infrastructure and need to be recognized and supported to provide the most possible benefits. Support for urban forestry needs to be integrated into strategic planning and funding allocations. In addition, the Chicago Region Trees Initiative would like to achieve a regionwide funding pool that would allow for grants and funding assistance for under-resourced communities to plant, inventory, and care for trees. Participants in this pool would range from individuals to large corporations. Partnerships between public and private organizations are going to be required to meet the challenges of the CRTI goals.

d. Integration of science:

The Chicago Region Trees Initiative has spent significant time and resources to understand and communicate forest composition and canopy cover and to communicate that knowledge on a regional and community scale. This foundation in science enables landowners, managers, and individuals to better understand the urban forest resource they own or manage. This information, coupled with the science behind the values, benefits, and services trees provide, and the knowledge of how to properly protect, plan, plant, and care for trees, are some of the tools needed to build ownership and action by individual and collective landowners, managers, and individuals.

2. Goal: Increase the Chicago region's tree canopy (achieve 22 percent canopy cover by 2050)

a. Improved tree health:

All individuals who interact with trees must understand that more mature trees and increased canopy result in increased value, benefits, and resources. Engineers, planners, contractors, landscape architects, nurserymen, decision makers, landscapers, stewards, and others need to work to actively protect, plant, and care for trees. To achieve a healthier urban forest with a larger canopy, the Chicago Region Trees Initiative needs to ensure that landowners, managers, and individuals are trained to plant trees correctly, with adequate root space and soil composition, and that they know how to properly water, mulch, and care for them; that nurseries and big box stores have broad diversity of species and high-quality tree stock available; that large public and private landowners have a certified arborist on staff or contract for professional arboriculture services; that there are increased opportunities for professional arboriculture training and International Society of Arboriculture certification; and that urban forest management plans are in place.

b. Improved urban forest policy:

Trees across the state, region, counties, communities, and private properties need to be protected as critical infrastructure. This can only happen

when strong policies are in place to protect this resource. The Chicago Region Trees Initiative will work to ensure that strong policies, incentives, and rebates are provided across public and private landownership so that this resource can continue to improve and to provide benefits and services.

c. Increased funding for urban forestry:

Significant funding is needed to implement the CRTI Master Plan. Of considerable concern is the inequitable distribution of trees across the Chicago region. Special focus and attention will be provided to help reverse this situation in under-resourced communities and neighborhoods. Creative and thoughtful solutions need to be implemented to increase funding for the master plan including increased public/private partnerships; broad utilization of contract growing; funding and scholarships for increased forestry training, certification, school, and internships; and rebate or incentive programs for preservation and installation of green infrastructure practices, including support for healthy trees.

d. Integration of science:

The Chicago Region Trees Initiative will need to regularly collect, analyze, and distribute forest composition data to decision makers, landowners, managers, and individuals through *Urban Trees and Forests of the Chicago Region* (Nowak et al. 2013), LiDAR analysis, public and private property inventories, and capacity surveys. The recommendation is that this data and analysis be updated every 10 years. As technology becomes more sophisticated and capable of replacing on-the-ground data collection, other methods will be explored over the course of the master plan implementation. The CRTI will collect, collaborate, and communicate the latest science related to trees and urban forestry to ensure that the most up-to-date information is easily accessible to all the CRTI partners and the public.

3. Goal: Reduce threats to trees

a. Improved tree health:

The loss of 8 percent of the Chicago region's trees due to invasive pest infestation has brought



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attention to the need for expanded species diversity across the region. To accomplish this, the Chicago Region Trees Initiative has recommended that not more than 5 percent of any one species, 10 percent of any one genus, and 15 percent of any one family be planted at any one time recognizing that age diversity needs to be considered to be sure that appropriate species are not eradicated from the landscape.

The presence of woody invasive species in our landscape is undermining the health of our urban forest. The CRTI will work to be sure public and private landowners, managers, individuals, and organizations have a working knowledge of how and why to control invasive species, existing and potential invasive species, and climate-related vulnerability and adaptation strategies.

Proper tree care is needed and the CRTI is recommending that tree pruning be practiced (ideally not more than a seven-year cycle) so that trees will not become a liability or challenge for landowners, especially during severe weather events. The CRTI Master Plan includes training to ensure landowners, managers, and individuals know how to conduct a tree health assessment so that problems can be identified early before they get out of control. With this training, tree owners, managers, and volunteers can establish a strong partnership with the US Department of Agriculture Animal Health Inspection Service and Illinois Department of Agriculture so that information and problems can quickly be identified and managed.

b. Improved urban forest policy:

Strategies for awareness and management of woody invasive species, existing pests and pathogens, and potential pests and pathogens need to be included in ordinances and/or regulations. This recommendation would also extend to the State of Illinois where reestablishment of the Illinois Invasive Species Council is needed to improve communication between states regarding new invaders and to develop strategies for control of invasive species including, but not limited to, restricting the movement of firewood within and from outside of the state.

c. Increased funding for urban forestry:

Millions of dollars are spent annually in the Chicago region to manage the impacts from invasive species. Investment in improved education, outreach, and management strategies for new and existing problems could reduce the dollars spent and needs to be quantified for use by decision makers. Studies have shown that early management of pests and problems and routine pruning and health assessments are less costly, result in lower catastrophic loss, and can help to improve the value, benefits, and services the urban forest provides.

d. Integration of science:

The Chicago Region Trees Initiative has developed regional, county, and local mapping of species diversity. This information is available and can be used by landowners, managers, and individuals to reduce risk. The CRTI can also help communities learn how to keep their tree inventories up-to-date and actively use them to more effectively manage the urban forest. One area where more information is needed is composition of private property trees—70 percent of the region's trees are on private property. The CRTI will continue to work to more clearly define the composition of private property trees and educate those landowners to improve the health of the urban forest. CRTI is working with the Northern Institute of Applied Climate Science and the United States Forest Service to identify strategies to assess vulnerability and tools to assist with adaptation for threats from climate change and is working to share these resources.

4. Goal: Enhance oak ecosystems

a. Improved tree health:

The Chicago Region Trees Initiative will work with public and private property owners to increase regeneration of oaks and associated species. This effort will result in expanded biological diversity through active management, reintroductions of native species for improved habitat; collaborative partnerships to reduce fragmentation and increase connectivity through oak ecosystem-dominated corridors; encouragement to public and private landowners to

use best management practices for managing their oak ecosystems (including management of invasive species); development of management plans; and access to locally sourced native trees in nurseries.

b. Improved urban forest policy:

The Chicago Region Trees Initiative will work to increase awareness and protection of core remnant oak ecosystem complexes on public and private land. These unique areas are our natural heritage and they are in need of protection. The CRTI will work with decision makers and private landowners to formally protect or incentivize protection of oak ecosystem core, satellite, and corridor complexes both now and for future generations.

c. Increased funding for urban forestry:

The Chicago Region Trees Initiative will work with state and federal agencies to secure funding for implementation of the Oak Ecosystem Recovery Plan. This will include teaching private landowners about local, state, and federal programs that provide tax incentives and/or funding assistance for protection, management plans, and implementation of best management practices for oak ecosystems, and encouraging their participation in these programs. Increased public/private partnerships are needed to support oak ecosystem protection and management and to ensure that funding is available for scientific research to support improved health of oak ecosystems.

d. Integration of science:

The Chicago Region Trees Initiative will identify and map remnant oak ecosystems and distribute this information to public and private landowners; ensure that oak ecosystem scientists and land managers collaborate; communicate on best practices for oak ecosystems; and distribute the latest research related to oaks and oak ecosystems to public and private landowners and managers. ☞

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