

Section 07 Greenspace + Trees

Currently in Edina:



35.9%

Average tree canopy coverage



31.9%

Impervious surface coverage



25.2%

Maintained lawn coverage



4.4°F

Hotter than surrounding region's air temperature thanks to urban heat island effect



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Greenspace + Trees




Trees and natural ground cover play a central role in supporting community health, improving air and water quality, helping to reduce building energy use, and supporting climate mitigation. Our understanding of the value of trees has been expanded to include mental and physical health benefits. Trees are critical in filtering air, removing harmful pollutants, such as carbon monoxide, particulate matter, and ground-level ozone - pollutants that can be toxic at high levels and which can cause asthma and other respiratory impacts.

Conversely, higher levels of impervious surfaces (pavement and buildings) within a community will increase the heat island of the community. Heat island refers to the phenomenon of higher atmospheric and surface temperatures occurring in developed areas than those experienced in the surrounding rural areas due to human activities and infrastructure. Increased heat indices during summer months due to heat island effects raise human discomfort and health risk levels in developed areas, especially during heat waves. Based on a 2006 study done by Minnesota State University and the University of Minnesota, the relationship between impervious surface percentage of a City and the corresponding degree of heat island temperature increase can be understood as a ratio.

Equity Considerations

- Lower income neighborhoods and neighborhoods with higher proportions of people of color regularly have lower tree canopy coverage, and the environmental, economic, and quality of life benefits trees support than more affluent neighborhoods.
- “Heat islands” and “micro heat islands” are built up areas that are hotter than other nearby areas. This is caused by lack of adequate greenspace and healthy tree canopy coverage combined with too many hard surfaces like roads, parking lots, and hard building surfaces. Frequently neighborhoods with higher vulnerable populations have the highest heat island impacts.

Sector Goals

	Tree Canopy Cover	Turf Coverage	Dark Impervious Surface Cover
Today	 35.9%	 25.2%	 25.5%
2030 Targets	39.5%	22.6%	23%



The strategies on the following pages guide our path in meeting our climate goals for the Greenspace and Trees sector. Each strategy is supported by a series of detailed actions to be explored and undertaken in order to carry out the vision and goals.

[See Section 10 Implementation for all supporting actions.](#)

Greenspace + Trees

Strategy
GS 1

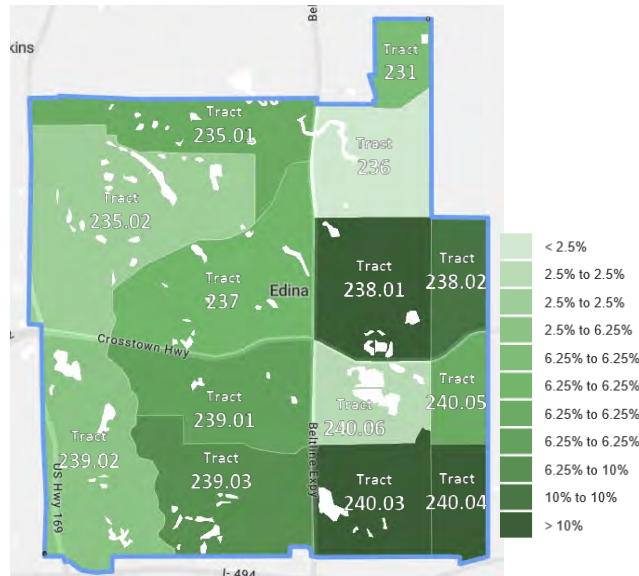
Increase tree cover from 35.9% to 39.5% by 2030 and 43% by 2040.

Our tree canopy reduces storm water runoff, provides clean drinking water, reduces the effects of urban heat islands and micro heat islands, decreases energy use in our buildings, sequesters atmospheric carbon dioxide while serving as a long-term carbon sink, and supports increasing economic growth^{1,2,3,4,5}. Increasing tree canopy coverage and health will provide critical climate adaptation services. Increases should be prioritized to balance the potential for increased tree canopy with the opportunity to improve tree canopy benefit equity, potential to positively impact as many households as possible, and the need for mitigation of heat island impacts. The suggested tree canopy increases by neighborhood shown to the right prioritizes based on the following weighted criteria:

- Potential for new trees: 20%
- Population density: 20%
- Low income density (equity adjustment): 30%
- Heat island reduction need: 30%

See Section 10 Implementation for supporting actions.

Suggested Tree Canopy Increase by Neighborhood (in absolute land cover percentage):

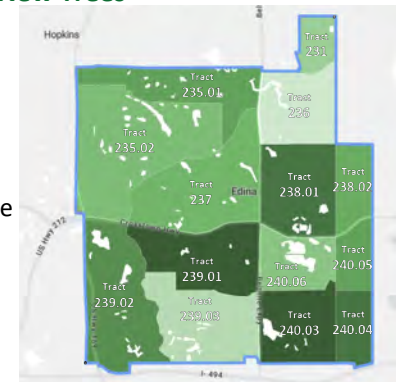


New Tree Planting Estimate Meeting City-Wide Tree Cover Goal*

Year	Canopy tree cover (acres)	Goal new planted (trees)	Cover tree canopy (% land)
2022	3,555	6,777	36.4%
2023	3,595	6,777	36.8%
2024	3,634	6,777	37.2%
2025	3,674	6,777	37.6%
2026	3,713	6,777	38.0%
2027	3,753	6,777	38.4%
2028	3,792	6,777	38.8%
2029	3,832	6,777	39.2%
2030	3,871	6,777	39.5%

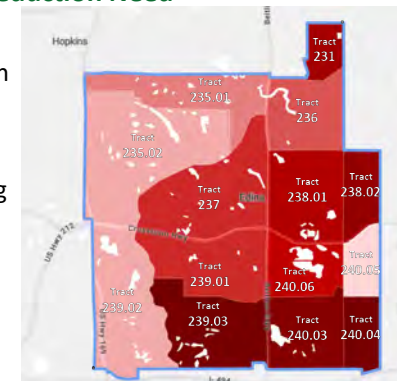
Prioritization based on Potential for New Trees

Higher values represent increased potential for tree planting based on physical capacity (available open space, open lawn areas, etc)



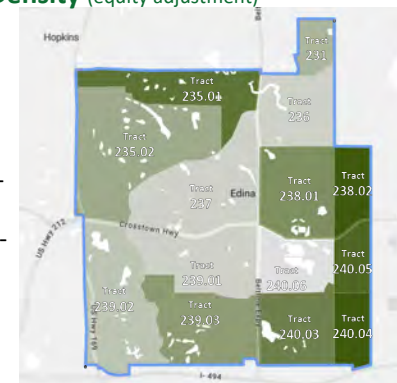
Prioritization based on Heat Island Reduction Need

Higher heat island reduction need values represent increased potential for reducing current and future heat island impacts through tree planting.



Prioritization based on Low Income Density (equity adjustment)

Higher low income density values represent higher potential for increasing environmental equity of tree canopy cover and benefits.

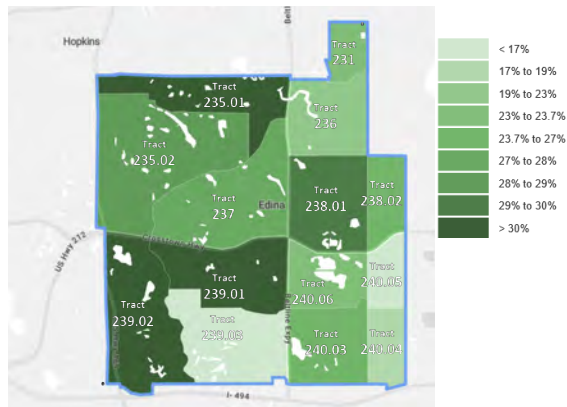


*Calculations include assumptions for existing tree growth as well as tree losses. See City's 2021 Ground Cover Survey: <https://view.publitas.com/palebluedot/edina-ground-cover-survey-and-sequestration-study/>

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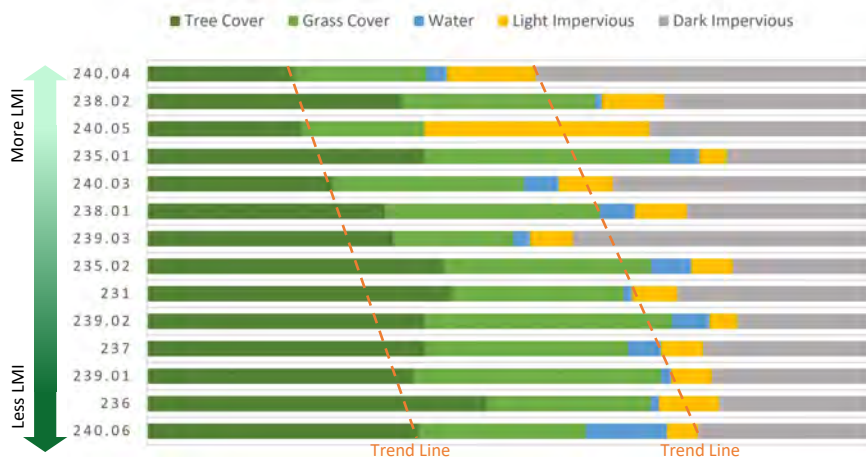
Turf Reduction Potential

93% of grass lands in Edina are manicured lawns—representing a great opportunity for turf reduction. Turf reduction can increase stormwater uptake, reduce potable water use, and increase soil carbon. The map below shows the portion of ground cover that is grass by Census Tract. Neighborhoods with higher percentages of grass coverage may offer the greatest potential for turf replacement with native grasses and wild flowers.



Ground Cover Characteristics by Census Tract Organized by Share of Low Income Population (LMI)

The bar chart provides a side-by-side comparison of the of land cover by Census Tract. The trend lines indicate census tracts with more lower income residents have less tree and grass coverage and more dark impervious surfaces. Those with higher portions of dark impervious surfaces should be prioritized for reduction actions.



Strategy GS 2

Increase pollinator supportiveness of lawns and grasslands in City of Edina and achieve a 10% turf replacement with native or climate adaptive grasses and wildflowers by 2030. (250 acres converted)

Replacing lawns with native grasses and wildflowers creates a more authentic, natural American landscape that combats climate change and provides shelter and food for songbirds and other small mammals. Compared to the typical lawn, native grasses improve water quality, reduce air pollution, provide habitat restoration and protection, and increase carbon sequestration.^{6,7,8}

See Section 10 Implementation for supporting actions.

Strategy GS 3

Reduce heat island effect through citywide “dark” impervious surface reduction of 10% by 2030 and 20% by 2040.

(250 acres reduced by 2030, 500 acres reduced by 2040).

Heat island refers to the phenomenon of higher atmospheric and surface temperatures occurring in developed areas than those experienced in the surrounding rural areas due to human activities and infrastructure. Increased heat island effects raise human discomfort and health risk levels in developed areas, especially during heat waves which are projected to become more severe and more common for Edina^{9,10}. There is a direct relationship between impervious surface coverage—particularly dark colored impervious surfaces- of a city and the amount of heat island temperature increase experience¹¹. Decreasing the amount of dark impervious surfaces will help decrease heat island impacts in Edina.

See Section 10 Implementation for supporting actions.

Edina’s Impervious Surface Coverage by Type

