



## EDMONDS, WASHINGTON



6,091 TOTAL ACRES  
5,725 LAND ACRES  
42,593 RESIDENTS

## A FORECAST ANALYSIS OF POSSIBLE PLANTING SCENARIOS

The urban forest is an invaluable asset for the City of Edmonds, providing residents and visitors with meaningful, quantifiable environmental, social, and economic benefits. In 2024, a tree canopy assessment was conducted to enhance understanding of the city's canopy infrastructure. This assessment identified **urban tree canopy (UTC)**, **potential planting areas (PPA)**, and areas unsuitable for planting, analyzing their current distribution across the city. These findings will enable the city to refine existing canopy goals, policies, ordinances, and management practices and formulate new ones to protect and expand the tree canopy.

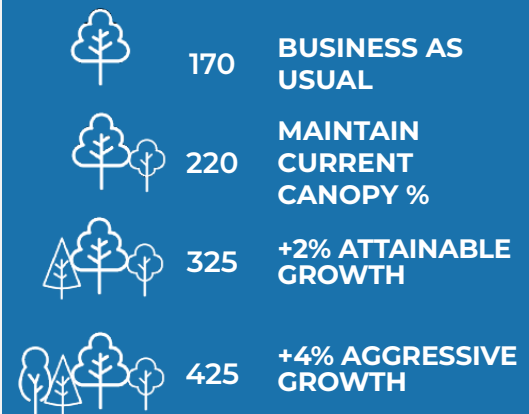
Building on the assessment results, this summary report aims to assess and communicate the impacts of various planting strategies on Edmonds' future canopy. Four scenarios (outlined in *Table 1*) were selected to demonstrate potential shifts in Edmonds' canopy cover over a 20-year period, from 2024 to 2044. The outcomes presented for each scenario can serve as guidelines to shape the scale and methods of future planting efforts.

### CURRENT STATE OF THE URBAN FOREST



*\*Edmonds' 2024 canopy cover is an assumption based on 2021 canopy data.*

### ANNUAL TREE PLANTING REQUIRED FOR EACH SCENARIO



### Annual Number of Trees Required for Each Planting Scenario

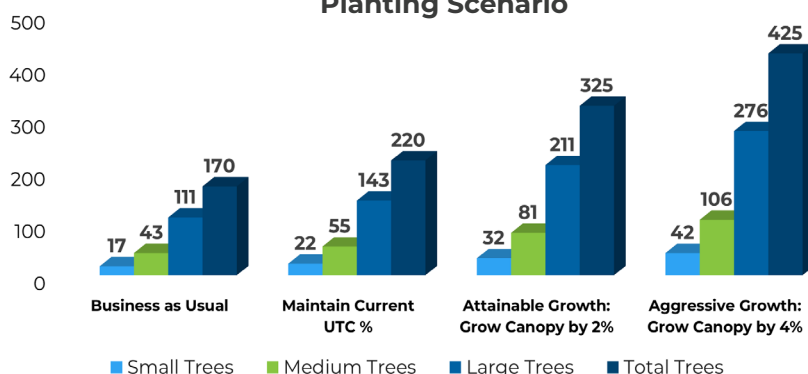


Figure 1. The number of tree plantings required over the next 20 years.



Planting **325**  
**trees per year**  
could grow  
Edmonds' canopy  
cover to 34% by  
2044.

## COMPARISON OF PLANTING SCENARIOS

Various planting scenarios were explored to assist the City in implementing the tree canopy and PPA metrics from this study. These scenarios outline different methods for aligning tree canopy and PPA data with the city's objectives, priorities, and resources. Citywide canopy cover goals were established in partnership with city officials. PlanIT Geo's Canopy Calculator tool was utilized to calculate the required canopy coverage (in acres and number of trees) needed to achieve these goals over a 20-year planning period. The calculator tool accounts for natural growth, regeneration, and canopy loss due to mortality or development. Four different tree-planting plans for the city we developed based on land ownership types. These three categories of ownership - private property, public property, and rights-of-way (ROW) - include a total of 5,725 land acres across the city, of which 1,855 acres are currently covered by tree canopy. City-owned properties and rights-of-way (ROW) were prioritized for tree planting because the city has direct influence over those property types.

- ▶ If Edmonds continues its current practice of planting 170\* trees annually, the city's tree canopy can be expected to drop by 1% over 20 years.
- ▶ To sustain Edmonds' current canopy of 32%, 4,425 trees should be planted over 20 years, at a rate of 325 trees annually.
- ▶ For an attainable growth goal of +2% (raising 32% to 34%), 6,493 trees should be planted over 20 years, at a rate of 325 trees annually.
- ▶ For an aggressive growth goal of +4% (raising 32% to 36%), 8,540 trees should be planted over 20 years, at a rate of 427 trees annually.

\* This plan assumes a total of 170 trees will be planted each year. The city will plant 150 trees on public property and along the ROW, while an estimated 20 trees will be planted on private land due to the city's (2:1) policy requiring two new trees to be planted for every one removed.

Table 1. *Planting scenario descriptions and results.*

Scenario	Citywide UTC in 2024		Tree Planting Required		Net Tree Canopy Change		Citywide UTC in 2044	
	%	Acres	Total	Annual	Acres	%	Acres	%
Business as Usual	32%	1,855	3,405	170	-56	-1%	1,799	31%
Maintain Current UTC %	32%	1,855	4,398	220	0	0%	1,855	32%
Attainable Growth: Grow Canopy by 2%	32%	1,855	6,493	325	117	2%	1,972	34%
Aggressive Growth: Grow Canopy by 4%	32%	1,855	8,499	425	229	4%	2,084	36%

Table 2. *Planting scenario metrics by property ownership type.*

Property Ownership Type	Total Possible Planting Area		Business as Usual		Maintain Current UTC %		Attainable Growth: Grow Canopy by 2%		Aggressive Growth: Grow Canopy by 4%	
	%	Acres	# of Trees	% PPA Used	# of Trees	% PPA Used	# of Trees	% PPA Used	# of Trees	% PPA Used
Private Property	31%	1,293	20	2%	81	6%	184	14%	285	21%
Right-of-Way	18%	197	124	60%	113	55%	114	55%	114	55%
City Public Property	13%	26	26	95%	26	95%	26	95%	26	95%

### CANOPY CALCULATOR ASSUMPTIONS

- 20 Planning Horizon (years)
- 4% New Tree Mortality
- 2% Annual Canopy Loss to Mortality
- 29 Annual Canopy Loss to Development (acres)
- 0.5% Natural Regeneration
- 0.5% Annual Canopy Growth

Tree size distribution (average crown radius at full maturity, percent of total tree population):

- 12.5 ft Small Tree (10%)
- 15 ft Medium Tree (25%)
- 30 ft Large Tree (65%)

## REACHING CANOPY GOALS

Achieving tree canopy growth, especially the aggressive growth scenario (+4% canopy over 20 years), will require a multi-faceted approach, with a focus on both public and private spaces in Edmonds. A crucial strategy, as outlined in Edmonds' [Green Streets Guide](#), is the implementation of depaving initiatives. These efforts aim to convert privately owned parking lots and other impervious surfaces into permeable spaces suitable for substantial tree planting. Encouraging such policies provides a viable solution to increase plantable areas and make significant progress towards these tree canopy goals.

To complement this strategy, it's essential to maintain and enforce Edmonds' existing 2:1 tree replacement policy ([section 23.10.080](#) of the municipal code). This crucial regulation ensures that any significant trees larger than 10.1 inches in diameter are adequately replaced with two new trees of appropriate species and size. By mandating this replacement ratio and monitoring compliance, the city can aim to effectively mitigate canopy loss, preserve biodiversity, and maintain the overall health, density, and ecological balance of Edmonds' urban forest for future generations to enjoy.

While expanding the overall tree canopy is important, the location of trees also plays a crucial role. Currently, 90% of Edmonds' tree canopy overhangs pervious surfaces, with only 10% over impervious areas. Increasing the proportion of trees overhanging impervious surfaces can provide numerous benefits through ecosystem services, such as localized cooling from shade and increased stormwater absorption. To address this imbalance, the city should focus on planting trees adjacent to roads, parking lots, and sidewalks and strengthen ordinances for tree planting around these areas in new developments. These measures can help offset the negative effects of impervious surfaces while contributing to the overall canopy growth goals.

## TREE CANOPY & PLANTABLE SPACE BY LAND USE

In addition to assessing tree canopy metrics at the property ownership level, tree canopy was evaluated on Edmonds' nine combined land use classes. This analysis aimed to understand how different land uses and their primary functions (e.g. residential, commercial, open space, downtown, etc.) influence tree canopy. This approach provides insights for urban planning and environmental management, facilitating targeted strategies for sustainable urban development. The classified land use areas within the city limits sum up to 5,675 acres, with 1,850 acres covered by tree canopy.

Areas primarily classified for Single Family Residential purposes comprised over 75% of the city's total land. Not surprisingly, this land use class contained nearly 80% of all tree cover (1,425 acres) in Edmonds, making it the most significant land use class in terms of canopy coverage. Areas classified as Open Space had the highest canopy coverage at 70%, contributing 225 acres of canopy. In addition to canopy cover, the Single Family Residential class makes up nearly 90% of the total area available for planting (1,529 acres).

Urban Tree Canopy Potential by Land Use (%)

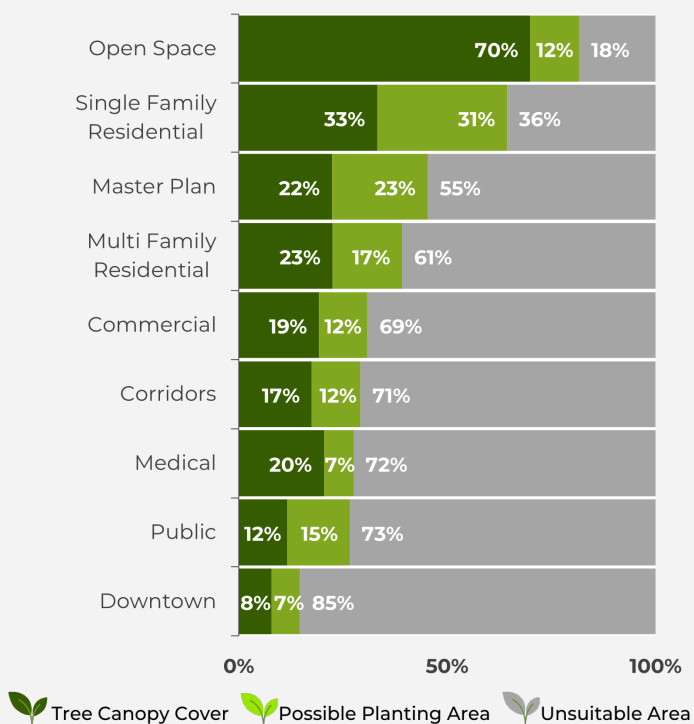


Figure 2. Urban tree canopy potential by land use.

Potential Planting Area Distribution (%)

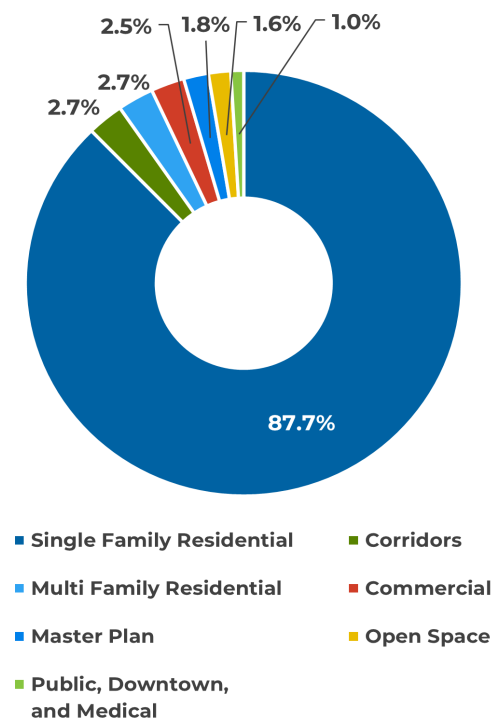


Figure 3. Distribution of potential planting area percent by land use.