

Urban Forestry

Led by: Director of Parks & Open Spaces

Description

This service manages public trees and promotes tree stewardship to Calgarians. Trees increase climate resiliency by improving air quality, reducing storm water runoff, and providing shade, cooling and wildlife habitat. Trees increase property values and create attractive, stress-reducing environments. The City plants public trees to replace those lost from construction and natural decline and grows the urban canopy to benefit future generations. The City also receives public trees from the development industry. The City waters newly planted trees for healthy establishment, and inspects and prunes trees to increase their lifespans. Urban Forestry reviews development projects to protect trees.

Value and benefits

Trees improve Calgarians' mental and physical well-being and foster attractive, walkable communities. Environmental benefits include improved climate resiliency, air quality, cooling effects, reduced storm water runoff and increased wildlife habitat. Economic benefits include trees increasing residential and commercial property values. Equitable access to trees across the city realizes benefits for all Calgarians. Proactive tree care ensures resilience of the urban forest and reduces tree damage during severe weather events. A diverse mix of tree species reduces the impact of pests and climate change. Good watering practices establish new trees in the Calgary climate for long lifespans. Effective planning ensures trees are planted sustainably for long-term survival and benefits. Stewardship programs encourage Calgarians to plant and care for trees.

Customers

Direct customers are Calgarians of all ages, property owners, park users, developers and home builders. Indirect customers include tourists, business improvement areas and future generations of Calgarians. The urban forest also creates and sustains habitat for wildlife.

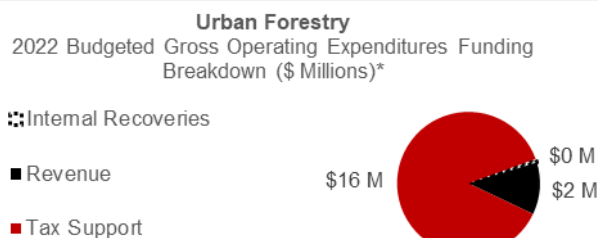
What we deliver

Urban Forestry is working towards delivering on the Municipal Development Plan's long-term urban canopy target of 16 per cent. The service's key work includes: tree planting; public engagement (e.g. community planting programs, tree care education); and, tree maintenance (structural pruning, watering newly planted trees, tree/stump removals, tree protection and tree pest/disease management).

Partners

The service works with the development industry to protect, inspect and receive new trees; The City and community partners to plant trees and identify planting sites; the landscape industry and educational institutions to define best practices and provide public education for tree care; and, external funders to leverage planting and incentive programs for Calgarians.

8.22%	Current tree canopy (target is 16%)
72.5%	Communities below the 16% canopy target
472,819	Public trees we steward
\$1.8 Billion	Asset value of The City's public trees



* Gross operating budget may include internal recoveries that are also included in other services' gross operating cost.

Note: Internal recoveries is how The City accounts for the costs of goods or services between services

Key assets

Almost 500,000 public trees as well as many more in native forest habitats (e.g. Weaslehead Flats, Griffith Woods, Douglas Fir Trail, etc.); the Pine Creek Tree Nursery; specialized equipment ranging from stump grinders, chippers, Geographic Information System (GIS) software and five aerial trucks.

What we have heard & what we are watching

What we have heard

As part of the 2022 One Calgary public engagement, 89 per cent of Calgarians were satisfied with Urban Forestry. There were no significant differences among survey respondents with Urban Forestry when looking at gender, age, income, visible minorities, immigrants and disability status groupings. Value dimensions ranked by Calgarians in 2022 were: 1) Environmental, 2) Wellness, 3) Connectivity, and 4) Attractiveness. The most frequent themes from Calgarians included the importance of planting more trees, biodiversity and protecting trees. The mental health (i.e. access to greenery) and environmental contributions of the urban forest were also noted as important to Calgarians.

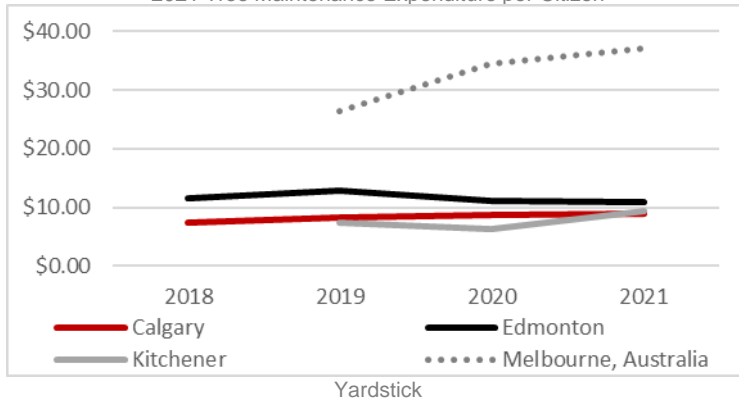
What Council has directed

A healthy and growing urban forest directly supports Climate Resilience. Trees capture carbon and become 'carbon sinks' that help reduce the greenhouse effect. Trees also filter out particle matter in the air to make it more breathable. Tree root systems also prevent soil erosion, helping prevent water pollution and flooding. In terms of Council's Focus Areas: Global Positioning and Reputation are supported by public trees enhancing Calgary's quality of life and attractiveness. Public trees are also located in all Calgary communities and the centre city, supporting Social Equity and Downtown Revitalization. Modernizing Government is supported by leveraging partnerships with external organizations and using digital technologies (e.g. GIS data) to optimize service delivery.

What we are watching

Risks include severe weather events (snow, winds, drought, hail, etc.) and tree pests and diseases. A genetically diverse urban forest is needed to mitigate the impacts of drought, insects, diseases and climate change. The City is at risk of not meeting the Municipal Development Plan's long-term urban canopy target at our current planting levels. Planting 3,500 trees per year will maintain the current urban canopy level. Planting another 4,000 trees per year will get us to the MDP target by 2060. The increasing number of mature trees lost to developments is also a risk without improved policies, planning and planting standards. The aging of large canopy trees could result in more canopy loss. A process for succession planning with other city infrastructure is needed. GIS technologies are improving efficiency and effectiveness. Urban Forestry is also focusing on tree planting programs, incentives and preservation on private property (77 per cent of the urban canopy is on private land).

2021 Tree Maintenance Expenditure per Citizen



Comparing our service

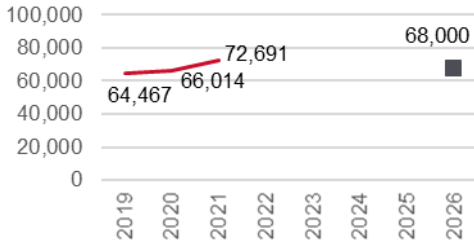
This benchmark compares a municipality's budget for maintenance of public street and park trees with the size of its population. Tree maintenance costs include inspections, structural pruning, watering, tree removals, tree protection and pest management. Calgary typically spends less than most Canadian cities with similar climates. The data source is Yardstick, an international parks and recreation benchmarking organization operated as a partnership between private sector and industry groups.

Measuring performance & where we want to go

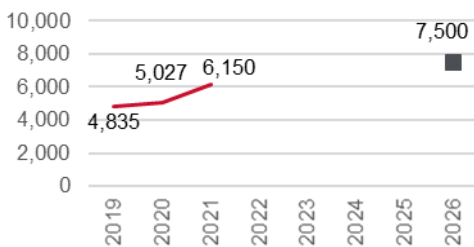
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— Actuals ■ Expected Future Performance

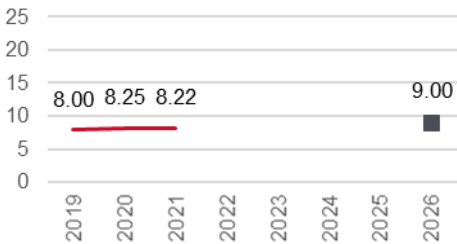
PM1: Number of trees inspected and/or pruned



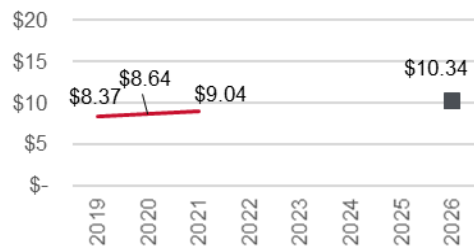
PM2: Number of trees planted annually



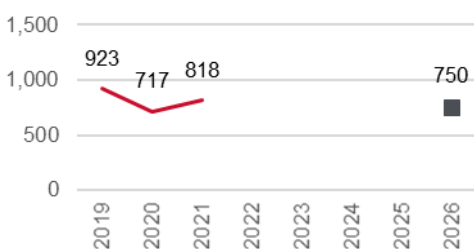
PM3: Calgary's urban canopy percentage (per cent)



PM4: Public Tree Maintenance Cost Per Calgarian (dollars)



PM5: Number of 3-1-1 tree emergency calls



Story behind the curve

Risk-based tree inspections and pruning continue to be a service priority. This proactive work increases the resilience of the urban forest and leads to improved lifespans for trees and less damages from severe weather, such as extreme winds or late/early seasonal snowfalls. The City also completes regular tree assessments to ensure asset management data is accurate, enabling informed decision making and the efficient use of available funds.

Tree planting is funded through available capital funding. For 2023-26, Urban Forestry requests lifecycle capital funding to replace approximately 3,500 trees per year that are at the end of their natural lifecycles. This funding will help maintain Calgary's urban canopy level (currently about 50 per cent towards the long-term Municipal Development Plan target). To improve progress towards achieving this target, Urban Forestry must plant another 4,000 new trees per year (7,500 in total). However, due to funding constraints, approximately 2,100 new trees will be planted per year.

The City of Calgary's Municipal Development Plan set a long-term urban canopy target of 14-20 per cent. Based on available planting land, Urban Forestry estimates 16 per cent is achievable by 2060. To accomplish this, Urban Forestry needs to replace 3,500 existing trees and plant 4,000 new trees each year. Calgary is currently half way to the 16 per cent target. Because trees grow slowly, progress comes in small increments. To stay on track towards Calgary's long-term urban canopy target, Urban Forestry needs to grow the canopy by 0.2 per cent each year in 2023-26.

Calgary's tree maintenance costs are low compared to most benchmarked cities. Modest annual cost increases are due to more public trees being added to The City's inventory each year and rising resource costs. As well, increases in 2023-26 are anticipated as more mature trees age and result in higher tree decline, removals and succession planting needed in older communities. Tree maintenance costs include inspections, structural pruning, watering, tree removals, tree protection and pest management. Some costs will be offset by efficiency efforts (e.g., GIS to optimize service routes).

Urban Forestry implemented a proactive strategy in 2015 to prioritize the pruning of existing public trees. As a result, the service expects more climate resilient trees and fewer 3-1-1 tree emergency calls (e.g., fallen trees or heavy branches blocking roads). This is despite an anticipated increase in severe weather events with climate change. So far, tree emergency calls have significantly decreased since 2015, when there were almost 2,000 of these calls per year. In 2021, tree emergency calls accounted for less than seven per cent of Urban Forestry's total 3-1-1 service requests.

What we plan to do

Result for 2023-2026

Urban Forestry will continue to prioritize risk-based tree inspections and pruning to sustain the existing public tree canopy. The City will also plant new trees with available funding, pilot projects and partnerships but more resources are required to reach the long-term urban canopy target.

How we are going to get there

Increase tree resilience to severe weather, invasive pests and diseases and expand tree lifespans by continuing to prioritize risk-based pruning of public trees.

Protect mature trees and sustain the urban forest by continuing to responding to Calgarian (3-1-1) and developer requests for tree health, protection and hazard mitigation.

Enhance public safety and mitigate damages to property by removing dead trees and select stumps.

Continually improve asset management and effectiveness by annually updating Urban Forestry's digital inventory of public trees.

Encourage sustainable tree planting in development and construction activities through tree inspections by aligning with land use bylaws, specifications and best practices.

Sustain the urban forest by assessing the risk of, and treating public trees for, invasive pests and diseases.

Adapt trees to Calgary's harsh environment and trial new tree species in Calgary's climate by managing a civic nursery.

Educate and incentivize Calgarians to plant and care for private trees by continuing to participate in public education and partnership programs.

Grow the urban canopy by continuing to participate in collaborative programs and funding opportunities (e.g., canopy growth, food security and volunteer planting).

Maintain Calgary's existing canopy through the development of a citywide program to systematically identify and replace older, larger trees when they are at the end of their natural lifecycles.

Provide a safe and healthy environment for park users, employees, contractors and volunteers by strengthening commitments to safety and well-being.

Operating budget needed to achieve results

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Breakdown of net operating budget (\$000s)

	2023		2024		2025		2026	
	Base	One-time	Base	One-time	Base	One-time	Base	One-time
Previous Year's Net Budget	15,187		15,610		16,559		16,749	
Previously approved One-time budget		-		-		-		-
2022 One-time carry forward		-		-		-		-
Revenue Changes	916	-	-	-	-	-	-	-
Internal Recoveries Changes	(916)	-	-	-	-	-	-	-
Inflation	74	-	103	-	124	-	101	-
Operating Impact of Previously Approved Capital	150	-	-	-	-	-	-	-
Operating Impact of New Capital (Incremental)	34	-	66	-	66	-	66	-
Service Reductions	-	-	-	-	-	-	-	-
Service Increases	164	-	780	-	-	-	-	-
Total net budget*	15,610	-	16,559	-	16,749	-	16,916	-

* The previous year's One-Time Budget is not carried forward to the following year.

Total Operating Budget (\$000s) for Approval

	2022 Budget	2023			2024			2025			2026		
	At April 30	Base	One-Time	Total	Base	One-Time	Total	Base	One-Time	Total	Base	One-Time	Total
Expenditures	18,751	18,216	-	18,216	19,165	-	19,165	19,355	-	19,355	19,522	-	19,522
Recoveries	(156)	(1,315)	-	(1,315)	(1,315)	-	(1,315)	(1,315)	-	(1,315)	(1,315)	-	(1,315)
Revenue	(2,207)	(1,291)	-	(1,291)	(1,291)	-	(1,291)	(1,291)	-	(1,291)	(1,291)	-	(1,291)
Net	16,387	15,609	-	15,609	16,558	-	16,558	16,748	-	16,748	16,915	-	16,915
Base	15,187												
One-Time	1,200												

Note: Figures may not add up due to rounding.

Capital budget needed to deliver service

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Activity	Investment Name	2023 Request (\$000s)	2024 Request (\$000s)	2025 Request (\$000s)	2026 Request (\$000s)	2027+ Request (\$000s)	Total Request (\$000s)
Annual Investment Program(s)							
422195	Urban Forestry - Lifecycle	2,528	3,018	3,596	3,767	-	12,909
Program(s)							
423436	Urban Forestry MDP Target	2,235	2,277	2,289	2,333	-	9,134
Projects(s)							
		-	-	-	-	-	-
Sub-Total (New Budget Requests)		4,763	5,295	5,885	6,100	-	22,043
Previously Approved Budget Remaining		-	-	-	-	-	-
Total Capital Investment		4,763	5,295	5,885	6,100	-	22,043

Explanation of capital budget requests

Annual Investment Program(s)

Activity 422195: Urban Forestry - Lifecycle

The annual replacement of approximately 3,500 trees lost due to attrition of the existing public tree inventory. Replacing public trees lost to attrition supports climate resilience and will help maintain current urban canopy levels.

Funding From: Municipal Sustainability Initiative (\$8,909 thousand) Capital Reserves (\$4,000 thousand)

Contributing Services: None

Operating Impact: This request requires \$17 thousand base funding of operating costs starting in 2023, 2024, 2025 and 2026.

Program(s)

Activity 423436: Urban Forestry MDP Target

Plant new trees in public spaces to improve The City's progress towards the Municipal Development Plan's urban canopy target. Capital funding to plant 2,100 new trees a year (although 4,000 new trees a year are needed to stay on track for the urban canopy target).

Funding From: Municipal Sustainability Initiative (\$9,134 thousand)

Contributing Services: None

Operating Impact: This request requires \$17 thousand base funding of operating costs starting in 2023, \$49 thousand base funding of operating costs starting in 2024, 2025 and 2026.