Urban Forestry

Led by: Calgary Parks

Description:

Urban Forestry manages public trees to improve air quality, reduce stormwater runoff, provide shade and cooling, provide wildlife habitat, increase property values and create stress-reducing environments for citizens. We plant trees to replace those lost to construction and natural decline. We also plant trees to increase the urban canopy for future generations. We receive public trees from the development industry. We water newly planted trees to ensure healthy establishment and prune trees to increase their lifespans and to reduce tree/branch failures during storms. We protect trees by reviewing construction and development projects. We promote tree stewardship to citizens.

Customers:

Our direct customers are citizens, park users, developers and home builders. Our indirect customers are tourists, business improvement areas and future generations of Calgarians. We create and sustain habitat for wildlife.

What is delivered to customers:

Tree planting, pruning, protection and stewardship.

Partners:

Urban Forestry partners with: the development industry to protect, inspect and receive new trees; other City service providers on trees for affordable housing sites, river banks, wetlands, etc.; and the landscape industry and educational institutions to define best practices and provide public education for tree care.

Service need (value proposition):

Social benefits of Urban Forestry include reducing stress, promoting health and wellness and fostering aesthetically pleasing, walkable communities. Environmental benefits include improved air quality, cooling effects (shade), reduced storm water runoff, increased wildlife habitat and climate change moderation. Economic benefits include increased property value on treed streets and attractiveness of business districts. Proactive tree care is required to ensure resilience of the urban forest and reduce tree damage during severe weather events. A diverse mix of tree species is required to reduce the impact of pests and climate change. Good watering practices are required to establish new trees in the Calgary climate so they have long lifespans.

Current state service value

8.25%

Tree canopy coverage in Calgary

16%

Calgary's tree canopy target

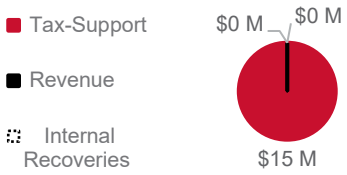
100%

Communities with public trees

79%

Citizens who value trees in our city

2018 Budgeted Gross Operating Expenditures Funding Breakdown ($ Millions)*



$10

Annual operating cost per resident to maintain a healthy and sustainable urban forest

** Gross operating budget and the service cost ratio may include internal recoveries that are also included in other services gross operating budget.*

Connections to Citizen Priorities

What the service includes

This service has no sub-services.

Key Capital Investments

Each year, we need to plant 3,500 trees to maintain the urban forest and an additional 4,000 trees to grow the urban forest to meet the MDP urban canopy target.

What we've heard and service outlook

What we heard: Research & Engagement Results

In the 2017 Citizen Expectations survey, 79 per cent of citizens stated the urban forest is important to their quality of life. In the 2018 One Calgary public engagement survey, citizens valued (in this order): trees for environmental, wellness, attractiveness and connectivity benefits. We actively educate citizens about the value and benefits of the urban forest. This happens at public events and through industry partnerships. We receive 13,000 service requests per year regarding tree inquiries, maintenance, planting and removals. Approximately 20 per cent of our service requests from citizens are unsolicited positive comments in response to the service.

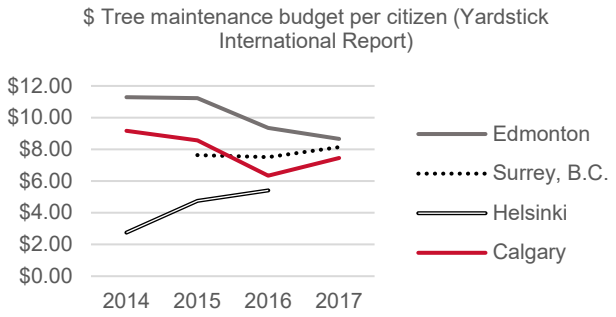
What Council has directed

Urban Forestry supports Council Directives in A Healthy & Green City. Trees support Calgary's strategies for climate change resiliency (H1) by providing shade in public spaces and cooling homes and buildings. As well, trees contribute to watershed management by reducing stormwater runoff and erosion (H3). In addition to contributing to aesthetically pleasing and walkable communities (N4) and public open spaces (H6), proximity to trees and forests contributes to the positive mental wellbeing of people (H4) as well as environmental benefits such as wildlife habitat and improved species diversity.

What are we watching?

Key trends impacting our service include increasing public interest in tree education and opportunities to involve agencies and sponsors that promote urban tree preservation. New technologies are used to more efficiently track our assets and optimize work. A genetically diverse urban forest is needed to mitigate the impacts of drought, insects, diseases and climate change. Risks to the service include severe weather events and tree pests. Calgary's urban forest was damaged by the June 2013 flood, the early snowfall in September 2014 and four severe windstorms in 2017. Dutch elm disease and Emerald ash borer can lead to high tree mortality rates if not effectively monitored and immediately addressed. Meeting the Municipal Development Plan's established long-term urban canopy coverage target of 16 per cent is at risk given our current level (8.25 per cent) and forecasted resource levels.

Benchmarking



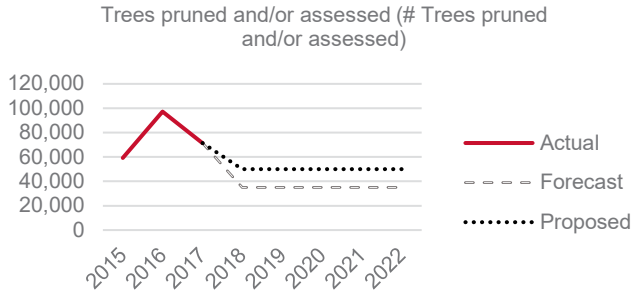
Source: Yardstick International Report

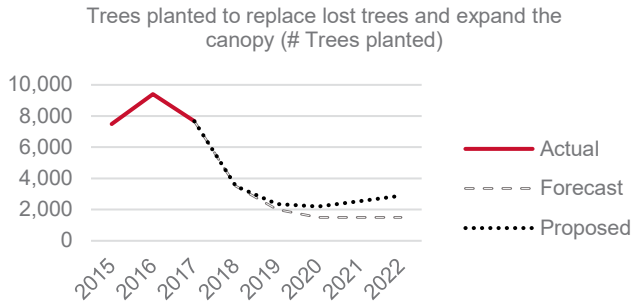
Yardstick is an international parks and recreation benchmarking organization operated as a partnership between private sector and industry groups. Note: Helsinki did not participate in the Yardstick audit in 2017 and Surrey did not participate in 2014.

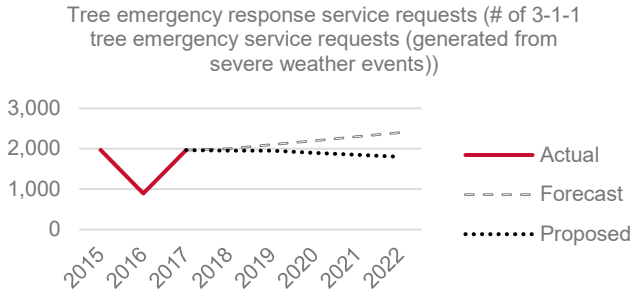
What matters to Calgarians

VALUE DIMENSION	DESCRIPTION
Environmental	The urban forest contributes to Calgary's biodiversity and long-term environmental well being.
Wellness	Trees provide stress-reducing natural spaces, which have been shown to improve health and wellness.
Attractiveness	Well-treed communities demonstrate increased property values and aesthetics.
Connectivity	Trees enhance walkability through shade and by providing a multi-sensory user experience.

How is the Service performing? Where we are headed and where do we want to go?







Story behind the curve

To recover from the 2014 Calgary Tree Disaster, Council provided $35M in one-time disaster recovery ReTree YYC program funding for 2015-17. This was used to plant new trees and replace those that were lost in the storm, inspect and prune more trees and provide enhanced public education to citizens in caring for the trees on their property. This one-time funding led to an increase in both tree planting and pruning from 2015-17. Activities returned to traditional service levels in 2018.

Trees Pruned and/or assessed: A key learning from the ReTree program is the need to focus on proactive pruning to sustain the resilience of the current inventory of public trees. This means the majority of operational spending will be directed to tree inspections and pruning with less funding available for planting new trees. There continues to be a modest shortfall in the pruning budget.

Trees Planted to replace lost trees and expand the canopy: In 2019-22, all planting, both replacement and growth, was shifted to capital funding business cases to focus the operational budget on proactive pruning. Tree loss compensation funds will continue to be used to replace trees lost to construction activities. In a typical year, this equates to 500 trees. In 2019, Urban Forestry will plant trees with the funding from this compensation. With limited capital funding for replacements in 2019-22, we will plant to offset some of the approximate 3,500 trees lost due to natural lifespan decline. With an additional $350,000 per year service increase for critical lifecycle tree replacement in 2019-22, we will be able to turn the curve on our forecasted plantings. However, due capital funding constraints, we will not be able to plant the 7,500 trees per year required to grow the urban canopy and meet the long-term Municipal Development Plan target for tree canopy coverage.

Tree emergency response service requests: By implementing our strategy to increase proactive pruning, we anticipate that tree emergency service requests will slightly decrease despite an anticipated increase in severe weather events.

What do we propose to do?

What we propose to continue doing

STRATEGY
Risk-based public tree pruning to increase tree lifespans and resilience to severe weather.
Respond to both citizen and developer requests around tree health, protection and hazards.
Inspect and protect mature trees in established areas and new developments to help sustain our urban forest.
Operate a cost-effective nursery that will harden plant material for improved tree establishment and health.
Do critical tree replacements in high priority areas, such as Memorial Drive or Centre City ($1.4M).
Remove dead trees for public safety and community aesthetics ($3.9M).

Why?

The Municipal Development Plan and the Urban Forestry Strategic Plan guide our strategies' focus to sustain and protect our current inventory of public trees. This includes optimizing inspections and pruning to increase tree resiliency to weather and climate change challenges. We will also focus our time and resources to ensure the establishment of newly planted trees that will become integrated into a healthy, mature urban forest.

What we propose to do less of

STRATEGY
Replacements of dead trees with new trees.
Additional tree planting for canopy growth.

Why?

Capital funding for planting new trees is limited. Recovery from the 2014 Calgary Tree Disaster included one-time funding for planting new trees to replace those lost to the storm. This one-time funding ended in 2017 and the existing operating budget will be re-directed to care for existing trees.

What we propose to do more of or include as a new offering

STRATEGY
Annually increase the number of trees pruned to improve the overall resiliency in our urban forest.
Investigate alternative methods for watering young trees during droughts to build resilience to climate change and severe weather.
Identify future planting areas to expand tree canopy coverages within the city, such as along the Green Line transit route and Ring Road network.

Why?

The ReTree YYC program (2015-17) confirmed the importance of regular proactive pruning. We will increase our tree pruning initiatives to make our forest more resilient. This will be accomplished by redirecting planting operating funds to pruning, and requesting capital funds for planting. All initiatives for Urban Forestry will be driven by improving internal efficiencies and efforts to optimize our processes and outcomes.

What Operating Budget do we need to achieve these results and strategies?

For Council Approval

SERVICE PERFORMANCE RESULTS FOR 2019-2022	CURRENT	TREND
Trees pruned and/or assessed (# Trees pruned and/or assessed)	35,000	↔
Trees planted to replace lost trees and expand the canopy (# Trees planted)	3,500	↓
Tree emergency response service requests (# of 3-1-1 service requests generated from severe weather events)	2,000	↔

Breakdown of net operating budget ($000s)

	2019	2020	2021	2022
Previous Year's Budget	14,752	14,175	15,143	15,401
Less Previous Year one Time	(1,890)	(811)	(1,269)	(1,022)
Base	12,862	13,364	13,874	14,379
Revenue Changes	-	-	-	-
Internal Recovery Changes	-	-	-	-
Inflation	152	160	155	154
Operating Impact of Previously Approved Capital	-	-	-	-
Operating Impact of New Capital (Incremental)	-	-	-	-
Efficiencies	-	-	-	-
Service Reductions	-	-	-	-
Service Increases	350	350	350	350
One Time	811	1,269	1,022	776
Realignments	-	-	-	-
Total	14,175	15,143	15,401	15,659

Total Operating Budget ($000s) for Approval

	2018 Budget	2019			2020			2021			2022		
	At Mar 31	Base	One-Time	Total	Base	One-Time	Total	Base	One-Time	Total	Base	One-Time	Total
Expenditure	14,799	13,411	811	14,222	13,921	1,269	15,190	14,426	1,022	15,448	14,930	776	15,706
Recoveries	(47)	(47)	-	(47)	(47)	-	(47)	(47)	-	(47)	(47)	-	(47)
Revenue	-	-	-	-	-	-	-	-	-	-	-	-	-
Net	14,752	13,364	811	14,175	13,874	1,269	15,143	14,379	1,022	15,401	14,883	776	15,659

Recommended Capital Investment to Support Service Delivery

For Council Approval

Capital Budget for Council Approval

ACTIVITY	DESCRIPTION	2019 REQUEST ($000s)	2020 REQUEST ($000s)	2021 REQUEST ($000s)	2022 REQUEST ($000s)	2023+ REQUEST ($000s)	Total REQUEST ($000s)
Annual Investment Program(s)		1,500	3,000	3,000	3,000	-	10,500
422195	UF Lifecycle	1,500	3,000	3,000	3,000	-	10,500
Project(s)		-	-	-	-	-	-
Program(s)		-	-	-	-	-	-
Sub-Total (New Budget Requests)		1,500	3,000	3,000	3,000	-	10,500
Previously Approved Budget Remaining		-	-	-	-	-	-
Total Capital Investment		1,500	3,000	3,000	3,000	-	10,500

Explanation of Capital Budget Requests

Annual Investment Program(s)

Activity 422195: UF Lifecycle

New Budget Request of $10,500 thousand for the Urban Forestry Lifecycle program. This lifecycle program will focus on tree replacement for trees lost due to attrition of the existing public tree inventory.
Funding from Lifecycle Maintenance & Upgrade Reserve ($3,000 thousand) and Reserve for Future Capital ($7,500 thousand)
Operating Impact of Capital: None