# Urban Forest Strategy

2025

# **Plan at a Glance**

This is the Town of View Royal's first Urban Forest Strategy (UFS). The UFS establishes a comprehensive, 20-year framework to guide the management of View Royal's urban forest. The UFS reflects the Town's commitment to enhancing community climate resilience, supporting the urban forest, enhancing public health and wellbeing, and protecting trees and native biodiversity.

# View Royal's **Urban Forest Vision**

Our Town's urban forest is celebrated for its diverse, mature trees and interconnected green spaces. It provides vital habitat for native plants, pollinators, and wildlife, while enhancing community resilience, health, and well-being. By making space for trees, we have expanded our urban forest and strengthened our sense of place. We are stewards of our environment, and the trees we plant today will benefit our community for generations.

# **Urban Forest Value** \$10 M \$184,000 Value of our Urban forest program budget urban forest **Tree Inventory** 1,200 33%/25% boulevard trees inventoried trees are inventoried maple / red maple **Canopy Cover** 29% **59%** Urban canopy of urban canopy cover (2023) is on private land **Survey Results** 85% 80% Want canopy Were concerned cover to increase about tree loss

# Land Acknowledgement

**Acknowledgements** 

The Town of View Royal acknowledges with respect that it is on the unceded traditional territories of the Lekwungen peoples, known today as the Esquimalt and Songhees Nations, and that their historic connections to these lands continue to this day.

## **Acknowledgement**

We are grateful to all those who contributed to shaping the Town of View Royal's Urban Forest Strategy. The Strategy was developed with the support of Diamond Head Consulting.

Town of View Royal: Ivan Leung; Laura Busby **Diamond Head Consulting:** Shane Hunt; Tyler Searls; Marco Sanelli: Vlad Romanescu: Amelia Needoba



**5.3** Develop strategic partnerships

Are essential to program performance and no net loss of canopy cover.

- Update View Royal's Subdivision and Development Servicing Bylaw and planting standards to enhance conditions for street trees
  - provides enhanced direction on the handling of View Royal's urban
- () Review View Royal's Zoning Bylaw to ensure performance criteria
- Establish dedicated tree maintenance and planting budgets within
- () Produce a State of the Urban Forest report on a five-year interval
- () Establish a Town arborist or urban forester position within Parks to
- () Access external funding opportunities to support tree planting
- (I) Review the Town's Natural Watercourse and Shoreline Areas , and
- () Develop a Terms of Reference for arborist reports and tree surveys
- () Prepare a biannual newsletter to communicate key urban forestry
- () Continue to offer View Royal's Resident Tree Planting Program and
- ① Actively participate in and support initiatives that utilize the Capital Regional District's (CRD) network of urban forestry professionals

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# 1. Introduction & Overview

# 1.1 Welcome

View Royal values its trees. Our community consists of a mosaic of urbanized spaces, interwoven with natural landscapes — Douglas-fir forests, Garry oak meadows, and forested shorelines. These are places home to a rich diversity of species. Our natural spaces and features enhance our built environment and provide essential spaces for recreation, leisure and ecological health. The Urban Forest Strategy (UFS) sets a clear, coordinated direction for managing View Royal's urban forest over the next 20 years. Its goal is to ensure the continued delivery of ecological, social, and health benefits provided by the urban forest. Effective urban forest management is inherently interdisciplinary, involving multiple departments

Effective urban forest management is inherently vironment and provide essential spaces for recreainterdisciplinary, involving multiple departments tion, leisure and ecological health. and interested parties in the community. Planning The urban forest has long been a priority in View requires thoughtful integration of diverse interests, Royal. The 2011 Official Community Plan (OCP) values, and technical expertise. This strategy is decommitted to maintaining a healthy urban forest by signed to provide that integration - balancing enencouraging the retention of trees and ecological vironmental protection, community needs, and the features, expanding tree canopy cover and enhanrealities of urban development. cing biodiversity and habitat. Despite these com-A 20-year horizon allows space for transformative mitments, new and evolving challenges, such as but sustainable urban forest planning, while schedclimate change, urban intensification, and declinuled five-year reviews will ensure the strategy reing forest health, threaten the quality and extent of mains adaptive and responsive to evolving chalthe urban forest. lenges and best practices.

To address these growing threats and to enhance community resilience, a renewed approach is needed — one that strengthens our management of the urban forest and supports its long-term sustainability to secure benefits to the community.



Left and above: Camas flowers in Garry oak meadows (Lotus Johnson)

# 1.2 Plan Purpose

By planning strategically, the Town can:

- Identify and track emerging issues in urban forest management,
- Establish organizational priorities in managing the urban forest,
- Support urban forest monitoring with reliable data and tools,
- Expand and enhance access to urban nature,
- Improve alignment between financial planning and operational needs,
- Inform data-driven policy development and decision-making, and
- Strengthen community outreach, education, and stewardship.

# **1.3 Structure of the Strategy**

The UFS is organized into five sections:

- 1. Introduction and Overview: introduces the context, purpose, and benefits of urban forest management in View Royal.
- 2. View Royal's Urban Forest: summarizes the current condition of the urban forest, including its composition, trends, and pressures.
- 3. Our Program: describes the Town's existing urban forest programs and regulatory framework.
- 4. The Path Forward: Identifies the key challenges and community input that have informed this Strategy, and introduces the strategic framework.
- 5. Action and Monitoring Plan: details the actions, targets, and indicators that will guide implementation over the next 20 years.

# **1.4 What is the Urban Forest?**

View Royal's urban forest includes all trees and forested landscapes within the Town's boundaries -those in public parks, along streets, in private yards, and within natural areas. It encompasses both planted and naturally occurring vegetation, and extends across the urban core to Thetis Lake, and Mill Hill Regional Parks, and the Town's rural edges (Figure 1)<sup>1</sup>.

The urban forest is more than trees alone. It includes the living (biotic), non-living (abiotic), and cultural elements that shape our landscapes—soils, understory vegetation, hydrology, and the relationships between people and place. Together, these features form a complex urban ecological system embedded in the urban environment.



Figure 1. Urban to rural gradient showing the range of tree assets in View Royal

# **1.5** Why is the Urban Forest Important?

Urban forests are an essential part of a livable, re-Improving human health silient and healthy urban environment. The benefits Exposure to greenery reduces stress, improves trees provide are often referred to as 'ecosystem work performance, boosts creativity, and aids reservices'. Examples of benefits include: covery in hospitals<sup>11,12,13</sup>. Schools with more trees and shrubs visible from classroom windows have been found to achieve higher test scores and Trees regulate temperatures through shade and I graduation rates<sup>14</sup>. Access to parks or natural areas and reduce storm and flood impacts<sup>2,3</sup>. They are increases physical activity levels<sup>15</sup>.

## **Climate adaptation and mitigation**

also important carbon sinks, sequestering and storing atmospheric carbon<sup>4,5</sup>. Economic value

## Clean air and water

Trees stimulate the local economy by attracting people to commercial districts, resulting in in-Leaves intercept or absorb pollutants like carbon creased spending and longer stays<sup>16</sup>. Areas with monoxide, nitrogen dioxide, and particulates<sup>6</sup>. abundant tree cover often have higher property Leaves and root systems also attenuate and filter values<sup>17,18</sup>. rainwater and stormwater runoff, improving water quality before it enters our waterways<sup>7,8</sup>. Resources

Habitat and biodiversity Trees provide resources for cultural, social, and economic uses, including food, medicines or ma-Urban forests support a wide range of plant, aniterials like timber, firewood or bark for weaving. mal, fungal, and microbial life<sup>9</sup>, benefiting both human and animal residents<sup>10</sup>.



Figure 2. The many benefits provided by View Royal's urban forest

# **Extreme Heat**

The urban forest also plays a critical role in protecting communities from the effects of extreme heat. By providing shade and releasing moisture into the air, they cool their environments. Urban areas with higher tree cover are better able to moderate extreme temperatures, reducing the risk of heat-related illnesses and mortality<sup>19</sup>. This benefit was underscored during British Columbia's 2021 heat dome, which caused over 800 fatalities<sup>20</sup>. A 2022 report to the Chief Coroner of BC identified low canopy cover as a contributing factor to this loss of life.

In contrast, areas with limited tree cover are often dominated by hard surfaces-such as pavement and rooftops-that absorb and retain heat throughout the day, then release it slowly at night, leading to elevated ambient temperatures and prolonged heat exposure. In View Royal, the effects of urban heat can be seen in a land surface temperature map captured on a hot summer day (Figure 2). This map highlights the cooling influence of forested areas like Thetis Lake Regional Park, shown in blue. In some cases, surface temperatures in these areas can be as must as 15°C cooler than the hottest urbanized areas in Town, shown in red.



Figure 3. Land surface temperature across the Town during an extreme heat event (06-25-22)



Figure 4. Health benefits of urban trees adapted from Urban Trees and Human Health: A Scoping Review.<sup>60</sup>

# **Ecosystem Services**

Ecosystem services are the environmental, social, and economic benefits that natural systems provide, including climate regulation, air and water purification, habitat support, and cultural value. Quantifying these services helps demonstrate their importance and guide investment in their protection.

To assess the value of its urban forest, the Town of View Royal used the industry standard i-Tree software suite, which estimates the dollar value of measurable services like carbon storage, air purification, and stormwater interception. While valuable, this approach does not capture harder-to-quantify benefits such as biodiversity, cultural significance, and mental well-being-meaning the true value of the urban forest is much greater than the figures suggest.

Within the Urban Containment Boundary (UCB), View Royal's urban forest is estimated to provide over \$10 million in stored carbon value and more than \$600,000 in annual benefits (Table 1). Community-wide, the urban forest is valued over \$68 million, including \$2.7 million in annual services.

Table 1. Summary of ecosystem service values for View Royal's UCB using i-Tree Canopy (2023)



# \$9.4 Million stored \$330,000 sequestered

**Carbon Storage** 

per year

# **Flood Mitigation**

\$110,000 per year



# **Air Purification**

\$170,000 per year

Ecosystem Service	Service Estimates	Dollar Value (\$)
Carbon & Stormwater		
C Sequestered annually in trees (t/year)	461	\$331,800
C stored in trees (t)	13,135	\$9,446,300
Stormwater Attenuation		
Avoided annual runoff (L/year)	47,648,156	\$112,200
Air Quality		
CO removed annually (kg)	133,109	\$200
NO2 removed annually (kg)	1,347,389	\$400
O3 removed annually (kg)	9,531,455	\$28,300
PM10 (kg)	2,814,651	\$19,400
PM2.5 (kg)	734,974	\$124,500
SO2 removed annually (kg)	516,131	\$100
Total air pollution removed (kg/year)	15,077,709	\$172,900
Total Annual Service Value		\$616,900
Total Non-repeating Service Value		\$10,063,200

# **Urban Forestry Program at a Glance**



# **Tree Giveaway**

View Royal's 'Resident Tree Planting Program' has grown significantly in recent years. In response to a surge in demand in 2024, funding increased from \$4,500 to \$26,000 to expand the program.

# **Tree Bylaw**

The Tree Bylaw is administered by the Engineering Department, specifically the Directory of Engineering and the department Clerk. While there is no fee for standard applications, fees apply when trees cannot be replaced or when applicants request expedited processing. Annual administrative costs range from \$20,000 to \$25,000 in total and include contractor support, clerk and staff time.

# **Invasive Species Management**

The Town addresses invasive species management in many ways: within road rights-of-way, management is contracted out at an annual cost of \$10,000. For other municipal owned lands, including parks, a part-time Invasive Species Management Coordinator is supported by an \$18,000 operating budget and oversees these efforts and guides restoration work led by the Greater Victoria Green Team (GVGT). The GVGT receives an additional \$25,000 in annual funding.

# **Tree Care**

Tree care operations are contractor dependent as the Town does not have a public works yard, in-house tree care crews, or a municipal arborist that can be dedicated to tree care. An operating budget of approximately \$75,000 is used for tree consulting, hazard removals, and (clearance) pruning. Tree replacement ranges from \$5,000 to \$30,000 annually.

# **Work Orders**

Annual public service requests related to tree work have averaged around 30 tickets in recent years.

Top to Bottom: Tree giveaway (Town of View Royal), tree bylaw (DHC), invasive species management (VRCA), tree care (Yulya Zolotko), work orders (Canva)

# **1.6 Urban Forest Program**

# How does the Town Manage its Trees?

### **Engineering & Parks Department**

The Town's Engineering Department is responsible In View Royal, the Fire Chief oversees fire services for managing the urban forest on Town property, including in its parks and along Municipal roads. This includes coordinating tree maintenance and removal activities on Town property, processing tree permits, development review, managing invasive species, and organizing the Town's residential tree-planting program. The Department's Engineering standards also influence the growing conditions provided for trees through their Subdivision and Development Servicing Bylaw (SDS, No. 985), Zoning Bylaw (ZBL, No. 900), and Official Community Plan (OCP, No. 811). The Town leverages dedicated funding for contracted arboriculture services, including tree pruning and consulting services that support tree and development permit applications. While tree protection is a priority for staff, urban forest management is one of several other responsibilities undertaken by related roles in Engineering and Parks.

### **Development Services Department**

The Town's Development Services Department was previously responsible for processing tree permits associated with development applications which have informally become the responsibility of Engineering and Parks. They continue to process development permits which must comply with the Town's OCP and ZBL, including relevant Development Permit (DP) Areas; these policies moderate the amount of space available for tree planting on private property. New provincial housing policy direction has put emphasis on growth through urban intensification. Development Services is leading the Town's mandate to consider the Municipality's policy frameworks relative to these, and to balance growth with other core planning objectives like complete communities and urban greening.

### **Department of Protective Services/Fire**

and emergency preparedness, playing a key role in community safety and wildfire prevention. As part of this, the FireSmart program, led by the Municipality's FireSmart coordinator, helps residents reduce wildfire risk through public education, home assessments, and practical steps like fire-resistant landscaping. The Fire Chief supports these efforts to strengthen urban forest and community resilience, securing View Royal's preparedness for wildfire season.

# Who else has a hand in urban forest management?

### **Capital Regional District**

While the Town of View Royal is responsible for trees on Municipal property, most of the Town's urban forest canopy is under the management of the Capital Regional District (64%) by way of Mill Hill and Thetis Lake Regional Parks. The District also reports on regional canopy cover change and identifies the location of sensitive ecosystems within its jurisdictional area (which includes View Royal). In general, trees located in regional parks are protected.

### Private Landowners

Within the Town's Urban Containment Boundary (UCB), 59% of all canopy cover is located on private property (Figure 5). Landowners influence the urban forest through their decisions to plant, maintain, or remove trees on their property, as well as through the species and locations they choose to plant. They also participate in urban forest stewardship opportunities and play an advocacy role in urban forest management.





Figure 5. The proportion of canopy cover within the Town's Urban Containment Boundary by ownership type in 2023

Below: View Royal Habitat Restoration Project volunteers (Town of View Royal)

**View Royal Parks** 

## **Utility Companies**

Hydro, gas and other service providers require tree pruning to maintain reasonable clearance around their assets. Service providers are responsible for providing or procuring these services to support public health and safety and to prevent unplanned service disruption. Presently, pruning services for these providers are not performed in collaboration with Town staff and do not always follow arboricultural best practices.

Additional actors influencing the urban forest include the Province, which regulates riparian areas and the Town's Agricultural Land Reserve. Private arboriculture and landscape companies also plant, maintain, and remove trees on private property.

# **First Nations**

The Town endeavours to engage First Nations on the happenings within View Royal. It is a continued and ongoing process. The urban forest has been identified to be of significant interest to the Xwesepsum and Songhees Nations and the Town will continue to reach out and engage with its neighbours regarding the state of the urban forest.

# **Greater Victoria Green Team**

The Greater Victoria Green Team has worked in partnership with the Town of View Royal to manage invasive species in its public parks. They host popular monthly and weekly restoration activities that provide volunteers with the opportunity to steward the Town's natural areas. The Municipality contracts a part-time Volunteer Coordinator for at least nine invasive species removal activities per year. The limited financial resources allocated to the project limit its ability to manage invasive species across the Town's many parks, and the plant in restoration sites.

# **1.7 Policy Context**

### **Enabling Legislation**

The Community Charter and the Local Government Act (LGA) are key pieces of legislation that empower municipalities in British Columbia to manage their urban forest. The Community Charter establishes core municipal powers, including authority over trees on public land, environmental protection, and bylaw enforcement. The LGA supports land use planning and development regulation, which influence how urban forests are protected or integrated into growth. Together, they provide the legal foundation for municipalities to plan, protect, and sustain urban forests in alignment with community priorities.

### **Strategic Plan**

The Town of View Royal's 2023–2026 Strategic Plan identifies Council's priorities over the coming four years and serves as a guiding document outlining the municipality's priorities and actions over that period. A significant element in the plan is the development of an Urban Forest Strategy (UFS), which aims to enhance the management, protection, and growth of the town's urban forest. This initiative reflects View Royal's commitment to environmental stewardship and sustainable development, recognizing the vital role that urban forests play in climate resilience and community well-being.

### **Official Community Plan**

The Community's Official Community Plan (OCP) outlines View Royal's long-term vision for sustainable growth, land use, and environmental stewardship. It emphasizes the protection of natural assets, including the urban forest, through policies that support biodiversity, climate resilience, and community well-being. The plan designates Development Permit Areas (DPAs) to manage development in sensitive ecosystems and commits to enhancing tree canopy cover and regularly updating the Tree Protection Bylaw.

### **Zoning Bylaw**

The Zoning Bylaw (ZBL) regulates development within the Town of View Royal. The ZBL specifies

what types of buildings can occur in each zone, and their associated performance regulations, which often include building height, setbacks and landscaped space requirements. In establishing the rules for form and lot configuration, View Royal's ZBL exerts significant influence over the space available for trees on private property.

### Subdivision & Servicing Bylaw

View Royal's Subdivision & Servicing (SDS) bylaw governs land subdivision and infrastructure servicing standards. It includes specifications for boulevard widths and tree planting in public rightsof-way, ensuring that new developments accommodate street trees and support the growth of the urban forest.

### **Tree Protection Bylaw No. 1069**

Adopted in 2022, View Royal's Tree Protection Bylaw regulates the alteration, removal, and replacement of trees within View Royal. It protects significant trees, including many native species and those over 20 cm in diameter, and sets conditions for their removal or alteration. The bylaw also outlines requirements for tree replacement and maintenance, supporting the Town's goals for canopy preservation and climate action.

### Parks Master Plan

While not a regulatory document, the Parks Master Plan is a supporting document that informs financial planning and provides strategic direction for the management and enhancement of View Royal's parks and green spaces. It advocates for increased public access to greenspace, improved park connectivity, and the protection of ecological assets.

### **Community Climate Action Strategy (CCAS)**

Similarly, the CCAS adopted in 2022 outlines View Royal's approach to mitigating and adapting to climate change. It commits to developing this Urban Forest Strategy and increasing community-wide tree canopy cover to enhance carbon sequestration and resilience to climate impacts.

# **View Royal's Policy Context**

# **Related Policies & Guidelines**

Community Heat Community Resilience Risk Assessment Bylaw Enforcement Policy Housing Needs Assessment Report

> Official Active Transportation Community **Network Plan** Plan

> > **Guiding Plans & Policies**

**Migratory Birds** Convention Act

> Local Government Act

# **Bylaws**

Tree Protection Bylaw

Subdivision & Development Servicing Bylaw

> Property Maintenance Bylaw

> > Land Use Bylaw

Zoning Bylaw

Community **Climate Action** Strategy

Community Wildfire Resilience Plan

Parks Master Plan

**Enabling Legislation** 

Species at Risk Act

**Riparian Areas Protection Act** 

Community Charter



Development (right) around Victoria General Hospital (above) has resulted in recent canopy loss (John Newcomb)

# 1.8 Urban Forest Report Card

Criteria and indicators offer a standard framework for the assessment of municipal urban forest management programs. Such a framework enables municipalities to evaluate performance consistently over time and enables comparison with peer communities who have used the same evaluation approach. View Royal's urban forest program has been assessed against a widely recognized set of urban forest criteria and indicators. These criteria provide a baseline for evaluating progress across various elements of an urban forest management program, including planning, operations, maintenance, monitoring, and partnerships. The evaluation of the Town's program included a thorough review of relevant policies and procedures, supplemented by detailed consultations with Town staff.

Evaluation of View Royal's program was based on a detailed review of the municipal policies and staff interviews. Overall, the Town's urban forest program scored 'Fair'. The primary limitation in advancing View Royal's urban forest program has been the limited resources available to it. All of the program is administered by staff who's primary role includes a range of other core tasks.



# **Urban Forest Report Card**

<ul> <li>2024 program grade (in colour)</li> <li>Not yet assessed</li> </ul>		7 L F	2024 JRBAN OREST DRT CARD	OPTIMAL 2
	Poor	Fair	Good	Optimal
PLAN				
Awareness of the urban forest as a community resource	-0		•	-0
Tree canopy cover relative to established canopy cover goals	-0			-0
Clear and defensible urban forest assessment and goals	-0			
Interdepartmental cooperation in urban forest strategy implementation	-0			O
Municipality-wide urban forest management plan	-0			
Municipal green asset management	-0			
Municipal-wide biodiversity or green network strategy	-0		O	
Tracking urban forestry operational carbon footprint and carbon-cycle balance			O	
Urban forest funding to implement a strategy	_0			
Municipal urban forestry program capacity				
Waste biomass utilization				
	<u> </u>	<u> </u>		0 -
MANAGE				
Equity in planting program delivery				
Forest Restoration & Native species planting	-0			-0
Ecosystem services targeted in tree planting projects and landscaping	-0			
Selection and procurement of stock in cooperation with nursery industry	•			
Streetscape and servicing specifications and standards for planting trees	-0			
Municipal tree planting and replacement program design, planning, and implementation				
Development requirements to plant trees on private land				
Age diversity (size class distribution) ————————————————————————————————————				
Species suitability				
Species diversity	•			
PROTECT				
Regulations for the protection and replacement of private and municipal trees —	_0			O
Regulations for sensitive ecosystems, soils, or permeability through private development	-0			
Internal protocols guide municipal tree or sensitive ecosystem protection				
Standards and specifications supporting tree protection during development				
Cooperation with utilities on protection and pruning of municipal trees				
MONITOR				
Tree inventory				
Natural areas inventory				
Maintenance of intensively managed trees				
Publicly owned tree species condition assessment				-0
Tree risk management				
Emergency response planning ——————————————————————————————————			•	-0
Pest and disease management				
Knowledge of trees on private property	-0		•	
PARTNER				
Citizen involvement	-	-		
nvolvement of large private land and institutional land holders				-0
Urban forest research	-			
Regional collaboration	-0			O

<ul> <li>2024 program grade (in colour)</li> <li>Not yet assessed</li> </ul>	Pood	// F	2024 JRBAN OREST ORT CARD	OPTIMAL 2
	Poor	Fair	Good	Optimal
PLAN				
Awareness of the urban forest as a community resource	-0		<b>—</b>	
Tree canopy cover relative to established canopy cover goals	-0	-0		
Clear and defensible urban forest assessment and goals	-0			•
Interdepartmental cooperation in urban forest strategy implementation	-0			
Municipality-wide urban forest management plan	-0			
Municipal green asset management	_0			
Municipal-wide biodiversity or green network strategy	_0		O	
Tracking urban forestry operational carbon footprint and carbon-cycle balance			O	
Urban forest funding to implement a strategy				
Municipal urban forestry program capacity				
Waste biomass utilization				
MANAGE	~	Ŭ	Ŭ	
Equity in planting program delivery		0	0	0
Forest Restoration & Native species planting				
Ecosystem services targeted in tree planting projects and landscaping	-0		O	0
Selection and procurement of stock in cooperation with nursery industry	•	-0	O	-0
Streetscape and servicing specifications and standards for planting trees	-0			
Municipal tree planting and replacement program design, planning, and implementation				
Development requirements to plant trees on private land				
Age diversity (size class distribution) ————————————————————————————————————				
Species suitability	-0	-0		-0
Species diversity	•			
PROTECT				
Regulations for the protection and replacement of private and municipal trees —	_0			
Regulations for sensitive ecosystems, soils, or permeability through private development	-0			
Internal protocols guide municipal tree or sensitive ecosystem protection				
Standards and specifications supporting tree protection during development				
Cooperation with utilities on protection and pruning of municipal trees				
MONITOR				
Tree inventory				
Natural areas inventory				
Maintenance of intensively managed trees				
Publicly owned tree species condition assessment	-0			
Tree risk management				
Emergency response planning			•	
Pest and disease management				
Knowledge of trees on private property	-0	0	•	
PARTNER				
Citizen involvement				
nvolvement of large private land and institutional land holders	-0			
Urban forest research	•	-0		
Regional collaboration	-0			

<ul> <li>2024 program grade (in colour)</li> <li>Not yet assessed</li> </ul>	COd	/ F	2024 JRBAN OREST ORT CARD	OPTIMAL 2
	Poor	Fair	Good	Optimal
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Awareness of the urban forest as a community resource	-0	-0		-0
Tree canopy cover relative to established canopy cover goals	-0			-0
Clear and defensible urban forest assessment and goals —	-0			
Interdepartmental cooperation in urban forest strategy implementation	-0			-0
Municipality-wide urban forest management plan	-0			
Municipal green asset management	_0			-0
Municipal-wide biodiversity or green network strategy	-0		O	
Tracking urban forestry operational carbon footprint and carbon-cycle balance				
Urban forest funding to implement a strategy				
Municipal urban forestry program capacity				
Waste biomass utilization				
	<u> </u>	<u> </u>	<u> </u>	<u> </u>
MANAGE				
Equity in planting program delivery				-0
Forest Restoration & Native species planting	-0		0	-0
Ecosystem services targeted in tree planting projects and landscaping	-0			-0
Selection and procurement of stock in cooperation with nursery industry	•			-0
Streetscape and servicing specifications and standards for planting trees	-0			
Municipal tree planting and replacement program design, planning, and implementation				
Development requirements to plant trees on private land			<b>—</b>	
Age diversity (size class distribution)				
Species suitability			<b>—</b>	
Species diversity				
PROTECT				
Regulations for the protection and replacement of private and municipal trees —	_0			
Regulations for sensitive ecosystems, soils, or permeability through private development	-0			
Internal protocols guide municipal tree or sensitive ecosystem protection				
Standards and specifications supporting tree protection during development				
Cooperation with utilities on protection and pruning of municipal trees				
MONITOR				
Tree inventory				
Natural areas inventory				
Maintenance of intensively managed trees				O
Publicly owned tree species condition assessment		0		
Tree risk management				
Emergency response planning				
Pest and disease management				
Knowledge of trees on private property	-0	0	•	O
PARTNER				
Citizen involvement				
Involvement of large private land and institutional land holders			O	0
Urban forest research	-			
Regional collaboration	_0		O	



# 2. View Royal's Urban Forest

# 2.1 Climate and Ecology

# Climate

The Town of View Royal has a temperate coastal flats, sandbars, streams, rivers, and lakes<sup>29</sup>. Willows, climate, shaped by its sheltered location in the rain dogwood, and snowberry are common in CDFmm shadow of the Olympic Mountains and Vancouver floodplains, and grand fir and western red cedar Island<sup>21,22</sup>. This results in mild, wet winters and warm, are more common in wetter sites. dry summers with a mean annual temperature near **Invasive Species** 10°C and over 1,000 mm of annual precipitation<sup>23</sup>. The climate and coastal setting support diverse ter-Invasive plants like English ivy, Himalayan blackrestrial and marine ecosystems, including estuaries, berry, and spurge laurel are widespread in the deltas, meadows, and forests<sup>24,25</sup>. Low snowfall en-CDFmm and in View Royal, outcompeting native ables a high diversity of overwintering birds, and species and degrading wildlife habitat. <sup>30</sup>. Over 150 Portage Inlet lies within a migratory bird sanctuary. invasive species have been introduced to the region since European settlement<sup>31</sup>. As early as 1972, Ecology a quarter of species in Garry oak ecosystems were non-native<sup>32</sup>, with some areas having up to 80% of View Royal is in the Coastal Douglas-fir Moist Maritime (CDFmm) biogeoclimatic subzone, limited understory plants from exotic origins<sup>33</sup>.

to low-elevation coastal areas around the Salish Sea<sup>26,27</sup>. Native ecosystems feature century-old Douglas-fir forests with a lush understory of ferns, salal, Oregon grape, and ocean spray, especially in Thetis Lake and Mill Hill Regional Parks<sup>28</sup>. Natural landscapes include grassy hilltops, marshes, mud-



Garry oak meadow (left) and wildflowers found in them (above).

Left to right: Garry oak meadow (Pr2is), camas (Lotus Johnson), white farn lily (Brewbooks), Henderson's shooting star (ErincinSF) and yellow montane violet (Andreyz Harkikh)

# **Garry Oak Ecosystems**

View Royal is home to many of Canada's rarest species and ecosystems<sup>34,35</sup>. Garry oak meadows and in area by over 85% since 1800<sup>38</sup>. This area will likesavannas are home to over 100 native species, including plants and wildlife. Many do not occur anywhere else in Canada and often have threatened forests<sup>39,40</sup>. Remnants of this ecosystem are often or endangered conservation status<sup>36</sup>.

Garry oak ecosystems were widespread prior to colonization and were intentionally burned by local Host Nations using frequent low-intensity fires for In 2022, View Royal sold almost ten hectares of food, such as berries, camas bulbs, and nuts. Over time, these landscapes were converted to farmland and residential uses, and Host Nations were decision helps protect the large concentration of prevented from using traditional land management species at risk contained within the resident Garpractices. Fire suppression has led to the transition ry oak ecosystem. View Royal continues to protect of some Garry oak meadows into Douglas-fir forests. Work is underway to further recognize the significance of cultural burns for maintaining the most to further the community's management of these biodiverse ecosystem in Canada<sup>37</sup>.

View Royal's Garry oak meadows have decreased ly decrease further since the ecosystem faces encroachment by urban development and Douglas fir small and interspersed with urban areas which limits the movement and establishment of plants and wildlife.

land to the Capital Regional District (CRD) to support the creation of Mill Hill Regional Park<sup>41</sup>. This rare Garry oak ecosystems through continued community development and is engaged in dialogues culturally important landscape features.







# **INVASIVE PLANTS**

Introduced in 1850 as an ornamental, dense thickets of scotch broom are fire prone and can shade out the numerous rare native flowering plants that normally occur in more open Garry oak meadows.

Area of concern: Parks, roadways, riparian and natural areas

Area of concern:

Dry open areas

Intentionally introduced to produce edible berries, it is now spread profusely by birds and expands aggressively through vegetative growth. Along streams and rivers, it can increase erosion

ENGLISHILL A P

**Area of concern:** Natural areas, edges

An ornamental plant that escaped from private gardens into natural areas that can smother native vegetation and reduce the lifespan of trees.

WINTER MOTY

# INVASIVE PESTS

Introduced in the 1930s from Europe and Russia, arriving on Vancouver Island in 1970, it now threatens the Garry oak ecosystem where it feeds on young Garry oak buds.

Introduced from Europe in the 1960s, it is a growing concern in the Pacific Northwest. The insect pierces and extracts nutrients from Garry oak leaves which can cause the leaves to drop prematurely. Up to 10% of the trees attacked by the pest die from repeated defoliation.

Introduced to North America around 1868, the moth has been found in Garry oak trees and can completely defoliate them. This can kill trees if repeated over multiple years, reducing the establishment of new trees, and impacting the health of older trees, which also affects the species that depend on them. **Target(s):** Garry oak Maples Apples

**Target(s):** Garry oak English oak



GYPSY MOT



# 2.2 History and Timeline

# Time immemorial

The Xwesepsum and Songhees Nations have stew-Captain James Douglas arrived at Clover Point in what is now the City of Victoria in the 19th cenarded the lands and waters in and around View Royal for thousands of years<sup>42,43</sup>. Indigenous land tury<sup>44,45</sup>. The Puget Sound Agricultural Company, a subsidiary of the Hudson's Bay Company, began management, including burning and food cultivation, made the area's creeks and meadows rich in farming along Esquimalt Harbour shortly after berries. Streams were used as paths by tradition-Douglas's arrival, transitioning the fur trading economy to an agricultural economy<sup>46,47</sup>. For much of it's al bark harvesters and led back to food-gathering history, View Royal's agricultural community fuelled areas. the growth of urban centres like Victoria and Van-Colonial land management practices have had dracouver.

matic impact on Indigenous relationships with this landscape. Urban forest management can serve as Urban development in the 1930s around Esquimalt Harbour and Portage Inlet was initially accompanan outlet to integrate Indigenous values, perspectives, and thousands of years of land management ied by market gardens and nurseries in its lowlands knowledge back into the management of these until the aftermath of WWII<sup>48,49</sup>. New residents introlands. The Town is working to further dialogues duced new and exotic trees and plants, featuring with local Nations, and will explore opportunities familiar foliage, flowers, and fruits from their places to support reconciliation and culturally sensitive of origin. While some early settlers retained Garmanagement practices through implementation of ry oak meadows on their property, View Royal's this Strategy. growth began in earnest in the 1960s and 1970s, reducing the abundance of native trees and ecosystems within the community. In its transition from an agricultural community to an attractive getaway destination, View Royal has more than doubled its initial population since that time<sup>50,51</sup>.



# **European Arrival**



Native forests in Thetis Lake Regional Park (Emily Norton)

In 1993, Thetis Lake Regional Park was created Despite dramatic change, View Royal's native forto protect 921 ha of native forests and freshwater lakes within View Royal's municipal area, but outside of its Urban Containment Boundary<sup>52</sup>. Today, View Royal would feel like a very different place the Park is managed by the CRD, and supports a than the one we have come to know and love. wide range of recreational opportunities such as cross-country skiing, swimming, running, and cycling.

ests and waters continue to be a critical part of our community fabric. Without our trees and forests,



# **Canopy Cover**

A tree's canopy cover is the area occupied by View Royal's canopy cover in 2019 and 2023 were leaves or needles when viewed from above (Figmeasured using 2019 LiDAR (Light Detection and ure 6). In BC and across Canada, canopy cover is Ranging) data, as well as 2019 and 2023 high-resoincreasingly being used to monitor the growth or lution imagery. Canopy layer processing was supported by machine learning methods. decline of community urban forests over time. Canopy cover can be summarized by different spatial While some canopy analyses below are providareas, often including neighbourhoods, land uses, ed Townwide for context, most focus on its Urban or ownership types. This type of analyses sup-Containment Boundary (UCB) which the Town has a ports insight into how the urban forest is distributgreater ability to influence. ed across the community, and can help shape the development of policy and land use regulations toward achieving a defined canopy cover target.



Figure 6. Canopy cover refers to the leafy upper part of trees when viewed from above (right)

View Royal's Canopy Cover

29%\*

\*162 ha in 2023 within the Urban Containment Boundary.



Thetis Lake Regional Park (Left to Right): Larisa Kurzemnieks, Benedek, Emily Norton, Dave Mantel)





# Community-wide

In 2023, canopy cover within the Urban Containment Boundary (UCB) was 29% (162 ha), down from 31% in 2019. This section explores canopy patterns within the following spatial units:

- Neighbourhood: Trends in canopy cover across View Royal's neighbourhoods
- Land ownership: Patterns of canopy cover across land ownership.
- Land use: Variation in canopy cover across different land uses.



Figure 7. Town-wide canopy cover in 2023 with the UCB

### By Neighbourhood

Canopy cover varies widely, from 79% in Thetis— From 2019 to 2023, canopy declined in all neighdue to extensive parkland-to 23% in Craigflower bourhoods within the UCB. Most saw reductions and Helmcken, which are more urbanized and have of 3–5%, but the Hospital neighbourhood experifewer trees (Figure 8). Thetis (79%) and Atkins (47%) enced an 11% drop. Since most canopy cover lies maintain high cover due to nearby Regional Parks. outside the UCB in CRD-managed regional parks, Harbour also shows relatively high canopy (39%) small losses within the UCB significantly affect due to larger, older residential lots that support maurban tree canopy—especially in residential areas ture trees. In contrast, Craigflower and Helmcken, where the loss is more noticeable and impactful to developed more recently with more intensive land the public.<sup>53</sup>. use, show lower canopy.



Figure 8. Canopy cover by neighbourhood in 2023

### **Canopy Trends**

View Royal has a community-wide canopy cover in Thetis Lake Regional Park and Mill Hill Regionabove that of many peer communities (60%), and al Park (Figure 7). Within the UCB, the low canopy slightly lower than average canopy cover (29%) within the Urban Containment Boundary (UCB) (Figure 9). High canopy coverage across the commun-uses. ity is largely attributed to the extensive tree cover

cover is due to urban land uses such as roads and housing, as well as commercial and institutional



Figure 9. Citywide and UCB canopy cover comparison with municipalities in the region

## 3-30-300 Rule

The 3-30-300 rule has been proposed as an intuitive target that can be used by municipalities to increase access to the benefits that the urban forest provides<sup>61</sup>. It states that each building should have at

### **Canopy Change**

Most canopy cover loss in View Royal between on urban intensification. This represents an accel-2019 and 2023 has occurred within the UCB, which eration from the past five years, during which candoes not include Thetis Lake Regional Park. Its opy cover fell by 2%. Without intervention, increascanopy cover declined from 31% in 2019 to 29% in ing development may further erode canopy cover. 2023 (Figure 10). This amounts to a compounding Tree removal to support the achievement of View annualized rate of loss of roughly 1.1% over that per-Royal's housing target will occur, but development iod. Loss was generally consistent across neighand canopy retention are not mutually exclusive. bourhoods, ranging from 3–5%, and was typically Careful design, policy interventions, and strong localized, tied to specific large development prourban forest management will be required to prejects rather than community-wide changes. serve or restore canopy cover. The Town will need The Hospital neighbourhood experienced a sharpto prioritize not only tree protection but also initiaer decline (11%) due to significant recent developtives that support tree canopy within new developments. Greenfield development in Mixed Residenment following construction.

tial areas saw even higher losses (22%). Together, large greenfield projects and smaller infill developments have contributed to notable canopy loss within the UCB over the past two decades.

As View Royal is now largely built out within the UCB, future growth-including 585 mandated housing units for over 3,200 new residents (a 25% increase over 25 years, or 0.9% annually)—will rely



Figure 10. Canopy cover loss within the Urban Containment Boundary from 2001 - 2023

### By Ownership

is in Thetis Lake and Mill Hill Regional Parks, man- cover. Though they make up 28% of the UCB land aged by the Capital Regional District (CRD). These protected parks will continue providing sizable canopy contributions to View Royal's urban forest incial lands, including the Trans-Canada Highway, in years to come. Within the UCB, over 58% of all canopy cover is located on private property, which is an ownership that makes up 59% of the Town's land base (Figure 11). This statistic highlights the over these lands, they represent important opporcritical role of private landowners in shaping the tunities for future canopy expansion, especially in Town's canopy future, whether through loss or re-settings where trees offer proven public benefits. generation.

More than half of View Royal's total canopy cover Municipal lands support above-average canopy area, they account for 31% of its canopy coverdriven largely by the Town's Parks system. Prov-Victoria General Hospital (VGH), and schools, cover a notable portion of the Town but feature low canopy cover. Although the Town has limited influence

### By Land Use

View Royal's Official Community Plan (OCP) pro-Higher-density land uses such as Intensive and vides a high-level vision for growth, shaping land Neighbourhood Mixed Use provide just 4% of total use and development patterns that affect tree recanopy cover, reflecting their smaller land footprint. tention and planting potential. The UCB's largest Commercial areas, often dominated by surface land uses-residential, parks, road rights-of-way parking, average 13% canopy cover and contribute (ROWs), large-lot and mixed residential, and comjust 2% to the total. Analyzing canopy by land use munity facilities—also host most of the Town's canhelps identify where policy changes or developopy cover (Figure 12). Residential areas make up ment regulations could most effectively increase 24% of the UCB and hold an equal share (24%) of future canopy across the Town. canopy. Parks, while only 9% of the land, contribute 19% of canopy. ROWs, with lower average canopy (19%), still provide 16% of the total due to their extensive reach.



Figure 11. Proportion of View Royal's urban (UCB) canopy cover and land area by ownership type (left), and canopy cover within that ownership type (right) in 2023

Figure 12. Proportion of View Royal's urban (UCB) canopy cover and land area by land use (left), and canopy cover within that land use (right) in 2023

### **Urban Heat**

Reduction in the urban heat island (UHI) effect is a particularly salient ecosystem service that is difficult to assign a fiscal value to because its effect can range from a strain on human health, to biodiversity and even infrastructure. Urban trees reduce the trees and, as a result, land surface temperatures urban heat island effect through the shade they provide and through transpiration. In contrast, impervious surfaces (e.g. roads and buildings) that tend to dominate in scarcely canopied urbanized neighbourhoods both absorb the sun's heat and dissipates that heat more gradually overnight.

There are some neighbourhoods in View Royal that are hotter than others. Shown in Figure 13 are View Royal's Low Canopy Hotspots (LCHs). These are localities where there is both a scarcity of urban are relatively greater. LCH tend to be localities that either feature an abundance of surface parking facilities (e.g., commercial or institutional use) or that are dominated by more recent, denser residential subdivisions with smaller lots where space available for planting comes at a premium.



Figure 13. Low Canopy Hotspot (LCH) mapping within View Royal

Below: Mill Stream Creek (John Newcomb)

# **Street Tree Inventory**

The Town of View Royal maintains an inventory of has seen the consequences of limited urban tree more than 1,200 municipal boulevard trees (i.e., diversity through the fallout of emerald ash borer trees located within the Town's right-of-ways/roads), and Dutch elm disease before it. By prioritizing diincluding the location and genera of those trees. versification of planting stock, communities can build passive resilience by decreasing the rep-View Royal's inventory encompasses 35 genera and 46 species, of which roughly one in three trees resentation of any single species or genus, and are presently maple (Figure 14). Most are red maple therefore the impact of the pests and diseases that specifically (25%), and cherries and plums (9%), they may host. dogwoods (8%), and oaks (8%) are also common.

The value of a current and quality public tree in-While the inventoried boulevard trees only repreventory system cannot be overstated. Real insights sent a small proportion of all trees in View Royal, into the condition, composition, and health of the the dominance of maples is common within North Town's trees are invaluable to operational planning American municipalities and is likely reflective of and would help shape a data-driven approach to the broader planted tree population. Overuse of urban forest management. a single genus, and certainly a single species, is typically thought to reduce the resilience of a tree population through increasing exposure to singular Maple 33% pests, disease, and/or stressors. Eastern Canada Cherries & Plums 9%

# 30-20-10 Rule

recommendation that is used to help increase the resilience of the urban forest<sup>62</sup>. It states that no family should forest, that no genus more than 20%, and that no species should occupy more than 10%. This helps build resilience to pests and diseases which often target individual species or genera, or a small subset of





Figure 14. The relative proportion of genera included in the Town's inventory of street trees (1222)

# **Forested Areas**

View Royal is home to native forest ecosystems unique to Canada, including the Coastal Douglas-fir and Garry oak meadow ecosystems. Thetis and Mill Hill Regional Parks alone contain more than half of the community's urban forest canopy, underscoring the critical role of forested areas in maintaining the Town's canopy cover. View Royal's forested areas presently face various pressures, including the spread of invasive plants, climate change, and development.

View Royal is situated within the Coastal Douglas-fir Moist Maritime Biogeoclimatic subzone (CDFmm). The CDFmm is a unique set of ecosystems that occur in south-east Vancouver Island, portions of the Gulf Islands, and pockets along the south coast and mainland of British Columbia. Vancouver Island's rain shadow, which supports a Mediterranean-like climate allows for a rich flora and fauna to thrive.

The CDFmm's namesake tree is the coastal Douglas-fir, which is the dominant species in much of View Royal's forests. Douglas-fir tolerates a variety of site conditions and can be found in association with most native tree and understory species present in View Royal. Understory plants like Oregon-grape, oceanspray, salal, snowberry, honeysuckle, saskatoonberry, sword fern, bracken, and bald hip rose, along with mosses, lichens, mushrooms, give colour and life to these forests. The Town's largest, and likely oldest, trees tend to be found on sites with deeper soil horizon or where water is abundant (e.g., riparian zones), and on sites afforded the long-term protections offered by parks and protected land uses (e.g., Thetis Lake and Mill Hill Regional Parks, and Knockan Hill Park). It is important to recognize that the CDFmm includes far

more than just Douglas-fir forests. In addition to those forests, the zone includes endangered Garry oak ecosystems, wetlands, and shorelines- all of which can be found in View Royal.

Most of View Royal's forested areas are mature, primarily coniferous forests that have regenerated after historical land clearings in the 19th and early 20th centuries (Figure 15). However, some early successional stands are also present. Early successional forests often consist of deciduous species such as red alder, cottonwood, and big leaf maple, typically found in more recently disturbed areas, riparian zones, or on marginal lands previously used for agriculture or industry.

View Royal's forested areas face significant challenges as the climate deviates from historical norms. Three of the last five years have seen record-breaking wildfires<sup>54,55,56</sup> and temperatures in British Columbia<sup>57,58,59</sup>. Remote sensing analysis conducted as part of this background review has identified more than 4,800 open grown or overstory trees exhibiting signs of decline or dieback in their crowns, an increase of 1120 (30%) since 2019. These trees are predominantly located in Thetis Lake Regional Park. Native species like western red cedar, western hemlock, and grand fir are struggling with the drier summers caused by climate change. The Park is managed by the CRD, so the Town does not have direct control over its management. However, increased fuel loading due to the decline of trees in the Park could increase the risk of wildfire in Town.

Incursions from invasive species are present to some degree in most of View Royal's forested parks and natural areas. English Ivy is a prolific understory plant in some locations, such as in Portage Park, however the efforts of View Royal's

Invasive Species Coordinator and community volas they are on the exterior ('edge') of a stand. As a result, interior trees are commonly less adapted to these forces than their counterparts. Where edge trees are removed with development, this can expose weaker, ill-adapted interior trees to new forces, like strong winds. Tree failures caused by wind (i.e. windthrow) can occur in these circumstances. The risk of windthrow is moderated by site position, context, stand composition, and site conditions. New forest edges can often be made 'wind firm', generally through the insights of a gualified environmental professional (i.e., Registered Professional Forester). There are parks in View Royal, such as Nursery Hill Park, that feature interior trees recently exposed to edge wind loading.

unteers have helped keep their tendrils off of overstory trees and the forest floor. Invasive blackberries, scotch broom, periwinkle, and several other common offenders to southeastern Vancouver Island were also confirmed present during spring 2024 field observations. Endangered ecosystems, such as those associated with Garry oak, should be prioritized in a monitoring a program to support early detection and treatment. Where development creates new forest edges, or otherwise interfaces with existing ones, processes should ensure the integrity of that edge is preserved during construction and after development. Trees growing inside a stand experience sheltered conditions where wind forces are not as strong



Figure 15. Successional stage of View Royal's urban forested areas (right)



Mature Forest (80-240 yrs) Young Forest Tall (35-80 yrs)

# WHAT WE HEARD

# **View Royal's Urban Forest Vision**

Survey respondents were asked to describe their vision of the urban forest. The most common words in their responses were trees (115 mentions), urban (35), and forest (28).



& Values

Strategy

# 3. Looking Ahead

# 3.1 Where we are going

The UFS is meant to guide the management of View Two phases of public engagement will inform the Royal's urban forest in the face of a changing comdevelopment of this UFS. The first phase included munity and climate. Using data sets from BC Stats, an online survey open throughout October 2024. It the Canadian Census, and the Town's 2024 Interfocused on identifying community values and prefim Housing Needs Report, the Town is expected to erences for urban forest management to shape the see an approximate population increase of 9,500 draft UFS' vision, principles, and objectives. The people between 2025 and 2050; to a population second phase of engagement has begun and inof more than 22,000 people within the life of this cludes the opportunity to review this draft UFS, and plan. New residents demand more homes and identify priority actions for its implementation. infrastructure, leading to increasingly tight urban One-hundred-and-twenty (120) respondents particispaces. At the same time climate change will bring pated in the phase 1 online survey. They indicated with it conditions, including storms and extreme three benefits they would like the UFS prioritize: heat, different from those we and our urban forest have known in the past. 1. Ecological: Such as habitat for native (local)

View Royal's Urban Forest Strategy takes guidance from the Town's Official Community Plan, and proposes strategies and actions meant to further the sustainable management of the urban forest in light of the range of threats it faces. In the pages following, we reflect both on the strengths and challenges experienced by the Town's urban forest management program, and the insights gleaned through community engagement, so that we can weave these issues, opportunities, and critical insights into a comprehensive management framework.

Below: Official Plan open house (Town of View Royal)





# 3.2 What We Heard

- plants and animals,
- 2. Environmental: Including stormwater management, air purification, and wind protection. and
- 3. Climate resilience: Like cooling, flood protection, carbon capture and carbon storage.

Eighty-five (85%) of respondents were concerned about tree loss, 80% would like to see an increase in Town-wide canopy cover, and over 75% believe that the protection of native trees, habitats, and biodiversity are high priorities. Over half of respondents (54%) are willing to support the Town increasing funding to its urban forest program to improve service levels.

# **Strengths & Opportunities**



This Strategy outlines a vision and actionable goals for managing the urban forest through 2045. Its goals are reinforced by the Town's other strategic policy documents, including its Strategic and Official Community Plans, and reflect an institutional awareness of the urban forest's importance.



View Royal's urban forest is home to the endangered Garry oak ecosystem which is among Canada's most biodiverse and threatened plant communities. These meadows, once maintained by Indigenous cultural burning practices, now face pressure from urban development and Douglas-fir encroachment due to fire suppression. Efforts like the Town's land transfer to Mill Hill Regional Park in 2022 support the protection of species at risk highlight its ongoing committement to conservation.

ion Woodland Aart In Work

View Royal's large park system ranges from Community Parks, such as Edwards Park and Robin Hill Park, to Natural Greenspace, Linear Parks like Portage Inlet Linear Park, and Regional Parks such as Eagle Creek Park.

The Town of View Royal has the opportunity to strengthen relationships with the Xwsepsum (Esquimalt Nation) and Songhees Nation, whose ancestors have stewarded the area for thousands of years. Despite the significant loss of access to traditional territories, View Royal's native forests and waterways remain critical to Host Nations' cultural practices. The Town is committed to enhancing dialogue with Host Nations and recognizes urban forest management as an opportunity to integrate Indigenous values, traditional knowledge, and culturally sensitive practices (see Strategy 5.1 in Section 5).

Programs like the Resident Tree Planting Program and the Greater Victoria Green Team foster strong community stewardship of the urban forest, enhancing public involvement and support for tree-related initiatives.

Existing regulations safeguard trees on both public and private lands, and most of the Town's urban forest is protected within Thetis Lake and Mill Hill Regional Parks. These areas act as vital reservoirs of biodiversity and ecosystem services.







# Challenges

Urbanizatio



As with most Canadian communities, growth in View Royal over the past two decades has resulted in net loss of the community's canopy cover. The that have contributed to this exchange will continue to amplify as the community looks forward to more than 2,800 new housing units and thousands more residents over the next 20 years. Processes and planning must adapt and diverge from historic patterns of growth and design if View Royal would like to maintain or increase its urban forest, rather than face continued loss.

The ii year; includ press as a s urbar pract we m

Urban forest management responsibilities are divided among various departments, generally assigned to staff as a small part of their larger role within the municipality. This lack of dedicated capacity and very limited program funds restricts program capacity at present and would not facilitate meaningful implementation of this plan.

The Town has a partial street tree inventory that would benefit from being updated and completed with key attributes. Current datasets like a complete inventory support data-driven decision-making and support program monitoring efforts.

View Royal's forests are increasingly challenged by the range of threats faced. Remote sensing has detected a 30% increase in declining trees since 2019, especially in Thetis Lake Regional Park. Invasive plants such as English ivy, Himalayan blackberry, Scotch broom, and periwinkle are widespread, despite management efforts.

The impacts of climate change are being felt more with each passing year; extreme heat, drought, and wildfire. Additional challenges include flooding risks from sea level rise and increased rainfall. These pressures will not subside, and in fact, climate change may manifest as a source of underlying stress, that will erode the resilience of the urban trees to resist a number of other urban stressors. Management practices can help adapt to climate change, but it is now something we must plan for, rather than hope to avoid.





# BY THE 2080s, PROJECTED CHANGES\* TO:



### TEMPERATURES

More extreme heat events with days above 25°C tripling. Milder winters. Summer extremes of 38°C (1-in-20 hottest day).



# EVAPOTRANSPIRATION

Increased rates of evaporation and transpiration from waterbodies, soil and plants.



### LESS MOISTURE AVAILABILITY

LARGER FIRES

WILL LIKELY CAUSE

SPECIES DISTRIBUTION SHIFTS

Forest species may shift northward

and upslope as heat and moisture

conditions exceed their tolerances.

Evapotranspiration will increase relative to precipitation, limiting water available to trees reducing growth, potentially leading to decline.

# PRECIPITATION

Heavier rainfalls and more rain except in summer. Longer droughts and decreasing snowpack.



### **SNOWMELT** Faster snowmelt. Earlier peak spring flows and flooding. Lower late-summer flows.



**GROWING SEASONS** Longer and warmer growing season, increasing by 83 days.



# VARIABILITY More frequent and unseasonal extreme weather

\* Projected changes based on modeling for the Capital Regional District using the Intergovernmental Panel on Climate Change's Representative Concentration Pathway 8.5 scenario (RCP8.5), which represents a high emissions pathway with limited mitigation of greenhouse gas emissions by the end of this century (or "Business as Usual").



CO.

# MORE PESTS AND INVASIVE SPECIES

LONGER FIRES SEASONS AND

burn larger areas because of hotter drier summers and vegetation.

Fires may occur more often and

Some pests could reproduce more rapidly and more often. Water stressed trees and ecosystems are more vulnerable to attack and invasion.

# LONGER, WARMER GROWING SEASONS

Longer growing seasons may support more growth, species diversity and potentially more carbon sequestration where growing conditions are suitable.



# MORE EXTREME WEATHER EVENTS

Extrem heat, precipitation, freezing rain, heavy wet snow, flooding, landslides, windstorms and other events may happen more often leading to more tree stress and damage.



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# **4.** Strategic **Framework**

The Town of View Royal's urban forest strategic framework is grounded by a community-based vision and guided by five overarching goals. The urban forest vision reflects our community's urban forest aspirations for 2045:

Our Town's urban forest is celebrated for its diverse, mature trees and interconnected green spaces. It provides vital habitat for native plants, pollinators, and wildlife, while enhancing community resilience, health, and well-being. By making space for trees, we have expanded our urban forest and strengthened our sense of place. We are stewards of our environment, and the trees we plant today will benefit our community for generations.

The five goals of the UFS work together to provide a clear and cohesive roadmap for managing View Royal's urban forest. Each goal is supported by specific strategies and actions that offer targeted guidance for implementation. Progress will be measured through defined indicators and sustained by cross-departmental coordination and partnerships with external stakeholders.

Several 'quick start' actions will enable View Royal to begin rapidly working towards positive urban forest outcomes within the early stages of the Strategy's life. In parallel, 'priority actions' will require more time and resourcing to implement but will have the most significant impact on the success of View Royal's urban forest program.

Ultimately, the strategic framework will allow the Town of View Royal to ensure that its urban forest continues to meaningfully contribute to the community's livability, identity, and resilience for generations to come.

# Strategic Framework



### Goal 1. Plan

1.1 Ensure planting standards support long-term tree growth

1.2 Ensure land use planning supports the urban forest

1.3 Ensure rates of tree planting support net new outcomes

1.4 Consider demonstrable need in program decision-making

## Goal 2. Manage

2.1 Improve urban forest governance 2.2 Prioritize program monitoring and reporting 2.3 Sustainably resource urban forest management and the implementation of this Strategy.



# 30%

View Royal's Urban Forest Vision

**Canopy Cover Target** (2045)

# **5** Goals

# **14 Strategies**



# 19 Core Actions (!)

Are essential to program performance and no net loss of canopy cover.

# Goal 3. Maintain

3.1 Use best practices and industry benchmarks in the Town's maintenance regime 3.2 Maintain forested areas to a reasonable standard of care

# **Goal 4. Protect**

4.1 Enhance regulatory tools and processes to achieve the right balance between tree protection and community growth. 4.2 Support the resilience of both View Royal as a community and its urban forest.

# **Goal 5. Partner**

5.1 Build relationships with Host Nations and Indigenous Peoples living in View Royal 5.2 Build community knowledge of and participation in urban forest management 5.3 Develop strategic partnerships

# 5. Action Plan

# Goal 1. Planning and design processes facilitate the growth of the urban forest.

# Strategy 1.1. Ensure planting standards are supporting long-term tree growth.

The best tree outcomes are often decided well in advance of the tree being planted. In constrained urban growing environments it is often the case that the qualities of planting sites dictate the success and longevity of the trees planted within them. Planting area, stock selection, soil qualities and volumes, spacing, irrigation and a range of other considerations all influence which trees are likely to survive on a site. By incorporating arboricultural best practices into development regulation and planting processes, trees planted are expected to have longer lifecycles and provide more benefits.



Poor planting practices (above) and land clearing (right) can be mitigated through thoughtful land use planning, planting standards and design (Diamond Head Consulting)

**KEY INDICATOR(S)**:

M3. Average DBH of boulevard trees at time of removal

**BASELINE (2025):** Unknown

**TARGET (2045):** >20 cm

Action 1. Ensure trees entering the boulevard inventory are inspected to verify compliance with stock and establishment standards prior to their acceptance by the Town.

Action 2. Update View Royal's Subdivision and Development Servicing Bylaw and standard details to enhance tree planting conditions in right-of-ways, including minimum soil volume, irrigation, boulevard width and soil depth requirements.

Action 3. Review tender specifications and warranty inspection standards for contracted tree planting.

**Action 4.** Review the Town's details for boulevards, tree planting, tree protection, and tree pits. Ensure design is aligned with best practices, and would support full tree life-cycles.

Action 5. Spatially define the areas across the Town where the use of native vegetation is to be prioritized given biodiversity preservation objectives within or adjacent to those areas (e.g. shoreline parks, park natural areas, and ESA buffers).

# Strategy 1.2. Ensure land use planning is supporting the urban forest.

Nearly 60% of View Royal's urban land base under private ownership. Land use planning polic and tools such as the OCP and zoning regulation play a significant role in shaping our community urban forest through determining the amount of space available for tree planting on private property. This is significant because the planting oppotunities, or lack thereof, created during development are likely to persist for decades.

Updates to land use planning policy and regulations can help ensure that as the Town grows to meet housing and infrastructure needs, it is also supporting urban forest goals. Maintaining, and certainly growing the urban forest canopy, will not be attainable otherwise. Action 6. Adopt OCP policy supporting the urban forest and UFS that provides enhanced direction on the handling of View Royal's urban forest within the community's guide to growth.



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**KEY INDICATOR(S)**:

M4. Urban core canopy cover

# **BASELINE (2023):** 29%

**TARGET (2045):** 30%

Action 7. Review View Royal's Zoning Bylaw to ensure performance criteria, including surface parking, landscaped open space, setbacks, and lot coverage, are supporting consistent inclusion of trees on development sites.

# **Canopy Cover Pathways**

a canopy cover target as a measurable indicator of their urban forest and urban greening aspirations. The establishment of an informed canopy cover target is a nuanced process, and gives consideration to the unique contexts relevant teach community.

While the OCP has committed to an increase in canopy cover, the community has yet to adopt a formalized target to better define this goal. The Town of View Royal currently has 29% urban canopy cover. View Royal has chosen to use an urban (i.e., UCB) canopy cover target in recognition that exists as protected parkland, and therefore does not face the same type of pressures as those in the heart of the community.

A growing number of communities have adopted Through the development of this document, the Town has prepared three canopy cover scenarios (Figure 17): canopy growth, canopy net neutrality, and status quo (described in more detail adjacent).

While the document uses possible canopy cover pathways to frame future program trajectories, it is important to recognize that a full range of program actions, beyond just the act of planting of trees, benefits the sustainability of an urban forest management program, supports community resilience to climate change, and elongates tree lifecycles. Activities like cyclical pruning, tree watering, the vast majority of the community's rural area community outreach, planning and development processes, and program monitoring each are every bit as important to growing View Royal's urban forest canopy as is the act of planting trees itself.



Figure 17. View Royal canopy cover pathways: Canopy growth, net neutral, and status quo.

Under a "canopy growth" scenario, View Royal's canopy would increase to at least 30% (+1%) over the coming two decades. Trends beginning over the past two decades would be reversed despite historic rates of loss and projected future population growth. New processes, resources, and procedures would build resilience to climate change and other developing forest health concerns. Rates of tree planting would not only offset loss, but would be sufficient to increase canopy cover. To achieve this, the existing gap between available program resources and demand would need to be considerably narrowed, and iterative evaluation may be necessary to ensure program development in accordance with the UFS remains adequately resourced.

The "canopy growth" scenario would demand substantial, but gradual implementation of this Strategy over the coming two decades. Achieving net canopy growth involves far more than just planting trees, and dollars spent toward this ends are dollars saved on tree removal, reactive management, and disaster relief.

-730 trees planted/replaced annually within the Town (est. 100 on municipal property, 2000 by 2045) \$250,000 - \$500,000 (2045) 🗰 15,000 - 25,000 Residents

Under a "net neutral" scenario, View Royal's canopy would remain at its current coverage (29%) over the coming two decades. Trends beginning over the past two decades would be reversed, to the extent that canopy loss is not continued despite forecasted growth. To achieve this, the existing gap between available program resources and demand would need to be narrowed, and particular I attention paid to View Royal's development processes, so as to ensure tree protection and replacement requirements are not net-negative.

The "net neutral" scenario would demand at least partial implementation of this Strategy over the coming two decades. Actions marked as core ( 🕛 ) may be enough to realize this pathway. The emphasis under net neutral is endorsing the minimum programming that may be necessary to avoid continued loss in the face of anticipated growth.

\$150,000 - \$250,000 (2045) 15,000 - 25,000 Residents

Under a "status quo" scenario, there would be no changes to the Community's existing program, structure, or meaningful change in level of resourcing. Trends beginning over the past two decades would be expected to continue over the next two decades, while at the same time pressures associated with climate change other forest health concerns would continue to amplify. The existing gap between available program resources and demand may widen. Under such a scenario, continued canopy loss would be assured, with the degree of loss moderated both by the magnitude of growth experienced over coming decades and by policy interventions the Town may explore to mitigate loss. Capital spending associated with severe weather and climate change may be expected to rise, where preventative measures and proactive planning are out of reach, given available resources.

The "status quo" scenario is illustrative, meant to identify the likely outcomes if programming moving forward remains unchanged from that of the past two decades. In practice, nothing in this Strategy would need to be acted on in order to realize a status quo scenario.

~ rates of canopy loss reflective of 20-year average No assumed budgetary commitments in 15,000 - 25,000 Residents

# Strategy 1.3. Ensure rates of tree planting are supporting net new outcomes.

If View Royal desires to maintain its urban forest canopy over the coming two decades, more than 8,600 new and replacement trees will need to be planted over the coming two decades (roughly 430 trees per year). This number is even higher, at 14,600 new and replacement trees (roughly 430 trees per year) if the Town wishes to grow its canopy cover to 30% (Figure 17). The Town can endeavour to plant trees itself however this is not a initiative the Municipality will be able to rise to alone. Given how much of View Royal falls on private property, residents, businesses and community members will play a significant role in the Town's urban forest change (positive or regressive) moving forward.

To support the maintenance of tree canopy or to ensure future canopy growth, the Town of View Royal will need to increase rates of tree planting from those observed historically, while at the same time offsetting canopy loss on private property. Tree planting plans can support the Town with assessing suitable planting sites that consider program budgets, practical constraints, and program objectives such as reducing urban hotspots (Figure 13).

**KEY INDICATOR(S)**: M5. Net new public trees planted

**BASELINE (2025)**: Net negative (2001-2023)

**TARGET (2025-2045):** 730 (1% growth); 50 - 100 on municipal property

Action 8. Prepare five-year tree planting plans to direct short-term tree planting programming toward the Town maintaining the desired net new tree planting.

Action 9. U Municipal tree planting targeting 50 - 100 trees per year between parks and boulevards and desired canopy cover pathways.

Action 10. Leverage restoration and afforestation to grow urban forest canopy within forested areas and in naturalization sites.

Action 11. U Establish an adopt-a-tree program where the Town will plant trees in underutilized boulevard or park space in exchange for resident-led care through establishment.

# Strategy 1.4. Consider demonstrable need in program decision-making.

View Royal's canopy cover is distributed unevenly across the community. Non-uniformity in the Town's canopy distribution is fairly typical in a growing urban community, but it means that the benefits associated with trees vary in their provision from one corner of the community to the next. By being strategic with program investment, incentives, and regulation, View Royal can encourage canopy growth in the parts of the community where it is lowest, at present.

Action 12. Explore opportunities for improving Often, the negative impacts associated an uneven urban forest access and education in areas with conurban forest distribution disproportionately impacts centrations of vulnerable populations. vulnerable populations within a community. The impacts of heat, associated with the urban heat island **Action 13.** Ensure community engagement and effect (and low canopy cover), is more acutely felt outreach programming is broadly accessible to where the costs of air conditioning are out of reach, any interested members of the community. Explore or amongst elderly populations, children, or newopportunities for improving urban forest access and comer members of the community. There are proeducation in low tree equity areas. cesses View Royal can initiate to ensure its urban Action 14. Explore requiring dedicated tree corriforest remains accessible to all members of the dors, boulevards clear of active transportation facommunity, and to ensure programming is reaching cilities or any other community infrastructure, along all community segments. priority right-of-ways such as: (i) those located in



Elderly couple enjoying nature's benefits (Nutlegal Photographer)

# Case Study: Burnaby's Tree4Free Program

**KEY INDICATOR(S)**: M6. Spatial heat disparity

**BASELINE (2025):** 15°C

**TARGET (2045)**: 10°C

Transit Oriented Development areas and along arterial/collector corridors, or (ii) areas of lower tree equity where there is a lower density of public trees. Identify these locations as a schedule in the OCP, prepare accompanying policy, and consistently require widening dedications within these areas.

# Goal 2. Program governance supports the Town in meeting it's urban forest aspirations.

# Strategy 2.1. Improve urban forest governance to achieve positive urban forest outcomes.

Urban forest governance involves both administrative structures and cultural norms that influence how decisions about urban trees are made and implemented. This includes the adoption of appropriate tools to support urban forest outcomes, as well as interdepartmental and inter-agency coordination among stakeholder organizations. Clear mandates, dedicated funding, and trained personnel are essential components, as is the integration of urban forestry into broader municipal goals such as climate resilience, equity, and public health.

Urban forest governance is shaped by how trees are valued within municipal institutions and the community. This includes the degree to which trees are seen as infrastructure, how engaged residents are in stewardship, and whether diverse community perspectives—especially from historically excluded groups—are incorporated into planning processes. A strong urban forest culture within a municipality supports long-term commitment, intergenerational thinking, and shared responsibility, which are all critical for maintaining and growing healthy, equitable urban forests.



Water bag for young trees in View Royal (DHC)

**KEY INDICATOR(S):** M7. Working group meetings

**BASELINE (2025)**: None

**TARGET (2045)**: Twice annually

**Action 15.** Prepare and adopt a Town Tree policy to formalize: green infrastructure within the Town's broader asset management program, risk management procedures concerning urban forest assets, integrated pest management procedures, public tree protection, replacement, and compensation requirements, and tree protection and inspection requirements with respect to capital works.

Action 16. U Establish dedicated tree maintenance and planting budgets within parks. Establish initial budgets based on a life-cycle costing approach.

Action 17. U Establish an interdepartmental Urban Forestry working group and meet biannually to review progress on implementation, and to review current challenges and opportunities impacting the Town's urban forestry program.

# Strategy 2.2. Prioritize program monitoring and reporting.

In order to understand how the Town is doing relative to its urban forest ambitions, the Municipality must have the tools at its disposal to track progress and evaluate change. Regular monitoring and data collection provide these insights and are essential in supporting adaptive urban forest management, enabling responsiveness to the ranging pressures faced.

Completing and maintaining a comprehensive street tree inventory will allow the Town to track improvements in urban forest health and prioritize maintenance efforts<sup>63</sup>. Monitoring change in canopy cover, planting success rates, tree condition, Action 18. Undertake a review of the Urban Forest and species diversity can all be used to evaluating Strategy every five years. the effectiveness of the Town's management ef-Action 19. U Establish and maintain a GIS-based forts, and for identifying areas of necessary change. boulevard tree inventory featuring a technical de-View Royal's success can then be shared in regular sign aligned with industry best practices and update reports that support building awareness and develthe inventory in-step with a proactive maintenance oping ongoing support for the program. regimen.



Collecting tree inventory data (DHC)

# **KEY INDICATOR(S)**:

M8. Tree condition rating; M4. Urban core canopy cover

## **BASELINE (2025)**: Unknown; 29%

## **TARGET (2030)**:

<10% in 'Poor' or worse condition; 30%

Action 20. Produce a new urban tree canopy dataset, derived from current LiDAR and imagery datasets, on a five-year interval.

Action 21. Produce a State of the Urban Forest report on a five-year interval to report on key program metrics and explore changes in the urban forest since prior reporting

# **UFS Monitoring Approach**

monitoring it's progress in the implementation of identified through the next (five-year) review of the the UFS. Table 2 contains a compilation of the indi- UFS. cators detailed throughout this Action Plan, as well as a small selection of supplementary indicators to further support program monitoring, administration, and decision-making.

The table describes each indicator, as well as the strategy it is most associated with, methods and datasets leveraged in its tracking, the frequency at which measurements will be undertaken, as well as the most current measurement (i.e., Baseline) and the target associated with it. If indicator measures suggest the Town is headed in the wrong direction with respect to one or more indicators through the

Table 2 Monitoring framework to track the implementation of View Royal's Urban Forest Strategy

Indicator	Method	Frequency	Baseline	Target
<b>M1.</b> Average DBH of boulevard trees	Inventory	Annual	Not Tracked	20 - 40 cm
<b>M2.</b> Interdepartmental working group meetings.	Calendar	Twice Annual	None	Twice Annual
<b>M3.</b> Average DBH of boulevard trees at time of removal	Inventory	Ongoing	Not Tracked	>20 cm
<b>M4.</b> Urban core canopy cover	LiDAR + Orthoimagery	2 years	29%	30% by 2045
<b>M5.</b> Net new public trees planted	Inventory	Annual	Not Tracked	513
<b>M6.</b> Spatial heat disparity	Thermal + Orthoimagery	5 years	15°C	5°C
M7. Working group meetings	-	Annual	Not Tracked	2
<b>M8.</b> Tree condition rating	Inventory	5 years	Not Tracked	<15% in 'Poor' or worse condition
M9. Inventory update cycle	Inventory	Annual	Ad hoc	7 years, iterative
M10. Program budget	Operating	Annual	\$6.50 / capita	\$10 / capita
M11. Cyclical pruning cycle	Inventory	7 years	Reactive	7 years, iterative
M12. Forest stand condition ratings	Inventory	Ongoing	Not Tracked	<20% 'Poor' or worse condition
M13. Genus and species diversity	Inventory	5 years	33% maple 25% red maple	< 30% Genera < 20% Species
M14. Program budget	Capital Budget	Annual	\$70,000	\$250,000
<b>M15.</b> Annual volunteer hours	-	Annual	Not Tracked	>100 hours

The following details View Royal's approach to life-cycle of this plan, adaptive measures may be

# Strategy 2.3. Sustainably resource urban forest management and the implementation of this Strategy.

Urban forest management responsibilities are currently dispersed across Municipal Departments. Without dedicated staff, urban forestry competes with other core professional responsibilities, limiting the Town's ability to manage its trees efficiently. Establishing a full-time urban forestry position will develop critical in-house arboriculture expertise, serving ranging utility in urban forest management efforts.

Existing levels of program funding will not be sufficient to meaningfully implement this UFS, nor to achieve the central objectives of the program described. Creating full-time or seasonal positions funded through partnerships, grants, or youth employment programs can leverage external support to add capacity to realize our urban forest vision.



Ornamental boulevard (DHC)

**KEY INDICATOR(S):** M10. Program budget

**BASELINE (2025)**: ~\$6.50 per capita

**TARGET (2045)**: \$10 per capita

Action 22. Access external employment funding, such as Canada Summer Jobs wage subsidies, to employ youth over the summer and explore sustainable funding for student and internship positions that can contribute to a wide range of stewardship, tree inventory, and other projects.

Action 23. U Establish a Town arborist or urban forester position within Parks to broadly enhance urban forest outcomes across all program areas and to support ongoing implementation of this Strategy.

Action 24. Transition the Town's Invasive Species Volunteer Coordinator to a full-time equivalent and expand community outreach, education, and stewardship programming.

Action 25. O Access external funding opportunities to support tree planting, such as the Growing Canada's Community Canopies (GCCC) initiative.

# **Goal 3.** Urban forest maintenance regimen are aligned with industry best practices.

# Strategy 3.1. Utilize best practices and industry benchmarks through the Town's maintenance regimen.

Like any other living thing, trees benefit from care throughout their life-cycle. A thoughtful and proactive maintenance regimen helps to maximize tree health, minimize associated risk, and ensure tree longevity. Younger trees often benefit from watering, structural pruning, and protection through establishment, and mature trees can benefit from pruning, integrated pest management, and various other life-cycle activities. Good care improves tree resilience to pests, diseases, and the impacts of climate change. A proactive maintenance regimen also tends to result in less frequent/intensive responsive maintenance activities and better prognosis for the tree. Tree care can be thought of in much the same way as dental hygiene; if you attend regular checkups and practice good dental care, your costs for service will be spread out across smaller appointments and will probably yield better outcomes than if you just see a dentist when you develop tooth pain.

**KEY INDICATOR(S):** M11. Cyclical pruning cycle

**BASELINE (2025):** None

**TARGET (2045):** Seven years

**Action 26.** Expand the Town's watering program to water newly planted trees weekly in the growing season for a period of 3 to 5 years after planting.

**Action 27.** Transition to a seven-year cyclical pruning cycle for all inventoried boulevard trees.

# Strategy 3.2. Maintain forested areas to a reasonable standard of care.

View Royal is home to a rich mosaic of ecosystems, including coastal Douglas-fir forests, Garry oak meadows, riparian corridors, and wetlands. These systems support a wide range of native biodiversity, from sensitive plant communities to birds, amphibians, and pollinators. The town's natural areas are not only ecologically significant but also provide valuable services to the community—such as stormwater regulation, climate resilience, recreational opportunities, and a strong sense of place.

Action 28. Prepare forest management plans for A proactive forest management approach is essenflagship parks including Nursery Hill Park, Kelvin tial to maintaining the health and function of these Grove/Wilfert Park, Eagle Creek, Robin Hill, Porecosystems. By planning ahead, the community tage Park, to define long-term objectives for forest can reduce wildfire risk, manage invasive species, management and identify short-term management and support native habitat restoration. Integrating actions to achieve objectives. Ensure current assessbiodiversity thinking into forest management planments of forest health underpin forest management ning helps ensure that ecological integrity is preplanning efforts. served while also adapting to climate change and Action 29. Prepare a biodiversity strategy to guide urban development pressures. Strategic, long-term the management of View Royal's natural ecosystems, planning allows View Royal to protect its natural including rare ecosystems and species (e.g. Garry heritage while building a more resilient and sustainable future. oak ecosystems), habitat hubs and corridors, their protection, invasive species management, access and recreational usage.

Thetis Lake Regional Park (Emily Norton)



**KEY INDICATOR(S)**:

M12. Forest stand condition ratings

**BASELINE (2025):** Unknown

# TARGET (2030):

<20% of stands 'poor' or worse condition

# Goal 4. View Royal protects it's urban forest.

# Strategy 4.1. Enhance regulatory tools and process are achieving the right balance between tree protection and community growth.

Large mature trees offer significant contributions to View Royal's canopy cover and generate substantial community benefits. Given the decades it requires for new trees to achieve the size and stature of a mature tree, their retention is a critical element in the Town achieving its urban forest management goals.

View Royal can strengthen its urban forest by adopting tools that prioritize the protection of trees, native soils, and sensitive ecosystems throughout the development process. Policies that require careful site assessment, promote thoughtful design, and incentivize conservation can help preserve ecological function, support climate resilience, and ensure long-term community benefits. Clear standards and accountability measures also reinforce a culture of stewardship and responsible land use.



Horticultural boulevard planting in View Royal (DHC)

Action 30. Establish a Wildfire Hazard Development Permit Area (DPA), including accompanying wildfire risk mapping as guided by View Royal's Community Wildfire Resiliency Plan.

Action 31. Require development proposals that would involve modification of an existing forest edge, or the creation of new forest edge, to be supported by a wind firm assessment prepared by a qualified professional.

Action 32. Review the Town's Natural Watercourse and Shoreline Areas DPA, as well as the Sensitive Terrestrial Ecosystem DPA to ensure mapping and associated requirements are aligned with the Town's broader vision for its urban forest management and natural systems.

Action 33. Develop a Terms of Reference for arborist reports and tree surveys, including specifying survey requirements and the conditions under which letters of assurance and/or arborist supervision will be imposed.

Action 34. Formalize a process for bonusing (e.g., height, floor area) where trees, or native soils, are voluntarily protected through development, or where proposed site configuration will support greater tree planting than would be supported by meeting minimum requirements (e.g., landscaped area, expanded setbacks, lot coverage, etc.). Include policy supporting this bonusing in the Town's OCP.

Action 35. Update contract language to require hold-backs related to tree protection where private contractors are working around public trees during capital projects.

**Action 36.** Review the Town's Tree Protection Bylaw to ensure alignment with broader community objectives for canopy growth.

Action 37. Explore the potential of a Landscaping Bylaw (s.527 of the LGA) toward improving consideration for the urban forest through development processes.

# Strategy 4.2. Support the resilience of both View Royal as a community and its urban forest.

Inventoried street trees only represent a small potion of View Royal's urban forest. However, the over-reliance on maples identified through the inventory is consistent with trends across Non-America. Urban forests that are composed of small number of species tend to be less resilies to stressors like climate change, pests, and d eases<sup>64</sup>. Emerald ash borer and Dutch elm disea have each contributed to the widespread decline of ash and elms due to their overuse in Northea and Central North America.

Developing tree species selection requirement and/or recommendations for public and privaland could improve the resilience of the urban for est by diversifying the species that compose it. T 30-20-10 Rule is a commonly used guideline to es sure that no tree species, genus, or family occupi more than 10%, 20%, and 30% of the urban for respectively.

**Action 38.** Manage the diversity of public trees by limiting the continued planting of overrepresented species on public land. Aim for the Town's tree invertory to include no more than 20% of any single genuand no more than 10% of any single species.

Edwards Park Viewpoint (Kevin Light Photo)



KEY INDICATOR(S): M13. Genus and species diversity BASELINE (2025): 33% maple; 25% red maple TARGET (2045): <20% any one genera, <10% any one species
 <b>Action 39.</b> Consider sourcing climate-adapted native seed stock for use in the Town's native ecosystems.
<b>Action 40.</b> Adjust terms of reference for landscape plan submissions for large developments to include planting stock selection that achieves a minimum diversity of 3-5 individual species well-suited to the site.
<b>Action 41.</b> Support implementation of the actions contained to View Royal's Community Wildfire Protection Plan.
<b>Action 42.</b> Adopt FireSmart principals in landscape management, programming, and treatments to build

# Case Study: July 2020 Mill Hill Fire and Community Wildfire Preparedness

In July 2020, a wildfire ignited in Mill Hill Regional Park, situated between Langford and View Royal. The fire was first reported around 5 p.m. on July 21 and rapidly expanded to nearly two hectares. Fire officials determined the blaze was likely human-caused, possibly due to a discarded cigarette or an unattended campfire, as no weatherrelated factors like lightning were present.

Firefighting efforts involved crews from Langford, View Royal, Colwood, Esquimalt, and the B.C. Wildfire Service, totaling around 70 personnel. The challenging terrain required extensive hose deployment, and aerial support from helicopters and air tankers was crucial in containing the fire. By July 29, the fire was officially declared extinguished, with no structures damaged.

This incident underscores the importance of fire safety, the threat it poses to View Royal as a Community, and the resources these events can consume in response.

Review View Royal's Community Wildfire Resilience Plan, schedule a free Firesmart Home Assessment, and learn the ways the Municipality is managing wildfire risk with your help through **View Royal's FireSmart webpage**.





# **Goal 5.** Sustainable urban forest management is achieved through partnership and community investment.

# Strategy 5.1. Build relationships with host Nations and Indigenous Peoples living in View Royal to integrate Indigenous perspectives with urban forest management.

Expanding government-to-government relationships with Esquimalt and Songhees Nations is vital to building a more inclusive and respectful approach to urban forest management in View Royal. These partnerships can help identify shared priorities, foster mutual learning, and ensure Indigenous values, rights, and Traditional Knowledge are meaningfully reflected in how forested areas are cared for and protected.

Collaborative efforts to identify culturally significant species, climate-resilient planting opportunities, and high-priority forested areas can support both ecological and cultural objectives. Integrating Indigenous perspectives into urban forestry planning strengthens reconciliation efforts and contributes to more holistic, place-based stewardship. Action 43. Expand government-to-government relationships with Esquimalt and Songhees Nations to better understand how Indigenous values and interests might be reflected in urban forest management practices, where high priority forested stands exist within View Royal, and identify opportunities to integrate Traditional Knowledge and land management practices into forested areas management.

Forest path in Thetis Lake Regional Park (Emily Norton)

# Strategy 5.2. Build community knowledge of and participation in urban forest management.

Encouraging community participation and knowledge sharing is key to the long-term success of urban forestry in View Royal. Making information accessible through diverse communication channels ensures residents across all demographics can stay informed and engaged. Public access to urban forestry data, along with tools for reporting local concerns, fosters transparency and strengthens the relationship between the Town and its residents.

Programs that support direct involvement, such as tree planting opportunities, deepen public connection to the urban forest and encourage shared stewardship. Regular updates and educational materials help build community understanding, promote best practices, and maintain momentum as the Town's urban forest strategy is implemented.
 Action 44. Ensure important urban forestry communications use a diversity of print and digital avenues to reach all segments of View Royal's population.
 Action 45. Make urban forestry data, including tree canopy mapping and inventory datasets, publicly available.



KEY INDICATOR(S):

M15. Annual volunteer hours

**BASELINE (2025):** Not tracked

**TARGET (2030):** >100 hours

Action 46. Prepare a biannual newsletter to communicate key urban forestry messages, updates, and progress on UFS implementation.

Action 47. Continue to offer View Royal's Resident Tree Planting Program and expand it if demand outpaces current program capacity. Add non-invasive non-native tree species to the planting list for areas of the town that are not connected to natural ecosystems.

**Action 48.** As demand justifies, further build on the successful partnerships and programming delivered through arrangements with the Greater Victoria Green Team (GVGT).





# Strategy 5.3. Develop strategic partnerships to support the urban forest.

A wide range of actors are involved in the management of the Town's urban forest. Community mer bers, utility companies, educational institution and various governmental and non-government organizations manage trees on their property. Co ordination between these actors can improve ou comes for trees and forests.

Community and inter-agency partnerships pla a vital role in supporting a healthy and res ent urban forest. By working collaboratively wi service providers, educational institutions, ar regional networks, View Royal can align goa reduce conflicts, and strengthen the effective ness of urban forest initiatives. These relation ships help ensure that infrastructure planning land management, and tree protection effort are better coordinated and mutually supportive

Engaging youth, professionals, and researched through education and knowledge-sharing fosted long-term stewardship and builds capacity with the field. Partnerships also create opportunities f innovation, shared learning, and the developmed of consistent best practices across jurisdictions enhancing the collective impact of urban forest efforts.



structure as (e.g., utility supported	and minimum planting setbacks from infra ssets and to identify acceptable solutions sleeves, root barriers, vertical setbacks) in meeting minimum setbacks to reduce
the Greater Shoreline ( mentary Sc engage yo	• Explore partnership opportunities with r Victoria School District (GVSD), including Community Middle School, Eagle View Ele chool, and View Royal Elementary School uth in educational programs that promote st awareness and foster student interest i
itiatives tha network of municipal s Focus on s	• Actively participate in and support at utilize the Capital Regional District's (CR urban forestry professionals, including staff, nurseries, consultants, and academic sharing knowledge and collaborating to ey challenges.
versity, the ondary inst	• Explore partnering with Royal Roads Ur University of Victoria and other post-sec- titutions to support research and workford ent in View Royal's urban forest.

# 6. Implementation Plan

# Action

Goal 1. Planning and design processes facilitate the growth of the urban forest.

## Strategy 1.1. Ensure planting standards are supporting long-term tree growth.

Action 1. Ensure trees entering the boulevard inventory are inspected to verify compliance with stock and establishment standards prior to their acceptance by the Town.

Action 2. Update View Royal's Subdivision and Development Servicing Bylaw and standard details to enhance tree planting conditions in right-of-ways, including minimum soil volume, irrigation, boulevard width and soil depth requirements.

Action 3. Review tender specifications and warranty inspection standards for contracted tree planting.

Action 4. Review the Town's details for boulevards, tree planting, tree protection, and tree pits. Ensure design is aligned with best practices, and would support full tree life-cycles.

Action 5. Spatially define the areas across the Town where the use of native vegetation is to be prioritized given biodiversity preservation objectives within or adjacent to those areas (e.g. shoreline parks, park natural areas, and ESA buffers).

Strategy 1.2. Ensure land use planning is supporting the urban forest.

Action 6. Adopt OCP policy supporting the urban forest and UFS that provides enhanced direction on the handling of View Royal's urban forest within the community's guide to growth.

Action 7. U Review View Royal's Zoning Bylaw to ensure performance criteria, including surface parking, landscaped open space, setbacks, and lot coverage, are supporting consistent inclusion of trees on development sites.

# Strategy 1.3. Ensure rates of tree planting are supporting net new outcomes.

Action 8. Prepare five-year tree planting plans to direct short-term tree planting programming toward the Town maintaining the desired net new tree planting.

Action 9. UMunicipal tree planting targeting 50 - 100 trees per year between parks and boulevards and desired canopy cover pathways.

Action 10. Leverage restoration and afforestation to grow urban forest canopy within forested areas and in naturalization sites.

Action 11. Establish an adopt-a-tree program where the Town will plant trees in underutilized boulevard or park space in exchange for resident-led care through establishment.

Strategy 1.4. Consider demonstrable need in program decision-making.

Department Lead(s)	Monitoring Measure
Engineering	M8. Tree condition rating
Engineering, Develop- ment Services	
Engineering	
Engineering	M3. Average DBH of boulevard trees at time of removal
Engineering, Develop- ment Services	
Development Services	M6. Spatial heat disparity
Development Services	M6. Spatial heat disparity
Engineering	
Engineering	M5. Net new public trees planted
Engineering	M4. Urban core can- opy cover
Engineering	M5. Net new public trees planted

# Est. Cost (Freq.)

Timeline

\$ (AN)	Short-Term
\$ - \$\$\$ (OT)	Short-Term
\$ (OT)	Immediate
\$ (OT)	Short-Term
\$\$\$ (PR)	Mid-Term
\$\$	Immediate
\$ - \$\$\$\$ (AN)	Long-Term
\$ - \$\$\$ (AN)	Short-Term
Ctoff time or CC 000	
<b>\$</b> - Staff time or <\$5,000	

\$ - Staff time or <\$5,000</li>
\$\$ - \$5,000 - \$10,000
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AN - Annual/Ongoing
OT - One-time
PR - Periodic

Immediate - 2026 Short-Term - 2026 - 2030 Mid-Term - 2030 - 2040 Long-Term - Beyond 2040

centrations of vulnerable populations.
Action 13. Ensure community engagement and outreach programming is broadly accessible to any interested members of the community. Explore opportunities for improving urban forest access and education in low tree equity areas.

Action 12. Explore opportunities for improving urban forest access and education in areas with con-

Action 14. Explore requiring dedicated tree corridors, boulevards clear of active transportation facilities or any other community infrastructure, along priority right-of-ways such as: (i) those located in Transit Oriented Development areas and along arterial/collector corridors, or (ii) areas of lower tree equity where there is a lower density of public trees. Identify these locations as a schedule in the OCP, prepare accompanying policy, and consistently require widening dedications within these areas.

Goal 2. Program governance supports the Town in meeting it's urban forest aspirations.

# Strategy 2.1. Improve urban forest governance to achieve positive urban forest outcomes.

Action 15. Prepare and adopt a Town Tree policy to formalize: green infrastructure within the Town's broader asset management program, risk management procedures concerning urban forest assets, integrated pest management procedures, public tree protection, replacement, and compensation requirements, and tree protection and inspection requirements with respect to capital works.

Action 16. Establish dedicated tree maintenance and planting budgets within parks. Establish initial budgets based on a life-cycle costing approach.

Action 17. Destablish an interdepartmental Urban Forestry working group and meet biannually to review progress on implementation, and to review current challenges and opportunities impacting the Town's urban forestry program.

### Strategy 2.2. Prioritize program monitoring and reporting.

Action 18. Undertake a review of the Urban Forest Strategy every five years.

Action 19. Establish and maintain a GIS-based boulevard tree inventory featuring a technical design aligned with industry best practices and update the inventory in-step with a proactive maintenance regimen.

Action 20. Produce a new urban tree canopy dataset, derived from current LiDAR and imagery datasets, on a five-year interval.

Department Lead(s)	Monitoring Measure	Est. Cost (Freq.)	Timeline
Engineering	M4. Urban core can- opy cover	\$ (AN)	Short-Term
Corporate Administra- tion		\$ (AN)	Immediate
Development Services, Engineering		\$ (OT)	Mid-Term
Engineering		\$\$-\$\$\$ (OT)	Mid-Term
Ligineening		ΦΦ-ΦΦ (OT)	Mid-Term
Engineering, Finance and Technology	M10. Program budget	\$\$\$\$ (AN)	Immediate
Chaired by Engineering, full representation from Internal departments	M2. Interdepart- mental working group meetings.	\$ (AN)	Immediate
Engineering		\$-\$\$ (PR)	Mid-Term
Engineering	M9. Inventory up-	\$* (AN)	Short-Term
date cycle	* moderated by size of boule- vard tree population. Present- ly, relatively small.		
Engineering M4. Urban core can- opy cover	M4. Urban core can-	\$\$\$ - \$\$\$\$* (PR)	Mid-Term
	* potentional cost efficien- cies through aligning LiDAR acquisition with neighbour- ing municipalities/regional districts undertaking similar work.		
		<ul> <li>\$ - Staff time or &lt;\$5,000</li> <li>\$\$ - \$5,000 - \$10,000</li> <li>\$\$\$ - \$10,000 - \$25,000</li> <li>\$\$\$\$ - &gt;\$25,000</li> <li>AN - Annual/Ongoing</li> <li>OT - One-time</li> <li>PR - Periodic</li> </ul>	Immediate - 2026 Short-Term - 2026 - 2030 Mid-Term - 2030 - 2040 Long-Term - Beyond 204
Action			
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Action	Department Lead(s)	Monitoring Measure	Est. Cost (Freq.)	Timeline
Action 21. IPProduce a State of the Urban Forest report on a five-year interval to report on key program metrics and explore changes in the urban forest since prior reporting.	Engineering		\$\$\$ (PR)	Mid-Term
Strategy 2.3. Sustainably resource urban forest management and the implementation of this Strategy.				
Action 22. Access external employment funding, such as Canada Summer Jobs wage subsidies, to employ youth over the summer and explore sustainable funding for student and internship pos- itions that can contribute to a wide range of stewardship, tree inventory, and other projects.	Engineering, Finance and Technology		\$ (PR)	Immediate
Action 23.  Establish a Town arborist or urban forester position within Parks to broadly enhance urban forest outcomes across all program areas and to support ongoing implementation of this Strategy.	Engineering, Finance and Technology		\$\$\$\$* (AN) * Investment here would bring capacity in-house that could reduce costs across multiple other implementation areas.	Immediate
Action 24. Transition the Town's Invasive Species Volunteer Coordinator to a full-time equivalent and expand community outreach, education, and stewardship programming.	Engineering, Finance and Technology		\$\$\$\$ (AN)	Immediate
Action 25. OAccess external funding opportunities to support tree planting, such as the Growing Canada's Community Canopies (GCCC) initiative.	Engineering, Finance and Technology		\$ (PR)	Immediate
Goal 3. Urban forest maintenance regimen are aligned with industry best practices.				
Strategy 3.1. Utilize best practices and industry benchmarks through the Town's maintenance regimen.				
Action 26. Expand the Town's watering program to water newly planted trees weekly in the growing season for a period of 3 to 5 years after planting.	Engineering		\$ - \$\$ (AN)	Mid-Term
Action 27. Transition to a seven-year cyclical pruning cycle for all inventoried boulevard trees.	Engineering	M11. Cyclical pruning cycle	\$\$\$\$ (AN)	Short-Term
Strategy 3.2. Maintain forested areas to a reasonable standard of care.				
Action 28. Prepare forest management plans for flagship parks including Nursery Hill Park, Kelvin Grove/Wilfert Park, Eagle Creek, Robin Hill, Portage Park, to define long-term objectives for forest management and identify short-term management actions to achieve objectives. Ensure current assessments of forest health underpin forest management planning efforts.	Engineering	M12. Forest stand condition ratings	\$\$\$ (PR)	Long-Term
Action 29. Prepare a biodiversity strategy to guide the management of View Royal's natural eco- systems, including rare ecosystems and species (e.g. Garry oak ecosystems), habitat hubs and corridors, their protection, invasive species management, access and recreational usage.	Engineering, Develop- ment Services		\$\$\$\$ (OT)	Mid-Term
Goal 4. View Royal protects it's urban forest.				
Strategy 4.1. Enhance regulatory tools and process are achieving the right balance between tree protection				
Action 30. 🕕 Establish a Wildfire Hazard Development Permit Area (DPA), including accompanying wildfire risk mapping as guided by View Royal's Community Wildfire Resiliency Plan.	Development Services, Protective Services		\$\$ (OT)	Short-Term
			<ul> <li>\$ - Staff time or &lt;\$5,000</li> <li>\$\$ - \$5,000 - \$10,000</li> <li>\$\$\$ - \$10,000 - \$25,000</li> <li>\$\$\$\$ - &gt;\$25,000</li> <li>AN - Annual/Ongoing</li> <li>OT - One-time</li> <li>PR - Periodic</li> </ul>	Immediate - 2026 Short-Term - 2026 - 2030 Mid-Term - 2030 - 2040 Long-Term - Beyond 2040

Action 31. Require development proposals that would involve modification of an existing forest edge, or the creation of new forest edge, to be supported by a wind firm assessment prepared by a qualified professional.

Action 32. Review the Town's Natural Watercourse and Shoreline Areas DPA, as well as the Sensitive Terrestrial Ecosystem DPA to ensure mapping and associated requirements are aligned with the Town's broader vision for its urban forest management and natural systems.

Action 33. Develop a Terms of Reference for arborist reports and tree surveys, including specifying survey requirements and the conditions under which letters of assurance and/or arborist supervision will be imposed.

Action 34. Formalize a process for bonusing (e.g., height, floor area) where trees, or native soils, are voluntarily protected through development, or where proposed site configuration will support greater tree planting than would be supported by meeting minimum requirements (e.g., landscaped area, expanded setbacks, lot coverage, etc.). Include policy supporting this bonusing in the Town's OCP.

Action 35. Update contract language to require hold-backs related to tree protection where private contractors are working around public trees during capital projects.

Action 36. Review the Town's Tree Protection Bylaw to ensure alignment with broader community objectives for canopy growth.

Action 37. DExplore the potential of a Landscaping Bylaw (s.527 of the LGA) toward improving consideration for the urban forest through development processes.

Action 38. Manage the diversity of public trees by limiting the continued planting of overrepresented species on public land. Aim for the Town's tree inventory to include no more than 20% of any single genus and no more than 10% of any single species.

Strategy 4.2. Support the resilience of both View Royal as a community and its urban forest.

Action 39. Consider sourcing climate-adapted native seed stock for use in the Town's native ecosystems.

Action 40. Adjust terms of reference for landscape plan submissions for large developments to include planting stock selection that achieves a minimum diversity of 3-5 individual species well-suited to the site.

Action 41. Support implementation of the actions contained to View Royal's Community Wildfire Protection Plan.

Action 42. Adopt FireSmart principals in landscape management, programming, and treatments to build the resilience of municipal buildings and Town assets.

epartment Lead(s)	Monitoring
	Measure

Development Services

**Development Services** 

Development Services,

Development Services

Engineering

Engineering

Engineering, Develop-

ment Services

Development Services

Engineering, Develop- M13. Genus and spement Services cies diversity

Engineering

Development Services

Protective Services

Engineering, Protective Services

Est. Cost (Freq.)	Timeline
\$ - \$\$* (OT)	Short-Term
* scoping of terms of refer- ence.	
\$\$ - \$\$\$\$* (OT)	Short-Term
* often, work would be com- pleted as part of a larger biodiversity strategy.	
\$ - \$\$* (OT)	Immediate
* scoping of terms of refer- ence.	
\$ (OT)	Short-Term
\$ (OT)	Short-Term
\$ - \$\$\$ (OT)	Short-Term
\$ - \$\$\$ (OT)	Short-Term
\$ (AN)	Short-Term
\$ (AN)	Mid-Term
\$ (OT)	Short-Term
\$ - \$\$\$\$ (AN)	Short-Term
\$ - \$\$ (OT)	Short-Term
<ul> <li>\$ - Staff time or &lt;\$5,000</li> <li>\$\$ - \$5,000 - \$10,000</li> <li>\$\$\$ - \$10,000 - \$25,000</li> <li>\$\$\$\$ - &gt;\$25,000</li> <li>AN - Annual/Ongoing</li> <li>OT - One-time</li> <li>PR - Periodic</li> </ul>	Immediate - 2026 Short-Term - 2026 - 2030 Mid-Term - 2030 - 2040 Long-Term - Beyond 2040

## Goal 5. Sustainable urban forest management is achieved through partnership and community investment.

### Strategy 5.1. Build relationships with host Nations and Indigenous Peoples living in View Royal to integrate Indigenous perspectives with urban forest management

Action 43. Expand government-to-government relationships with Esquimalt and Songhees Nations to better understand how Indigenous values and interests might be reflected in urban forest management practices, where high priority forested stands exist within View Royal, and identify opportunities to integrate Traditional Knowledge and land management practices into forested areas management.

#### Strategy 5.2. Build community knowledge of and participation in urban forest management.

Action 44. Ensure important urban forestry communications use a diversity of print and digital avenues to reach all segments of View Royal's population.

Action 45. Make urban forestry data, including tree canopy mapping and inventory datasets, publicly available.

Action 46. Prepare a biannual newsletter to communicate key urban forestry messages, updates, and progress on UFS implementation.

Action 47. Continue to offer View Royal's Resident Tree Planting Program and expand it if demand outpaces current program capacity. Add non-invasive non-native tree species to the planting list for areas of the town that are not connected to natural ecosystems.

Action 48. As demand justifies, further build on the successful partnerships and programming delivered through arrangements with the Greater Victoria Green Team (GVGT).

#### Strategy 5.3. Develop strategic partnerships to support the urban forest.

Action 49. Work with utility providers to define preferred and minimum planting setbacks from infrastructure assets and to identify acceptable solutions (e.g., utility sleeves, root barriers, vertical setbacks) supported in meeting minimum setbacks to reduce undue harm to trees.

Action 50. Explore partnership opportunities with the Greater Victoria School District (GVSD), including Shoreline Community Middle School, Eagle View Elementary School, and View Royal Elementary School to engage youth in educational programs that promote urban forest awareness and foster student interest in urban forestry.

Action 51. Actively participate in and support initiatives that utilize the Capital Regional District's (CRD) network of urban forestry professionals, including municipal staff, nurseries, consultants, and academics. Focus on sharing knowledge and collaborating to address key challenges.

Action 52. Explore partnering with Royal Roads University, the University of Victoria and other post-secondary institutions to support research and workforce development in View Royal's urban forest.

Office of the Mayor & CAO, Corporate Administration, Engineering

Corporate Administration, Engineering Corporate Administration, Engineering Corporate Administra-

tion, Engineering

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Est. Cost (Freq.)

#### Timeline

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	Immodiate
\$ - \$\$\$\$ (AN)	Immediate
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\$ (AN)	Mid-Term
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\$\$\$ - \$\$\$\$ (AN)	Immediate
\$\$ - \$\$\$\$ (AN)	Short-Term
\$ (PR)	Short-Term
$\psi(1,1)$	
\$ (AN)	Mid-Term
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\$ (AN)	Long-Term
<b>\$</b> - Staff time or <\$5,000	
<b>\$\$</b> - \$5,000 - \$10,000	Immediate - 2026
<b>\$\$\$</b> - \$10,000 - \$25,000	<b>Short-Term</b> - 2026 - 2030
<b>\$\$\$\$</b> - >\$25,000	Mid-Term - 2030 - 2040
<b>AN</b> - Annual/Ongoing	Long-Term - Beyond 2040
<b>OT</b> - One-time	
<b>PR</b> - Periodic	

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# Appendix

To assess View Royal's urban forestry program, a set of urban forest criteria and indicators have been adapted from the urban forest sustainability model originally proposed by Clark et al. in 1997 and updated by Leff in 2016. This suite of criteria and performance indicators helps assess the program's status using a standardized approach. Each criterion is linked to one of five overarching goals: Plan, Plant, Protect, Manage, Partner.

Our evaluations were based on a detailed review of the Town's policies and staff interviews. Overall, the Town's urban forest program scored 'Fair'. The assessment results are summarized in a 'Report Card' that the Town can use for benchmarking and progress tracking.

Our criteria & indicators table is based on the following resources:

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A current (2025) evaluation of View Royal's urban forest management program, scoring "poor", "fair", "good", or "optimal" under each identified assessment criteria, are highlighted on the pages following.

Primary				INDICATORS FOR URBA	AN FORESTRY PERFORMANC	E	Primary
moumou	Assessment Criteria	OBJECTIVE	Poor	Fair	Good	Optimal	source *modified by DHC from original
			PLAN				
Davey 2016 C6*	Awareness of the urban forest as a community resource	The urban forest is recognized as vital to the community's environmental, social, and economic well-being.	General ambivalence or negative attitudes about trees, which are perceived as neutral at best or as the source of problems. Actions harmful to trees may be taken deliberately.	Trees are widely acknowledged as providing environmental, social, and economic services but are not widely integrated in corporate strategies and policies.	Trees are widely acknowledged as providing environmental, social, and economic services and urban forest objectives are integrated into other corporate strategies and policies.	Urban forest recognized as vital to the community's environmental, social, and economic well- being. Widespread public and political support and advocacy for trees, resulting in strong policies and plans that advance the viability and sustainability of the entire urban forest.	Davey 201 R2 target*
Davey 2016 C1 target*	Interdepartmental and Municipal agency cooperation on urban forest strategy implementation	Ensure all relevant municipal departments and agencies cooperate to advance goals related to urban forest issues and opportunities.	Little cooperation and conflicting among departments and/or agencies often leading to poor outcomes for trees.	Common goals but limited cooperation among departments and/or agencies and mixed outcomes for trees.	Municipal departments, affected agencies and urban forest managers recognize potential conflicts and reach out to each other on an	Formal interdepartmental working agreements or protocols for all projects that could impact municipal trees.	Davey 201 T1

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			INDICATORS FOR URBA	N FORESTRY PERFORMANC	E
Assessment Criteria	OBJECTIVE	Poor	Fair	Good	Optimal
				informal but regular basis.	
Clear and defensible urban forest canopy assessment and goals	Urban forest policy and practice is driven by comprehensive goals municipality-wide and at the neighbourhood or land use scale informed by accurate, high- resolution assessments of existing and potential canopy cover.	No assessment or goals.	Low-resolution and/or point- based sampling of canopy cover using aerial photographs or satellite imagery – and limited or no goal setting.	Complete, detailed, and spatially explicit, high- resolution Urban Tree Canopy (UTC) assessment based on enhanced data (such as LiDAR) – accompanied by a comprehensive set of goals by land use and other parameters.	The City has a complete, detailed, and spatially explicit high-resolution Urban Tree Canopy (UTC) assessment accompanied by a comprehensive set of goals, all utilized effectively to drive urban forest policy and practice municipality-wide and at neighbourhood or smaller management level.
Relative tree canopy cover	Achieve desired degree of tree cover, based on potential or according to goals set for entire municipality and for each neighbourhood or land use.	The existing canopy cover for entire municipality is <50% of the desired canopy	The existing canopy is 50%- 75% of desired	The existing canopy is >75%-100% of desired.	The existing canopy is >75%- 100% of desired - at the individual neighborhood level

Primary				INDICATORS FOR URBA	AN FORESTRY PERFORMANC	E	Primary				INDICATORS FOR URBA	N FORESTRY PERFORMANC	E
source *modified by DHC from original	Assessment Criteria	OBJECTIVE	Poor	Fair	Good	Optimal	source *modified by DHC from original	Assessment Criteria	OBJECTIVE	Poor	Fair	Good	Optimal
						as well as overall municipality						financial statements of the municipality.	
Davey 2016 R4	Municipality-wide urban forest management plan	Develop and implement a comprehensive urban forest management plan for public and private property.	No plan	Existing plan limited in scope and implementation	Recent comprehensive plan developed and implemented for publicly owned forest resources, including trees managed intensively (or individually) and those managed extensively, as a population (e.g., trees in natural areas)	Strategic, multi- tiered plan with built-in adaptive management mechanisms developed and implemented for public and private resources	SFI Objective 3 Davey 2016 R6 target*	Municipal-wide biodiversity or green network strategy Municipal urban forestry program capacity	Acquire and restore publicly-owned natural areas in pursuit of meeting municipal-wide biodiversity and connectivity goals. Maintain sufficient well-trained personnel and equipment – whether in-house or through contracted or	No or very limited planning and stewardship of natural areas. Team severely limited by lack of personnel and/or	Area specific management plans focused on management, restoration, and protection of natural areas. Team limited by lack of staff and/or access to	Municipal-wide urban forest, parks or natural areas strategy guiding management, restoration, and protection of the existing natural areas network. Team able to implement many of the goals and	Biodiversity strategy or equivalent in effect to manage, restore and existing and acquire future natural areas network throughout the municipality. Team able to implement all of the goals and
DHC	Municipal green infrastructure asset management	Integrate green infrastructure assets into the municipal asset management system to support valuing and accounting for natural assets in the City's financial planning to build climate resilient infrastructure.	No recognition of value of natural or human-made elements that provide ecological and hydrological functions (green infrastructure)	Local government recognizes the value of green infrastructure but does not yet have information to include them in an asset management system.	Green infrastructure assets have been partially or fully inventoried and some assets are included in an asset	Green infrastructure assets are inventoried and included in an asset management system and on the consolidated financial statement of the municipality.	Davey 2016 R5 target*	Urban forest funding to implement a strategy	volunteer services – to implement municipality-wide urban forest management plan Maintain adequate funding to implement the urban forest strategy.	access to adequate equipment. Unable to perform adequate maintenance, let alone implement new goals. Little or no dedicated funding.	adequate equipment to implement new goals. Dedicated funding but insufficient to implement the urban forest	objectives of the urban forest management plan. Dedicated funding sufficient to partially implement the urban forest strategy and maintain new	objectives of the urban forest management plan. Sustained funding to fully implement the urban forest strategy and maintain new

Primary			INDICATORS FOR URBAN FORESTRY PERFORMANCE								
<b>source</b> *modified by DHC from original	Assessment Criteria	OBJECTIVE	Poor	Fair	Good	Optimal					
				strategy or maintain new assets as they are added to the inventory.	assets as they are added to the inventory.	assets as they are added to the inventory.					

	GROW											
Davey 2016 R7 target*	City tree planting and replacement program design, planning and implementation	Comprehensive and effective tree selection, planting and establishment program that is driven by canopy cover goals and other considerations according to the UFS.	Tree replacement and establishment is ad hoc.	Some tree planting and replacement occurs, but with limited overall municipality- wide planning and insufficient to meet replacement requirements.	Tree replacement and establishment is directed by needs derived from an opportunities assessment and species selection is guided by site conditions, tree health and climate adaptation considerations.	Tree planting and replacement is guided by strategic priorities and is planned out to make progress towards targets set for canopy cover, diversity, tree health and climate adaptation within the timeframe of the strategy.						
DHC	Development requirements to plant trees on private land	Ensure that new trees are required in landscaping for new development or, where space is lacking, there is an equivalent contribution to tree planting in the public realm.	Landscaping requirements do not address trees on private land.	Developments are generally required to plant trees but the outcomes are often in conflict with public trees and other infrastructure due to space limitations and not connected to meeting canopy cover targets.	Developments are required to plant trees or, where space is not adequate according to soil volume available, provide cash-in-lieu for equivalent tree planting on public land. The requirement is not connected to meeting canopy cover targets.	Developments are required to provide a minimum density of trees per unit measure or, where space is not adequate according to soil volume available, provide adequate cash-in-lieu for equivalent tree planting on public land. Planting density is determined based on meeting a municipal-wide canopy cover target.						

Davey 2016 R8 target*	Streetscape and servicing specifications and standards for planting trees	Ensure all publicly owned trees are planted into conditions that meet requirements for survival and maximize current and future tree benefits.	No or very few specifications and standards for growing sites.	Specifications and standards for growing sites exist but are inadequate to meet urban forest goals.	Specifications and standards exist and are adequate to meet urban forest goals but are not always achieved.	All trees planted are in sites with adequate soil quality and quantity, and with sufficient growing space to achieve their genetic potential and life expectancy, and thus provide maximum ecosystem services.	Dav 2010	6 procure in coop	ement of stock peration with y industry	Diversity targets and climate adaptation/mitigation objectives guide tree species selection and nurseries proactively grow stock based on municipal requirements.	Species selection is not guided by diversity targets or climate adaptation/mitigat ion objectives.	Species selection is guided by diversity and climate adaptation/ mitigation but required stock is rarely available from nurseries and acceptable	policy or guided by a connectivity analysis. Species selection is guided by targets for diversity and climate adaptation/ mitigation and required stock or acceptable substitutes are usually available from nurseries.	Species selection is guided by targets for diversity and climate adaptation/mitigati on and required stock is secured ahead of the planned planting year from contract or in-house
(Davey 2016 R3 target)	Equity in planting program delivery	Ensure that the benefits of urban forests are made available to all, especially to those in greatest need of tree benefits.	Tree planting and outreach are not determined equitably by canopy cover or need for benefits.	Planting and outreach include attention to low- canopy neighborhoods or areas.	Planting and outreach targets neighborhoods with low canopy and a high need for tree benefits.	Equitable planting and outreach at the neighbourhood level are guided by strong citizen engagement in identified low- canopy/high-need areas.	SFI	targete	stem services ed in tree ng projects and	Incorporate ecosystem services objectives into public and private tree planting projects to improve urban tree health and resilience, carbon sequestration, stormwater management and cooling.	Ecosystem services not considered in planting projects or intentionally designed into vegetated	substitutes reduce diversity. Ecosystem services, such as stormwater interception, occasionally incorporated into City or	Guidelines in place for planting projects and landscape designs on public and private land to deliver specific ecosystem services.	nurseries. Ecosystem services targets are defined for the urban forest and policy requires planting project and landscape
Davey 2016 R14 target*	Forest restoration and native species planting	Encourage the appreciation of climate suitable native vegetation by the community and ensure native species are widely planted to enhance native biodiversity and connectivity	Voluntary use of climate suitable native species on publicly and privately-owned lands.	The use of climate suitable native species is encouraged on a site-appropriate basis in public and private land development projects.	Policies require the use of climate suitable native species and management of invasive species on a site-appropriate basis in public and private land development projects but are not integrated across all	Policies require the use of climate suitable native species and management of invasive species on a site-appropriate basis in public and private land development projects and through tree bylaw.					landscapes	private land planting projects and landscape designs.		designs on public and private land to contribute to meeting targets.

	MANAGE							Age diversity (size class distribution)	Provide for ideal uneven age distribution of all "intensively" (or	Even-age distribution, or	Some uneven distribution, but	Total tree population across municipality	approaches that
Davey 2016 R1 target*Tree inventoryDavey 2016 T7Knowledge of trees on private property	A current and comprehensive inventory of intensively managed trees to guide management, including data such as age distribution, species mix, tree	No inventory.	entory. Partial inventory of publicly- owned trees in GIS.	of street trees and in intensively managed of park trees in GIS but b	The municipal tree inventory is complete, is GIS- based, supported by mapping, and is			individually) managed trees – municipality-wide as well as at neighbourhood level	highly skewed toward a single age class (maturity stage) across entire population	most of the tree population falls into a single age class	approaches an ideal age distribution of 40% juvenile, 30% semi-mature, 20% mature, and 10% senescent	ideal distribution municipality-wide as well as at the neighborhood level	
		condition and risk assessment.			updated.		Davey 2016 T3	Species diversity	Establish a genetically diverse population across the municipality as well as at the neighbourhood scale	Five or fewer species dominate the entire tree population across municipality	No single species represents more than 10% of the total tree	No single species represents more than 5% of total tree population; no genus more than	At least as diverse as "Good" rating (5/10/15) municipality-wide - and at least as
2016 T7 target*	•	Understand the extent, location, and general condition of privately-owned trees.	No information about privately owned trees.	bout privately based or low-	Detailed Urban Tree Canopy analysis of the urban forest on private land, including extent and location, integrated into a municipality- wide GIS system	entile urbaniorest					population; no genus more than 20%, and no family more than 30%	10%; and no family more than 15%	diverse as "fair" (10/20/30) at the neighborhood level
							Davey 2016 T4	Species suitability	Establish a tree population suited to the urban environment and adapted to the overall region	Fewer than 50% of all trees are from species considered suitable for the area	>50%-75% of trees are from species suitable for the area	More than 75% of trees are suitable for the area.	Virtually all trees are suitable for the area
gapin	Natural areas inventory	A current and comprehensive inventory of sensitive and modified natural ecosystems and their quality mapped to Provincial standards to provide standardized ecological information to support decision- making. No inventory of natural areas. Natural areas SIS but not and attribute information not to a standard decision- making. No inventory of Natural areas Natural areas Nat	natural areas. GIS but not recently update and attribute information not	inventoried in GIS but not recently updated and attribute information not	inventoried in GISinventoried in GISand with standardand with standardand completeand completeattribute informationattributeto support decision-information to	inventoried in GIS and with standard and complete attribute information to	Davey 2016 T5 target	Publicly owned tree species condition	Current and detailed understanding of condition and risk potential of all publicly owned trees that are managed intensively (or individually)	Condition of urban forest is unknown	Sample-based tree inventory indicating tree condition and risk level	Complete tree inventory that includes detailed tree condition ratings	Complete tree inventory that is GIS-based and includes detailed tree condition as well as risk ratings
			Davey 2016 R10*	Maintenance of intensively managed trees	Maintain all publicly owned intensively managed trees for optimal health and condition in order to extend longevity and maximize current and future benefits	Intensively managed trees are maintained on a request/reactive basis.	Intensively managed trees are maintained on a request/reactive	All intensively managed trees are systematically maintained on a cycle determined by	All mature intensively managed trees are maintained on an optimal pruning				

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				basis. Limited systematic	workload and resource limitations.	cycle. All immature trees are			responses to existing and potential pest, disease and invasive species	and no pest management.	management plan and reactive	in place and implemented.	
				(block) pruning	All immature trees	structurally			threats to the urban forest.		pest		
				and/or immature	are structurally	pruned.					management.		
				trees are	pruned.						-		
				structurally									
				pruned.			Davey	Waste biomass	A closed system diverts all urban	Wood waste from	Wood waste	Wood waste from	
		A response plan guides call-out	Response plan not	Response plan is	Response plan	A comprehensive	2016 R13	utilization	wood and green waste through reuse	the urban forest is	from the urban	the urban forest is	
	Emergency response	procedures, resources available and	documented or	documented and	includes call-out	response plan is in	target*	utitization	and recycling.	not utilized.	forest is utilized	utilized as mulch or	
	planning	the clean-up response for extreme	not current.	includes call-out	procedure, roles and	place and a	targot			not utilized.	as mulch or	biofuel and	
	prairing	weather and earthquake.		procedures,	responsibilities, and	response drill					biofuel.	sometimes high	
				roles and	criteria for	occurs annually.						value pieces are	
				responsibilities	prioritizing tree							milled and stored for	
				but lacks details	hazards and							later use or sold on	
				to prioritize	removing debris is in							to local value-added	
				hazards and	place.							industries.	
				clean-up.									
							SFI	Tracking of operational	Organization will actively track their	Basic CO2/GHG	Basic CO2/GHG	Basic CO2/GHG	
avey		Comprehensive tree risk	No coordinated	Some areas	Priority areas of the	A comprehensive	Эгі	carbon footprints and	operational carbon footprints	accounting not	accounting and	accounting and	
016 R12	Tree risk management	management program fully	tree risk	within the city	City are inspected	risk management		urban forest carbon-cycle	and their community-wide urban	considered for	carbon cycle	carbon cycle	
arget*	The HSK management	implemented, according to ANSI	assessment or	are prioritized for	on a regular	program is in		balance	forest carbon-cycle balance and	urban forestry	assessment and	assessment and	
argot		A300 (Part 9) "Tree Risk	risk management	risk assessment	schedule and	place, with all			work with community	operations	climate action	climate action plan	
Updated		Assessment" standards, and	program.	and	operational	public lands			partners to minimize greenhouse gas	operations	plan undertaken	undertaken with	
y DHC		supporting industry best	Response is on a	management.	standards and	inspected on			emissions (GHG) emissions while		for	specific goals and	1
o make		management practices.	reactive basis	Little annual	budgets are in place	defined schedules			maximizing carbon		urban forestry	objectives for urban	
nore			only.	budget is	for responding to	and operational			sequestration and avoided GHG		operations and	forestry and formal	1
elevant/				available to	and managing tree	standards and			emissions.		for the entire	policies in place to	0
nuanced				develop a more	risks within an	budgets in place					community with	encourage use of	:
				proactive	appropriate	for responding to					general goals	trees and green	
				inspection	timeframe.	and managing tree					and objectives to	infrastructure	
				program.		risks within an					minimize	for carbon	i
						appropriate					community	sequestration and	
						timeframe.					emissions.	energy conservation	
онс	Pest and Disease	An Integrated Pest Management	No integrated pest	No integrated	An integrated pest	A comprehensive						in buildings.	
made	Management	(IPM) plan guides treatment	management plan	pest	management plan is	pest management							

						for carbon sequestration and energy conservation in buildings, and to maximize urban wood and woody biomass utilization.	SFI Objectiv e 3	Internal protocols guide City tree or sensitive ecosystem protection	Ensure all relevant municipal departments follow consistent tree or ecosystem protection protocols for capital design and construction activities.	No protocols guiding City tree or ecosystem protection for capital design and construction activities.	Informal and inconsistent processes followed for City tree or ecosystem protection for capital design and construction activities.	enable effective tree retention. Established protocols for City tree or ecosystem protection for capital design and construction activities but outcomes are inconsistent or	consistently applied.Established protocols for City tree or ecosystem protection for capital design and construction activities are consistently followed and outpage are
Davey 2016 R9 target*	Policy or regulations regulating the protection and replacement of private and City trees	PF Secure the benefits derived from trees on public and private land by enforcement of municipality-wide policies and practices including tree protection.	ROTECT No or very limited tree protection policy.	Policies in place to protect public trees and employ industry best management practice.	Policies in place to protect public and private trees with enforcement but lack integration with other municipal policy to enable effective tree retention.	Urban forest strategy and integrated municipal-wide policies that guide the protection of trees on public and private land, and ensure they are consistently applied and enforced.	Davey 2016 C3 target*	Standards of tree protection and tree care observed during development or by local arborists and tree care companies	Consulting arborists and tree care companies understand city-wide urban forest goals and objectives and adhere to high professional standards.	Limited understanding or support for tree protection requirements.	General understanding or support for tree protection requirements but large variation in the quality of information and services provided.	sometimes unachievable. General understanding or support for tree protection requirements and generally consistent quality of information and services provided.	outcomes are successful.Advocacy for tree protection requirements, engagement with City staff on improving processes and standards, and generally consistent quality of information and services provided
SFI Objectiv e 3 and 4	Policy or regulations for conservation of sensitive ecosystems, soils, or permeability on private property through development	Secure the benefits derived from environmentally sensitive areas by enforcement of municipality-wide policies in pursuit of meeting biodiversity and connectivity goals.	No or very limited natural areas protection policy.	Policies in place to protect privately- owned natural areas without enforcement.	Development Permit Areas in place to protect privately-owned natural areas with enforcement but lack integration with other municipal policy to	Biodiversity strategy or equivalent and integrated municipal-wide policies that guide privately-owned natural area protection and ensure they are	Davey 2016 C2 target*	Cooperation with utilities on protection (and pruning) of City trees	All 3rd party utilities employ best management practices and cooperate with the City to advance goals and objectives related to urban forest issues and opportunities.	Utilities take actions impacting urban forest with no municipal coordination or consideration of	Utilities inconsistently employ best management practices, rarely recognizing potential	Utilities employ best management practices, recognize potential municipal conflicts, and reach out to urban	to high professional standards. Utilities employ best management practices,

			the urban forest resource.	municipal conflicts or reaching out to urban forest managers and vice versa.	forest managers on an ad hoc basis – and vice versa.	out to urban forest managers and vice versa.
		ΡΑ	RTNER			
Davey 2016 C5 target*	Citizen involvement and neighbourhood action	Citizens and groups participate and collaborate at the neighbourhood level with the municipality and/or its partnering NGOs in urban forest management activities to advance municipality-wide plans	Little or no citizen involvement or neighborhood action.	Community groups are active and willing to partner in urban forest management, but involvement and opportunities are ad hoc.	Several active neighborhood groups engaged across the community, with actions coordinated or led by municipality and/or its partnering NGOs.	Proactive outreach and coordination efforts by the City and NGO partners result in widespread citizen involvement and collaboration among active neighbourhood groups engaged in urban forest management
Davey 2016 C4 target*	Involvement of large private land and institutional land holders (e.g., schools)	Large private landholders to embrace and advance city-wide urban forest goals and objectives by implementing specific resource management plans.	Large private landholders are generally uninformed about urban forest issues and opportunities.	Landholders manage their tree resource but are not engaged in meeting municipality-wide urban forest goals.	Landholders develop comprehensive tree management plans (including funding strategies) that advance municipality-wide urban forest goals.	As described in "Good" rating, plus active community engagement and access to the property's forest resource.
	Urban forest research	Research is active and ongoing towards improving our understanding of the urban forest resource, the benefits it produces,	No urban forest research.	Isolated academic research occurs in the municipality's urban forest.	The municipality supports and has input on academic research occurring	The urban forest is a living laboratory - in collaboration with public,

Davey 2016 C7 target

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	and the impacts of planning, policy, design and management initiatives.			in its urban forest and knowledge transfer occurs.	private, NGO and academic institutions - integrating research and innovation into managing urban forest health, distribution, and
					abundance.
gional collaboration	There is cooperation and interaction on urban forest plans among neighbouring municipalities within the region, and/or within regional agencies.	Municipalities have no interaction with each other or the broader region for planning or	Some neighboring municipalities and regional agencies share similar policies and plans related to trees	Some urban forest planning and cooperation across municipalities and regional agencies.	Widespread regional cooperation resulting in development and implementation of
		coordination on urban forestry.	and urban forest.		regional urban forest strategy.

